Board of Trustees Regular Meeting

807 Mountain Avenue
Town Board Meeting Room
Berthoud, Colorado 80513
Tuesday, June 9, 2026, at 6:30 PM

This meeting will be streamed live on YouTube. The live stream is accessible by visiting www.berthoud.org/stream.

The Board of Trustees may act on any of the following agenda items as presented or modified prior to or during the meeting and items necessary or convenient to effectuate the agenda items.

I. Call to Order

II. Pledge of Allegiance

III. Roll Call

IV. Citizen Participation

V. Scheduled Items and Estimated Times for Discussion

1. Consent Agenda **(5 Min)**

Consent Agenda items are considered to be routine by the Town Board and will be enacted with a single vote. There will be no separate discussion of these items. If discussion is deemed necessary, an item may be removed from the Consent Agenda and considered separately.

a. June 9, 2026 Meeting Agenda

b. May 12, 2026 Meeting Minutes

c. May 26, 2026 Meeting Minutes

d. April 2026 Financial Information

e. Invitation for Bid – Serenity Ridge Stormwater Project

f. Berthoud Arboretum Preconstruction Services Agreement

g. 2nd Amendment to Westside Crossing Commercial Development Agreement

h. Agreement Between the Town of Berthoud and Social Pinpoint, Inc for Berthoud Engage Community Engagement Software

The order of agenda items listed above is approximate and intended as a guideline for the Town Board. Individuals needing special accommodation may request assistance by contacting the Town Clerk 807 Mountain Avenue, Berthoud, Colorado 80513, 970-532-2643 at least 24 hours in advance.

i. Agreement Between the Town of Berthoud and the Town of Erie for the Lease of CBT Water Rights

j. Intergovernmental Agreement Between the Town of Berthoud and Larimer County Regarding the Wilson Farm Conservation Project Funding

2. Annual Committee Report - Youth Advisory Commission (20 Min)

3. Updated Water Supply - Demand Outlook (40 Min)

4. Berthoud Drought Response Plan (20 Min)

5. Intersection Model Presentation (15 Min)

6. Public Hearing: Berthoud Industrial (Buckner) Annexation and Zoning (15 Min)

7. Introduction: Amendment to Landscape Guidelines in consideration of the newly adopted Colorado Wildfire Resiliency Code - Ordinance 1383 (15 Min)

8. Amendment to Chapter 17 of Berthoud Municipal Code Regarding Off Highway Vehicles - Ordinance 1385 (15 Min)

VI. Elected Official and Staff Reports

9. Town Board -

10. Mayor -

11. Staff - Town Administrator, Attorney

VII. Adjourn

Town Clerk or Deputy Town Clerk

William Karspeck, Mayor

The order of agenda items listed above is approximate and intended as a guideline for the Town Board. Individuals needing special accommodation may request assistance by contacting the Town Clerk 807 Mountain Avenue, Berthoud, Colorado 80513, 970-532-2643 at least 24 hours in advance.

Board of Trustees Regular Meeting

807 Mountain Avenue
Town Board Meeting Room
Berthoud, Colorado 80513
Tuesday, June 9, 2026, at 6:30 PM

This meeting will be streamed live on YouTube. The live stream is accessible by visiting www.berthoud.org/stream.

The Board of Trustees may act on any of the following agenda items as presented or modified prior to or during the meeting and items necessary or convenient to effectuate the agenda items.

I. Call to Order

II. Pledge of Allegiance

III. Roll Call

IV. Citizen Participation

V. Scheduled Items and Estimated Times for Discussion

1. Consent Agenda **(5 Min)**

Consent Agenda items are considered to be routine by the Town Board and will be enacted with a single vote. There will be no separate discussion of these items. If discussion is deemed necessary, an item may be removed from the Consent Agenda and considered separately.

a. June 9, 2026 Meeting Agenda

b. May 12, 2026 Meeting Minutes

c. May 26, 2026 Meeting Minutes

d. April 2026 Financial Information

e. Invitation for Bid – Serenity Ridge Stormwater Project

f. Berthoud Arboretum Preconstruction Services Agreement

g. 2nd Amendment to Westside Crossing Commercial Development Agreement

h. Agreement Between the Town of Berthoud and Social Pinpoint, Inc for Berthoud Engage Community Engagement Software

The order of agenda items listed above is approximate and intended as a guideline for the Town Board. Individuals needing special accommodation may request assistance by contacting the Town Clerk 807 Mountain Avenue, Berthoud, Colorado 80513, 970-532-2643 at least 24 hours in advance.

i. Agreement Between the Town of Berthoud and the Town of Erie for the Lease of CBT Water Rights

j. Intergovernmental Agreement Between the Town of Berthoud and Larimer County Regarding the Wilson Farm Conservation Project Funding

2. Annual Committee Report - Youth Advisory Commission (20 Min)

3. Updated Water Supply - Demand Outlook (40 Min)

4. Berthoud Drought Response Plan (20 Min)

5. Intersection Model Presentation (15 Min)

6. Public Hearing: Berthoud Industrial Annexation and Zoning - Ordinance 1382 (15 Min)

7. Introduction: Amendment to Landscape Guidelines in consideration of the newly adopted Colorado Wildfire Resiliency Code - Ordinance 1383 (15 Min)

8. Amendment to Chapter 17 of Berthoud Municipal Code Regarding Off Highway Vehicles - Ordinance 1385 (15 Min)

VI. Elected Official and Staff Reports

9. Town Board -

10. Mayor -

11. Staff - Town Administrator, Attorney

VII. Adjourn

Town Clerk or Deputy Town Clerk

William Karspeck, Mayor

The order of agenda items listed above is approximate and intended as a guideline for the Town Board. Individuals needing special accommodation may request assistance by contacting the Town Clerk 807 Mountain Avenue, Berthoud, Colorado 80513, 970-532-2643 at least 24 hours in advance.

Board of Trustees Meeting Minutes

807 Mountain Avenue
Town Board Meeting Room
Berthoud, Colorado 80513
Tuesday, May 12, 2026, at 6:30 PM

5/12/2026 – Minutes

I. Call to Order

Mayor Karspeck called the meeting to order at 6:31 PM.

II. Pledge of Allegiance

Mayor Karspeck led the Pledge of Allegiance.

III. Roll Call

The following Board members were present:

Trustee Karen Anderson
Trustee Casey Grace
Trustee Sean Murphy
Trustee Brett Wing
Mayor Pro-Tem May Soricelli-Albrecht
Mayor Will Karspeck

The following Board members were absent:

Trustee Arno Olbricht

The following staff members were present:

Town Attorney Kathryn Sellars
Town Administrator Chris Kirk
Town Clerk Christian Samora
Deputy Town Clerk Lexi Dovel
Larimer County Sheriff Sergeant Justin Williamson
Community Development Director Anne Johnson
Town Planner Bella Manzo
Water & Wastewater Engineer Savana Dumler
Water Operations Manager Tyler Carpenter

IV. Citizen Participation

Abigail Smith, Randy Niece, Becky Dittmer, and Ann Karspeck spoke regarding the Berthoud Arboretum.

V. Scheduled Items and Estimated Times for Discussion

1. Consent Agenda (5 Min)

Consent Agenda items are considered to be routine by the Town Board and will be enacted with a single vote. There will be no separate discussion of these items. If discussion is deemed necessary, an item may be removed from the Consent Agenda and considered separately.

Trustee Grace requested items b, d, f, and g be removed from the Consent Agenda for individual consideration.
Trustee Murphy requested item h be removed from the Consent Agenda for individual consideration.
Trustee Anderson requested item c be removed from the Consent Agenda for individual consideration.

Trustee Wing moved to approve item a. Trustee Anderson seconded the motion. In a 6-0 roll call vote, the motion Passed.

The Board had further discussion on item b) April 28, 2026 Meeting Minutes. Trustee Grace requested additional comments be included for item 5. Amendment of the Municipal Code Regarding Backflow Prevention and Cross-Connection Control - Ordinance 1380 and for item 6. 2026 Drought Response Plan Update.

Trustee Wing moved to approve item b with the changes noted by Trustee Grace. Trustee Anderson seconded the motion. In a 6-0 roll call vote, the motion Passed.

Trustee Anderson recused herself for the discussion of item c) Habitat for Humanity Grant Application Letter of Support.

Trustee Wing moved to approve item c. Trustee Grace seconded the motion. In a 5-0 roll call vote, the motion Passed, with Trustee Anderson abstaining.

The Board had further discussion on item d) March 2026 Financial Information.

Trustee Wing moved to approve item d. Mayor Pro-Tem Soricelli-Albrecht seconded the motion. In a 6-0 roll call vote, the motion Passed.

Trustee Wing moved to approve item e. Trustee Anderson seconded the motion. In a 6-0 roll call vote, the motion Passed.

The Board had further discussion on item f) CDOT HWY 56 Maintenance Agreement.

Trustee Wing moved to approve item f. Trustee Grace seconded the motion. In a 6-0 roll

call vote, the motion Passed.

The Board had further discussion on item g) Approval of Amendment to Applied Controls & Engineering Professional Services Agreement.

Trustee Anderson moved to approve item g and authorize the Town Administrator to contract with Applied Controls for the amount referenced in the agreement, subject to the final approval of the agreement by the Town Attorney. Trustee Grace seconded the motion. In a 6-0 roll call vote, the motion Passed.

The Board had further discussion on item h) Limited Waiver and Consent of Potential Conflict - HPWC/Hick Legacy Water Regional Authority.

Trustee Murphy moved to approve item h. Trustee Grace seconded the motion. In a 6-0 roll call vote, the motion Passed.

- **a.** May 12, 2026, Meeting Agenda
- **b.** April 28, 2026, Meeting Minutes
- **c.** March 2026 Financial Information
- **d.** Habitat for Humanity Grant Application Letter of Support
- **e.** Local Planning Grant from DOLA - Share deliverable - Land and Water Banking Memorandum
- **f.** CDOT HWY 56 Maintenance Agreement
- **g.** Approval of Amendment to Applied Controls & Engineering Professional Services Agreement
- **h.** Limited Waiver and Consent of Potential Conflict – HPWC/Hick Legacy Water Regional Authority

2. Main Street 3-Year Presentation and Funding Request (30 Min)

Whitney Way and Katie Hittelman with Berthoud Main Street gave a presentation.
Gayle Langley and Traci Stoffel with Colorado Main Street provided additional information.

Mayor Karspeck opened the item to public comment.
Kimberly Wilhelm, Marleene Buttice, Rudi Taylor, Melissa Feldbush, David Stranathan, and Ann Karspeck spoke during public comment.
Mayor Karspeck closed public comment.

Trustee Murphy moved to direct Town staff to create an agreement, a formal resolution, and a memorandum of understanding with Berthoud Main Street encompassing the $85,000 initial ask and intent for a 3-year plan or relationship and return it to the Town

Board for final consideration, including the following requirements:

- **Berthoud Main Street will include a Town liaison position.**
- **An annual agenda item is added before the Town Board, including a visit by Berthoud Main Street along with an annual report of financial expenditures and revenues, achievements from the year, and goals for the coming year, and any other supplemental DOLA requirements.**

In tandem with Town staff, Berthoud Main Street will provide:

- **A statement of planned expansion for Berthoud Main Street.**
- **A mission statement.**
- **Berthoud Main Street will engage in stakeholder engagement.**

Trustee Wing seconded the motion. In a 6-0 roll call vote, the motion Passed.

Mayor Karspeck called for a 5-minute break.

3. Annual Committee Report - Historic Preservation Advisory Committee (30 Min)

Leslie Moore, Chair of the Historic Preservation Advisory Committee, gave an annual committee report.

4. Proclamation - National Historic Preservation Month (5 Min)

Mayor Karspeck read the proclamation aloud and declared May 2026 as Historic Preservation Month.

5. Adoption of the Town of Berthoud Historic Preservation Master Plan (15 Min)

Community Development Director Anne Johnson provided an introduction to the Historic Preservation Master Plan.

John Schuttler with Chronicle Heritage gave a presentation.

Town Planner Bella Manzo provided additional information.

Mayor Karspeck opened the item to public comment.
Whitney Way spoke during public comment.
Mayor Karspeck closed public comment.

Trustee Anderson moved to adopt Ordinance 1381, an ordinance of the Town of Berthoud adopting the Historic Preservation Master Plan. Trustee Murphy seconded the motion. In a 6-0 roll call vote, the motion Passed.

6. Amendment of the Municipal Code Regarding Backflow Prevention and Cross-Connection Control - Ordinance 1380 **(30 Min)**

Water and Wastewater Engineer Savana Dumler and Water Operations Manager Tyler Carpenter gave a presentation on Ordinance 1380 regarding backflow prevention and cross-connection control.

Trustee Murphy moved to extend the meeting past 9:30 pm. Trustee Anderson seconded the motion. With all in favor, the motion Passed.

Mayor Karspeck opened the item to public comment.
Whitney Way spoke during public comment.
Mayor Karspeck closed public comment.

Trustee Anderson moved to adopt Ordinance 1380, an ordinance of the Town of Berthoud repealing and reenacting Section 6.28 of the Berthoud Municipal Code regarding backflow prevention, adopting a new Section 6.29 regarding non-potable cross-connection control, and repealing provisions in conflict therewith. Trustee Grace seconded the motion. In a 6-0 roll call vote, the motion Passed.

7. Elected Official Reports **(20 Min)**

a. Town Board -

Trustee Grace inquired about the use of AI to transcribe Board meetings or to create meeting summaries. Grace reported on PORT Committee discussions regarding bike park improvements, a beautification project at Pioneer Park, engaging with Northern Water for plant care around Town, and the Berthoud Arboretum.

Trustee Wing discussed a Housing at a Crossroads report by the NoCo Foundation and housing needs in Northern Colorado.

Trustee Anderson reported on HPAC discussions regarding an application to remove a historic landmark designation and concerns about Town branding. Anderson noted the upcoming Historic Walking Tour on June 13, 2026.

Trustee Murphy provided an update on SB26-100 regarding Youth Sports and reported on discussions with County Commissioner Shadduck McNally regarding Pine Beetle information and conversations with Chief Charles on the Community Wildfire Protection Plan. Murphy reported on Tree Committee conversations regarding America in Bloom, the upcoming Berthoud Day event, community outreach about the Emerald Ash Borer, the Berthoud Arboretum, and tree management around town.

Mayor Pro-Tem Soricelli-Albrecht discussed the Berthoud Arboretum and inquired about water restrictions. Soricelli-Albrecht expressed concern about board members acting as Town liaisons for outside boards and committees.

b. Mayor -

Mayor Karspeck reported on the NOCO Foundation housing report, Turner Middle School philanthropy, the Berthoud Business Appreciation breakfast, and a recent MPO meeting. Karspeck reports that the next MPO meeting will be held in Berthoud.

c. Staff - Town Administrator, Attorney

Administrator Kirk provided an update on cost estimates for pickleball court lighting and on the status of the County Line Road construction.

8. Executive Session to determine positions relative to matters that may be subject to negotiations; developing strategy for negotiations; and instructing negotiators, pursuant to C.R.S. § 24-6-402 (4)(e), regarding lease of 290 Mountain Avenue (30 Min)

Trustee Anderson moved to go into Executive Session pursuant to C.R.S. 24-6-402(4)(e)(I) to determine positions relative to matters that may be subject to negotiations, developing a strategy for negotiations, and instructing negotiators regarding 290 Mountain Ave. Trustee Murphy seconded the motion. In a 6-0 roll call vote, the motion Passed.

VI. Adjourn

The meeting was adjourned at 10:59 pm.

Town Clerk or Deputy Town Clerk

William Karspeck, Mayor

Board of Trustees Meeting Minutes

807 Mountain Avenue
Town Board Meeting Room
Berthoud, Colorado 80513
Tuesday, May 26, 2026, at 6:30 PM

5/26/2026 – Minutes

I. Call to Order

Mayor Karspeck called the meeting to order at 6:31 PM.

II. Pledge of Allegiance

Mayor Karspeck led the Pledge of Allegiance.

III. Roll Call

The following Board members were present:

Trustee Karen Anderson
Trustee Casey Grace
Trustee Sean Murphy
Trustee Arno Olbricht
Trustee Brett Wing
Mayor Pro-Tem May Soricelli-Albrecht
Mayor Will Karspeck

The following staff members were present:

Town Attorney Kendra Carberry
Town Administrator Chris Kirk
Town Clerk Christian Samora
Deputy Town Clerk Lexi Dovel
Larimer County Sheriff Deputy Zack Anderson
Administrative Technician Ethan Clemens
Project Engineer Daniel Buendia
Community Engagement Manager Stephanie Horvath

Mayor Karspeck called for a moment of silence for Berthoud Fire Lieutenant Ken Bradley, who sustained serious injuries in an auto accident.

IV. Citizen Participation

Zell Cantrell, Managing Director of True Life Companies spoke about affordable housing and well setbacks during public comment. Cantrell requested that the Town reconsider oil and gas well setback in the Development Code and provided proposed revisions to the Town Clerk.

Kim and Tony Armstrong of Berthoud spoke about BATS and RAFT during public comment. The Armstrongs expressed concern regarding RAFT's ability to accommodate riders in the same way that BATS does.

David Malanson of Berthoud spoke about oil and gas-well setbacks and election results regarding development during public comment. Malanson encouraged the Board to review HUD standards regarding oil and gas well setbacks and to look at development at a slower pace.

V. Scheduled Items and Estimated Times for Discussion

1. Consent Agenda (5 Min)

Consent Agenda items are considered to be routine by the Town Board and will be enacted with a single vote. There will be no separate discussion of these items. If discussion is deemed necessary, an item may be removed from the Consent Agenda and considered separately.

Trustee Murphy requested item "b. May 12, 2026, Meeting Minutes" be removed from the consent agenda for additional consideration and discussion.

Trustee Wing requested item "d. Property Lease - 821 Mountain Avenue" be removed from the consent agenda for additional consideration and discussion.

Trustee Anderson moved to combine and approve the items on the Consent Agenda with exception of items "b." and "d." Trustee Wing seconded the motion. In a 7-0 roll call vote, the motion Passed.

Mayor Karspeck indicated that Items "b." and "d" will be considered following item 4.) Town Branding - Creative Comittee Recommendations.

The Board approved the following items from the Consent Agenda:

a. May 26, 2026 Meeting Agenda

c. May 2026 Board Report

e. FRA: Crossing Safety Program / Railroad Crossing Elimination Grant Program

2. Tree Advisory Committee Presentation Regarding Arboretum (45 Min)

Tree Advisory Committee members Kathy Mitchell and Paul Buckener gave a brief presentation regarding the Berthoud Arboretum. The presentation included background information regarding the proposed park, an overview of what an arboretum is, and how it can benefit the community.

3. Berthoud Arboretum Discussion (20 Min)

The Board discussed the Arboretum regarding funding, water supply, and grants. Daniel Buendia, Project Engineer, addressed any questions and provided additional details regarding the Berthoud Arboretum project.

Mayor Karspeck opened the item to public comment.

The following members of the public spoke during public comment regarding the Arboretum Project:
Christpher Freeman
David Changnon
Susie Changnon
Carolyn Hobson
Sandra Nickerson
Mary Jane Hogen
Jane Vielehr
John Simon
Ann Karspeck and Charles Gracenstien
Jessica Higgens
Kate Bolton

Mayor Karspeck closed public comment.

Following additional discussion, the following motion was made:

Trustee Anderson moved to direct the Town Administrator to review the Berthoud Arboretum project costs, reduce the costs to bring the project within budget, and advise the Board of Trustees of the success of the reductions and what will be included or excluded as a result. Mayor Pro-Tem Soricelli-Albrecht seconded the motion. In a 7-0 roll call vote, the motion Passed.

Mayor Karspeck called for a 10-minute break.

4. Town Branding - Creative Committee Recommendations (30 Min)

Community Engagement Manager Stephanie Horvath and Katy Mclaughlin from Locality Studio gave a presentation and provided background information regarding the branding initiative. The presentation included information regarding the project history, stakeholder involvement, findings, and proposed graphic designs. Horvath and Mclaughlin addressed any questions and provided details regarding how the elements in each logo represent the community.

Amy Pilla, Berthoud Community Library District CEO, provided further information regarding the Creative Committee decision-making process while serving on the Creative Committee.

The Board discussed the Creative Committee recommendations for updating the Town branding initiative and were supportive of the first option presented, incorporating both the "Where Good Things Grow" and "Garden Spot of Colorado" taglines.

b. May 12, 2026 Meeting Minutes

The Board of Trustees Further discussed item "b. May 12th, 2026 Meeting Minutes", previously removed from the Consent Agenda.

Trustee Murphy requested that his motion made during the May 12th meeting regarding Berthoud Main Street be reviewed for accuracy.

Mayor Pro-Tem Soricelli-Albrecht discussed missing deliverables that should be included in the Berthoud Main Street MOU. Attorney Carberry indicated that the approval of minutes is an opportunity to correct clerical errors, and that the Board may schedule a future discussion regarding the Berthoud Main Street MOU.

Following discussion regarding needed corrections to the May 12th, 2026 Meeting Minutes, Clerk Samora indicated that the meeting recording will be reviewed and the Minutes will be placed on the next meeting agenda for consideration.

Trustee Anderson moved to continue item b. May 12th, 2026 Meeting Minutes to the next Board meeting. Trustee Murphy seconded the motion. In a 7-0 roll call vote, the motion Passed.

d. Property Lease - 821 Mountain Avenue

The Board of Trustees further discussed Item "d. Property lease 821 Mountain Avenue", previously removed from the Consent Agenda.

Mayor Karspeck opened the item for public comment.

Ann Karspeck spoke during public comment regarding the proposed lease for 821 Mountain Avenue. Karspeck spoke regarding the budget for the lease over the next ten years. Karpseck also expressed concern regarding a loss of sales tax revenue over a period of ten years.

Mayor Karspeck closed public comment.

Mayor Pro-Tem Soricelli-Albrecht moved to extend the meeting past 9:30 PM, through Elected Official reports. Trustee Murphy seconded the motion. In a 7-0 voice vote, the motion Passed.

After additional discussion, the following motion was made:

Trustee Wing moved to approve Item d., a property lease between the Town of Berthoud and BVSC, LLC for a property located at 821 Mountain Ave. Mayor Pro-Tem Soricelli-Albrecht seconded the motion. In a 7-0 roll call vote, the motion Passed.

5. Elected Official Reports (20 Min)

a. Town Board -

Trustee Olbricht had no report.

Trustee Grace inquired about the timeline for updating the April 28, 2026 meeting minutes. Clerk Samora indicated that the April 28, 2026 minutes have been revised and will be posted by the end of the week. Trustee Grace spoke regarding meeting minutes becoming condensed compared to older meeting minutes, and the possibility of creating a more detailed minute-taking method for future use. The Board of Trustees were supportive of scheduling a work session to discuss meeting operations and to investigate solutions for improving public access to meeting recordings and indexing.

Trustee Grace spoke regarding resident feedback regarding the bills paid report and if the document could be searchable. Trustee Grace inquired about the operational status of the Town's splashpad.

Trustee Murphy thanked all parties involved for the veteran memorial banner program. Trustee Murphy discussed setting the scope of meeting mechanics for a future discussion.

Trustee Anderson discussed the historic preservation walk, the Roam and Rummage event, and Habitat for Humanity's participation.

Trustee Wing spoke regarding the delays in the reconstruction of N County Line Road 1 and inquired about potential legal actions the town has available to ensure a timely completion of the project. Administroator Kirk indicated that the Town is using all available remedies to expedite construction. Attorney Carberry indicated that additional discussion should be saved for an Executive Session. Trustee Wing inquired about the potential for a business located in the Town of Windsor opening a second location in Berthoud. Administrator Kirk stated that there is not anything that can be shared publicly. Trustee Wing inquired regarding a water transaction between the Town of Erie and the Town of Berthoud. Kirk indicated that it will be addressed at a future meeting. Trustee Wing requested an agenda item in the future regarding only purchasing future vehicles from American companies with the support of two other Trustees.

Trustee Anderson inquired about the UC Health land purchase near I-25. Administrator Kirk indicated that the Town has not spoken to UC Health regarding the property and that public land records indicate the property was purchased.

Mayor Pro-Tem Soricelli-Albrecht spoke regarding the MOU for Berthoud Main Street from the May 12, 2026 meeting, expressing concerns on moving too fast, the language, and wanting to revisit the topic. Administrator Kirk indicated that staff is working through the language with Berthoud Main Street and the Town Board will have another opportunity to weigh in before approval.

Mayor Pro-Tem Soricelli-Albrecht spoke regarding regional economic development and how the Town is connecting with drawing people in and connecting with other organizations.

Mayor Pro-Tem Soricelli-Albrecht thanked Mayor Karspeck and Scott Slaugh for their memorial service in honoring veterans.

b. Mayor -

Mayor Karspeck reported on 9News interview for the Memorial Day event and the veteran banners along Mountain Avenue. Mayor Karspeck passed a card around for Lieutenant Bradley. Mayor Karspeck spoke about Congressman Evans event celebrating the paving of County Road 7 from Mead to Berthoud. Mayor Karspeck provided a reminder for Berthoud Day on June 6, 2026.

c. Staff - Town Administrator, Attorney

Town Administrator Kirk did not have a report to share.

Town Attorney Carberry did not have a report to share.

VI. Adjourn

Mayor Karspeck adjourned the meeting at 10:35 PM.

Town Clerk or Deputy Town Clerk	William Karspeck, Mayor

TOWN OF BERTHOUD AT A GLANCE

Monthly Report
APRIL 2026

- Sales & Use Tax revenue is 18% **over** budget for the month of April; $1,145,394 was received and $970,812 was budgeted.

- Town Revenue through April including transfers between funds is 23% **under** budget for 2026.

- Town Expenditures through April are 38% **under** budget for 2026.

Sales Tax Review

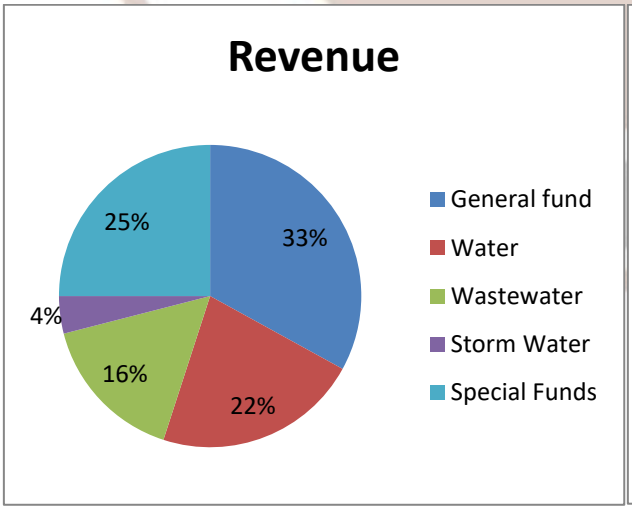
APRIL	Berthoud Sales Tax	Motor Vehicle Use Tax	Building Materials Use Tax	Combined Total
2026	814,673.25	150,121.98	180,598.92	1,145,394.15
2025	649,849.17	120,218.32	271,387.20	1,054,468.49
2024	611,708.74	138,542.55	212,809.00	941,932.68
2023	588,533.11	142,980.11	101,945.60	800,785.90

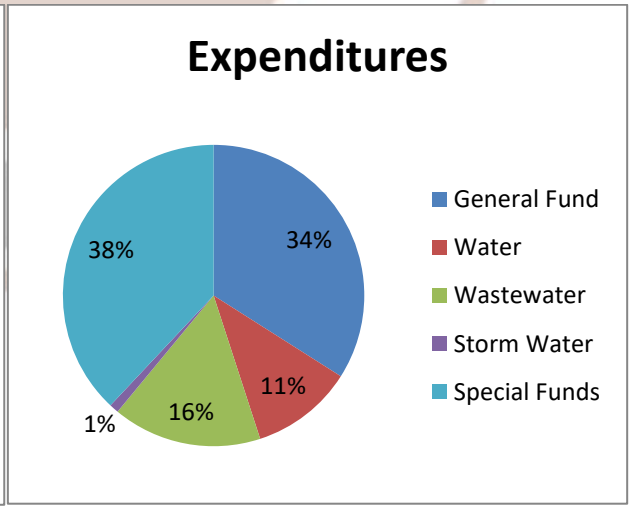
SALES TAX YEAR-TO-DATE FOR 2026 $ 4,620,194.68

COMBINED STATEMENT OF REVENUES AND EXPENDITURES
APRIL 2026

REVENUE	Current Month	YTD Actual	YTD Budget	% of YTD Budget	% of Annual Budget
General Fund	1,275,618	4,281,343	4,427,200	97%	32%
Water	533,080	2,954,277	2,810,543	105%	35%
Wastewater	566,631	2,142,729	5,062,443	42%	14%
Storm Water	133,181	475,388	344,867	138%	46%
Special Funds	1,070,414	3,308,922	4,403,531	75%	25%
TOTAL REVENUE	**3,578,924**	**13,162,659**	**17,048,584**	**77%**	**26%**
Capital Projects	2,045,833	8,183,333	17,516,667	47%	16%

EXPENDITURES	Current Month	YTD Actual	YTD Budget	% of YTD Budget	% of Annual Budget
General Fund	2,219,761	6,647,768	7,556,546	88%	29%
Water	483,713	2,074,535	6,037,981	34%	11%
Wastewater	955,635	3,157,683	7,669,990	41%	14%
Storm Water	17,942	98,021	930,430	11%	4%
Special Funds	2,057,463	7,397,243	9,170,712	81%	27%
TOTAL EXPENDITURES	**5,734,514**	**19,375,250**	**31,365,659**	**62%**	**21%**
Capital Projects	166,666	582,887	12,966,667	4%	1%





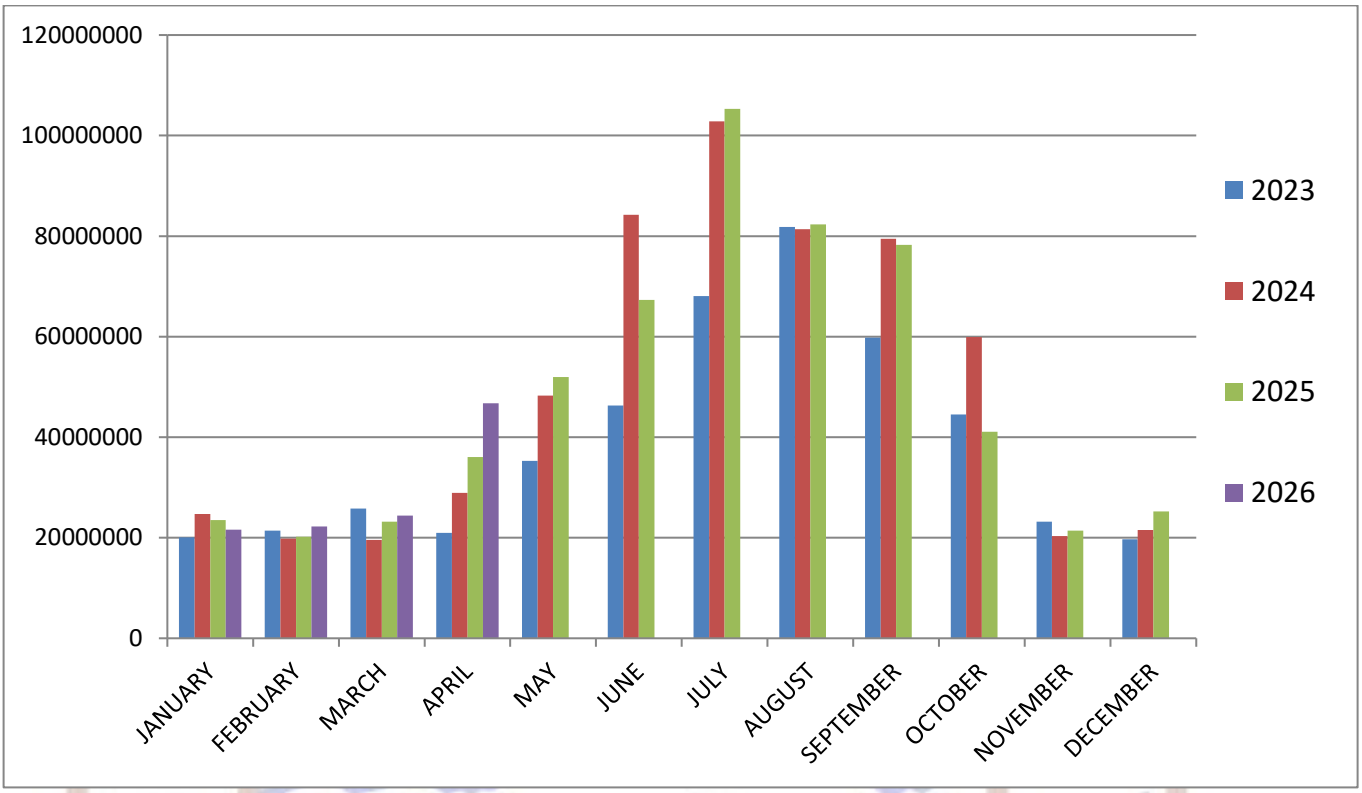
2026

	YEAR TO DATE TOTALS THRU APRIL 2026
Single Family Permits	71
Overall Permit Total	248
Water Gallons Billed	115,000,000
Passports	311
Cemetery	11 Funerals

Building Permit & Permit Valuation by Year & 2024 YTD

	2022	2023	2024	2025	2026 YTD
Single-Family home permits	222	220	238	172	71
All permits (roofing, decks, additions, etc.)	809	748	1078	868	248
Total Permit Value	$164,526,847	$119,408,321	$135,242,724	$126,832,292	$50,592,979

BERTHOUD WATER USAGE



Personnel Summary

	Full-time	Part-time	Seasonal
Administration	13	1	
Code Enforcement	2		
Economic Development	1		
Planning-Building	4	3	
Engineering	4		
Streets	6		
Recreation	4		
Rec Center	7	78	
Parks-Forestry	15		
BATS	1	1	
Water-Wastewater	10		

Town of Berthoud
807 Mountain Ave
PO Box 1229
Berthoud, CO 80513-1229
Phone 970.532.2643 Fax 970.532.0640

BILLS SUMMARY
APRIL 2026 FINAL

BILLS ALLOWED

TOTAL BILLS	$	2,547,342
NET PAYROLL	$	404,378

Mayor William Karspeck

Trustee May Albrecht

Trustee Karen Anderson

Trustee Casey Grace

Trustee Sean Murphy

Trustee Arno Olbricht

Trustee Brett Wing

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
1100130000							
81185							
04/26	04/13/2026	81185	USPS-Berthoud	04132026	11-00-130000	Prepaid Expenditures	12,000.00
Total 1100130000:							12,000.00
1100200400							
41326300							
04/26	04/13/2026	413263	CIGNA	APRIL 2026	11-00-200400	Insurance Payable	79,510.51
401261046							
04/26	04/02/2026	401261	Allstate	APRIL 2026	11-00-200400	Insurance Payable	1,004.67
401261048							
04/26	04/02/2026	401261	Guardian	APRIL 2026	11-00-200400	Insurance Payable	7,842.40
Total 1100200400:							88,357.58
1100410300							
81477							
04/26	04/30/2026	81477	Town of Johnstown	APRIL 2026	11-00-4103-00	Sales Tax-General	5,940.84
Total 1100410300:							5,940.84
1100420900							
81194							
04/26	04/20/2026	81194	Keefe, Alexander	594888	11-00-4209-00	Restitution	200.00
Total 1100420900:							200.00
1100450100							
81202							
04/26	04/23/2026	81202	Nork, Kevin	596877	11-00-4501-00	Court-Fees	25.00
Total 1100450100:							25.00
1100462000							
81351							
04/26	04/23/2026	81351	DR Horton Homes	25BER-0082	11-00-4620-00	Building and Planning Fees	400.00
81352							
04/26	04/23/2026	81352	Dream Finders Homes	Multiple	11-00-4620-00	Building and Planning Fees	2,800.00
81353							
04/26	04/23/2026	81353	LGI Homes	Multiple	11-00-4620-00	Building and Planning Fees	1,600.00
Total 1100462000:							4,800.00
1101501001							
81251							
04/26	04/02/2026	81251	Digital Print Resources Inc	22388	11-01-5010.01	Office Supplies-General Office	961.40
81293							
04/26	04/09/2026	81293	Culligan of Cheyenne	92340	11-01-5010.01	Office Supplies-General Office	85.00
Total 1101501001:							1,046.40
1101501004							
81354							
04/26	04/21/2026	81354	Awards Unlimited	40382	11-01-5010.04	Office Supplies-Board	194.48

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 1101501004:							194.48
1101501101							
81263							
04/26	04/02/2026	81263	Voice Exchange (Paragon	60405-46022	11-01-5011.01	Telephone-General Office	44.80
81355							
04/26	04/21/2026	81355	CenturyLink Business Serv	780562009	11-01-5011.01	Telephone-General Office	2.39
Total 1101501101:							47.19
1101501501							
81290							
04/26	04/09/2026	81290	CIRSA	Multiple	11-01-5015.01	Insurance	1,769.73
81302							
04/26	04/09/2026	81302	Healthiest You Inc	2026041222	11-01-5015.01	Insurance	1,122.00
Total 1101501501:							2,891.73
1101501707							
81362							
04/26	04/21/2026	81362	Terminix	470879195	11-01-5017.07	Building Maintenance-Town Hall	134.71
Total 1101501707:							134.71
1101501804							
81312							
04/26	04/09/2026	81312	Prairie Mountain Media	448239	11-01-5018.04	Publications/Legal Notice	87.00
Total 1101501804:							87.00
1101502001							
81349							
04/26	04/20/2026	81349	Cumming Management Gr	189105	11-01-5020.01	Professional Services-Admin	1,623.75
Total 1101502001:							1,623.75
1101502004							
81416							
04/26	04/28/2026	81416	NJK Photography	1542	11-01-5020.04	Professional Services-Board	506.25
Total 1101502004:							506.25
1101502103							
81255							
04/26	04/02/2026	81255	March & Olive, LLC	Multiple	11-01-5021.03	Municipal Judge	1,175.00
Total 1101502103:							1,175.00
1101502202							
81401							
04/26	04/28/2026	81401	Cavins, Dawn	2026	11-01-5022.02	Election Judge	723.89
81405							
04/26	04/28/2026	81405	Dawdy, Yvonne	2026	11-01-5022.02	Election Judge	739.05
81407							
04/26	04/28/2026	81407	Engelhardt, Terry	2026	11-01-5022.02	Election Judge	723.89

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
81409							
04/26	04/28/2026	81409	Hyde-Bohn, Mary Kay	2026	11-01-5022.02	Election Judge	720.10
Total 1101502202:							2,906.93
1101502302							
81260							
04/26	04/02/2026	81260	Pioneer Press of Greeley	Multiple	11-01-5023.02	Election Supplies	12,030.09
81262							
04/26	04/02/2026	81262	Samora, Christian	MARCH	11-01-5023.02	Election Supplies	51.91
Total 1101502302:							12,082.00
1101502801							
81203							
04/26	04/29/2026	81203	Docusign, Inc	11110065986	11-01-5028.01	Records Management	7,722.00
81382							
04/26	04/29/2026	81382	Docusign, Inc	11110065986	11-01-5028.01	Records Management	7,722.00
Total 1101502801:							15,444.00
1101503601							
81371							
04/26	04/23/2026	81371	Trailhead Cafe	75	11-01-5036.01	Regional Meetings	222.00
Total 1101503601:							222.00
1101503800							
81318							
04/26	04/13/2026	81318	Wing, Clifford	APRIL 9 202	11-01-5038.00	Administrative Expenses	810.15
Total 1101503800:							810.15
1101503801							
81339							
04/26	04/16/2026	81339	Voiance Language Service	0889460326	11-01-5038.01	Passport Expense	13.11
Total 1101503801:							13.11
1101504003							
81332							
04/26	04/16/2026	81332	Bell, Boge & Associates	42420	11-01-5040.03	Attorney-Municipal Court	2,506.49
Total 1101504003:							2,506.49
1101508907							
81350							
04/26	04/20/2026	81350	Z's Home & Office Cleanol	1660	11-01-5089.07	Janitorial Service & Supplies	1,826.27
Total 1101508907:							1,826.27
1101509501							
81286							
04/26	04/09/2026	81286	Anchor Network Solutions,	Multiple	11-01-5095.01	Computer Maintenance/Replace	4,927.05
Total 1101509501:							4,927.05

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
1101524604							
81317							
04/26	04/13/2026	81317	Cardmember Service	MARCH26	11-01-5246.04	Audio/Video Equipment Upgrade	35,950.01
Total 1101524604:							35,950.01
1101524701							
401261047							
04/26	04/02/2026	401261	Caselle Inc.	APRIL 2026	11-01-5247.01	Software-Admin	2,172.00
Total 1101524701:							2,172.00
1101525607							
81297							
04/26	04/09/2026	81297	Digital Print Resources Inc	22387	11-01-5256.07	Clean Up Day	232.50
Total 1101525607:							232.50
1102501801							
81320							
04/26	04/14/2026	81320	Berthoud Weekly Surveyor	1060	11-02-5018.01	Public Events	318.00
Total 1102501801:							318.00
1102503404							
81256							
04/26	04/02/2026	81256	NOCO Humane	1063	11-02-5034.04	Animal Control	3,737.58
Total 1102503404:							3,737.58
1102504604							
81321							
04/26	04/14/2026	81321	INKLINGS	29292	11-02-5046.04	Uniforms-Code Enf	51.00
Total 1102504604:							51.00
1102522801							
81411							
04/26	04/28/2026	81411	Larimer Co Sheriff's Office	26-0318	11-02-5228.01	LCSO Contract Services	779,110.00
Total 1102522801:							779,110.00
1103500901							
81400							
04/26	04/28/2026	81400	APWA Colorado Chapter	04212026	11-03-5009.01	Travel/Training	1,800.00
Total 1103500901:							1,800.00
1103501101							
81291							
04/26	04/09/2026	81291	Complete Wireless Technol	69481	11-03-5011.01	Telephone	165.00
Total 1103501101:							165.00
1103501202							
81130							
04/26	04/08/2026	81130	XCEL Energy	Multiple	11-03-5012.02	Utilities-Street Lights	194.70

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 1103501202:							194.70
1103501207							
81129							
04/26	04/08/2026	81129	XCEL Energy	971436689	11-03-5012.07	Street Light Repairs	10,149.82
81195							
04/26	04/20/2026	81195	Lumin8 Transportation Tec	13561	11-03-5012.07	Street Light Repairs	264.75
Total 1103501207:							10,414.57
1103501406							
81307							
04/26	04/09/2026	81307	Kwik Korner	FEB2026	11-03-5014.06	Gas & Oil	1,134.78
Total 1103501406:							1,134.78
1103503602							
81285							
04/26	04/09/2026	81285	4Rivers Equipment	Multiple	11-03-5036.02	Heavy Duty Veh/Equip Maint	2,408.17
Total 1103503602:							2,408.17
1103504007							
81413							
04/26	04/28/2026	81413	Loveland Barricade LLC	28519	11-03-5040.07	Contract Services	4,597.50
Total 1103504007:							4,597.50
1103504102							
81340							
04/26	04/16/2026	81340	Wagner Equipment Compa	Multiple	11-03-5041.02	Equipment Rental	681.63
Total 1103504102:							681.63
1103504506							
81181							
04/26	04/08/2026	81181	Republic Services	Multiple	11-03-5045.06	Shop Operations	1,218.27
81197							
04/26	04/20/2026	81197	Mountain View Commercial	14650	11-03-5045.06	Shop Operations	375.00
Total 1103504506:							1,593.27
1103504704							
81266							
04/26	04/02/2026	81266	Colorado Barricade Co	Multiple	11-03-5047.04	Signs & Signage	16,920.62
81271							
04/26	04/02/2026	81271	Trinity Group Companies	28764-IN	11-03-5047.04	Signs & Signage	2,483.75
81299							
04/26	04/09/2026	81299	Fastenal Company	COGRE1968	11-03-5047.04	Signs & Signage	873.08
Total 1103504704:							20,277.45
1104504608							
81418							
04/26	04/28/2026	81418	RCX Sports	2400003165	11-04-5046.08	Uniforms-Flag Football	9,968.00

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 1104504608:							9,968.00
1104504650							
81368							
04/26	04/23/2026	81368	MI Sports and Casuals	Multiple	11-04-5046.50	Uniforms-Soccer	5,759.45
Total 1104504650:							5,759.45
1104505555							
81315							
04/26	04/09/2026	81315	Tang Soo Do Concepts LL	93154	11-04-5055.55	Clinics-Additional Programs	980.00
Total 1104505555:							980.00
1106503906							
81311							
04/26	04/09/2026	81311	MarksNelson	MN1054723	11-06-5039.06	Dues & Subscriptions	705.56
Total 1106503906:							705.56
1106510606							
81188							
04/26	04/15/2026	81188	Dubois, Brian	DCI 3/31/26	11-06-5106.06	Travel-Business Prospecting	447.97
Total 1106510606:							447.97
1106512006							
81125							
04/26	04/08/2026	81125	House of Rossi Boutique	SIGN GRAN	11-06-5120.06	Grants for Business Facade Imp	1,626.27
Total 1106512006:							1,626.27
1107501101							
81193							
04/26	04/20/2026	81193	Hilltop Broadband	293020	11-07-5011.01	Telephone	259.84
Total 1107501101:							259.84
1107501209							
81361							
04/26	04/21/2026	81361	Poudre Valley REA	APRIL2026	11-07-5012.09	Utilities-facilities/gen parks	1,689.26
Total 1107501209:							1,689.26
1107504404							
81303							
04/26	04/09/2026	81303	Helena Agri-Enterprises, L	402432380	11-07-5044.04	Fertilizer/Chemicals-Fields	10,435.11
Total 1107504404:							10,435.11
1107504601							
81128							
04/26	04/08/2026	81128	Visger, Dawson	UNIFORM 4-	11-07-5046.01	Uniforms	103.61
Total 1107504601:							103.61

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
1107505402							
81190							
04/26	04/20/2026	81190	Cintas First Aid & Safety	9367683114	11-07-5054.02	Trash-Admin	100.00
Total 1107505402:							100.00
1107505704							
81252							
04/26	04/02/2026	81252	Grainger	Multiple	11-07-5057.04	Repair/Supplies-Ball Fields	124.14
Total 1107505704:							124.14
1107505709							
81191							
04/26	04/20/2026	81191	Colorado Materials Inc	201474	11-07-5057.09	Repair/Supplies-General Park	950.61
81259							
04/26	04/02/2026	81259	Pioneer Mfg. Co./ Pioneer	286867	11-07-5057.09	Repair/Supplies-General Park	670.89
81306							
04/26	04/09/2026	81306	Integrated Site Services In	4018	11-07-5057.09	Repair/Supplies-General Park	1,312.50
Total 1107505709:							2,934.00
1107505806							
81272							
04/26	04/02/2026	81272	University Auto Parts-NAP	Multiple	11-07-5058.06	Equipment Maint-Fleet	471.51
81294							
04/26	04/09/2026	81294	Dan's Small Engine	0126613	11-07-5058.06	Equipment Maint-Fleet	392.24
Total 1107505806:							863.75
1107509203							
81298							
04/26	04/09/2026	81298	Evangeline Specialties Inc.	62503	11-07-5092.03	Main Street Maintenance	154.02
Total 1107509203:							154.02
1108521502							
81313							
04/26	04/09/2026	81313	ProCode, Inc.	3573415	11-08-5215.02	Contract Inspections	57,709.35
Total 1108521502:							57,709.35
1110513100							
81369							
04/26	04/23/2026	81369	Nine dot Arts	3393	11-10-5131.00	Public arts projects	5,250.00
Total 1110513100:							5,250.00
1110573000							
81334							
04/26	04/16/2026	81334	LL Johnson Distributing Co	1970178-00	11-10-5730.00	Harper Hawk Turbo Vacuum	86,129.45
Total 1110573000:							86,129.45
1111518603							
81288							
04/26	04/09/2026	81288	Baseline Engineering Corp.	Multiple	11-11-5186.03	Development Code Updates	5,820.50

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 1111518603:							5,820.50
1112501901							
81406							
04/26	04/28/2026	81406	Division of Oil & Public Saf	I-0051029	11-12-5019.01	Elevator Maintenance	30.00
Total 1112501901:							30.00
1113502001							
81258							
04/26	04/02/2026	81258	Picture This Creative Servi	241-R-0037	11-13-5020.01	Prof Services-Community	300.00
81265							
04/26	04/02/2026	81265	AdSortium, LLC	5286	11-13-5020.01	Prof Services-Community	3,576.25
Total 1113502001:							3,876.25
1114502001							
81204							
04/26	04/29/2026	81204	Fehr & Peers	194625	11-14-5020.01	Prof Serv-Engineering	8,941.70
81300							
04/26	04/09/2026	81300	Fehr & Peers	193665	11-14-5020.01	Prof Serv-Engineering	10,115.00
81383							
04/26	04/29/2026	81383	Fehr & Peers	194625	11-14-5020.01	Prof Serv-Engineering	8,941.70
Total 1114502001:							27,998.40
1114524701							
81292							
04/26	04/09/2026	81292	Cubic ITS, Inc	90223230	11-14-5247.01	Software-Engineering	5,036.00
Total 1114524701:							5,036.00
1115515400							
81408							
04/26	04/28/2026	81408	House of Neighborly Servic	APRIL26	11-15-5154.00	HNS Utility Assistance	9,722.59
Total 1115515400:							9,722.59
1115516800							
81365							
04/26	04/23/2026	81365	A Little Help	APRIL2026	11-15-5168.00	Contributions	7,500.00
Total 1115516800:							7,500.00
2000504002							
81283							
04/26	04/08/2026	81283	ZWR LLC	1010	20-00-5040.02	Attorney Fees	1,205.70
81323							
04/26	04/14/2026	81323	Lyons Gaddis	MARCH26	20-00-5040.02	Attorney Fees	18,249.80
Total 2000504002:							19,455.50
2100441000							
81003							
04/26	04/01/2026	81003	Cate Brothers	HM1160	21-00-4410-00	Sale of Water	2,993.64

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
81372							
04/26	04/27/2026	81372	CENTENNIAL STATE EAR	HM1161	21-00-4410-00	Sale of Water	3,435.68
81373							
04/26	04/27/2026	81373	BVB GENERAL CONYTAC	HM1163	21-00-4410-00	Sale of Water	2,218.67
81374							
04/26	04/27/2026	81374	ITG	HM1166	21-00-4410-00	Sale of Water	1,999.39
81375							
04/26	04/29/2026	81375	COUGHLIN, JILLIAN,MIC	11979.2	21-00-4410-00	Sale of Water	129.99
81376							
04/26	04/29/2026	81376	COOPER, RYAN	2592.5	21-00-4410-00	Sale of Water	30.00
81377							
04/26	04/29/2026	81377	ROATH, GRACE	1203.1	21-00-4410-00	Sale of Water	91.00
81378							
04/26	04/29/2026	81378	GINGERY, JESS & SAND	2342.1	21-00-4410-00	Sale of Water	76.25
81379							
04/26	04/29/2026	81379	MARTIN, ADRIANNA	9546.4	21-00-4410-00	Sale of Water	.00
81380							
04/26	04/29/2026	81380	SIRVA RELOCATION LLC	10142.2	21-00-4410-00	Sale of Water	12.50
81381							
04/26	04/29/2026	81381	ASA, BERT & TRACEY	12398.2	21-00-4410-00	Sale of Water	98.88
Total 2100441000:							11,086.00
2100500901							
81126							
04/26	04/08/2026	81126	Matthews, Ken	AWWA 3-202	21-00-5009.01	Travel, Training	2,599.03
Total 2100500901:							2,599.03
2100501101							
81253							
04/26	04/02/2026	81253	Hilltop Broadband	MARCH2026	21-00-5011.01	Telephone	205.04
81404							
04/26	04/28/2026	81404	Comcast	APRIL26	21-00-5011.01	Telephone	510.00
Total 2100501101:							715.04
2100501203							
81364							
04/26	04/21/2026	81364	XCEL Energy	APRIL2026	21-00-5012.03	Utilities-Treatment	8,903.21
Total 2100501203:							8,903.21
2100504601							
81183							
04/26	04/09/2026	81183	Gonzo Screen Printing	12690	21-00-5046.01	Uniforms	66.00
81184							
04/26	04/09/2026	81184	Tennant, Alex	UNIFORM 4-	21-00-5046.01	Uniforms	141.54
Total 2100504601:							207.54
2100504701							
81257							
04/26	04/02/2026	81257	Northern Water	APRIL26	21-00-5047.01	Rental of Office Space	4,800.00
Total 2100504701:							4,800.00

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
2100504802							
81124							
04/26	04/02/2026	81124	Cintas First Aid & Safety	Multiple	21-00-5048.02	Safety Equipment	279.00
Total 2100504802:							279.00
2100505702							
81200							
04/26	04/21/2026	81200	Home Depot Commercial	Multiple	21-00-5057.02	Repair, Maint, Supp Dist	1,197.20
81201							
04/26	04/21/2026	81201	Home Depot Commercial	6041257	21-00-5057.02	Repair, Maint, Supp Dist	602.84
81357							
04/26	04/21/2026	81357	Gopher Excavation Inc	06=2778	21-00-5057.02	Repair, Maint, Supp Dist	4,050.00
Total 2100505702:							5,850.04
2100505703							
81192							
04/26	04/20/2026	81192	Grainger	9858434393	21-00-5057.03	Repair, Maint, Supp Treat	26.34
81280							
04/26	04/08/2026	81280	Ramey Environmental	Multiple	21-00-5057.03	Repair, Maint, Supp Treat	87,388.78
81282							
04/26	04/08/2026	81282	Utility Notification Center of	226030159	21-00-5057.03	Repair, Maint, Supp Treat	532.74
81359							
04/26	04/21/2026	81359	Hach Co.	14956143	21-00-5057.03	Repair, Maint, Supp Treat	1,406.77
Total 2100505703:							89,354.63
2100506003							
81281							
04/26	04/08/2026	81281	Treatment Technology	Multiple	21-00-5060.03	Chemicals-Treatment	8,158.63
81326							
04/26	04/14/2026	81326	Riley Equipment Company	010952	21-00-5060.03	Chemicals-Treatment	15,475.55
81415							
04/26	04/28/2026	81415	Nalco Company LLC	Multiple	21-00-5060.03	Chemicals-Treatment	68,148.87
Total 2100506003:							91,783.05
2100510603							
81363							
04/26	04/21/2026	81363	USA Bluebook	Multiple	21-00-5106.03	Lab Equipment/Supplies	2,068.21
81421							
04/26	04/28/2026	81421	USA Bluebook	Multiple	21-00-5106.03	Lab Equipment/Supplies	4,202.19
Total 2100510603:							6,270.40
2100510802							
81402							
04/26	04/28/2026	81402	City of Fort Collins	1106028	21-00-5108.02	Lab Testing	5,400.00
Total 2100510802:							5,400.00
2100512401							
81278							
04/26	04/08/2026	81278	Dry Creek Lateral Ditch Co	2026	21-00-5124.01	Water Assessments	4,200.00
81310							
04/26	04/09/2026	81310	Loveland Lake And Ditch C	2026	21-00-5124.01	Water Assessments	32,286.72

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
81341							
04/26	04/16/2026	81341	Welch Lateral Ditch Compa	2026	21-00-5124.01	Water Assessments	3,450.00
Total 2100512401:							39,936.72
2300501004							
81198							
04/26	04/20/2026	81198	Office Depot	Multiple	23-00-5010.04	Office Supplies	751.63
Total 2300501004:							751.63
2300501101							
81356							
04/26	04/21/2026	81356	Comcast	APRIL2026	23-00-5011.01	Telephone-Main Plant	174.88
81366							
04/26	04/23/2026	81366	CenturyLink	APRIL2026	23-00-5011.01	Telephone-Main Plant	295.03
81424							
04/26	04/28/2026	81424	Comcast	APRIL26-2	23-00-5011.01	Telephone-Main Plant	1,807.34
Total 2300501101:							2,277.25
2300501201							
81261							
04/26	04/02/2026	81261	Poudre Valley REA	MARCH2026	23-00-5012.01	Utilities-Main Plant	17,473.90
81333							
04/26	04/16/2026	81333	Little Thompson Water Dist	MARCH26-2	23-00-5012.01	Utilities-Main Plant	256.26
81417							
04/26	04/28/2026	81417	Poudre Valley REA	APRIL26	23-00-5012.01	Utilities-Main Plant	6,833.35
Total 2300501201:							24,563.51
2300501202							
81264							
04/26	04/02/2026	81264	XCEL Energy	MARCH2026	23-00-5012.02	Utilities-Regional	1,522.37
81331							
04/26	04/16/2026	81331	AGFINITY INC	Multiple	23-00-5012.02	Utilities-Regional	4,871.80
81423							
04/26	04/28/2026	81423	XCEL Energy	974855937	23-00-5012.02	Utilities-Regional	1,407.59
Total 2300501202:							7,801.76
2300501203							
81309							
04/26	04/09/2026	81309	Little Thompson Water Dist	MARCH26	23-00-5012.03	Utilities	2,325.65
81412							
04/26	04/28/2026	81412	Little Thompson Water Dist	APRIL26	23-00-5012.03	Utilities	92.49
Total 2300501203:							2,418.14
2300505401							
81180							
04/26	04/08/2026	81180	Republic Services	Multiple	23-00-5054.01	Trash	547.90
Total 2300505401:							547.90
2300505701							

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
81284							
04/26	04/09/2026	81284	1000 Bulbs	1062023	23-00-5057.01	Repair, Maint. & Supplies-Main	457.81
81345							
04/26	04/21/2026	81345	Ramey Environmental	Multiple	23-00-5057.01	Repair, Maint. & Supplies-Main	1,484.84
81358							
04/26	04/21/2026	81358	Greeley Lock & Key	Multiple	23-00-5057.01	Repair, Maint. & Supplies-Main	6,912.08
81414							
04/26	04/28/2026	81414	Milliken Johnstown Electric	MARR2600	23-00-5057.01	Repair, Maint. & Supplies-Main	2,250.00
Total 2300505701:							11,104.73
2300509004							
81343							
04/26	04/21/2026	81343	Hinkle & Company	19388	23-00-5090.04	Audit	15,000.00
Total 2300509004:							15,000.00
2300510801							
81277							
04/26	04/08/2026	81277	Colorado Analytical Labs, I	Multiple	23-00-5108.01	Lab Tests-Main Plant	4,562.21
Total 2300510801:							4,562.21
2300510903							
81327							
04/26	04/14/2026	81327	Stewart & Stevenson Powe	60172195	23-00-5109.03	Generator Maintenance	430.00
Total 2300510903:							430.00
2300511401							
81324							
04/26	04/14/2026	81324	McDonald Farms	0183966	23-00-5114.01	Sludge Hauling-Main Plant	1,214.00
81346							
04/26	04/21/2026	81346	TerraGenesis	J000720	23-00-5114.01	Sludge Hauling-Main Plant	3,757.81
81420							
04/26	04/28/2026	81420	TerraGenesis	J000740	23-00-5114.01	Sludge Hauling-Main Plant	998.97
Total 2300511401:							5,970.78
2300543006							
81419							
04/26	04/28/2026	81419	RESPEC Company LLC	3261375	23-00-5430.06	Lift Station Projects	5,550.15
Total 2300543006:							5,550.15
2400501900							
430261851							
04/26	04/30/2026	430261	Alfa Construction LLC	APRIL 2026	24-00-5019.00	ALFA Line Reimbursement	8,250.00
Total 2400501900:							8,250.00
2400527100							
81410							
04/26	04/28/2026	81410	Kimley-Horn and Assoc., In	196724000	24-00-5271.00	1st Street Sewer Upgrade	29,886.09
Total 2400527100:							29,886.09

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
2400527804							
81279							
04/26	04/08/2026	81279	Martin/Martin Inc.	25.1821-000	24-00-5278.04	Plant Improvements	45,837.50
Total 2400527804:							45,837.50
2900505703							
81325							
04/26	04/14/2026	81325	R & R Concrete	4	29-00-5057.03	Repair and Maintenance	2,200.00
Total 2900505703:							2,200.00
2900526102							
81205							
04/26	04/29/2026	81205	Hardline Equipment	Multiple	29-00-5261.02	Sweeper Parts	9,300.30
81384							
04/26	04/29/2026	81384	Hardline Equipment	Multiple	29-00-5261.02	Sweeper Parts	9,300.30
Total 2900526102:							18,600.60
3100520701							
81269							
04/26	04/02/2026	81269	Renner Sports	10740	31-00-5207.01	Pioneer Park	56,905.00
Total 3100520701:							56,905.00
3200504200							
81403							
04/26	04/28/2026	81403	Colorado Open Lands	2026.03.31	32-00-5042.00	Little Thompson Corridor Inven	17,996.25
Total 3200504200:							17,996.25
3300502000							
81308							
04/26	04/09/2026	81308	Lamp Rynearson	226002.01	33-00-5020.00	Professional Fees	14,900.00
Total 3300502000:							14,900.00
3400501301							
81254							
04/26	04/02/2026	81254	Mainstreet Car Care & Qui	Multiple	34-00-5013.01	Vehicle Maintenance	285.40
Total 3400501301:							285.40
3400507202							
81127							
04/26	04/08/2026	81127	Schra Tree Care	38601A	34-00-5072.02	Tree Maint.-Parks	785.00
81296							
04/26	04/09/2026	81296	DBC Irrigation Supply	Multiple	34-00-5072.02	Tree Maint.-Parks	1,300.04
Total 3400507202:							2,085.04
3400507902							
81268							
04/26	04/02/2026	81268	MAC Equipment INC	Multiple	34-00-5079.02	Supplies	2,664.13

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 3400507902:							2,664.13
3600430600							
81478							
04/26	04/30/2026	81478	Larimer County Sales Tax	APRIL 2026	36-00-4306-00	County Open Space Revenue	39,446.44
Total 3600430600:							39,446.44
3600526500							
81199							
04/26	04/20/2026	81199	XCEL Energy	Multiple	36-00-5265.00	Jaskowski Property Maint.	146.37
81347							
04/26	04/21/2026	81347	XCEL Energy	MARCH26	36-00-5265.00	Jaskowski Property Maint.	1,900.18
Total 3600526500:							2,046.55
3600526800							
81250							
04/26	04/02/2026	81250	Colorado Portables	Multiple	36-00-5268.00	Berthoud Reservoir park Maint	684.25
Total 3600526800:							684.25
3700505702							
81270							
04/26	04/02/2026	81270	SiteOne Landscape Supply	Multiple	37-00-5057.02	Repair & Maintenance	562.87
Total 3700505702:							562.87
3900501302							
81305							
04/26	04/09/2026	81305	Integrated Safety Services	Multiple	39-00-5013.02	Vehicle Maintenance	2,049.75
Total 3900501302:							2,049.75
3900504502							
81335							
04/26	04/16/2026	81335	NOCO Drug Testing	26-1286	39-00-5045.02	Driver Drug Testing	188.00
Total 3900504502:							188.00
5100503800							
81267							
04/26	04/02/2026	81267	Lamp Rynearson	Multiple	51-00-5038.00	Sidewalk Improvements	2,722.00
Total 5100503800:							2,722.00
5201500801							
81319							
04/26	04/14/2026	81319	American DataBank LLC	26030231	52-01-5008.01	Background/Physicals	49.00
Total 5201500801:							49.00
5201501101							
81304							
04/26	04/09/2026	81304	Hilltop Broadband	286472	52-01-5011.01	Telephone/Internet	420.84

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 5201501101:							420.84
5201501201							
81131							
04/26	04/08/2026	81131	XCEL Energy	972111328	52-01-5012.01	Utilities	12,666.80
Total 5201501201:							12,666.80
5201502004							
81316							
04/26	04/09/2026	81316	Xerox Business Solutions	Multiple	52-01-5020.04	Purchased Services	844.78
Total 5201502004:							844.78
5201504001							
81330							
04/26	04/14/2026	81330	Hoffmann, Parker, Wilson	MARCH2026	52-01-5040.01	Attorney Fees	26,652.13
Total 5201504001:							26,652.13
5201505404							
81182							
04/26	04/08/2026	81182	Republic Services	Multiple	52-01-5054.04	Trash Service	583.49
Total 5201505404:							583.49
5201505601							
81322							
04/26	04/14/2026	81322	Lefthand Printworks	Multiple	52-01-5056.01	Brochures/Advertising/Printing	232.00
Total 5201505601:							232.00
5201524701							
81295							
04/26	04/09/2026	81295	Dash Platform, LLC	01657882	52-01-5247.01	Computer Software	1,990.83
Total 5201524701:							1,990.83
5203501401							
430263302							
04/26	04/30/2026	430263	WEX BANK	APRIL 2026	52-03-5014.01	Fuel	4,180.62
Total 5203501401:							4,180.62
5203505701							
81196							
04/26	04/20/2026	81196	Mayer Plumbing LLC	4438	52-03-5057.01	Equipment Maintenance/Repair	998.63
81344							
04/26	04/21/2026	81344	Long Building Technologies	SRVCE0025	52-03-5057.01	Equipment Maintenance/Repair	909.00
Total 5203505701:							1,907.63
5203508904							
81289							
04/26	04/09/2026	81289	C & B Cleaning	050	52-03-5089.04	Janitor Service	5,512.50

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 5203508904:							5,512.50
5203510201							
81301							
04/26	04/09/2026	81301	HD Supply formerly Home	Multiple	52-03-5102.01	Supplies/Equipment	1,837.52
Total 5203510201:							1,837.52
5205504601							
81367							
04/26	04/23/2026	81367	TopShelf Printers	75691	52-05-5046.01	Uniforms	550.17
Total 5205504601:							550.17
5205506001							
81206							
04/26	04/29/2026	81206	Treatment Technology	Multiple	52-05-5060.01	Chemicals	3,726.21
81207							
04/26	04/29/2026	81207	Wagner Welding Supply C	Multiple	52-05-5060.01	Chemicals	367.87
81386							
04/26	04/29/2026	81386	Treatment Technology	Multiple	52-05-5060.01	Chemicals	3,726.21
81387							
04/26	04/29/2026	81387	Wagner Welding Supply C	Multiple	52-05-5060.01	Chemicals	367.87
Total 5205506001:							8,188.16
5206510201							
81337							
04/26	04/16/2026	81337	Shankweiler, Susanne	103	52-06-5102.01	Supplies/Equipment	150.00
Total 5206510201:							150.00
5207502104							
81189							
04/26	04/20/2026	81189	Berthoud Local	Multiple	52-07-5021.04	Wildfire Class	240.00
81329							
04/26	04/14/2026	81329	Wildfire Arts Center	04082026	52-07-5021.04	Wildfire Class	1,056.00
Total 5207502104:							1,296.00
5208502031							
81370							
04/26	04/23/2026	81370	Northern Colorado Sports	13741	52-08-5020.31	Officials-Adult Volleyball	1,660.00
Total 5208502031:							1,660.00
5209502032							
81336							
04/26	04/16/2026	81336	Northern Colorado Sports	Multiple	52-09-5020.32	Officials-Youth Volleyball	5,135.00
Total 5209502032:							5,135.00
5235525400							
81132							
04/26	04/13/2026	81132	UMB BANK	BTO0 4/2026	52-35-5254.00	COP Payment	368,700.00

GL Period	Check Issue Date	Check Number	Payee	Invoice Number	Invoice GL Account	Invoice GL Account Title	Check Amount
Total 5235525400:							368,700.00
5240570100							
81314							
04/26	04/09/2026	81314	Recreation Plus	13294	52-40-5701.00	Waggener Farm Park maint	942.97
81338							
04/26	04/16/2026	81338	Uline	206556694	52-40-5701.00	Waggener Farm Park maint	834.23
Total 5240570100:							1,777.20
5240570200							
81249							
04/26	04/02/2026	81249	21st Century Equipment	W05931	52-40-5702.00	Berthoud Bike Park maint	2,391.60
81360							
04/26	04/21/2026	81360	Paratex Weed Control Inc.	Multiple	52-40-5702.00	Berthoud Bike Park maint	8,444.00
Total 5240570200:							10,835.60
6003502001							
81422							
04/26	04/28/2026	81422	Wenk Associates, Inc.	502788	60-03-5020.01	Arboretum-concept plan	13,420.00
Total 6003502001:							13,420.00
6003502002							
81287							
04/26	04/09/2026	81287	Baseline Engineering Corp.	36034	60-03-5020.02	Arboretum-design	289.50
Total 6003502002:							289.50
6004502002							
81342							
04/26	04/21/2026	81342	DTJ Design	71340	60-04-5020.02	Richardson-design	163,518.55
Total 6004502002:							163,518.55
6005502001							
81208							
04/26	04/29/2026	81208	Wenk Associates, Inc.	Multiple	60-05-5020.01	Newell-concept plan	5,199.74
81328							
04/26	04/14/2026	81328	Wenk Associates, Inc.	502746	60-05-5020.01	Newell-concept plan	19,786.76
81388							
04/26	04/29/2026	81388	Wenk Associates, Inc.	Multiple	60-05-5020.01	Newell-concept plan	5,199.74
Total 6005502001:							30,186.24
Grand Totals:							2,547,342.26

April 2026

Beginning and ending fund balances are not included in YTD and TOTAL Budget columns.

GENERAL FUND

REVENUE

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TAXES	$ 780,250.46	$ 2,520,668.14	$ 3,156,433.00	$ 9,469,299.00	79.9%
LICENSES & PERMITS	$ 15,395.31	$ 69,487.84	$ 67,184.33	$ 201,553.00	103.4%
INTERGOVERNMENTAL REVENUE	$ 79,744.12	$ 220,232.72	$ 217,478.00	$ 652,434.00	101.3%
FINES	$ 3,610.00	$ 16,715.00	$ 11,375.00	$ 34,125.00	146.9%
MISCELLANEOUS	$ 268,706.72	$ 1,004,527.52	$ 650,858.33	$ 1,952,575.00	154.3%
TRANSFERS	$ 51,517.21	$ 207,624.49	$ 212,605.00	$ 637,815.00	97.7%
PROPERTY SALES & DONATIONS & INS CLAIM	$ -	$ -	$ -	$ -	0.0%
RECREATION	$ 49,370.50	$ 141,551.25	$ 68,866.67	$ 206,600.00	205.5%
PARKS	$ 4,463.75	$ 11,920.25	$ 7,666.67	$ 23,000.00	155.5%
LEASE REVENUE	$ 22,560.18	$ 88,616.04	$ 34,733.33	$ 104,200.00	255.1%
TOTAL REVENUE GENERAL FUND	**$ 1,275,618.25**	**$ 4,281,343.25**	**$ 4,427,200.33**	**$ 13,281,601.00**	96.7%

ADMINISTRATION

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
ADMIN SALARIES/TAXES/BENEFITS	$ 137,402.19	$ 497,171.95	$ 672,479.33	$ 2,017,438.00	73.9%
GENERAL OFFICE OTHER	$ 56,104.12	$ 424,458.73	$ 307,366.67	$ 922,100.00	138.1%
ELECTIONS	$ 4,124.80	$ 41,898.20	$ 17,050.00	$ 51,150.00	0.0%
MUNICIPAL COURT	$ 2,351.03	$ 11,833.98	$ 19,666.67	$ 59,000.00	60.2%
BOARD & BOARD MEETINGS	$ 9,806.56	$ 25,313.63	$ 33,533.33	$ 100,600.00	75.5%
FINANCE	$ -	$ 7,605.40	$ 5,500.00	$ 16,500.00	138.3%
BUILDING MAINTENANCE	$ 1,951.56	$ 16,960.85	$ 23,333.33	$ 70,000.00	72.7%
COMMUNITY SUPPORT	$ 1,690.76	$ 31,650.76	$ 34,000.00	$ 102,000.00	93.1%
TRANSFERS	$ 17,083.33	$ 68,333.32	$ 68,333.33	$ 205,000.00	100.0%
TOTAL ADMIN EXPENDITURES	$ 230,514.35	$ 1,125,226.82	$ 1,181,262.67	$ 3,543,788.00	95.3%

PUBLIC SAFETY DEPARTMENT

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
CODE ENFORCEMENT (INCLUDES SALARY)	$ 13,643.32	$ 51,502.88	$ 79,390.00	$ 238,170.00	64.9%
LSCO ADMIN SUPPLIES	$ -	$ -	$ 500.00	$ 1,500.00	0.0%
ANIMAL CONTROL	$ 3,737.58	$ 14,950.32	$ 14,950.00	$ 44,850.00	100.0%
TRAFFIC CONTROL/PEDESTRIAN SAFETY/ABATE	$ -	$ 5,533.06	$ 2,000.00	$ 6,000.00	276.7%
DRUG EDUCATION/PUBLIC EVENTS	$ 1,141.06	$ 2,359.99	$ 3,150.00	$ 9,450.00	74.9%
LARIMER COUNTY SHERIFF	$ 779,110.00	$ 779,110.00	$ 1,038,812.67	$ 3,116,438.00	75.0%
TOTAL PUBLIC SAFETY EXPENDITURES	$ 797,631.96	$ 853,456.25	$ 1,138,802.67	$ 3,416,408.00	74.9%

STREETS DEPARTMENT

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
SALARIES/TAXES/BENEFITS	$ 46,969.63	$ 159,080.54	$ 298,175.00	$ 894,525.00	53.4%
ADMINISTRATION OTHER	$ 3,220.07	$ 7,415.50	$ 11,750.00	$ 35,250.00	63.1%
STREET REPAIR/MAINTENANCE	$ 15,902.99	$ 82,903.00	$ 98,083.33	$ 294,250.00	84.5%
CONTRACT SERVICES	$ 6,616.50	$ 7,116.50	$ 17,500.00	$ 52,500.00	40.7%
SIGNAGE	$ 1,400.00	$ 26,077.63	$ 14,000.00	$ 42,000.00	186.3%
SNOW REMOVAL	$ -	$ -	$ 22,750.00	$ 68,250.00	0.0%
SHOP & VEHICLE MAINTENANCE	$ 15,003.99	$ 36,905.91	$ 43,133.33	$ 129,400.00	85.6%
TOTAL STREETS EXPENDITURES	$ 89,113.18	$ 319,499.08	$ 505,391.67	$ 1,516,175.00	63.2%

RECREATION DEPARTMENT

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
ADMIN SALARIES/TAXES/BENEFITS	$ 26,207.42	$ 96,129.78	$ 95,068.67	$ 285,206.00	101.1%
ADMINISTRATION (SUPPLIES,CONCESSIONS)	$ 2,217.67	$ 10,063.09	$ 18,766.67	$ 56,300.00	53.6%
FLAG FOOTBALL	$ 11,297.06	$ 13,588.85	$ 12,053.33	$ 36,160.00	112.7%
TRACK	$ -	$ -	$ 2,800.00	$ 8,400.00	0.0%
TENNIS	$ -	$ -	$ 1,646.67	$ 4,940.00	0.0%
ADULT SOFTBALL	$ 202.04	$ 337.04	$ 1,883.33	$ 5,650.00	17.9%
YOUTH BASEBALL	$ 2,053.28	$ 2,053.28	$ 6,800.00	$ 20,400.00	30.2%
YOUTH SOFTBALL	$ 2,453.57	$ 2,513.57	$ 5,570.00	$ 16,710.00	45.1%
ADULT KICKBALL	$ 115.89	$ 115.89	$ 1,060.00	$ 3,180.00	10.9%
ADULT SOCCER	$ -	$ 660.00	$ 1,710.00	$ 5,130.00	38.6%
SOCCER	$ 6,538.82	$ 7,673.17	$ 7,990.00	$ 23,970.00	96.0%
CAMPS/TOURNAMENTS	$ -	$ -	$ 3,855.00	$ 11,565.00	0.0%
ADDITIONAL PROGRAMS	$ 588.00	$ 2,683.61	$ 3,350.00	$ 10,050.00	80.1%
TOTAL RECREATION EXPENDITURES	$ 51,673.75	$ 135,818.28	$ 162,553.67	$ 487,661.00	83.6%

PARKS DEPARTMENT

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
SALARIES/TAXES/BENEFITS	$ 60,526.19	$ 238,616.14	$ 320,179.33	$ 960,538.00	74.5%
ADMINISTRATION OTHER	$ 2,395.97	$ 10,858.11	$ 14,533.33	$ 43,600.00	74.7%
INSECT CONTROL	$ -	$ -	$ 20,000.00	$ 60,000.00	0.0%
FACILITIES MAINTENANCE	$ 14,151.09	$ 20,296.40	$ 23,000.00	$ 69,000.00	88.2%
TURF/BALLFIELDS	$ 9,720.26	$ 30,187.98	$ 50,666.67	$ 152,000.00	59.6%
GENERAL PARKS	$ 13,578.11	$ 38,315.52	$ 47,000.00	$ 141,000.00	81.5%
FLEET MAINTENANCE	$ 149.93	$ 7,387.50	$ 8,666.67	$ 26,000.00	85.2%
SEASONAL DECORATIONS/BANNERS	$ -	$ 2,529.64	$ 6,333.33	$ 19,000.00	39.9%
TRANSFER TO FORESTRY	$ 45,833.33	$ 183,333.32	$ 183,333.33	$ 550,000.00	100.0%
TOTAL PARKS EXPENDITURES	$ 146,354.88	$ 531,524.61	$ 673,712.67	$ 2,021,138.00	78.9%

ECONOMIC DEVELOPMENT

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
SALARIES/TAXES/BENEFITS	$ 11,209.79	$ 40,128.75	$ 43,616.00	$ 130,848.00	92.0%
ADMINISTRATION OTHER	$ 1,588.87	$ 29,537.66	$ 16,593.33	$ 49,780.00	178.0%
BUSINESS DEVELOPMENT/MARKETING	$ 447.97	$ 1,923.40	$ 17,083.33	$ 51,250.00	11.3%
GRANTS - MARKET STUDY & FAÇADE/SIGN	$ -	$ 21,626.27	$ 6,666.67	$ 20,000.00	0.0%
TOTAL ECONOMIC DEV EXPENDITURES	$ 13,246.63	$ 93,216.08	$ 83,959.33	$ 251,878.00	111.0%

BUILDING DEPARTMENT

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
SALARIES/TAXES/BENEFITS	$ 16,313.29	$ 59,654.00	$ 84,704.00	$ 254,112.00	70.4%
ADMINISTRATION OTHER	$ 60.08	$ 3,309.52	$ 8,533.33	$ 25,600.00	38.8%
INSPECTIONS	$ 44,165.15	$ 173,024.58	$ 112,000.00	$ 336,000.00	154.5%
TOTAL BUILDING DEPARMENT EXPENDITURES	$ 60,538.52	$ 235,988.10	$ 205,237.33	$ 615,712.00	115.0%

PLANNING DEPARTMENT

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
SALARIES/TAXES/BENEFITS	$ 37,598.61	$ 136,922.87	$ 167,295.00	$ 501,885.00	81.8%
ADMINISTRATION OTHER	$ 664.20	$ 4,151.05	$ 14,466.67	$ 43,400.00	28.7%
COMMISSION SUPPORT	$ 70.97	$ 1,042.00	$ 6,666.67	$ 20,000.00	15.6%
DEVELOPMENT REVIEW	$ 14,762.53	$ 52,714.52	$ 20,000.00	$ 60,000.00	263.6%
COMPREHENSIVE PLANNING	$ 19,221.46	$ 35,926.58	$ 28,333.33	$ 85,000.00	126.8%
TOTAL PLANNING DEPARTMENT EXPENDITURES	$ 72,317.77	$ 230,757.02	$ 236,761.67	$ 710,285.00	97.5%

ENGINEERING

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
SALARIES/TAXES/BENEFITS	$ 29,511.53	$ 109,709.01	$ 199,420.33	$ 598,261.00	55.0%
ADMINISTRATION OTHER	$ 14,493.33	$ 55,410.74	$ 117,933.33	$ 353,800.00	47.0%
TOTAL ENGINEERING EXPENDITURES	$ 44,004.86	$ 165,119.75	$ 317,353.67	$ 952,061.00	52.0%

COMMUNITY OUTREACH

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
SALARIES/TAXES/BENEFITS	$ 11,640.36	$ 43,087.30	$ 51,968.67	$ 155,906.00	82.9%
ADMINISTRATION OTHER	$ 507.07	$ 1,734.35	$ 5,900.00	$ 17,700.00	29.4%
COMMUNITY SUPPORT	$ 360.00	$ 11,973.29	$ 21,500.00	$ 64,500.00	55.7%
TOTAL COMMUNITY OUTREACH EXPENDITURES	$ 12,507.43	$ 56,794.94	$ 79,368.67	$ 238,106.00	71.6%

TOWN HALL-MOUNTAIN AVE

EXPENDITURES	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
INSURANCE AND TAXES	$ -	$ 682.48	$ 25,847.67	$ 77,543.00	2.6%
BUILDING MAINTENANCE	$ 2,558.61	$ 17,168.02	$ 10,499.67	$ 31,499.00	163.5%
BUILDING REPAIRS	$ -	$ -	$ 333.33	$ 1,000.00	0.0%
ELEVATOR MAINTENANCE	$ 30.00	$ 30.00	$ 2,000.00	$ 6,000.00	1.5%
HOA FEES	$ 4,395.23	$ 17,580.92	$ 19,661.33	$ 58,984.00	0.0%
DESIGN	$ -	$ -	$ -	$ -	0.0%
TOTAL MOUNTAIN AVE EXPENDITURES	**$ 6,983.84**	**$ 35,461.42**	**$ 58,342.00**	**$ 175,026.00**	60.8%

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL G.F.C.I. EXPENDITURES	$ 677,651.67	$ 2,847,260.38	$ 2,888,666.67	$ 8,666,000.00	98.6%
TOTAL CONTRIBUTION EXPENDITURES	$ 17,222.59	$ 17,644.99	$ 25,133.33	$ 75,400.00	70.2%
TOTAL EXPENDITURES GENERAL FUND	**$ 2,219,761.43**	**$ 6,647,767.72**	**$ 7,556,546.00**	**$ 22,669,638.00**	
TOTAL REVENUE OVER EXPENDITURES	**$ (944,143.18)**	**$ (2,366,424.47)**	**$ (3,129,345.67)**	**$ (9,388,037.00)**	

WATER FUND

SOURCE OF SUPPLY

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL SOURCE OF SUPPLY REVENUE	$ 83,620.78	$ 603,146.65	$ 680,958.33	$ 2,042,875.00	88.6%
TOTAL SOURCE OF SUPPLY EXPENDITURES	$ 62,270.89	$ 301,779.89	$ 2,116,930.00	$ 6,350,790.00	14.3%
NET REVENUE OVER EXPENDITURES	**$ 21,349.89**	**$ 301,366.76**	**$ (1,435,971.67)**	**$ (4,307,915.00)**	

WATER OPERATIONS & MAINTENANCE

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL WATER OPERATING REVENUE	$ 285,379.90	$ 1,352,707.03	$ 1,522,200.00	$ 4,566,600.00	88.9%
EXPENDITURES					
SALARIES/TAXES/BENEFITS	$ 77,608.93	$ 279,570.88	$ 394,865.00	$ 1,184,595.00	70.8%
ADMINISTRATION OTHER	$ 44,810.67	$ 245,967.23	$ 256,433.33	$ 769,300.00	95.9%
DISTRIBUTION	$ 33,518.91	$ 67,744.37	$ 144,533.33	$ 433,600.00	46.9%
TREATMENT	$ 90,564.96	$ 254,505.29	$ 270,666.67	$ 812,000.00	94.0%
PROFESSIONAL SERVICES	$ 42,919.09	$ 182,513.23	$ 250,500.00	$ 751,500.00	72.9%
UTILITY BILLING	$ 1,564.08	$ 10,936.24	$ 11,200.00	$ 33,600.00	97.6%
IMPROVEMENTS	$ 108,774.62	$ 205,409.04	$ 1,646,461.33	$ 4,939,384.00	12.5%
TRANSFER	$ 21,681.25	$ 526,109.00	$ 86,725.00	$ 260,175.00	606.6%
TOTAL WATER OPERATING EXPENDITURES	$ 421,442.51	$ 1,772,755.28	$ 3,061,384.67	$ 9,184,154.00	57.9%
NET REVENUE OVER EXPENDITURES	**$ (136,062.61)**	**$ (420,048.25)**	**$ (1,539,184.67)**	**$ (4,617,554.00)**	

WATER PLANT CAPITAL IMPROVEMENTS

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL WATER PLANT CAPITAL REVENUE	$ 164,079.71	$ 998,423.76	$ 607,384.67	$ 1,822,154.00	164.4%
TOTAL WATER PLANT CAPITAL EXPENDITURES	$ -	$ -	$ 859,666.67	$ 2,579,000.00	0.0%
NET REVENUE OVER EXPENDITURES	**$ 164,079.71**	**$ 998,423.76**	**$ (252,282.00)**	**$ (756,846.00)**	
TOTAL WATER FUND REVENUE	$ 533,080.39	$ 2,954,277.44	$ 2,810,543.00	$ 8,431,629.00	105.1%
TOTAL WATER FUND EXPENDITURES	$ 483,713.40	$ 2,074,535.17	$ 6,037,981.34	$ 18,113,944.00	34.4%
NET REVENUE OVER EXPENDITURES	**$ 49,366.99**	**$ 879,742.27**	**$ (3,227,438.34)**	**$ (9,682,315.00)**	

WASTEWATER FUND

WASTEWATER OPERATIONS & MAINTENANCE

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL WASTEWATER REVENUE	$ 412,060.82	$ 1,612,326.71	$ 4,541,600.00	$ 13,624,800.00	35.5%
EXPENDITURES					
SALARIES/TAXES/BENEFITS	$ 24,389.73	$ 88,262.23	$ 173,601.67	$ 520,805.00	50.8%
ADMINISTRATION OTHER	$ 3,765.46	$ 144,352.01	$ 86,730.00	$ 260,190.00	166.4%
MAIN WASTEWATER TREATMENT PLANT	$ 55,617.61	$ 218,591.01	$ 265,666.67	$ 797,000.00	82.3%
REGIONAL I-25 TREATMENT PLAN	$ 4,325.65	$ 20,738.22	$ 40,066.67	$ 120,200.00	51.8%
COLLECTION SYSTEM	$ 1,587.32	$ 25,249.39	$ 95,000.00	$ 285,000.00	26.6%
PROFESSIONAL SERVICES	$ 44,631.95	$ 185,471.41	$ 250,833.33	$ 752,500.00	73.9%
UTILITY BILLING	$ 2,594.57	$ 12,018.45	$ 13,866.67	$ 41,600.00	86.7%
TRANSFER	$ 21,681.25	$ 86,725.00	$ 86,725.00	$ 260,175.00	100.0%
IMPROVEMENTS	$ 347,751.78	$ 1,040,448.73	$ 3,316,666.67	$ 9,950,000.00	31.4%
BOND	$ -	$ 71,176.37	$ 227,500.00	$ 682,500.00	31.3%
TOTAL WASTEWATER EXPENDITURES	$ 506,345.32	$ 1,893,032.82	$ 4,556,656.67	$ 13,669,970.00	41.5%
NET REVENUE OVER EXPENDITURES	**$ (94,284.50)**	**$ (280,706.11)**	**$ (15,056.67)**	**$ (45,170.00)**	

WASTEWATER CAPITAL IMPROVEMENTS

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL WASTEWATER CAPITAL REVENUE	$ 154,570.20	$ 530,402.01	$ 520,843.33	$ 1,562,530.00	101.8%
TOTAL WASTEWATER CAPITAL EXPENDITURES	$ 449,289.29	$ 1,264,649.93	$ 3,113,333.33	$ 9,340,000.00	40.6%
NET REVENUE OVER EXPENDITURES	**$ (294,719.09)**	**$ (734,247.92)**	**$ (2,592,490.00)**	**$ (7,777,470.00)**	
TOTAL WASTEWATER FUND REVENUE	$ 566,631.02	$ 2,142,728.72	$ 5,062,443.33	$ 15,187,330.00	42.3%
TOTAL WASTEWATER FUND EXPENDITURES	$ 955,634.61	$ 3,157,682.75	$ 7,669,990.00	$ 23,009,970.00	41.2%
TOTAL REVENUE OVER EXPENDITURES	**$ (389,003.59)**	**$ (1,014,954.03)**	**$ (2,607,546.67)**	**$ (7,822,640.00)**	

STORM WATER FACILITIES FUND

STORM WATER OPERATIONS & MAINTENANCE

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL STORM WATER REVENUE	$ 74,952.99	$ 293,114.20	$ 200,000.00	$ 600,000.00	146.6%
EXPENDITURES					
SALARIES/TAXES/BENEFITS	$ -	$ -	$ -	$ -	0.0%
ADMINISTRATION OTHER	$ 8,045.00	$ 32,180.00	$ 36,430.00	$ 109,290.00	88.3%
STREET CLEANING	$ 9,897.38	$ 13,355.26	$ 34,000.00	$ 102,000.00	39.3%
PROFESSIONAL SERVICES	$ -	$ -	$ 33,333.33	$ 100,000.00	0.0%
IMPROVEMENTS	$ -	$ 52,485.40	$ 10,000.00	$ 30,000.00	0.0%
TOTAL STORM WATER EXPENDITURES	$ 17,942.38	$ 98,020.66	$ 113,763.33	$ 341,290.00	86.2%
NET REVENUE OVER EXPENDITURES	**$ 57,010.61**	**$ 195,093.54**	**$ 86,236.67**	**$ 258,710.00**	

STORM WATER CAPITAL IMPROVEMENTS

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL STORM WATER CAPITAL REVENUE	$ 58,227.61	$ 182,273.64	$ 144,866.67	$ 434,600.00	125.8%
TOTAL STORM WATER CAPITAL EXPENDITURES	$ -	$ -	$ 816,666.67	$ 2,450,000.00	0.0%
NET REVENUE OVER EXPENDITURES	**$ 58,227.61**	**$ 182,273.64**	**$ (671,800.00)**	**$ (2,015,400.00)**	
TOTAL STORM WATER FUND REVENUE	$ 133,180.60	$ 475,387.84	$ 344,866.67	$ 1,034,600.00	137.8%
TOTAL STORM WATER FUND EXPENDITURES	$ 17,942.38	$ 98,020.66	$ 930,430.00	$ 2,791,290.00	10.5%
TOTAL REVENUE OVER EXPENDITURES	**$ 115,238.22**	**$ 377,367.18**	**$ (585,563.33)**	**$ (1,756,690.00)**	

SPECIAL REVENUE FUNDS

PARK DEVELOPMENT

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL PARK DEVELOPMENT REVENUE	$ 66,680.32	$ 206,971.37	$ 237,566.67	$ 712,700.00	87.1%
TOTAL PARK DEVELOPMENT EXPENDITURES	$ 75,902.36	$ 386,664.59	$ 310,000.00	$ 930,000.00	124.7%
NET REVENUE OVER EXPENDITURES	**$ (9,222.04)**	**$ (179,693.22)**	**$ (72,433.33)**	**$ (217,300.00)**	

PARK DEDICATION

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL PARK DEDICATION REVENUE	$ 15,807.81	$ 48,139.86	$ 61,058.33	$ 183,175.00	78.8%
TOTAL PARK DEDICATION EXPENDITURES	$ 21,576.25	$ 26,722.50	$ 50,000.00	$ 150,000.00	53.4%
NET REVENUE OVER EXPENDITURES	**$ (5,768.44)**	**$ 21,417.36**	**$ 11,058.33**	**$ 33,175.00**	

PUBLIC FACILITIES

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL PUBLIC FACILITIES REVENUE	$ 23,966.95	$ 95,332.15	$ 77,950.00	$ 233,850.00	122.3%
TOTAL PUBLIC FACILITIES EXPENDITURES	$ -	$ 97,631.91	$ 301,666.67	$ 905,000.00	32.4%
NET REVENUE OVER EXPENDITURES	**$ 23,966.95**	**$ (2,299.76)**	**$ (223,716.67)**	**$ (671,150.00)**	

CONSERVATION TRUST/FORESTRY

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL CONSERVATION TRUST REVENUE	$ 47,925.64	$ 238,438.82	$ 237,333.33	$ 712,000.00	100.5%
EXPENDITURES					
SALARIES/TAXES/BENEFITS	$ 49,525.12	$ 159,725.64	$ 223,528.33	$ 670,585.00	71.5%
ADMINISTRATION OTHER	$ 230.73	$ 3,811.94	$ 19,416.67	$ 58,250.00	19.6%
FLEET MAINTENANCE	$ 729.75	$ 5,510.57	$ 8,833.33	$ 26,500.00	62.4%
PARK MAINTENANCE & IMPROVEMENTS	$ -	$ 6,160.47	$ 3,333.33	$ 10,000.00	184.8%
TREE MAINTENANCE	$ 3,969.02	$ 12,521.82	$ 14,000.00	$ 42,000.00	89.4%
EAB RESPONSE	$ -	$ -	$ 15,000.00	$ 45,000.00	0.0%
TOTAL CONSERVATION TRUST EXPENDITURES	$ 54,454.62	$ 187,730.44	$ 284,111.67	$ 852,335.00	66.1%
NET REVENUE OVER EXPENDITURES	**$ (6,528.98)**	**$ 50,708.38**	**$ (46,778.34)**	**$ (140,335.00)**	

LARIMER COUNTY OPEN SPACE TAX

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL LARIMER COUNTY REVENUE	$ 38,774.99	$ 79,204.60	$ 241,333.33	$ 724,000.00	32.8%
TOTAL LARIMER COUNTY EXPENDITURES	$ 2,677.44	$ 7,109.71	$ 123,333.33	$ 370,000.00	5.8%
NET REVENUE OVER EXPENDITURES	**$ 36,097.55**	**$ 72,094.89**	**$ 118,000.00**	**$ 354,000.00**	

CEMETERY ENDOWMENT

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL CEMETERY ENDOWMENT REVENUE	$ 23,355.76	$ 105,570.67	$ 81,500.00	$ 244,500.00	129.5%
EXPENDITURES					
SALARIES/TAXES/BENEFITS	$ 5,049.05	$ 22,665.65	$ 27,446.33	$ 82,339.00	82.6%
FUNERALS	$ -	$ -	$ 1,000.00	$ 3,000.00	0.0%
MAINTENANCE	$ 2,201.07	$ 16,476.25	$ 10,616.67	$ 31,850.00	155.2%
IMPROVEMENTS	$ -	$ -	$ 75,000.00	$ 225,000.00	0.0%
TOTAL CEMETERY ENDOWMENT EXPENDITURES	$ 7,250.12	$ 39,141.90	$ 114,063.00	$ 342,189.00	34.3%
NET REVENUE OVER EXPENDITURES	**$ 16,105.64**	**$ 66,428.77**	**$ (32,563.00)**	**$ (97,689.00)**	

BATS

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL BATS REVENUE	$ 21,470.10	$ 86,077.12	$ 385,833.33	$ 1,157,500.00	22.3%
EXPENDITURES					
SALARIES/TAXES/BENEFITS	$ 9,669.03	$ 37,647.39	$ 45,804.00	$ 137,412.00	82.2%
ADMINISTRATION OTHER	$ 220.50	$ 841.00	$ 2,300.00	$ 6,900.00	36.6%
DRIVING	$ 1,372.03	$ 3,531.53	$ 11,166.67	$ 33,500.00	31.6%
SERVICES	$ -	$ 40,643.14	$ 323,333.33	$ 970,000.00	12.6%
TOTAL BATS EXPENDITURES	$ 11,261.56	$ 82,663.06	$ 382,604.00	$ 1,147,812.00	21.6%
NET REVENUE OVER EXPENDITURES	**$ 10,208.54**	**$ 3,414.06**	**$ 3,229.33**	**$ 9,688.00**	

ROAD IMPACT FEES

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL ROAD IMPACT REVENUE	$ 22,044.16	$ 143,463.93	$ 213,425.00	$ 640,275.00	67.2%
TOTAL ROAD IMPACT EXPENDITURES	$ 429,276.38	$ 1,718,661.17	$ 1,740,308.33	$ 5,220,925.00	98.8%
NET REVENUE OVER EXPENDITURES	**$ (407,232.22)**	**$ (1,575,197.24)**	**$ (1,526,883.33)**	**$ (4,580,650.00)**	

RECREATIONAL MMJ

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL RECREATIONAL MMJ REVENUES	$ 56,213.00	$ 163,339.22	$ 212,000.00	$ 636,000.00	77.0%
TOTAL RECREATIONAL MMJ EXPENDITURES	$ 83,698.33	$ 408,628.32	$ 578,333.33	$ 1,735,000.00	70.7%
NET REVENUE OVER EXPENDITURES	**$ (27,485.33)**	**$ (245,289.10)**	**$ (366,333.33)**	**$ (1,099,000.00)**	

1998 1% SALES TAX

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL 1998 1% REVENUE	$ 300,043.31	$ 676,052.07	$ 1,010,812.67	$ 3,032,438.00	66.9%
TOTAL 1998 1% EXPENDITURES	$ 312,557.56	$ 1,256,004.02	$ 1,943,933.33	$ 5,831,800.00	64.6%
NET REVENUE OVER EXPENDITURES	**$ (12,514.25)**	**$ (579,951.95)**	**$ (933,120.66)**	**$ (2,799,362.00)**	

2019 1% SALES TAX

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
RECREATION CENTER REVENUE	$ 141,905.82	$ 736,819.94	$ 590,572.00	$ 1,771,716.00	124.8%
SALES TAX REVENUE/INTEREST	$ 312,225.88	$ 729,511.99	$ 1,054,146.00	$ 3,162,438.00	69.2%
TOTAL 2019 1% REVENUE	$ 454,131.70	$ 1,466,331.93	$ 1,644,718.00	$ 4,934,154.00	89.2%
RECREATION CENTER OPERATING EXPENSES	$ 173,423.13	$ 767,844.55	$ 888,966.33	$ 2,666,899.00	86.4%
PARK EXPENSES	$ 516,685.70	$ 2,047,740.87	$ 2,068,591.67	$ 6,205,775.00	99.0%
COP PAYMENT AND OTHER EXPENSES	$ 368,700.00	$ 370,700.00	$ 384,800.00	$ 1,154,400.00	96.3%
TOTAL 2019 1% EXPENDITURES	$ 1,058,808.83	$ 3,186,285.42	$ 3,342,358.00	$ 10,027,074.00	95.3%
NET REVENUE OVER EXPENDITURES	**$ (604,677.13)**	**$ (1,719,953.49)**	**$ (1,697,640.00)**	**$ (5,092,920.00)**	

TOTAL SPECIAL FUNDS REVENUE	$ 1,070,413.74	$ 3,308,921.74	$ 4,403,530.66	$ 13,210,592.00
TOTAL SPECIAL FUNDS EXPENDITURES	$ 2,057,463.45	$ 7,397,243.04	$ 9,170,711.66	$ 27,512,135.00
TOTAL REVENUE OVER EXPENDITURES	**$ (987,049.71)**	**$ (4,088,321.30)**	**$ (4,767,181.00)**	**$ (14,301,543.00)**

TOTAL REVENUE	$ 3,578,924.00	$ 13,162,658.99	$ 17,048,583.99	$ 51,145,752.00
TOTAL EXPENDITURES	$ 5,734,515.27	$ 19,375,249.34	$ 31,365,658.99	$ 94,096,977.00

CAPITAL PROJECTS

SPARTAN AVENUE CROSSING

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL SPARTAN AVENUE REVENUE	$ 429,166.67	$ 1,716,666.68	$ 1,716,666.67	$ 5,150,000.00	100.0%
TOTAL SPARTAN AVENUE EXPENDITURES	$ -	$ 216.00	$ 50,000.00	$ 150,000.00	0.4%
NET REVENUE OVER EXPENDITURES	**$ 429,166.67**	**$ 1,716,450.68**	**$ 1,666,666.67**	**$ 5,000,000.00**	

DOWNTOWN BUILDING RENOVATION

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL DOWNTOWN BUILDING REVENUE	$ 166,666.67	$ 666,666.68	$ 666,666.67	$ 2,000,000.00	100.0%
TOTAL DOWNTOWN BUILDING EXPENDITURES	$ -	$ 47,852.50	$ 666,666.67	$ 2,000,000.00	7.2%
NET REVENUE OVER EXPENDITURES	**$ 166,666.67**	**$ 618,814.18**	**$ -**	**$ -**	

ARBORETUM

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL ARBORETUM REVENUE	$ 583,333.33	$ 2,333,333.32	$ 2,333,333.33	$ 7,000,000.00	100.0%
TOTAL ARBORETUM EXPENDITURES	$ 13,420.00	$ 18,889.00	$ 1,866,666.67	$ 5,600,000.00	1.0%
NET REVENUE OVER EXPENDITURES	**$ 569,913.33**	**$ 2,314,444.32**	**$ 466,666.66**	**$ 1,400,000.00**	

RICHARDSON PARK

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL RICHARDSON PARK REVENUE	$ 833,333.33	$ 3,333,333.32	$ 12,666,666.67	$ 38,000,000.00	26.3%
TOTAL RICHARDSON PARK EXPENDITURES	$ 145,093.26	$ 482,729.10	$ 10,250,000.00	$ 30,750,000.00	4.7%
NET REVENUE OVER EXPENDITURES	**$ 688,240.07**	**$ 2,850,604.22**	**$ 2,416,666.67**	**$ 7,250,000.00**	

NEWELL FARM PARK

	CURRENT MONTH	YTD ACTUAL	YTD BUDGET	TOTAL 2026 BUDGET	PERCENTAGE YTD ACTUAL vs YTD BUDGET
TOTAL NEWELL FARM REVENUE	$ 33,333.33	$ 133,333.32	$ 133,333.33	$ 400,000.00	100.0%
TOTAL NEWELL FARM EXPENDITURES	$ 8,152.24	$ 33,200.00	$ 133,333.33	$ 400,000.00	24.9%
NET REVENUE OVER EXPENDITURES	**$ 25,181.09**	**$ 100,133.32**	**$ -**	**$ -**	

TOTAL CAPITAL PROJECTS REVENUE	$ 2,045,833.33	$ 8,183,333.32	$ 17,516,666.67	$ 52,550,000.00
TOTAL CAPITAL PROJECTS EXPENDITURES	$ 166,665.50	$ 582,886.60	$ 12,966,666.67	$ 38,900,000.00
TOTAL REVENUE OVER EXPENDITURES	**$ 1,879,167.83**	**$ 7,600,446.72**	**$ 4,550,000.00**	**$ 13,650,000.00**

Board of Trustees Information

Public Works Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Invitation for Bid – Serenity Ridge Stormwater Project**
Type of Item:	**Consent Agenda**
Purpose:	**Board Approval of soliciting bids for Serenity Ridge Drainage Improvement Project**
Presented by:	**Keith Knoll**

Attachments:

1. SR - Project Location
2. IFB - Serenity Ridge Stormwater Improvements

Background:

Town staff have identified drainage concerns within the Serenity Ridge subdivision. During significant precipitation events, stormwater runoff can create localized flooding, erosion, and sedimentation issues that affect the performance of the existing drainage system.

To address these concerns, Town staff has been working collaboratively with the Serenity Ridge Homeowners Association to evaluate existing drainage conditions and develop a practical solution to improve stormwater conveyance. The proposed project consists of installing storm drainage piping and related infrastructure improvements to redirect excessive runoff while maintaining historic drainage patterns. The necessary improvements would occur within both Town-owned right-of-way and property owned by the Serenity Ridge Homeowners Association.

Town staff would like to advertise the project for public bid to obtain information on the project costs.

Update/Next Steps:

Following the bid opening, staff will review proposals. The Board will have the opportunity to approve the bid award with the selected contractor and project cost.

Fiscal Impact and Fund Source:

This Project is currently funded in the 2026 Budget
28-00-5105.00 – Serenity Ridge Drainage Improvements - $200,000.00

Community Touchstones:

The Serenity Ridge Drainage Project will properly manage storm events, enhancing the neighborhood's **resiliency.** Grading and sediment control plans protect water quality and maintain the **sustainability** of the stormwater conveyance infrastructure.

Recommended Action(s):

Board Approval of soliciting bids for Serenity Ridge Drainage Improvements Project.

Project Locations



Invitation for Bids

Serenity Ridge Drainage Project

Town of Berthoud, Colorado

807 Mountain Avenue

Berthoud, CO 80513

Bid Documents

1. ADVERTISEMENT FOR BIDS
2. Instructions to Bidder
3. Bid Form
4. Example Construction Services Agreement
5. Project Location
6. Serenity Ridge Drainage Project CDs
7. General Conditions (EJCDC C-700, 2007 ed.)
8. Bid Bond, Performance, and Payment Bond

2026

INVITATION TO BID

Sealed Bids will be received by the **Town of Berthoud, CO** (hereinafter referred to as OWNER), at 807 Mountain Avenue, P.O. Box 1229, Berthoud, CO 80513, until **11:00 a.m., OWNER's clock, July 8th, 2026** for the Serenity Ridge Drainage Project. The Contract provides for the following work:

The **Serenity Ridge Drainage Project** as defined per task order may consist of excavation and regrading existing drainage facilities, installation of precast concrete pipe, removal and replacement of existing asphalt roadway, removal and replacement of pedestrian trail, and protection of adjacent facilities. Actual work quantities will vary from the Bid Form quantities.

Contract documents require that all work be completed no later than **September 30th, 2026**. The Bidding Documents may be examined at the office of the OWNER. Bid security in the amount of five percent (5%) of the total Bid Price must accompany each Bid in the form specified in the Instructions to Bidders.

There will be a **Pre-Bid Meeting** for this project scheduled for **11:00 a.m. June 18th, 2026**. The meeting will start at Berthoud Town Hall, 807 Mountain Ave., Berthoud, CO 80513 and move from there to site locations.

Bid documents are available via the Rocky Mountain E-Purchasing System ("BidNet") at www.govbids.com. If you are not registered with BidNet, please visit their website and select "Vendor Registration." If you have questions about the registration process, please contact BidNet at 800-677-1997

For additional information contact Daniel Buendia, Public Works Project Engineer, for the Town of Berthoud, at (970)-344-5807 or dbuendia@berthoud.org.

INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS

Terms used in these Instructions to Bidders, which are defined in the Standard General Conditions of the Construction Contract (EJCDC C-700, 2007 ed.), have the meanings assigned to them in the General Conditions. Other terms used in the Bidding Documents and not defined elsewhere have the following meanings that are applicable to both the singular and plural thereof.

1.1. Bidder – One who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to a Bidder.
1.2. Issuing Office – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
1.3. Successful Bidder – The lowest, qualified, responsible, and responsive Bidder to whom OWNER (on the basis of OWNER'S evaluation as hereinafter provided) makes an award.

2. COPIES OF BIDDING DOCUMENTS

2.1. Complete sets of Bidding Documents may be obtained as stated in the Invitation to Bid. No partial sets will be issued. The Bidding Documents may be examined at the locations identified in the Invitation to Bid.
2.2. Complete sets of Bidding Documents shall be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

3. QUALIFICATION OF BIDDERS

3.1. To demonstrate qualifications to perform the Work, each Bidder must submit, within five (5) days of Owner's request, a written statement of qualifications including financial data, a summary of previous experience, present commitments, and other such data as may be called for below. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

4.1. It is the responsibility of each Bidder, before submitting a Bid, to:
- 4.1.1. Examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical data" referred to below).
- 4.1.2. Visit the site to become familiar with and satisfy Bidder as to the general, local, and site conditions that may in any manner affect cost, progress, performance, or furnishing of the Work.
- 4.1.3. Consider federal, state, and local laws, ordinances, rules, and regulations that may affect cost, progress, performance, or furnishing of the Work.
- 4.1.4. Study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data.
- 4.1.5. Promptly notify OWNER of all conflicts, errors, ambiguities, or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.

4.2. Information and data reflected in the Contract Documents with respect to underground facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by OWNERS of such underground facilities or others, and OWNER does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.
4.3. Provisions concerning responsibilities for the adequacy of data furnished too prospective Bidders on subsurface conditions, underground facilities, other physical conditions, and

possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.2. and 4.3. of the General Conditions.

4.4. Before submitting a Bid, each Bidder will be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise, which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents.

4.5. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that (without exception) the Bid is premised upon performing and furnishing the Work required by the Contract Documents, and applying the specific means, methods, techniques, sequences, or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Contract Documents; and the written resolutions thereof by ENGINEER are acceptable to Bidder and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

5. AVAILABILITY OF LANDS FOR WORK, ETC.

5.1. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and other lands designated for use by the CONTRACTOR in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

6. INTERPRETATIONS AND ADDENDA

6.1. All questions about the meaning or intent of the Bidding Documents are to be directed to OWNER. Interpretations or clarifications considered necessary by OWNER in response to such questions will be issued by Addenda. Questions received less than **two (2)** days prior to the date for opening of the Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6.2. Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

7. BID SECURITY

7.1. The amount of Bid Security is stated in the Invitation to Bid. The required security must be in the form of a certified or bank cashier's check made payable to OWNER or a Bid Bond on the form enclosed herewith. The Bid Bond must be executed by a surety meeting the requirements set forth in the General Conditions for surety bonds.

7.2. The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid Security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required contract security within fifteen (15) days of the Notice of Award, OWNER may annul the Notice of Award; and the Bid Security of that Bidder will be forfeited. The Bid Security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER

until the earlier of the seventh (7th) day after the Effective Date of the Agreement or the thirty-sixth (36th) day after the Bid opening, whereupon the Bid Security furnished by such Bidders will be returned.

8. CONTRACT TIMES

8.1. The number of days within which, or the date by which, the Work is to be substantially completed and also completed and ready for final payment (the term "Contract Times" is defined in paragraph 1.12. of the General Conditions) are set forth in the Agreement or Bid Form and will be included in the Agreement.

9. LIQUIDATED DAMAGES

9.1. Provisions for liquidated damages, if any, are set forth in the Agreement.

10. SUBSTITUTE AND "OR EQUAL" ITEMS

10.1. The Contract, if awarded, will be on the basis of material and equipment described on the Drawings or specified in the Specifications without consideration of possible substitute or "or equal" items. Whenever it is indicated on the Drawings or specified in the Specifications that a substitute or "or equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to OWNER, application for such acceptance will not be considered by ENGINEER until after the effective date of the Agreement. The procedure for submittal of any such application by CONTRACTOR and consideration by OWNER is set forth in paragraphs 6.7.1., 6.7.2., and 6.7.3. of the General Conditions which may be supplemented in the General Requirements.

10.2. Federal Register 40 CFR - Part 33, paragraph 33.255 – "Specifications" states that the recipient "need not establish the existence of any source other than the named brand." Hence, the existence of "an equal" is not the burden of the OWNER or the ENGINEER. The OWNER, through the ENGINEER, has the authority to decide what products are equal to those specified as determined in Whitten vs. Paddock as upheld by the Supreme Court.

11. SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.1. The apparent low bidder, and any other Bidder so requested will, with the bid, submit to OWNER a list of principal subcontractors, suppliers, and other persons and organizations he proposes to use in the Work. Such list shall be accompanied by an experience statement with pertinent information as to similar projects and other evidence of qualification for each such subcontractor, person, and organization if requested by OWNER.

11.2. Particular consideration will be given to the qualifications of each subcontractor proposed to perform more than fifty percent (50%) of the Work and those proposed to perform any 'hot-taps.'

11.3. The list of subcontractors shall also include the suppliers and manufacturers of and other principal items of materials and equipment the Bidder expects to use in the Work unless such suppliers or manufacturers are named in the Bid Form.

11.4. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed subcontractor, either may, before the Notice of Award is given, request the apparent Bidder to submit an acceptable substitute without an increase in Bid price. If the apparent Successful Bidder declines to make any such substitution, OWNER may award the contract to the next lowest Bidder that proposes to use acceptable subcontractors, suppliers, and other persons and organizations. Those declining to make requested substitutions will not constitute grounds for sacrificing the Bid Security of any Bidder. Any subcontractor, supplier, other person, or organization listed and to whom OWNER or ENGINEER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.8.2. of the General Conditions.

11.5. Manufacturer's Data. The Bid list of subcontractors submitted, as provided herein, shall be accompanied by two (2) prints or copies of data on equipment and materials to be furnished

by each supplier or manufacturer named on the list. Data submitted shall illustrate the physical characteristics of the equipment and materials to be furnished. Although the drawings and specifications submitted need not be complete shop drawings, they must contain sufficient detail for ENGINEER to determine whether the materials and equipment shall conform to the Contract Documents.

11.5.1. The Contract Documents will take precedence over any non-conforming data submitted. Any Bid specifically conditioned upon furnishing equipment or materials which are not responsive to the Contract Documents may not be considered.

12. BID FORM

12.1. A copy of the Bid Form is bound in the Contract Documents which may be retained by the Bidder. A separate, unbound copy is enclosed for submission with the Bid.

12.2. All blanks on the Bid Form must be completed in ink or typed.

12.3. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign), and the corporate address and state of incorporation shall be shown below the corporate name.

12.4. Bids by partnerships must be executed in the partnership name and signed by a partner. Their title must appear under their signature, and the official address of the partnership must be shown below the signature.

12.5. Bids by joint ventures shall be signed by each participant in the joint venture or by an authorized agent of each participant. The full name of each person or company interested in the Bid shall be listed on the Bid Form.

12.6. All names must be typed or printed in ink below the signature.

12.7. The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

12.8. The address and telephone number for communications regarding the Bid must be shown.

12.9. Evidence of authority to conduct business as an out-of-state corporation in the state where the Work is to be performed shall be provided in accordance with Paragraph 3 above. A state CONTRACTOR'S license number, if any, must also be shown.

12.10. No alterations in Bids or in the printed forms therefore, by erasures, interpolations, or otherwise will be acceptable unless each such alteration is signed or initiated by the Bidder. If initialed, OWNER may require the Bidder to identify any alteration so initialed.

12.11. Bids must be priced on a unit price basis for the base contract.

12.12. The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances named in the Contract Documents as provided in GC-11.8.

13. SUBMISSION OF BIDS

13.1. Bids shall be submitted at the time and place indicated in the Invitation to Bid and shall be enclosed in an opaque, sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of the Bidder, and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.

13.2. Bids shall be deposited at the designated location prior to the time and date for receipt of Bids indicated in the Invitation to Bid, or any extension thereof made by Addendum. Bids received after the time and date for receipt of Bids will be returned unopened. Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

13.3. Oral, telephonic, or telegraphic Bids are invalid and will not receive consideration.

13.4. No Bidder may submit more than one (1) Bid. Multiple Bids under different names will not be accepted from one (1) firm or association.

14. MODIFICATION AND WITHDRAWAL OF BIDS

14.1. Bids may be modified or withdrawn by an appropriate document duly executed (in a manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

14.2. Bids may also be modified or withdrawn in person by the Bidder or an authorized representative provided he can prove their identity and authority.

14.3. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

14.4. If, within twenty-four (24) hours after Bids are opened, any Bidder files a duly signed, written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid; and the Bid Security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

15. OPENING OF BIDS

15.1. Bids will be opened and (unless obviously non-responsive) read aloud publicly as indicated in the Invitation to Bid. An abstract of the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids.

16. BIDS TO REMAIN OPEN SUBJECT TO ACCEPTANCE

16.1. All Bids shall remain subject to acceptance for **ten (10)** days after the day of the Bid opening; but OWNER may, in their sole discretion, release any Bid and return the Bid Security prior to that date.

17. AWARD OF CONTRACT

17.1. OWNER reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced, or conditional Bids and to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

17.2. In evaluating Bids, OWNER will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or prior to the Notice of Award.

17.3. OWNER may consider the qualifications and experience of subcontractors, suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of subcontractors, suppliers, and other persons and organizations must be submitted. OWNER also may consider the operating costs, maintenance requirements, performance data, and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.

17.4. OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of the Bidder's proposed subcontractors and other persons and organizations to do the Work in accordance with the Contract Documents to OWNER'S satisfaction within the prescribed time.

17.5. If the contract is to be awarded, OWNER will give the Successful Bidder a Notice of Award within the number of days specified above during which the Bids are to remain open.

18. CONTRACT SECURITY

18.1. Paragraph 5.1. of the General Conditions and the Supplementary Conditions set forth OWNER's requirements as to Construction Performance and Construction Payment Bonds. When the Successful Bidder delivers the executed Agreement to OWNER, it shall be accompanied by the required Construction Performance and Construction Payment Bonds.

19. SIGNING OF AGREEMENT

19.1. When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within **ten (10)** days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds. Within **three (3)** days thereafter, OWNER shall deliver one (1) fully signed counterpart to CONTRACTOR. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.

20. PREBID CONFERENCE

20.1. **There is a pre-bid conference on June 18th at 11:00 a.m.**

21. SALES AND USE TAXES

21.1. OWNER is exempt from Colorado State Sales and Use Taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Contract Price. Refer to Supplementary Conditions SC-6.15. for additional information.

22. RETAINAGE

22.1. Provisions concerning retainage and CONTRACTOR'S rights to deposit securities in lieu of retainage are set forth in the Agreement.

BID FORM

CONTRACT IDENTIFICATION AND NUMBER: **Serenity Ridge Drainage Project**

THIS BID IS SUBMITTED TO:

Town of Berthoud
807 Mountain Avenue
P.O. Box 1229
Berthoud, CO 80513

THIS BID IS SUBMITTED BY: _____
(CONTRACTOR)

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents, for the Contract Price, within the Contract Time indicated in this Bid, and in accordance with the other terms and conditions of the Contract.

2. BIDDER accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders including, without limitation, those dealing with the disposition of the Bid Security. This Bid will remain subject to acceptance for **ten (10)** days after the day of the Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the bidding requirements within **five (5)** days after the date of OWNER's Notice of Award.

3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

   (a) BIDDER has examined and carefully studied the Bidding Documents and the following Addenda receipt, all of which are hereby acknowledged:

Number	Date
_____	_____
_____	_____

   (b) BIDDER has visited the site, has become familiar with, and is satisfied as to the general, local, and site conditions that may affect cost, progress, performance, and furnishing of the Work.

   (c) BIDDER is familiar with and is satisfied as to all federal, state, and local laws and regulations that may affect cost, progress, performance, and furnishing of the Work.

   (d) BIDDER is aware of the general nature of Work to be performed by the OWNER and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.

   (e) BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

   (f) BIDDER has given OWNER written notice of all conflicts, errors, ambiguities, or discrepancies that BIDDER has discovered in the Contract Documents; and the written resolution thereof by OWNER is acceptable to BIDDER. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

   (g) This Bid is genuine; not made in the interest of or on behalf of any undisclosed person, firm, or corporation; and is not submitted in conformity with any agreements or rules of any group, association, organization, or corporation. BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid. BIDDER has not solicited or induced any person, firm, or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

   (h) Any other representation required by laws and regulations.

4. BIDDER will complete the Work in accordance with the Contract Documents for the following price(s).

Serenity Ridge Drainage Project may consist of excavation and regrading existing drainage facilities, installation of precast concrete pipe, removal and replacement of existing asphalt roadway, removal and replacement of pedestrian trail, and protection of adjacent facilities. Bidder acknowledges that quantities are not guaranteed, and final payment will be based on actual quantities determined as provided in the Contract Documents.

Bid Item A:

Item Description	Quantity	Unit	Unit Cost	Total Cost
Mobilization	1	LS		
Remove and replace existing gravel	212	SY		
Remove and replace existing asphalt road section	26	SY		
Inlet protection	4	EA		
5” stabilized crusher fines trail and landscape fabric	1,931	SF		
Sediment control log	186	LF		
Rock sock check dam	90	LF		
Erosion control blanket (3-year coconut straw)	2,177	SY		
Seeding (native)	2,177	SY		
Riprap (type VL)	37	CY		
Riprap (type L)	70	CY		
Geotextile fabric (under FES Riprap)	246	SY		
18" RCP pipe	95	LF		
18" RCP flared end section	2	EA		
30" RCP pipe	141	LF		
30" RCP flared end section	2	EA		
Type “13” valley inlet	2	EA		
Fine grading and shaping	0.6	AC		
Cut	1,342	CY		
Fill	29	CY		
Export Earthworks	1,313	CY		
Traffic Control	1	LS		

TOTAL PROJECT COST A: $_____

5. BIDDER agrees that the Work will be substantially complete and completed and read for final payment in accordance with paragraph 14.13. in the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6. BIDDER accepts the provisions of the Agreement as to liquidated damages in case of failure to complete the Work on time.

7. The following documents are attached to and made a condition of this Bid.
   (a) Required Bid Security.
   (b) A tabulation of subcontractors, suppliers, and other persons and organizations required to be identified in this Bid (see paragraph 8, below).

8. The terms used in this Bid, which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents, have the meanings assigned to them in the General Conditions.

9. BIDDER shall complete the following listing of Subcontractors, Suppliers, and Equipment Manufacturers. (As used in submitting their Base Bid Price).

   (a) All Bid Schedules.

Supplier _____

SUBMITTED on _____, 20__.

Supplier _____

SUBMITTED on _____, 20__.

Supplier _____

SUBMITTED on _____, 20__.

Supplier _____

SUBMITTED on _____, 20__.

If BIDDER is:

An Individual

By: _____ (SEAL)
(Individual's Name)

doing business as _____

Business address: _____

Phone No.: _____

A Partnership

By: _____ (SEAL)
(Firm Name)

_____
(General Partner)

Business address: _____

Phone No.: _____

A Corporation

By: _____
(Corporation Name)

_____
(State of Incorporation)

By: _____
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest: _____
(Secretary)

Business address: _____

Phone No.: _____

Agreement for Services
(Fixed Fee)

This Agreement for Services (the "Agreement") is made and entered into this _____ day of _____, 2026 (the "Effective Date"), by and between the Town of Berthoud, a Colorado municipal corporation with an address of 807 Mountain Avenue, Berthoud, CO 80513 (the "Town"), and _____, an independent contractor with a principal place of business at _____ ("Contractor") (each a "Party" and collectively the "Parties").

Whereas, the Town requires services; and

Whereas, Contractor has held itself out to the Town as having the requisite expertise and experience to perform the required services.

Now Therefore, for the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Scope of Services.

a. Contractor shall furnish all labor and materials required for the complete and prompt execution and performance of all duties, obligations, and responsibilities which are described or reasonably implied from the Scope of Services set forth in **Exhibit A**, attached hereto and incorporated herein by this reference, and known as:

b. A change in the Scope of Services shall not be effective unless authorized as an amendment to this Agreement. If Contractor proceeds without such written authorization, Contractor shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the Town is authorized to modify any term of this Agreement, either directly or implied by a course of action.

2. Term and Termination.

a. This Agreement shall commence on the Effective Date, and shall continue until Contractor completes the Scope of Services to the satisfaction of the Town, or until terminated as provided herein.

b. Either Party may terminate this Agreement upon 30 days advance written notice. The Town shall pay Contractor for all work previously authorized and completed prior to the date of termination. If, however, Contractor has substantially or materially breached this Agreement, the Town shall have any remedy or right of set-off available at law and equity.

3. Compensation. In consideration for the completion of the Scope of Services by Contractor, the Town shall pay Contractor $_____. This amount shall include all fees, costs and expenses incurred by Contractor, and no additional amounts shall be paid by the Town for

EXAMPLE

such fees, costs and expenses. Contractor may submit periodic invoices, which shall be paid by the Town within 30 days of receipt.

4. Responsibility.

a. Contractor hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and licenses in good standing, required by law. The work performed by Contractor shall be in accordance with generally accepted practices and the level of competency presently maintained by other contractors in the same or similar type of work in the applicable community.

b. The Town's review, approval or acceptance of, or payment for any services shall not be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

c. Contractor shall at all times comply with all applicable law, including all federal, state and local statutes, regulations, ordinances, decrees and rules relating to the emission, discharge, release or threatened release of a hazardous material into the air, surface water, groundwater or land, the manufacturing, processing, use, generation, treatment, storage, disposal, transportation, handling, removal, remediation or investigation of a hazardous material, and the protection of human health and safety, including without limitation the following, as amended: the Comprehensive Environmental Response, Compensation and Liability Act; the Hazardous Materials Transportation Act; the Resource Conservation and Recovery Act; the Toxic Substances Control Act; the Clean Water Act; the Clean Air Act; the Occupational Safety and Health Act; the Solid Waste Disposal Act; the Davis Bacon Act; the Copeland Act; the Contract Work Hours and Safety Standards Act; the Byrd Anti-Lobbying Amendment; the Housing and Community Development Act; and the Energy Policy and Conservation Act.

d. Contractor shall comply with the accessibility standards for an individual with a disability adopted by the State Office of Information Technology pursuant to C.R.S. § 24-85-103, and shall indemnify, hold harmless and assume liability on behalf of the Town and its officers, employees, agents and attorneys for all costs, expenses, claims, damages, liabilities, court awards, attorney fees and related costs, and any other amounts incurred by the Town in relation to Contractor's noncompliance with such accessibility standards.

5. Ownership. Any materials, items, and work specified in the Scope of Services, and any and all related documentation and materials provided or developed by Contractor shall be exclusively owned by the Town. Contractor expressly acknowledges and agrees that all work performed under the Scope of Services constitutes a "work made for hire." To the extent, if at all, that it does not constitute a "work made for hire," Contractor hereby transfers, sells, and assigns to the Town all of its right, title, and interest in such work. The Town may, with respect to all or any portion of such work, use, publish, display, reproduce, distribute, destroy, alter, retouch, modify, adapt, translate, or change the Work Product without providing notice to or receiving consent from Contractor; provided that Contractor shall have no liability for any work that has been modified by the Town.

EXAMPLE

6. Independent Contractor. Contractor is an independent contractor. Notwithstanding any other provision of this Agreement, all personnel assigned by Contractor to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Contractor for all purposes. Contractor shall make no representation that it is a Town employee for any purposes.

7. Insurance.

a. Contractor agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Contractor pursuant to this Agreement. At a minimum, Contractor shall procure and maintain, and shall cause any subcontractor to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

i. Worker's Compensation insurance as required by law.

ii. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations, and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and contractors as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

b. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees or its contractors shall be excess and not contributory insurance to that provided by Contractor. Contractor shall be solely responsible for any deductible losses under any policy.

c. Contractor shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Agreement.

8. Indemnification. Contractor agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including reasonable attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Agreement if such injury, loss, or damage is caused in whole or in part by, the omission, error, professional error, mistake, negligence, or other fault of Contractor, any subcontractor of Contractor, or any officer,

EXAMPLE

employee, representative, or agent of Contractor, or which arise out of a worker's compensation claim of any employee of Contractor or of any employee of any subcontractor of Contractor; provided that Contractor's liability under this indemnification provision shall be to the fullest extent of, but shall not exceed, that amount represented by the degree or percentage of negligence or fault attributable to Contractor, any subcontractor of Contractor, or any officer, employee, representative, or agent of Contractor or of any subcontractor of Contractor.

9. Miscellaneous.

a. *Governing Law and Venue*. This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Larimer County, Colorado.

b. *No Waiver*. Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the Town shall not constitute a waiver of any of the other terms or obligation of this Agreement.

c. *Integration*. This Agreement constitutes the entire agreement between the Parties, superseding all prior oral or written communications.

d. *Third Parties*. There are no intended third-party beneficiaries to this Agreement.

e. *Notice*. Any notice under this Agreement shall be in writing, and shall be deemed sufficient when directly presented or sent pre-paid, first class U.S. Mail to the Party at the address set forth on the first page of this Agreement.

f. *Severability*. If any provision of this Agreement is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

g. *Modification*. This Agreement may only be modified upon written agreement of the Parties.

h. *Assignment*. Neither this Agreement nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

i. *Governmental Immunity*. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities or protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

j. *Rights and Remedies*. The rights and remedies of the Town under this Agreement are in addition to any other rights and remedies provided by law. The expiration of this Agreement shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

EXAMPLE

k. *Subject to Annual Appropriation*. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

l. *Force Majeure*. No Party shall be in breach of this Agreement if such Party's failure to perform any of the duties under this Agreement is due to Force Majeure, which shall be defined as the inability to undertake or perform any of the duties under this Agreement due to acts of God, floods, fires, sabotage, terrorist attack, strikes, riots, war, labor disputes, forces of nature, the authority and orders of government or pandemics.

m. *Electronic Signatures*. The Parties intend that this Agreement be governed by the Uniform Electronic Transactions Act, C.R.S. § 24-71.3-101, *et seq*.

In Witness Whereof, the Parties have executed this Agreement as of the Effective Date.

Town of Berthoud, Colorado

_____
William Karspeck, Mayor

Attest:

_____
Christian R. Samora, CMC, Town Clerk

Contractor

By: _____

State of Colorado)
) ss.
County of _____)

The foregoing instrument was subscribed, sworn to and acknowledged before me this ___ day of _____, 2026, by _____ as _____ of _____.

My commission expires:

(Seal)

_____
Notary Public

EXAMPLE

Exhibit A
Scope of Services

Contractor's Duties

During the term of this Agreement, Contractor shall perform the following duties, as directed by the Town:

Contractor's Deliverables

In performance of the duties described above, Contractor shall deliver the following items to the Town, during the timeframes established by the Town:

EXAMPLE

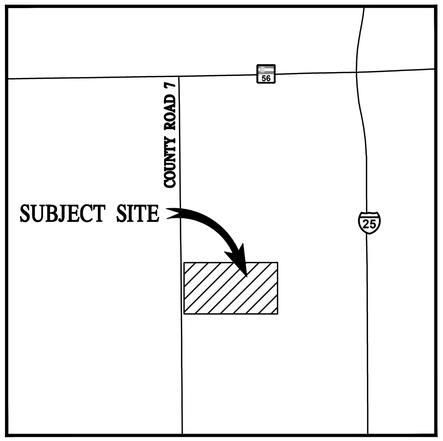
PROJECT LOCATION





CONSTRUCTION DOCUMENTS
SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO



VICINITY MAP
1" = 2000'

BASIS OF BEARINGS

ASSUMING THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, AS MONUMENTED BY A NO. 6 REBAR WITH A 2-1/2 INCH BRASS CAP STAMPED PLS 20142 AT THE WEST QUARTER CORNER OF SAID SECTION 22 AND A NO. 6 REBAR WITH A 3-1/4 INCH ALUMINUM CAP STAMPED PLS 38281 AT THE SOUTHWEST QUARTER CORNER OF SAID SECTION 22 TO BEAR SOUTH 00°33'58" EAST, BEING A GRID BEARING OF THE COLORADO STATE PLANE COORDINATE SYSTEM, NORTH ZONE, NORTH AMERICAN DATUM 1983/2007, A DISTANCE OF 2653.07 FEET WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

BENCHMARK

CP MOTO WITH AN ELEVATION OF 5024.51, NAVD 88

Sheet List Table

SHEET NUMBER	SHEET TITLE
C1	COVER
C2	GENERAL NOTES
C3	GRADING, EROSION AND SEDIMENT CONTROL PLAN I
C4	GRADING, EROSION AND SEDIMENT CONTROL PLAN II
C5	GRADING, EROSION AND SEDIMENT CONTROL PLAN II
C6	STORM DRAIN PLAN & PROFILE I
C7	STORM DRAIN PLAN & PROFILE II
C8	DETAILS I
C9	DETAILS 2

CONTACTS:

MUNICIPALITY
TOWN OF BERTHOUD
807 MOUNTAIN AVENUE
BERTHOUD, CO 80513
970.344.5807
CONTACT: DANIEL BUENDIA

ENGINEER
BASELINE ENGINEERING
112 N. RUBEY DRIVE, #201
GOLDEN, CO 80403
303.940.9966
CONTACT: LUKE MYERS, P.E.

BASELINE Engineering · Planning · Surveying
112 N RUBEY DRIVE, SUITE 210 • GOLDEN, COLORADO 80403
P: 3039403966 • F: 3039403959 • www.baselinecorp.com

ROW IMPROVEMENTS

ITEM NO	CDOT ITEM CODE #	DESCRIPTION - INSIDE RIGHT-OF-WAY	QUANTITY	UNIT
1	626-00000	MOBILIZATION	1	LS
2	202-00027	REMOVE & REPLACE EXISTING GRAVEL	212	SY
3	202-00220	REMOVE EXISTING ASPHALT ROAD SECTION	26	SY
4	950-00100	REPLACE EXISTING ASPHALT ROAD SECTION	26	SY
5	208-00053	INLET PROTECTION	4	EA
6	213-00067	REPLACE 5" MIN. DEPTH STABILIZED CRUSHER FINES TRAIL AND LANDSCAPE FABRIC	37	SF
7	216-00042	EROSION CONTROL BLANKET (3-YEAR COCNUT STRAW)	101	SY
8	212-00005	SEEDING (NATIVE)	101	SY
9	506-00206	RIPRAP (TYPE VL)	37	CY
10	506-00210	RIPRAP (TYPE L)	64	CY
11	213-00070	GEOTECH FABRIC (UNDER FES RIPRAP)	191	SY
12	603-01180	18" RCP PIPE	95.0	LF
13	603-05018	18" FLARED END SECTION	2	EA
14	603-01300	30" RCP PIPE	48.0	LF
15	603-05030	30" FLARED END SECTION	1	EA
16	604-13005	TYPE '13' VALLEY INLET	2	EA
17	950-00303	FINE GRADING & SHAPING	0.1	ACRE
18	950-00303	CUT	161	CY
19	950-00303	FILL	2	CY
20	950-01400	EXPORT EARTHWORK	159	CY

OPEN SPACE IMPROVEMENTS

ITEM NO	CDOT ITEM CODE #	DESCRIPTION - OPEN SPACE	QUANTITY	UNIT
21	626-00000	MOBILIZATION	1	LS
22	208-00002	SEDIMENT CONTROL LOG	186	LF
23	208-00041	ROCK SOCK CHECK DAM	90	LF
24	216-00042	EROSION CONTROL BLANKET (3-YEAR COCNUT STRAW)	2,076	SY
25	212-00005	SEEDING (NATIVE)	2,076	SY
26	506-00209	RIPRAP (TYPE L) (@ EA 30 RCP FES)	6	CY
27	213-00070	GEOTECH FABRIC (UNDER FES RIPRAP)	55	SY
28	603-01300	30" RCP PIPE	93	LF
29	603-05030	30" FLARED END SECTION	1	EA
30	950-00303	FINE GRADING & SHAPING	0.5	ACRE
31	950-00303	CUT	1,181	CY
32	950-00303	FILL	27	CY
33	950-01400	EXPORT EARTHWORK	1,154	CY
34	213-00067	REPLACE 5" MIN. DEPTH STABILIZED CRUSHER FINES TRAIL AND LANDSCAPE FABRIC	1,894	SF

811 Know what's **below.** **Call** before you dig.

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025-08-13 DANIEL B REVISIONS	GCT	

DESIGNED BY ITT | DRAWN BY ITT | CHECKED BY NJN

TOWN OF BERTHOUD
TOWN OF BERTHOUD — WELD COUNTY
SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
COVER

PREPARED UNDER THE DIRECT SUPERVISION OF

12/09/25

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM	BASELINE
SURVEY DATE	12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04-Cover.Detail.dwg
SHEET	01 OF 9

C1

N:\co3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04-Cover.Detail.dwg, 12/9/2025 10:32:08 AM, Garrett Tsouproke

CONSTRUCTION DOCUMENTS
SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO

GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST TOWN OF BERTHOUD STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC AND PRIVATE IMPROVEMENTS, COLORADO DEPARTMENT OF TRANSPORTATION, MOUNTAIN VIEW FIRE PROTECTION DISTRICT REQUIREMENTS, UTILITY COMPANIES, AND ALL APPLICABLE STATE AND LOCAL STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL HAVE IN POSSESSION AT THE JOB SITE AT ALL TIMES ONE (1) SIGNED COPY OF APPROVED PLANS, STANDARDS AND SPECIFICATIONS, AND PERMITS. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EMERGENCY ACCESS ROUTES TO THE SITE AND STRUCTURE AT ALL TIMES PER THE APPLICABLE MOUNTAIN VIEW FIRE PROTECTION DISTRICT REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ANY VARIANCE TO THE ABOVE DOCUMENTS. THE CONTRACTOR SHALL NOTIFY THE TOWN ENGINEER OF ANY CONFLICTING STANDARDS OR SPECIFICATIONS. IN THE EVENT OF ANY CONFLICTING STANDARD OR SPECIFICATION, THE MORE STRINGENT OR HIGHER QUALITY STANDARD, DETAIL OR SPECIFICATION SHALL APPLY.
3. THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE CODES, LICENSES, STANDARD SPECIFICATIONS, PERMITS, BONDS, ETC., WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK, INCLUDING, BUT NOT LIMITED TO A LOCAL AND STATE GROUNDWATER DISCHARGE AND COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT (CDPHE) STORMWATER DISCHARGE PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITY.
4. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY AUTHORIZED TOWN OF BERTHOUD PERSONNEL.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE TOWN ENGINEER, GEOTECHNICAL ENGINEER, AND ALL UTILITY OWNERS, AT LEAST 48 HOURS PRIOR TO START OF ANY CONSTRUCTION, PRIOR TO BACKFILLING, AND AS REQUIRED BY JURISDICTIONAL AUTHORITY AND/OR PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL CONTINUE WITH NOTIFICATIONS THROUGHOUT THE PROJECT AS REQUIRED BY THE STANDARDS AND SPECIFICATIONS.
6. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE; INCLUDING, SAFETY OF PERSONS AND PROPERTY DURING THE PERFORMANCE OF WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE TOWN CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.
7. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN FOR TOWN APPROVAL BY THE TOWN OF BERTHOUD PRIOR TO CONSTRUCTION AND PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY. THE CONTRACTOR AGREES TO COMPLY WITH THE PROVISIONS OF THE TRAFFIC CONTROL PLAN AND THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)," PART VI, FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL. ALL TEMPORARY AND PERMANENT TRAFFIC SIGNS SHALL COMPLY TO THE MUTCD WITH REGARD TO SIGN SHAPE, COLOR, SIZE, LETTERING, ETC. UNLESS OTHERWISE SPECIFIED. IF APPLICABLE, PART NUMBERS ON SIGNAGE DETAILS REFER TO MUTCD SIGN NUMBERS.
8. THE TYPE, SIZE, LOCATION, AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE AS SHOWN ON THE DRAWINGS BASED ON INFORMATION BY OTHERS. NOT ALL UTILITIES ARE SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE, SIZE, TYPE, AND LOCATION OF ALL UNDERGROUND UTILITIES WHETHER SHOWN OR NOT ALONG THE ROUTE OF THE WORK. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO DATE OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY SIZE AND HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING FACILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE TOWN OF ANY DISCREPANCIES. THE ENGINEER AND/OR OWNER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS SHOWN ON PLANS. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES AND COSTS WHICH MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES. THE CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO PROCEEDING WITH GRADING AND CONSTRUCTION. ALL WORK PERFORMED IN THE AREA OF UTILITIES SHALL BE PERFORMED AND INSPECTED ACCORDING TO THE REQUIREMENTS OF THE UTILITY OWNER. LIKEWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAPPING ANY EXISTING UTILITY (INCLUDING DEPTH) WHICH MAY CONFLICT WITH THE PROPOSE CONSTRUCTION, AND FOR RELOCATING ENCOUNTERED UTILITIES AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL CONTACT AND RECEIVE APPROVAL FROM TOWN ENGINEER AND THE UTILITY OWNER BEFORE RELOCATING ANY ENCOUNTERED UTILITIES. CONTRACTOR RESPONSIBLE FOR SERVICE CONNECTIONS, AND RELOCATING AND RECONNECTING AFFECTED UTILITIES AS COORDINATED WITH UTILITY OWNER AND/OR ENGINEER, INCLUDING NONMUNICIPAL UTILITIES (TELEPHONE, GAS, CABLE, ETC., WHICH SHALL BE COORDINATED WITH THE UTILITY OWNER). THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE TOWN ENGINEER UPON DISCOVERY OF A UTILITY DISCREPANCY OR CONFLICT. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO (1-800-922-1987, WWW.UNCC.ORG).
9. ALL TRENCHES SHALL BE ADEQUATELY SUPPORTED AND THE SAFETY OF WORKERS PROVIDED FOR AS REQUIRED BY THE MOST RECENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION." THESE REGULATIONS ARE DESCRIBED IN SUBPART P, PART 1926 OF THE CODE OF FEDERAL REGULATIONS. SHEETING AND SHORING SHALL BE UTILIZED WHERE NECESSARY TO PREVENT ANY EXCESSIVE WIDENING OR SLOUGHING OF THE TRENCH WHICH MAY BE DETRIMENTAL TO HUMAN SAFETY, TO THE PIPE BEING PLACED, TO TREES, OR TO ANY EXISTING STRUCTURE WHERE EXCAVATIONS ARE MADE UNDER SEVERE WATER CONDITIONS. THE CONTRACTOR MAY BE REQUIRED TO USE AN APPROVED PILING INSTEAD OF SHEETING AND SHORING.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. GROUNDWATER TO BE PUMPED SHALL BE TESTED, PERMITTED, AND PUMPED PER THE STATE OF COLORADO AND LOCAL GROUNDWATER DISCHARGING PERMIT REQUIREMENTS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING NEARBY PUBLIC STREETS OF MUD OR DEBRIS DUE TO CONSTRUCTION ACTIVITY INITIATED BY SAID CONTRACTOR ON A DAILY BASIS OR AS OTHERWISE DIRECTED BY AUTHORIZED TOWN PERSONNEL.
12. ALL SURPLUS MATERIALS, TOOLS, AND TEMPORARY STRUCTURES, FURNISHED BY THE CONTRACTOR, SHALL BE REMOVED FROM THE PROJECT SITE BY THE CONTRACTOR. ALL DEBRIS AND RUBBISH CAUSED BY THE OPERATIONS OF THE CONTRACTOR SHALL BE REMOVED, AND THE AREA OCCUPIED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ITS ORIGINAL CONDITION OR BETTER, WITHIN 48 HOURS OF PROJECT COMPLETION.
13. PRIOR TO THE BEGINNING OF WORK, A PRECONSTRUCTION CONFERENCE SHALL BE HELD BETWEEN THE TOWN, THE RESPONSIBLE PARTY WHO IS SCHEDULED TO PERFORM THE WORK, THE DESIGNATED ON-SITE FIELD REPRESENTATIVE, THE CONSULTING ENGINEER OR LANDSCAPE PROFESSIONAL, AND ANY OTHER ENTITIES INVOLVED IN THE CONSTRUCTION.
14. THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE TOWN OF BERTHOUD STANDARDS AND SPECIFICATION, THE STATE OF COLORADO, MILE HIGH FLOOD DISTRICT "URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3", THE M-STANDARD PLANS OF THE COLORADO DEPARTMENT OF TRANSPORTATION, AND THE APPROVED EROSION CONTROL PLAN. THE TOWN OF BERTHOUD MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL EROSION CONTROL MEASURES AT THE CONTRACTOR'S EXPENSE DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE PLANS DO NOT FUNCTION AS INTENDED. THE CONTRACTOR IS RESPONSIBLE FOR PROHIBITING SILT AND DEBRIS LADEN RUNOFF FROM LEAVING THE SITE, AND FOR KEEPING ALL PUBLIC AREAS FREE OF MUD AND DEBRIS. THE CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING FINAL GRADES AND FOR REMOVING ACCUMULATED SEDIMENTATION FROM ALL AREAS INCLUDING SWALES AND DETENTION/WATER QUALITY AREAS. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY THE TOWN OF BERTHOUD.
15. DEVELOPMENT PHASING OF ANY PROJECT MUST BE SHOWN ON THE CONSTRUCTION PLANS, APPROVED BY THE TOWN ENGINEER AND MADE A PART OF THE APPLICATION PROCEDURE. NO PHASING SHALL BE PERMITTED UNLESS THIS REQUIREMENT HAS BEEN ADHERED TO.
16. NO WORK SHALL BEGIN UNTIL THE INSTALLING RESPONSIBLE PARTY IS IN POSSESSION OF AN APPROVED SET OF PLANS AND THE TOWN OF BERTHOUD STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC AND PRIVATE IMPROVEMENTS, AND ALL NECESSARY PERMITS FOR THE IMPROVEMENTS HAS BEEN ISSUED BY THE TOWN. TOWN ENGINEERING'S APPROVAL SHALL BE FOR GENERAL CONFORMITY TO THE UTILITY SPECIFICATIONS AND SHALL NOT CONSTITUTE BLANKET APPROVAL OF ALL DIMENSIONS, QUANTITIES AND DETAILS OF THE MATERIAL OR EQUIPMENT SHOWN. NOR SHALL SUCH APPROVAL RELIEVE THE RESPONSIBLE PARTY, CONSULTING ENGINEER, OR LANDSCAPE ARCHITECT OF THEIR RESPONSIBILITY FOR ERRORS CONTAINED IN THE DRAWINGS.
17. THE RESPONSIBLE PARTY SHALL FURNISH REASONABLE AID AND ASSISTANCE REQUIRED BY THE TOWN ENGINEER FOR THE PROPER EXAMINATION OF THE MATERIALS AND WORK. WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACCEPTED WORKMANSHIP PRACTICES AND THE TOWN OF BERTHOUD STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC AND PRIVATE IMPROVEMENTS. ANY WORK NOT ACCEPTED BY THE TOWN ENGINEER SHALL BE REDONE UNTIL COMPLIANCE WITH THESE STANDARDS IS ACHIEVED. INSTRUCTIONS GIVEN BY THE TOWN ENGINEER RELATING TO QUALITY OF MATERIALS AND WORKMANSHIP MUST BE OBEYED AT ONCE BY THE RESPONSIBLE PARTY. THE TOWN SHALL NOT SUPERVISE SET OUT WORK, OR GIVE LINE AND GRADE STAKES.
18. THE MATERIALS USED IN PROJECTS SHALL BE NEW AND SUBJECT TO THE INSPECTION AND APPROVAL OF THE INSPECTOR AT ALL TIMES. THE INSPECTOR HAS THE RIGHT TO PERFORM ANY TESTING DEEMED NECESSARY TO ENSURE COMPLIANCE OF THE MATERIAL WITH THESE STANDARDS. NO MATERIAL SHALL BE USED BEFORE BEING INSPECTED AND APPROVED BY THE INSPECTOR. FAILURE OR NEGLECT ON THE PART OF THE INSPECTOR TO CONDEMN OR REJECT INFERIOR MATERIALS OR WORK SHALL NOT BE CONSTRUED TO IMPLY THEIR ACCEPTANCE SHOULD THEIR INFERIORITY BECOME EVIDENT AT ANY TIME PRIOR TO FINAL ACCEPTANCE OF THE WORK. INSPECTORS HAVE THE AUTHORITY TO REJECT DEFECTIVE OR INFERIOR MATERIALS AND/OR DEFECTIVE WORKMANSHIP AND TO SUSPEND WORK UNTIL SUCH TIME AS THE RESPONSIBLE PARTY SHALL CORRECT THE DISCREPANCIES IN QUESTION.
19. WHENEVER DEFECTIVE MATERIALS AND WORK ARE REJECTED, THE RESPONSIBLE PARTY SHALL PROMPTLY REMOVE SUCH DEFECTIVE MATERIALS AND CONSTRUCTION FROM THE JOB SITE AND REPLACE ALL DEFECTIVE PORTIONS TO THE SATISFACTION OF THE TOWN ENGINEER. IN THE EVENT THE RESPONSIBLE PARTY FAILS TO REMOVE REJECTED ITEMS FROM THE JOB SITE WITHIN A REASONABLE LENGTH OF TIME, THE TOWN ENGINEER MAY ARRANGE FOR SUCH REMOVAL AT THE EXPENSE OF THE RESPONSIBLE PARTY.
20. INSPECTION SHALL NOT RELIEVE THE RESPONSIBLE PARTY FROM ANY OBLIGATION TO PERFORM THE WORK STRICTLY IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS OR ANY MODIFICATIONS THEREOF. WORK NOT SO CONSTRUCTED SHALL BE REMOVED AND CORRECTED BY THE RESPONSIBLE PARTY AT HIS SOLE EXPENSE, WHENEVER SO ORDERED BY THE TOWN ENGINEER, WITHOUT REFERENCE TO ANY PREVIOUS ERROR OR OVERSIGHT IN INSPECTION.
21. EXCEPT IN CASES OF EMERGENCY, MAINTENANCE, OR PROTECTION OF WORK ALREADY COMPLETED, NO WORK SHALL BE ALLOWED BETWEEN THE HOURS OF 7 P.M. AND 7 A.M.; NOR ON SATURDAY, SUNDAY, OR LEGAL HOLIDAYS UNLESS APPROVED BY THE TOWN ENGINEER IN EACH CASE. WHEN ANY INSPECTOR IS REQUIRED TO WORK OUTSIDE THE HOURS OF 7 A.M. TO 4 P.M. ON REGULAR TOWN BUSINESS DAYS, OVERTIME SHALL BE CHARGED TO THE RESPONSIBLE PARTY. HOWEVER, SUCH INSPECTORS SHALL REMAIN EMPLOYEES OF THE TOWN FOR ALL PURPOSES. REQUESTS FOR OVERTIME SHALL BE MADE TO THE TOWN ENGINEER AT LEAST 48 HOURS IN ADVANCE. PAYMENT FOR SUCH OVERTIME WORK SHALL BE MADE TO THE TOWN PRIOR TO FINAL ACCEPTANCE.
22. IN THE EVENT ONE OR MORE INSPECTORS REPRESENTING PRIVATE CONSULTING ENGINEERING FIRMS ARE ALSO INSPECTING A PROJECT ALONG WITH THE TOWN ENGINEER, THE INSTRUCTIONS GIVEN BY THE TOWN ENGINEER SHALL PREVAIL IN THE EVENT OF CONFLICTING INSTRUCTIONS.
23. ADA COMPLIANCE: THE CROSS-SLOPE OF ALL WALKS MUST NOT BE STEEPER THAN 48:1 (2.0%) PERPENDICULAR TO DIRECTION OF TRAVEL. RUNNING SLOPE OF ACCESSIBLE WALKS MUST BE NOT STEEPER THAN 1:20 (5.0%) IN DIRECTION OF TRAVEL. MAXIMUM GRADE OF ACCESSIBLE CURB RAMPS AND RAMPS IS 1:12 (8.3%). CURB RAMPS SHALL PROVIDE A LANDING AT THE TOP AND RAMP RUNS PROVIDE LANDINGS AT THE BOTTOM AND TOP OF EACH RAMP RUN AT A SLOPE NOT TO EXCEED 1:48. RAMPS RISE EXCEEDING SIX INCHES SHALL INCLUDE HANDRAILS. RAMP RUNS WITH A RISE GREATER THAN 6 INCHES (150 MM) SHALL HAVE HANDRAILS COMPLYING WITH SECTION 505. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 1:48 IN ALL DIRECTIONS. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO PLACEMENT OF FLATWORK OF SITE CONDITIONS OR DISCREPANCIES WHICH PREVENT TYPICAL REQUIRED GRADES FROM BEING ACHIEVED. ALL RAMPS, STAIRS, EDGE PROTECTION, AND RAILINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT ADA STANDARDS. ACCESSIBLE CURB RAMPS SHALL CONFORM TO THE CDOT MSTANDARDS (SEE DETAIL M-608-1, ETC).
24. PROTECT ALL TREES AND VEGETATION. PLACE CONSTRUCTION FENCING AT DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. DEEP WATER TREES WEEKLY. HAND EXCAVATION REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN DRIPLINE OF TREES. REPAIR OF ANY DAMAGE TO EXISTING IMPROVEMENTS OR LANDSCAPING IS THE RESPONSIBILITY OF THE CONTRACTOR.
25. THE WORK SHALL BE SURVEYED AND STAKED UNDER THE SUPERVISION OF A LICENSED LAND SURVEYOR IN ACCORDANCE WITH THE APPROVED PLANS.
26. RIM AND GRATE ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL ADJUST RIMS AND OTHER IMPROVEMENTS TO MATCH FINAL PAVEMENT AND FINISHED GRADE ELEVATIONS.
27. THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD A COMPLETE SET OF CONSTRUCTION RECORD DRAWINGS ("AS-BUILTS"), FOR THE CONSTRUCTED IMPROVEMENTS. THE PLANS SHALL SHOW SUFFICIENT DIMENSION TIES TO PERMANENT SURFACE FEATURES FOR ALL BURIED FACILITIES TO ALLOW FOR FUTURE LOCATING. THE PLANS SHALL SHOW FINAL PAVEMENT, FLOW LINE ELEVATIONS, CONTOURS AT POND/DRAINAGE FEATURES (AS SURVEYED AND CERTIFIED BY A COLORADO P.L.S.), MANHOLE,PIPE, AND INLET LOCATIONS, INVERTS, GRATE ELEVATIONS, SIZES OF ALL UTILITIES, AND ANY VARIATIONS FROM THE APPROVED PLAN. FINAL AS-BUILT PLANS PREPARED BY THE ENGINEER OF RECORD SHALL BE PROVIDED TO THE TOWN OF BERTHOUD.
28. IF A FOUNDATION UNDERDRAIN SYSTEM IS INSTALLED IN THE PUBLIC RIGHT-OFWAY, THE FOLLOWING STATEMENT SHALL BE INCLUDED IN THE DRAWINGS:
    28.1. "THE FOUNDATION UNDERDRAIN SYSTEM IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER OR ITS ASSIGNS. THE TOWN IS NOT RESPONSIBLE FOR THE MAINTENANCE OR REPAIR OF SAID SYSTEM."

GRADING NOTES

1. CONSTRUCTION SHALL ADHERE TO THE FOLLOWING SEQUENCE UNLESS OTHERWISE SPECIFIED BY THE TOWN ENGINEER: SANITARY SEWER INSTALLATION, WATER MAIN INSTALLATION, CURB AND GUTTER INSTALLATION, WATER SERVICE INSTALLATION.
2. COMPACTION OF ALL TRENCHES MUST BE ATTAINED AND COMPACTION TEST RESULTS SUBMITTED TO THE ENGINEER AND THE TOWN OF BERTHOUD PRIOR TO FINAL ACCEPTANCE.
3. ALL WORK, INCLUDING CORRECTION WORK, SHALL BE INSPECTED BY A TOWN REPRESENTATIVE WHO SHALL HAVE THE AUTHORITY TO HALT CONSTRUCTION WHEN STANDARD CONSTRUCTION PRACTICES ARE NOT BEING ADHERED TO.
4. DEVELOPER AND BUILDER SHALL REGULARLY PATROL THE PUBLIC LANDS ADJACENT TO THE DEVELOPMENT TO REMOVE CONSTRUCTION DEBRIS AND KEEP THE SITE CLEAN AND SAFE.
5. ALL SITE GRADING (EXCAVATION, EMBANKMENT, AND COMPACTION) SHALL CONFORM TO THE RECOMMENDATIONS OF THE LATEST SOILS INVESTIGATION FOR THIS PROPERTY AND SHALL FURTHER BE IN CONFORMANCE WITH THE TOWN OF BERTHOUD STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC AND PRIVATE IMPROVEMENTS', LATEST EDITION. A CDPS GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES SHALL BE OBTAINED PRIOR TO ANY GRADING BEING PERFORMED ON SITES ONE (1) ACRE OR LARGER IN SIZE. THESE PERMITS CAN BE OBTAINED FROM THE STATE WATER QUALITY CONTROL DIVISION.
6. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATION AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
7. TOPSOIL SHALL BE STOCKPILED TO THE EXTENT PRACTICABLE ON THE SITE FOR USE ON AREAS TO BE REVEGETATED. ANY AND ALL STOCKPILES SHALL BE LOCATED AND PROPER MEASURES TAKEN TO CONTROL EROSION AND SEDIMENT MOVEMENT. AT ALL TIMES, THE PROPERTY SHALL BE MAINTAINED AND/OR WATERED TO PREVENT WIND-CAUSED EROSION. EARTHWORK OPERATIONS SHALL BE DISCONTINUED WHEN DUST SIGNIFICANTLY IMPACTS ADJACENT PROPERTY. IF EARTHWORK IS COMPLETE OR DISCONTINUED AND DUST FROM THE SITE CONTINUES TO CREATE PROBLEMS, THE OWNER/DEVELOPER SHALL IMMEDIATELY INSTITUTE MITIGATIVE MEASURES AND SHALL CORRECT DAMAGE TO ADJACENT PROPERTY.
9. PERMANENT SLOPES SHALL NOT EXCEED 4:1 (H:V) IN AREAS TO BE SEEDED OR SODDED. RETAINING WALLS SHALL BE REVIEWED AND APPROVED BY SEPARATE APPLICATION TO THE TOWN OF BERTHOUD.
10. THIS EROSION AND SEDIMENT CONTROL PLAN HAS BEEN SUBMITTED TO THE TOWN OF BERTHOUD AND IS IN GENERAL CONFORMANCE WITH THE TOWN'S EROSION CONTROL STANDARDS. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURE MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEM OR IF THE PROPOSED EROSION CONTROL MEASURES DO NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS EROSION CONTROL PLAN AND THE OBLIGATION OF THE LANDOWNER SHALL RUN WITH THE LAND UNTIL SUCH TIME AS THE EROSION CONTROL PLAN IS PROPERLY COMPLETED, OFFICIALLY MODIFIED, OR VOIDED.

SITE SPECIFIC NOTES:

1. PERMANENT OR TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED TO ALL DISTURBED AREAS AND SOIL STOCKPILES WITHIN 30 DAYS TO ALL AREAS INCLUDING AREAS WHICH WILL BE LEFT DORMANT FOR MORE THAN 60 DAYS.
2. ALL DISTURBED AREAS SHALL BE RESEEDED. THE SEED MIX SHALL BE IN ACCORDANCE WITH THE APPROVED MATERIALS LIST OF SEED MIXES WITHIN THE TOWN OF BERTHOUD CODE.

TOWN OF BERTHOUD WAIVER STATEMENT:

ALL WORK SHALL BE CONSTRUCTED TO THE TOWN STANDARDS AND SPECIFICATIONS. THESE PLANS HAVE BEEN REVIEWED BY THE TOWN OF BERTHOUD FOR CONCEPTS ONLY AND GENERAL CONFORMANCE WITH THE TOWN'S STANDARDS AND SPECIFICATIONS. THE REVIEW BY THE TOWN OF BERHTOUD DOES NOT IMPLY RESPONSIBILITY BY THE TOWN OF BERTHOUD OR THE TOWN ENGINEER FOR ACCURACY AND CORRECTNESS OF THE PLANS OR CALCULATIONS.

LEGEND

EXISTING LINETYPES	PROPOSED LINETYPES	
5280	5280	MAJOR CONTOUR (5' INTERVAL)
81	81	MINOR CONTOUR (1' INTERVAL)
		EDGE OF ASPHALT
		EDGE OF GRAVEL
		CURB AND GUTTER (SPILL/CATCH)
		WIRE FENCE
		DITCH FLOWLINE
ST	ST	STORM SEWER

EXISTING SYMBOLS	PROPOSED SYMBOLS	
S	S	SANITARY MANHOLE
25.4±	25.36	SPOT ELEVATION
		FLOW DIRECTION, TYPICALLY ON PAVED SURFACES
		FLOW DIRECTION, TYPICALLY IN GRASSED SWALE
3:1	3:1	NOMINAL SLOPE ON CUT OR FILL
		CONCRETE FLARED END SECTION
		METAL FLARED END SECTION
		SIGN
		UTILITY CROSSING
	ECB	EROSION CONTROL BLANKET
	IP	INLET PROTECTION
	SCL	SEDIMENT CONTROL LOG
	RS	ROCK SOCK

SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF INLET PROTECTION.
   -TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)

2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.

5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.

6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

811 Know what's below. Call before you dig.

BASELINE
Engineering • Planning • Surveying
112 N RUBEY DRIVE, SUITE 210 • GOLDEN, COLORADO 80403
P: 3033403868 • F: 3039403959 • www.baselinecorp.com

DESIGNED BY ITT | DRAWN BY ITT | CHECKED BY NJN

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025-08-13 DANIEL B REVISIONS	GCT	

TOWN OF BERTHOUD
TOWN OF BERTHOUD | WELD COUNTY
SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
GENERAL NOTES

PREPARED UNDER THE DIRECTION SUPERVISION OF
12/09/25

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM: BASELINE	SURVEY DATE: 12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04-Cover.Detail.dwg
SHEET 02 OF 9	

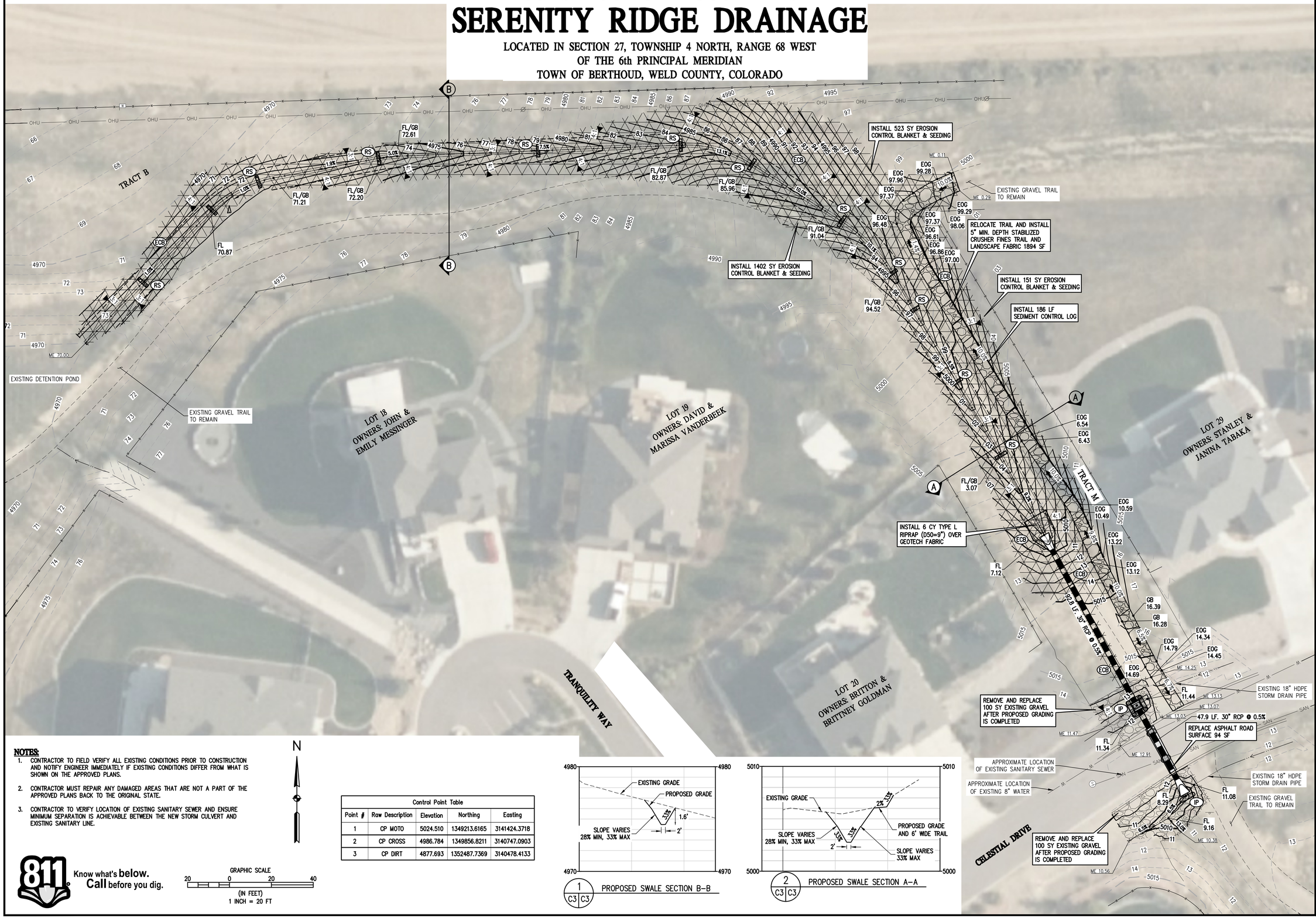
C2

N:\co3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04-Cover.Detail.dwg, 12/9/2025 10:38:50 AM, Garrett Tsuprake

CONSTRUCTION DOCUMENTS

SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO



NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IMMEDIATELY IF EXISTING CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE APPROVED PLANS.
2. CONTRACTOR MUST REPAIR ANY DAMAGED AREAS THAT ARE NOT A PART OF THE APPROVED PLANS BACK TO THE ORIGINAL STATE.
3. CONTRACTOR TO VERIFY LOCATION OF EXISTING SANITARY SEWER AND ENSURE MINIMUM SEPARATION IS ACHIEVABLE BETWEEN THE NEW STORM CULVERT AND EXISTING SANITARY LINE.

N

Control Point Table				
Point #	Raw Description	Elevation	Northing	Easting
1	CP MOTO	5024.510	1349213.6165	3141424.3718
2	CP CROSS	4986.784	1349856.8211	3140747.0903
3	CP DIRT	4877.693	1352487.7369	3140478.4133

1 C3 C3 PROPOSED SWALE SECTION B–B

2 C3 C3 PROPOSED SWALE SECTION A–A

811 Know what's **below.** **Call** before you dig.

GRAPHIC SCALE
20 0 20 40
(IN FEET)
1 INCH = 20 FT

BASELINE
Engineering • Planning • Surveying
102 N. RUBEY DRIVE, SUITE 210 • GOLDEN, COLORADO 80403
P: 3039403868 • F: 3039403869 • www.baselinecorp.com

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025-08-13 DANIEL B REVISIONS	GCT	

DESIGNED BY ITT | DRAWN BY ITT | CHECKED BY NJN

TOWN OF BERTHOUD
TOWN OF BERTHOUD — WELD COUNTY

SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
GRADING, EROSION AND SEDIMENT CONTROL PLAN I

PREPARED UNDER THE DIRECT SUPERVISION OF
Garrett C. Tsuprake, PE 38599 — 12/9/2025

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM	BASELINE
SURVEY DATE	12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04 -Grad.dwg
SHEET	03 OF 9

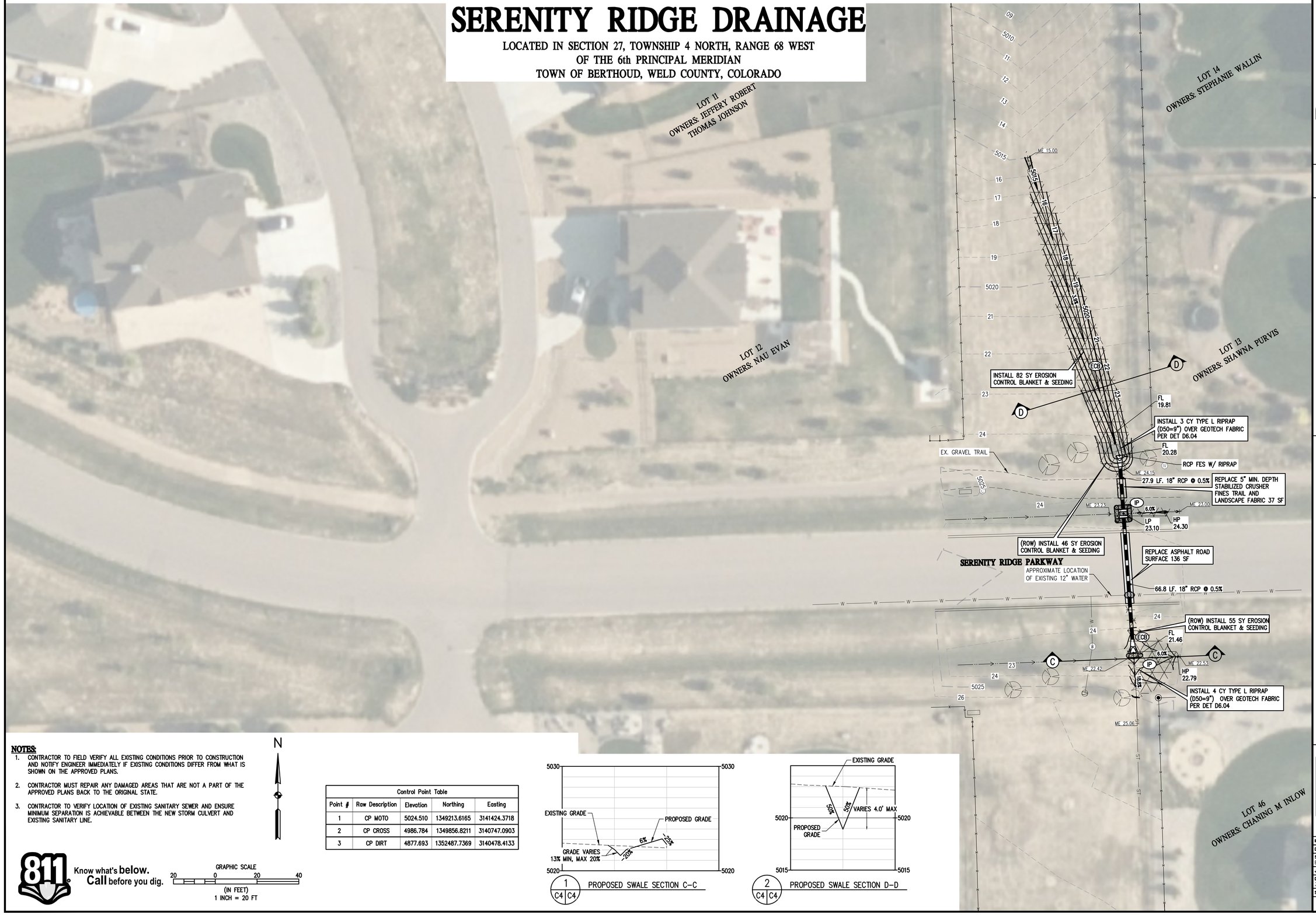
C3

N:\co3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04 -Grad.dwg, 12/9/2025 10:35:29 AM, Garrett Tsuprake

CONSTRUCTION DOCUMENTS

SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO



NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IMMEDIATELY IF EXISTING CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE APPROVED PLANS.
2. CONTRACTOR MUST REPAIR ANY DAMAGED AREAS THAT ARE NOT A PART OF THE APPROVED PLANS BACK TO THE ORIGINAL STATE.
3. CONTRACTOR TO VERIFY LOCATION OF EXISTING SANITARY SEWER AND ENSURE MINIMUM SEPARATION IS ACHIEVABLE BETWEEN THE NEW STORM CULVERT AND EXISTING SANITARY LINE.

N

Control Point Table				
Point #	Raw Description	Elevation	Northing	Easting
1	CP MOTO	5024.510	1349213.6165	3141424.3718
2	CP CROSS	4986.784	1349856.8211	3140747.0903
3	CP DIRT	4877.693	1352487.7369	3140478.4133

1 C4 | C4 PROPOSED SWALE SECTION C–C

2 C4 | C4 PROPOSED SWALE SECTION D–D

811 Know what's **below.** **Call** before you dig.

GRAPHIC SCALE
20 0 20 40
(IN FEET)
1 INCH = 20 FT

BASELINE
Engineering · Planning · Surveying
112 N RUBEY DRIVE, SUITE 210 • GOLDEN, COLORADO 80403
P: 3039403868 • F: 3039403869 • www.baselinecorp.com

DESIGNED BY	DRAWN BY	CHECKED BY
ITT	ITT	NJN

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025-08-13 DANIEL B REVISIONS	GCT	

TOWN OF BERTHOUD
WELD COUNTY
TOWN OF BERTHOUD

SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
GRADING, EROSION AND SEDIMENT CONTROL PLAN II

PREPARED UNDER THE DIRECT SUPERVISION OF

12/09/25

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM	BASELINE
SURVEY DATE	12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04 -Grad.dwg
SHEET	04 OF 9

C4

N:\co3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04 -Grad.dwg, 12/9/2025 10:40:26 AM, Garrett Tsuprake

CONSTRUCTION DOCUMENTS
SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO



N

GRAPHIC SCALE
20 0 20 40
(IN FEET)
1 INCH = 20 FT

NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IMMEDIATELY IF EXISTING CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE APPROVED PLANS.
2. CONTRACTOR MUST REPAIR ANY DAMAGED AREAS THAT ARE NOT A PART OF THE APPROVED PLANS BACK TO THE ORIGINAL STATE.
3. CONTRACTOR TO VERIFY LOCATION OF EXISTING SANITARY SEWER AND ENSURE MINIMUM SEPARATION IS ACHIEVABLE BETWEEN THE NEW STORM CULVERT AND EXISTING SANITARY LINE.

Control Point Table				
Point #	Raw Description	Elevation	Northing	Easting
1	CP MOTO	5024.510	1349213.6165	3141424.3718
2	CP CROSS	4986.784	1349856.8211	3140747.0903
3	CP DIRT	4877.693	1352487.7369	3140478.4133

811 Know what's **below.** **Call** before you dig.

BASELINE
Engineering • Planning • Surveying
102 N RUBEY DRIVE SUITE 210 • GOLDEN, COLORADO 80403
P: 3033403868 • F: 3033403869 • www.baselinecorp.com

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025-08-13 DANIEL B REVISIONS	GCT	

DESIGNED BY ITT | DRAWN BY ITT | CHECKED BY NJN

TOWN OF BERTHOUD
TOWN OF BERTHOUD | WELD COUNTY
SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
GRADING, EROSION AND SEDIMENT CONTROL PLAN II

PREPARED UNDER THE DIRECT SUPERVISION OF
COLORADO LICENSED
CHRISTOPHER R. MYERS
44363
12/09/25
PROFESSIONAL ENGINEER

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM	BASELINE
SURVEY DATE	12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04 -Grad.dwg
SHEET	05 OF 9

C5

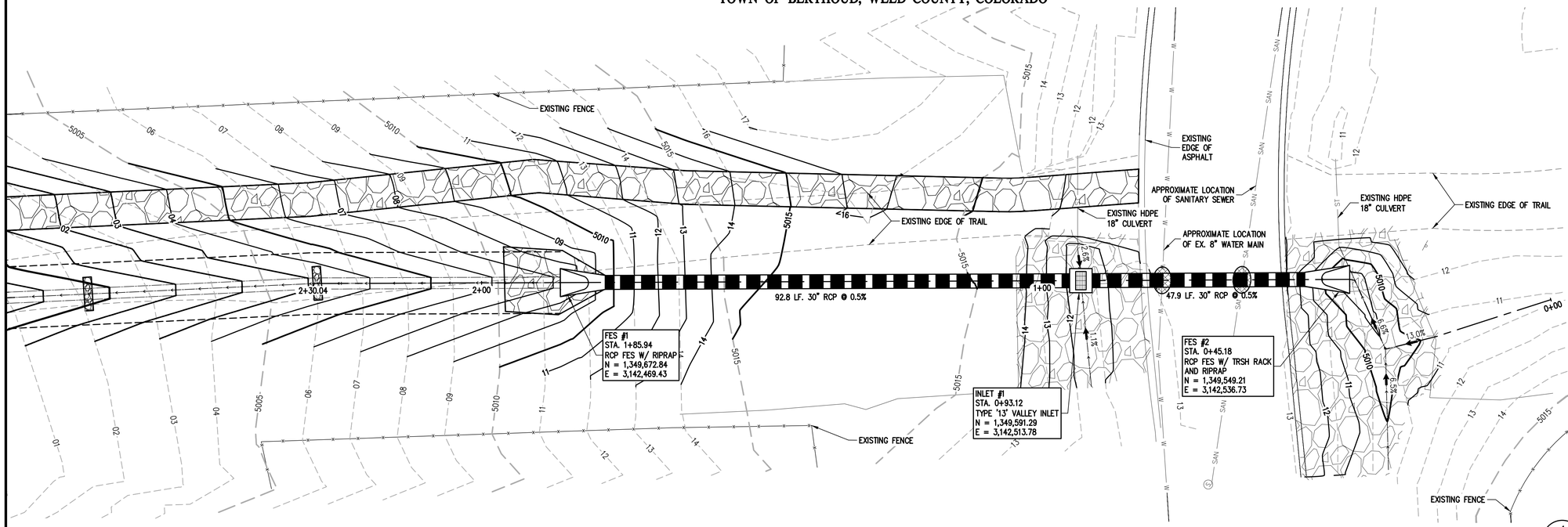
N:\co3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04 -Grad.dwg, 12/9/2025 10:37:42 AM, Garrett Tsuprake

CONSTRUCTION DOCUMENTS
SERENITY RIDGE DRAINAGE

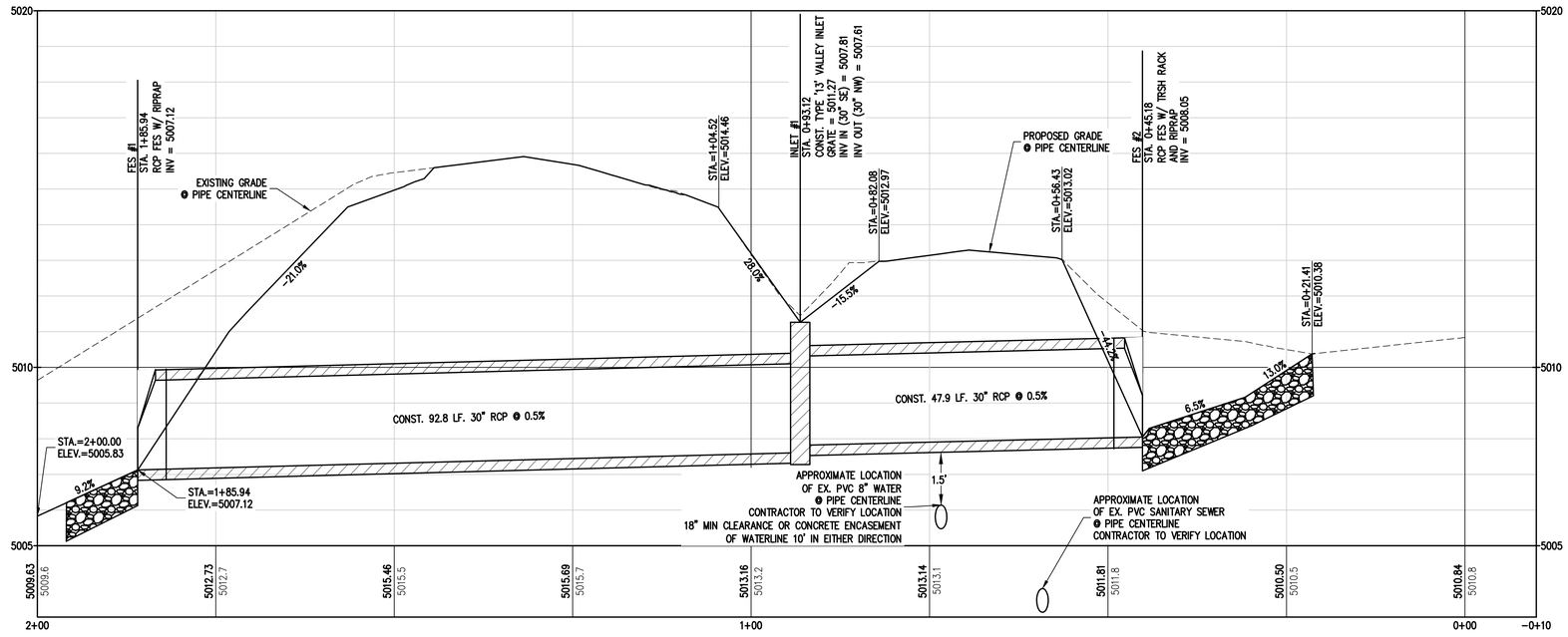
LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO

NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IMMEDIATELY IF EXISTING CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE APPROVED PLANS.
2. CONTRACTOR MUST REPAIR ANY DAMAGED AREAS THAT ARE NOT A PART OF THE APPROVED PLANS BACK TO THE ORIGINAL STATE.
3. CONTRACTOR TO VERIFY LOCATION OF EXISTING SANITARY SEWER AND ENSURE MINIMUM SEPARATION IS ACHIEVABLE BETWEEN THE NEW STORM CULVERT AND EXISTING SANITARY LINE.



1 C6 | C6 NEW 30" CULVERT PLAN & PROFILE



BASELINE
Engineering • Planning • Surveying
102 N RUBEY DRIVE SUITE 210 • GOLDEN, COLORADO 80403
P: 3033403868 • F: 3033403869 • www.baselinecorp.com

DESIGNED BY	DRAWN BY	CHECKED BY
ITT	ITT	NJN

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025-08-13 DANIEL B REVISIONS	GCT	

TOWN OF BERTHOUD
TOWN OF BERTHOUD
WELD COUNTY

SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
STORM DRAIN PLAN & PROFILE I

PREPARED UNDER THE DIRECT SUPERVISION OF

COLORADO LICENSED
STEVE R. MAY
44363
12/09/25
PROFESSIONAL ENGINEER

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM	BASELINE
SURVEY DATE	12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04 -Pipe.dwg
SHEET	05 OF 9

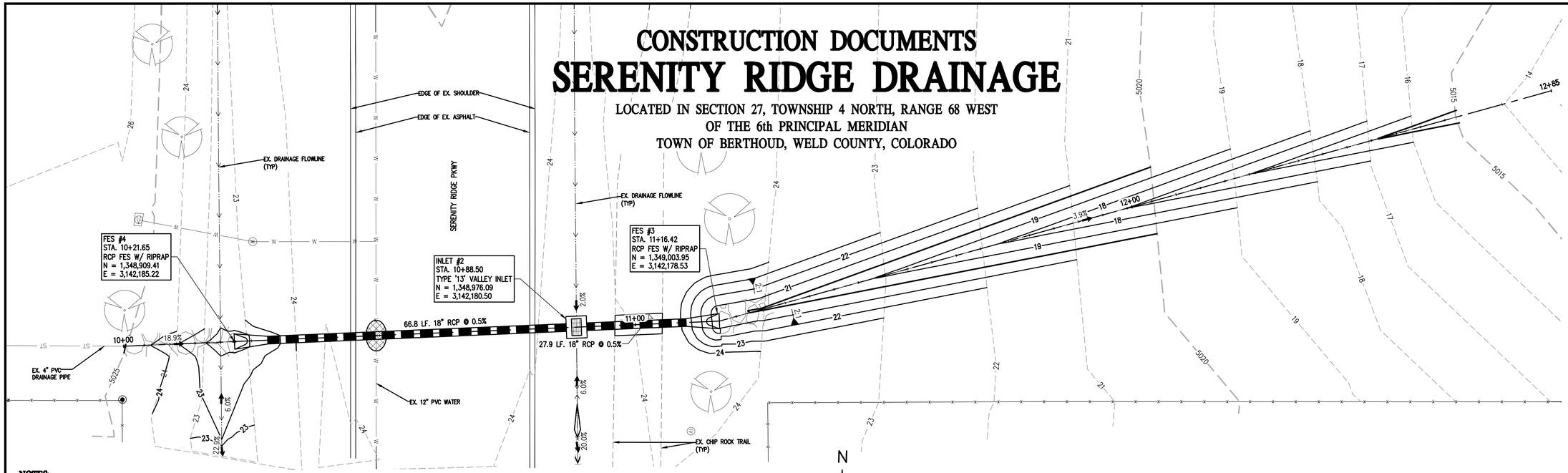
C6

N:\co3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04 -Pipe.dwg, 12/9/2025 10:36:18 AM, Garrett Tsouprake

CONSTRUCTION DOCUMENTS

SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO



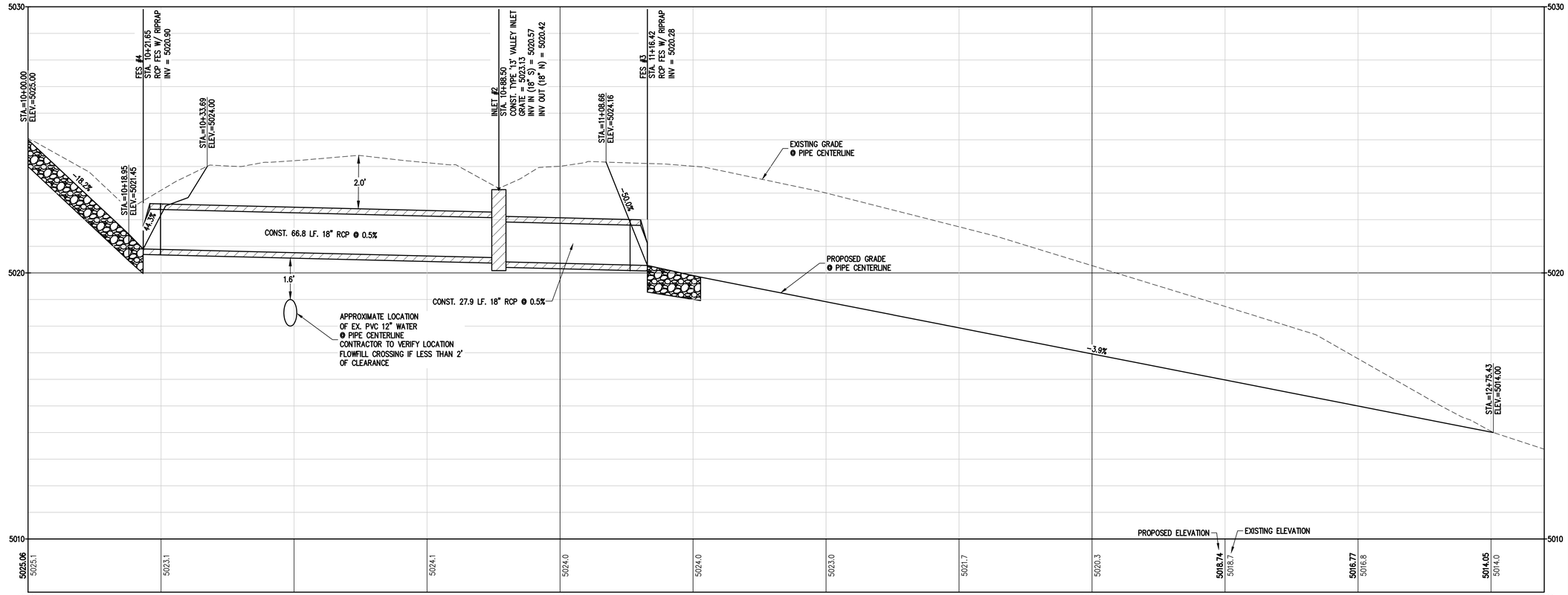
NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IMMEDIATELY IF EXISTING CONDITIONS DIFFER FROM WHAT IS SHOWN ON THE APPROVED PLANS.
2. CONTRACTOR MUST REPAIR ANY DAMAGED AREAS THAT ARE NOT A PART OF THE APPROVED PLANS BACK TO THE ORIGINAL STATE.
3. CONTRACTOR TO VERIFY LOCATION OF EXISTING SANITARY SEWER AND ENSURE MINIMUM SEPARATION IS ACHIEVABLE BETWEEN THE NEW STORM CULVERT AND EXISTING SANITARY LINE.

1 / C7 C7 NEW 18" CULVERT PLAN & PROFILE

N

GRAPHIC SCALE
10 0 10 20
(IN FEET)
HORIZ: 1 INCH = 10 FT
VERT: 1 INCH = 2 FT



BASELINE
Engineering • Planning • Surveying
122 N RUBEY DRIVE, SUITE 210 • GOLDEN, COLORADO 80403
P: 3039403968 • F: 3039403969 • www.baselinecorp.com

DESIGNED BY	DRAWN BY	CHECKED BY
ITT	ITT	NJN

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025-08-13 DANIEL B REVISIONS	GCT	

TOWN OF BERTHOUD

WELD COUNTY
TOWN OF BERTHOUD

SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
STORM DRAIN PLAN & PROFILE II

PREPARED UNDER THE DIRECT SUPERVISION OF

COLORADO LICENSED
GAGE R. MAY
44383
12/09/25
PROFESSIONAL ENGINEER

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM	BASELINE
SURVEY DATE	12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04 -Pipe.dwg
SHEET	07 OF 9

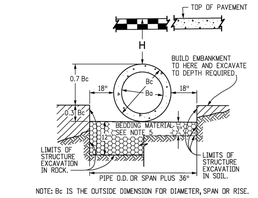
C7

N:\co3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04 -Pipe.dwg, 12/9/2025 10:33:45 AM, Garrett Tsouprake

CONSTRUCTION DOCUMENTS

SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO



NOTE: Bc IS THE OUTSIDE DIMENSION FOR DIAMETER, SPAN OR RISE.

PIPE INSTALLATION
(WITH 0.7 PROJECTION RATIO)

CIRCULAR (CIR)			VERTICAL ELLIPTICAL (VE)				HORIZONTAL ELLIPTICAL (HE)			
△ PIPE SIZE= Bd (INSIDE DIA)	WALL THICKNESS	0.3 Bc (OUTSIDE DIA)	SPAN	RISE	WALL THICKNESS	0.3 OUTSIDE RISE	SPAN	RISE	WALL THICKNESS	0.3 OUTSIDE RISE
IN.		FT.	IN.			FT.	IN.			FT.
12	2	0.40								
15	2-1/4	0.49								
18	2-1/2	0.58					23	14	2-3/4	0.49
21	2-3/4	0.66								
24	3	0.75					30	19	3-1/4	0.66
27	3-1/4	0.84					34	22	3-1/2	0.73
30	3-1/2	0.92					38	24	3-3/4	0.79
33	3-3/4	1.01								
36	4	1.10	29	45	4-1/2	1.35	45	29	4-1/2	0.95
42	4-1/2	1.28	34	53	5	1.58	53	34	5	1.10
48	5	1.45	38	60	5-1/2	1.78	60	38	5-1/2	1.23
54	5-1/2	1.62	43	68	6	2.00	68	43	6	1.38
60	6	1.80	48	76	6-1/2	2.23	76	48	6-1/2	1.53
66	6-1/2	1.97	53	83	7	2.43	83	53	7	1.68
72	7	2.15	58	91	7-1/2	2.65	91	58	7-1/2	1.83
78	7-1/2	2.32	63	98	8	2.85	98	63	8	1.98
84	8	2.50	68	106	8-1/2	3.08	106	68	8-1/2	2.13
90	8-1/2	2.68	72	113	9	3.28	113	72	9	2.25
96	9	2.85	77	121	9-1/2	3.50	121	77	9-1/2	2.40
102	9-1/2	3.02	82	128	9-3/4	3.69	128	82	9-3/4	2.54
108	10	3.20	87	136	10	3.90	136	87	10	2.68

△ ALSO EQUIVALENT ROUND DIMENSION FOR ELLIPTICAL PIPE.

DIMENSIONS FOR REINFORCED CONCRETE PIPE
(FOR INFORMATION ONLY)

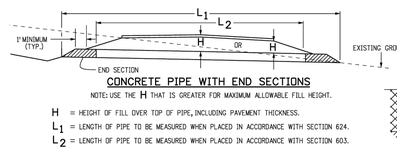
GENERAL NOTES

REINFORCED CONCRETE PIPE

1. FILL HEIGHTS GREATER THAN MAXIMUM ALLOWED IN THE HEIGHTS OF FILL TABLE ON THIS SHEET REQUIRE SPECIAL DESIGN OF STRUCTURE.
2. PIPE DESIGN IS BASED ON SAFETY FACTOR OF 1.33 ON ULTIMATE STRENGTH.
3. THE HEIGHTS OF FILL OVER TOP OF PIPE ARE BASED ON UNIT WEIGHT OF SOIL AT 135 LBS. PER CUBIC FT.
4. PIPE CLASS IS DETERMINED FROM 0.01 IN. CRACK D-LOAD.
5. BEDDING IS CLASS B (MODIFIED) (FROM CONCRETE PIPE DESIGN MANUAL-AMERICAN CONCRETE PIPE ASSOCIATION) WITH SETTLEMENT RATIO $R = 0.0$ (YIELDING BED). BEDDING MATERIAL FOR RIGID PIPE IN SOIL SHALL BE 3 IN. LOOSE THICKNESS STRUCTURE BACKFILL CLASS 2. BEDDING MATERIAL FOR RIGID PIPE IN ROCK SHALL BE 12 IN. LOOSE THICKNESS STRUCTURE BACKFILL CLASS 1.
6. CHANGES IN DESIGN FACTORS REQUIRE COMPENSATING CHANGES IN PIPE DESIGN.
7. MINIMUM WALL THICKNESS DIMENSIONS ARE BASED ON AASHTO M 170 (WALL B) FOR CIRCULAR PIPE, AND AASHTO M 207 FOR ELLIPTICAL PIPE.
8. SPACING FOR MULTIPLE PIPE INSTALLATIONS SHALL CONFORM TO THE DETAILS SHOWN ON STANDARD PLAN M-206-1.
9. WHEN A PIPE IS TO BE EXTENDED, THE SAME PIPE MATERIAL AND SIZE AS IN THE ORIGINAL PIPE INSTALLATION SHALL BE USED.

NONREINFORCED CONCRETE PIPE

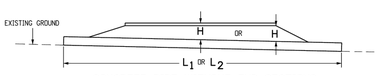
1. AT THE OPTION OF THE CONTRACTOR, NONREINFORCED CONCRETE PIPE CONFORMING TO AASHTO M 86 MAY BE USED IN LIEU OF REINFORCED CONCRETE PIPE FOR ALL SIZES 36 INCHES IN DIAMETER AND SMALLER. THE NONREINFORCED CONCRETE PIPE SHALL MEET THE SAME D-LOAD TO PRODUCE THE ULTIMATE LOAD UNDER THE THREE-EDGE BEARING METHOD AS SPECIFIED FOR REINFORCED CONCRETE PIPE. IN CONFORMANCE WITH AASHTO M 170, THE CONTRACTOR SHALL PROVIDE WRITTEN CERTIFICATION OF CONFORMANCE. THE WALL THICKNESS OF THE NONREINFORCED PIPE MAY BE INCREASED AS REQUIRED TO MEET D-LOAD REQUIREMENT.
2. ALL REQUIREMENTS FOR REINFORCED CONCRETE PIPE, EXCEPT THOSE REFERRING TO REINFORCEMENT, SHALL APPLY TO NONREINFORCED CONCRETE PIPE.



CONCRETE PIPE WITH END SECTIONS

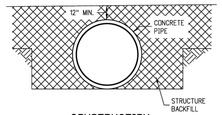
NOTE: USE THE H THAT IS GREATER FOR MAXIMUM ALLOWABLE FILL HEIGHT.

H = HEIGHT OF FILL OVER TOP OF PIPE, INCLUDING PAVEMENT THICKNESS.
L_1 = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 624.
L_2 = LENGTH OF PIPE TO BE MEASURED WHEN PLACED IN ACCORDANCE WITH SECTION 603.



CONCRETE PIPE WITHOUT END SECTIONS

NOTE: USE THE H THAT IS GREATER FOR MAXIMUM ALLOWABLE FILL HEIGHT.



CONSTRUCTION
MINIMUM COVER FOR RIGID PIPE

TYPE OF PIPE	HEIGHT OF FILL OVER TOP OF PIPE, H (FEET)			
	CLASS OF PIPE		(0.01 IN. CRACK D-LOAD)	
	CLASS CIR II CLASS VE II CLASS HE II 1000 D	CLASS CIR III CLASS VE III CLASS HE III 1350 D	CLASS CIR IV CLASS VE IV CLASS HE IV 2000 D	CLASS CIR V CLASS VE V 3000 D	CLASS VE VI 4000 D
CIRCULAR (CIR)	1 TO 18	1 TO 25	± 25 TO 37	± 37 TO 45	± 45 TO 62
VERTICAL ELLIPTICAL (VE)	1 TO 18	1 TO 25	± 25 TO 37	± 37 TO 45	
HORIZONTAL ELLIPTICAL (HE)	1 TO 18	1 TO 25	± 25 TO 37		

ALLOWABLE RANGE OF HEIGHTS FOR FILL
OVER REINFORCED CONCRETE PIPE
(ALL SIZES)

Computer File Information	
Creation Date: 07/04/12	Initials: DLM
Last Modification Date: 10/02/14	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 603020101.dgn	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

Sheet Revisions	
Date:	Comments
3/25/14	Made Wt. Cover for Rigid Pipe detail like others. Deleted Cen. Note 6 & renumbered.
4/11/14	Changed "dia." to 1 in Heights table.

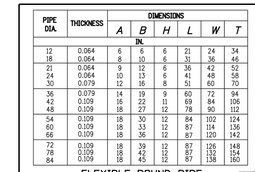
Colorado Department of Transportation
4201 East Arkansas Avenue
CDOT HQ, 4th Floor
Denver, CO 80222
Phone: 303-757-9021 FAX: 303-757-9868
Division of Project Support DLM/LTA

REINFORCED CONCRETE PIPE

STANDARD PLAN NO. M-603-2

Issued By: Project Development Branch on July 4, 2012

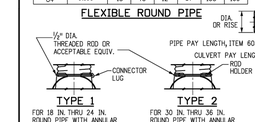
Sheet No. 1 of 1



FLEXIBLE ROUND PIPE

PLAN VIEW

PIPE DIA.	THICKNESS	DIMENSIONS					
		A	B	H	L	W	T
		IN.					
12	0.064	6	6	6	21	24	34
18	0.064	8	10	6	31	36	46
21	0.064	9	12	6	36	42	52
24	0.064	10	13	6	41	48	58
30	0.079	12	16	8	51	60	70
36	0.079	14	19	9	60	72	94
42	0.109	16	22	11	69	84	106
48	0.109	18	27	12	78	90	112
54	0.109	18	30	12	84	102	124
60	0.109	18	33	12	87	114	136
66	0.109	18	36	12	87	120	142
72	0.109	18	39	12	87	126	148
78	0.109	18	43	12	87	132	154
84	0.109	18	45	12	87	138	160



TYPE 1
FOR 18 IN. THRU 24 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS. NOT TO BE USED ON HELICALLY-FORMED PIPE UNLESS RECORRUGATED.

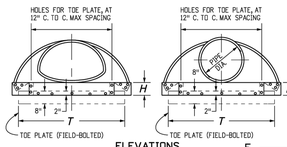
TYPE 2
FOR 30 IN. THRU 36 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS. NOT TO BE USED ON HELICALLY-FORMED PIPE UNLESS RECORRUGATED.

TYPE 3
FOR 42 IN. THRU 84 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS AND ALL SIZES WITH HELICAL CORRUGATIONS AND FOR ALL METAL PIPE ARCH CULVERTS. SHOP ATTACH A 24 IN. MIN. LENGTH OF ANNULAR PIPE WITH GALV. RIVETS OR BOLTS, SPOT WELDS, OR 2 IN. LONG SKIP WELDS ON 8 IN. CTRS. REPAIR BURNT GALVANIZING IN ACCORDANCE WITH SUBSECTION 707.09.

TYPICAL CONNECTIONS

FLEXIBLE PIPE ARCH

PIPE ARCH SPAN x RISE	THICKNESS	DIMENSIONS					
		A (±1")	B (MAX.)	H (±1")	L (±1.5")	W (±2")	T
		IN.					
21 x 15	0.064	7	10	6	23	36	46
24 x 18	0.064	8	12	6	28	42	52
28 x 20	0.064	9	14	6	32	48	58
35 x 24	0.079	10	16	6	39	60	70
42 x 29	0.079	12	18	8	46	75	85
49 x 33	0.109	13	21	9	53	85	103
57 x 38	0.109	18	26	12	63	90	108
64 x 43	0.109	18	30	12	70	102	120
71 x 47	0.109	18	33	12	77	114	132



ELEVATIONS

GENERAL NOTES

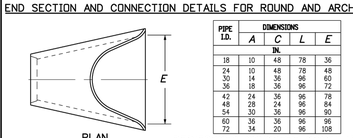
1. DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO DIFFERENT MANUFACTURERS' CONFIGURATIONS.
2. CONCRETE END SECTIONS SHALL BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.
3. DESIGN LENGTH OF PIPE OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE. ANY ADDITIONAL PIPE REQUIRED TO PROVIDE THE DESIGN LENGTH SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
4. THE INSIDE CONFIGURATION AND THE JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH.
5. END SECTIONS FOR CMP ARCH PIPE SHALL MATCH THE DIMENSIONS OF THE PIPE SHOWN ON THE PLANS.
6. GALVANIZED TOE PLATE AS SHOWN IS REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE THE SAME THICKNESS AS END SECTIONS. TOE PLATE SHALL BE FIELD-BOLTED TO END SECTION WITH ⅜ IN. GALVANIZED BOLTS, NUTS AND WASHERS.
7. GALVANIZED STEEL SHALL CONFORM TO AASHTO M 111, M 218 OR M 232.
8. FOR TYPE SD END SECTIONS, BARS SHALL BE FABRICATED FROM NPS-3 GALVANIZED STEEL SCHEDULE 40 PIPE WHICH SHALL CONFORM TO ASTM A 53.
9. FOR A TYPE SD END SECTION, THE INSTALLATION OF ALTERNATIVE 1 OR ALTERNATIVE 2 END SECTION SHALL BE THE CONTRACTOR'S OPTION.
10. CONCRETE PIPE JOINT FASTENERS, WHERE SHOWN ON PLANS, SHALL BE INSTALLED SO THAT A MINIMUM OF 15 LINEAR FEET OF THE OUTLET END OF THE PIPE ARE MECHANICALLY LOCKED TOGETHER. END SECTION LENGTHS WHEN USED, SHALL BE INCLUDED IN THE 15 LF REQUIREMENT.
11. CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER. PLASTIC END SECTIONS SHALL NOT BE USED.
12. THE END SECTION STYLE, EITHER REGULAR OR SAFETY, SHALL BE AS SHOWN ON THE PLANS.
13. AT THE OPTION OF THE CONTRACTOR AND APPROVAL OF THE CDOT PROJECT ENGINEER, REINFORCED CONCRETE END SECTIONS MAY BE MADE WITH SYNTHETIC FIBERS INSTEAD OF STEEL FOR PIPES 36 INCHES IN DIAMETER AND SMALLER, AND CONFORM TO AASHTO M 86 AND SUBSECTION 601.03.



SECTION F-F

END VIEW

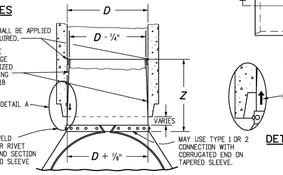
END SECTION AND CONNECTION DETAILS FOR ROUND AND ARCH METAL PIPES



PIPE I.D.	DIMENSIONS			
	A	C	L	E
	IN.			
18	10	48	78	36
24	10	48	78	48
30	14	36	96	60
36	18	36	96	72
42	24	36	96	78
48	28	24	96	84
54	30	36	96	90
60	36	36	96	96
72	34	20	96	108

REINFORCED CONCRETE CIRCULAR PIPE

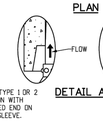
END SECTION FOR REINFORCED CONCRETE CIRCULAR PIPE



D	Z (MIN.)
IN.	
18 - 24	12
30 AND 36	16
42 AND LARGER	24

NOTE: METAL END SECTION SHALL BE FINALY WEDGED INTO PIPE END BEFORE BACKFILLING.

STEEL END SECTION FOR CONCRETE CIRCULAR PIPE
(ALTERNATIVE FOR CONCRETE END SECTION)



END SECTION FOR REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIVALENT CIRCULAR DIA.	DIMENSIONS				
	NOMINAL SPAN x RISE	A	C	L	E
	IN.				
24	30 x 19	9	33	72	48
30	38 x 24	10	18	72	60
36	45 x 29	12	24	84	72
42	53 x 34	16	36	96	78
48	60 x 38	21	36	96	84
54	68 x 43	26	36	96	90
60	76 x 48	30	36	96	96



PIPE DIAMETER	F
IN.	
18 - 30	5
36 - 42	6
48 - 60	7
72 - 84	9

CONCRETE JOINT FASTENER (TWO PER JOINT)

Computer File Information	
Creation Date: 07/04/12	Initials: JBK
Last Modification Date: 05/01/18	Initials: LTA
Full Path: www.codot.gov/business/designsupport	
Drawing File Name: 6010100102.dgn	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

Sheet Revisions	
Date:	Comments
5/01/18	Added General Note 13.

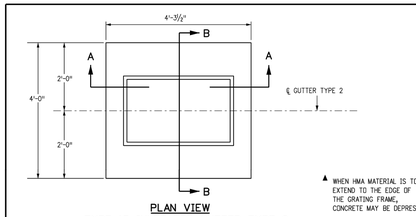
Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868
Division of Project Support JBK/LTA

CONCRETE AND METAL END SECTIONS

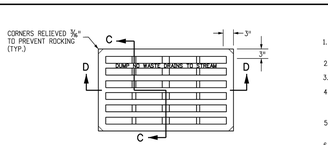
STANDARD PLAN NO. M-603-10

Issued By: Project Development Branch July 4, 2012

Sheet No. 1 of 2

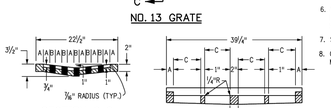


PLAN VIEW
TYPE 13 INLET FOR GUTTER TYPE 2



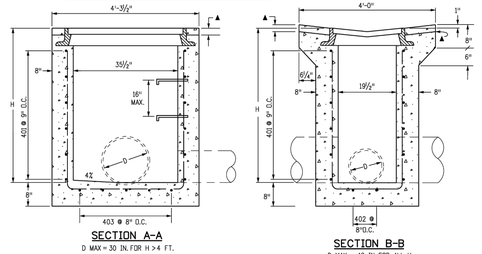
NO. 13 GRATE

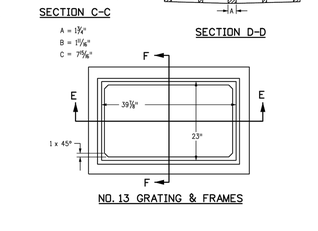
WHEN HMA MATERIAL IS TO EXTEND TO THE EDGE OF THE GRATING FRAME, CONCRETE MAY BE DEPRESSED.



SECTION C-C

SECTION D-D



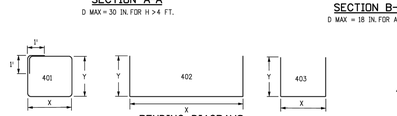


NO. 13 GRATING & FRAMES

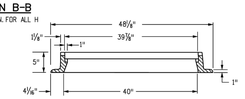
H	CONCRETE	REINFORCING STEEL	NO. OF 401 BARS REQ'D.	MAXIMUM PIPE I.D.	
				SEC. A-A	SEC. B-B
	CU. YDS.	@ LB.		IN.	IN.
3'-0"	1.3	72	4	18	18
3'-6"	1.5	76	4	24	18
4'-0"	1.6	90	5	30	18
4'-6"	1.8	104	6	30	18
5'-0"	1.9	109	6	30	18
5'-6"	2.1	122	7	30	18
6'-0"	2.2	136	8	30	18
6'-6"	2.4	141	8	30	18
7'-0"	2.5	154	9	30	18
7'-6"	2.7	168	10	30	18
8'-0"	2.8	173	10	30	18
8'-6"	3.0	187	11	30	18
9'-0"	3.1	200	12	30	18
9'-6"	3.3	205	12	30	18
10'-0"	3.4	219	13	30	18

@ INCLUDES 1X FOR OVERRUN.
NOTE: CONCRETE QUANTITIES INCLUDE VOLUME OCCUPIED BY PIPE.

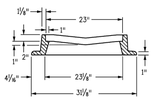
QUANTITIES FOR ONE INLET



BENDING DIAGRAMS
ALL DIMENSIONS ARE OUT-TO-OUT OF BAR.



SECTION E-E
APPROXIMATE WEIGHT = 590 LBS.



SECTION F-F

MARK	NO. REQ'D.	DIMENSIONS		LENGTH
		X	Y	
401	4	3'-6"	2'-2"	13'-4"
402	2	3'-4½"	* 2'-6½"	8'-5½"
403	5	2'-1½"	* 2'-3"	7'-2½"

* ADD 6 IN. TO THIS DIMENSION FOR EACH 6 IN. INCREASE OF "H" OVER 3 FT.-0 IN.

BAR LIST FOR H = 3 FT.-0 IN.

Computer File Information	
Creation Date: 07/31/19	
Designer Initials: JBK	
Last Modification Date: 07/31/19	
Detailer Initials: LTA	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

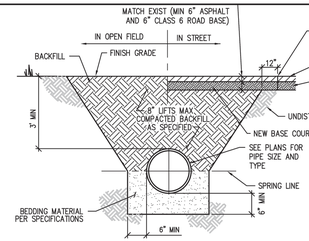
CONCRETE INLET TYPE 13

STANDARD PLAN NO. M-604-13

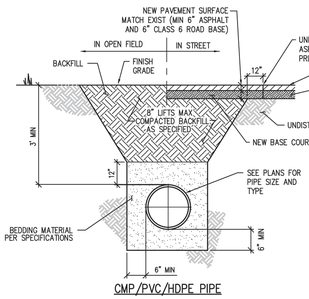
Standard Sheet No. 1 of 1

Issued by the Project Development Branch: July 31, 2019

Project Sheet Number:



REINFORCED CONCRETE PIPE

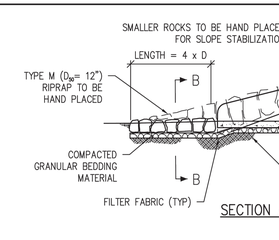


CMP/PVC/HDPE PIPE

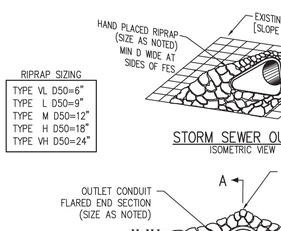
NOTES:
1. IF UNSTABLE MATERIALS ARE FOUND IN TRENCH, OVEREXCAVATE PER SPECIFICATIONS OR AS REQUIRED.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES.

SCALE: NTS

TOWN OF BERTHOUD STANDARD DESIGN CRITERIA STORM SEWER DETAILS	D6.02
STORM SEWER BEDDING DETAIL	DATE: 12/2019

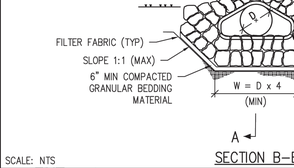


SECTION A-A



RIPRAP SIZING
TYPE VL D50=6"
TYPE L D50=9"
TYPE M D50=12"
TYPE H D50=18"
TYPE VH D50=24"

STORM SEWER OUTLET
ISOMETRIC VIEW



SECTION B-B

SCALE: NTS

TOWN OF BERTHOUD STANDARD DESIGN CRITERIA STORM SEWER DETAILS	D6.04
RIPRAP APRON SIZING & PLACEMENT AT FLARED END SECTION	DATE: 12/2019

REVISION DESCRIPTION	DATE	PREPARED BY	DESIGNED BY
CONSTRUCTION DRAWINGS	3/7/2024	BEC/ITT	ITT
2025-08-13 DANIEL B REVISIONS		GCT	DRAWN BY ITT
			CHECKED BY NJN

BASELINE
Engineering • Planning • Surveying
120 W RUBEY DRIVE SUITE 210 • GOLDEN, COLORADO 80403
P: 3033403866 • F: 3039403869 • www.baselinecorp.com

TOWN OF BERTHOUD
TOWN OF BERTHOUD
WELD COUNTY
SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
DETAILS I

PREPARED UNDER THE DIRECT SUPERVISION OF
COLORADO LICENSED
CHRISTINE B. MILLER
44363
12/09/25
PROFESSIONAL ENGINEER

FOR AND ON BEHALF OF BASELINE CORPORATION

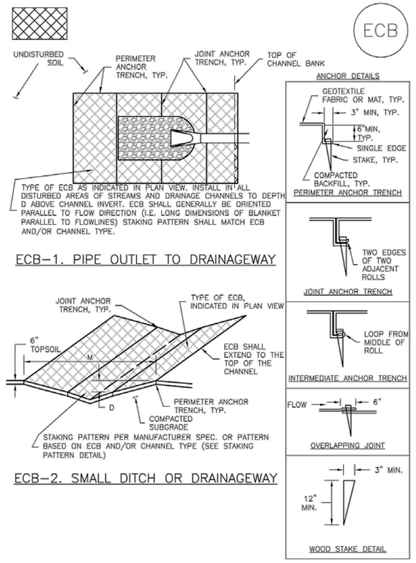
INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM	SURVEY DATE
BASELINE	12/03/2020
JOB NO.	PW-20-20-04
DRAWING NAME	3407-PW.20.20.04-Cover.Detail.dwg
SHEET 08 OF 9	

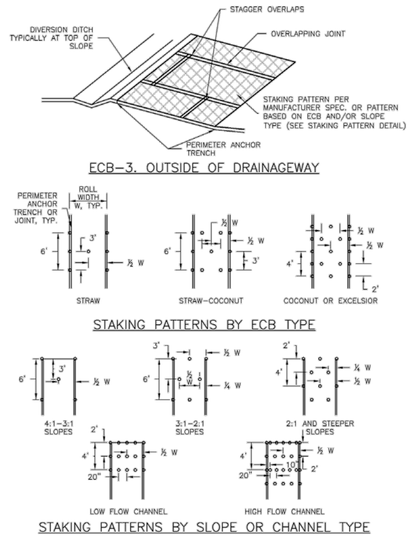
C8

N:\co\3407 - Berthoud On-Call Services\2020 Berthoud Projects\PW-20-00-04 Serenity Ridge Drainage\Drawings\Construction Documents\3407-PW.20.20.04-Cover.Detail.dwg, 12/9/2025 10:32:40 AM, Garrett Tsouproke

CONSTRUCTION DOCUMENTS
SERENITY RIDGE DRAINAGE

LOCATED IN SECTION 27, TOWNSHIP 4 NORTH, RANGE 68 WEST
OF THE 6th PRINCIPAL MERIDIAN
TOWN OF BERTHOUD, WELD COUNTY, COLORADO





EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF ECB.
   –TYPE OF ECB (STRAW, STRAW–COCONUT, COCONUT, OR EXCELSIOR).
   –AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.

2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.

3. IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.

4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.

5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.

6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE–HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.

7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.

8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB–1.

9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED.

10. DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB–1. ECB MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	–	100%	–	DOUBLE/ NATURAL
STRAW–COCONUT	30% MIN	70% MAX	–	DOUBLE/ NATURAL
COCONUT	100%	–	–	DOUBLE/ NATURAL
EXCELSIOR	–	–	100%	DOUBLE/ NATURAL

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNEL.
**ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS

EROSION CONTROL BLANKET MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

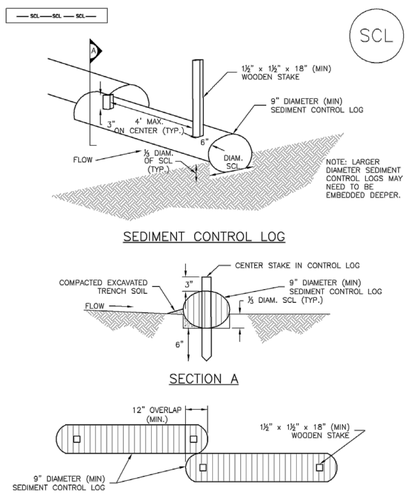
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

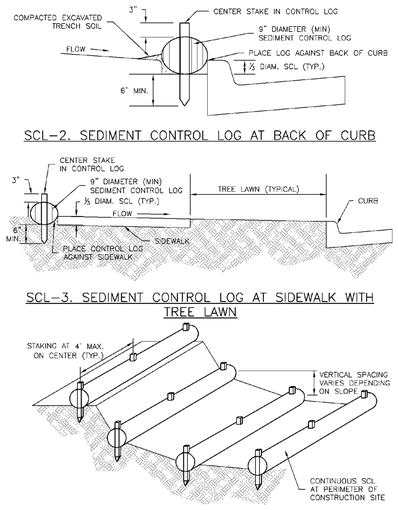
4. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.

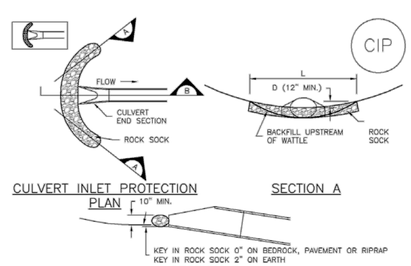
5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER COLORADO, NOT AVAILABLE IN AUTOCAD)







CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

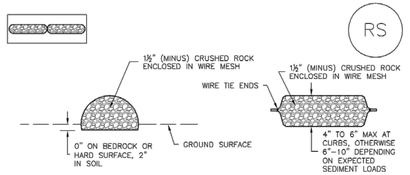
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

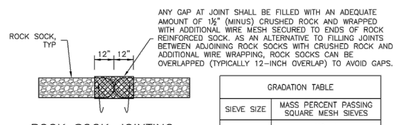
4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.





GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1½"	90 – 100
1"	20 – 55
¾"	0 – 15
⅜"	0 – 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

ROCK SOCK INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION(S) OF ROCK SOCKS.

2. CRUSHED ROCK SHALL BE 1½" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1½" MINUS).

3. WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF ½", RECOMMENDED MINIMUM ROLL WIDTH OF 48"

4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2' CENTERS ON ENDS OF SOCKS.

5. SOME MUNICIPALITIES MAY ALLOW THE USE OF FIBER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS–1. ROCK SOCK PERIMETER CONTROL

BASELINE
Engineering • Planning • Surveying
102 N RUBEY DRIVE SUITE 210 • GOLDEN, COLORADO 80403
P: 3039403868 • F: 3039403869 • www.baselinecorp.com

REVISION DESCRIPTION	PREPARED BY	DATE
CONSTRUCTION DRAWINGS	BEC/ITT	3/7/2024
2025–08–13 DANIEL B REVISIONS	GCT	

DESIGNED BY ITT | DRAWN BY ITT | CHECKED BY NJN

TOWN OF BERTHOUD
TOWN OF BERTHOUD WELD COUNTY
SERENITY RIDGE DRAINAGE
SERENITY RIDGE PARKWAY & TRANQUILITY WAY
DETAILS 2

PREPARED UNDER THE DIRECT SUPERVISION OF
COLORADO LICENSED
BRIAN E. M
44383
12/09/25
PROFESSIONAL ENGINEER

FOR AND ON BEHALF OF BASELINE CORPORATION

INITIAL SUBMITTAL	3/7/2024
DRAWING SIZE	24" X 36"
SURVEY FIRM: BASELINE	SURVEY DATE: 12/03/2020
JOB NO.	PW–20–20–04
DRAWING NAME	3407–PW.20.20.04–Cover.Detail.dwg
SHEET	09 OF 9

C9

N:\co3407 – Berthoud On–Call Services\2020 Berthoud Projects\PW–20–00–04 Serenity Ridge Drainage\Drawings\Construction Documents\3407–PW.20.20.04–Cover.Detail.dwg, 12/9/2025 10:38:03 AM, Garrett Tsuprake

Board of Trustees Information

Public Works Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Berthoud Arboretum Preconstruction Services Agreement**
Type of Item:	**Consent Agenda**
Purpose:	**Board approve preconstruction services agreement with Golden Triangle Construction and Wenk Associates**
Presented by:	**Keith Knoll**

Attachments:

1. Pre-construction Services Agreement - GTC
2. Pre-construction Service Agreement - Wenk

Background:

The Berthoud Arboretum project was advertised for public bid on March 2, with bids closing on Tuesday, April 7. At the May 26 Board of Trustees meeting, the Board motioned for staff to review project costs in order to reduce costs to make the project within budget and advise the board on the success of reduction and share what would be included and excluded.

The Town received project bid proposals from four contractors. Staff has completed a review of all proposals, including an interview and reference checks with the leading contractor. Following the review process, the next step staff recommends is entering into a pre-construction services agreement with Golden Triangle Construction (GTC) to further refine the project scope and reduce overall project costs. Wenk Associates, the project designer, would also participate in the pre-construction process.

Update/Next Steps:

Staff will return to the Board of Trustees at a later meeting with the success of the reduction and share what would be included and excluded.

Fiscal Impact and Fund Source:

60-03-5200.02 – Arboretum – Construction Admin - $20,000.00

GTC not to exceed contract of $15,000.00
Wenk not to exceed contract of $5,000.00

Community Touchstones:

The Berthoud Arboretum project will strengthen community identity by creating a unique

public space that reflects the Town's character and natural environment. Through sustainable landscaping, tree preservation, and open space enhancements, the project promotes environmental stewardship, resiliency, and long-term community benefit.

Recommended Action(s):

Board approve the pre-construction services agreement with Golden Triangle Construction and Wenk Associates which allows town staff to work with the contractor and designer on evaluating project scope and costs.

Agreement for Professional Services
(Fixed Fee)

This Agreement for Professional Services (the "Agreement") is made and entered into this _____ day of _____, 2026 (the "Effective Date"), by and between the Town of Berthoud, a Colorado municipal corporation with an address of 807 Mountain Avenue, Berthoud, CO 80513 (the "Town"), and Golden Triangle Construction, LLC., an independent contractor with a principal place of business at 8008 Raspberry Way, Frederick, CO 80504 ("Consultant") (each a "Party" and collectively the "Parties").

Whereas, the Town requires professional services; and

Whereas, Consultant has held itself out to the Town as having the requisite expertise and experience to perform the required professional services.

Now Therefore, for the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

I. Scope of Services

A. Consultant shall furnish all labor and materials required for the complete and prompt execution and performance of all duties, obligations, and responsibilities which are described or reasonably implied from the Scope of Services set forth in **Exhibit A**, attached hereto and incorporated herein by this reference, and known as: **Scope of Services**.

B. A change in the Scope of Services shall not be effective unless authorized as an amendment to this Agreement. If Consultant proceeds without such written authorization, Consultant shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the Town is authorized to modify any term of this Agreement, either directly or implied by a course of action.

II. Term and Termination

A. This Agreement shall commence on the Effective Date, and shall continue until Consultant completes the Scope of Services to the satisfaction of the Town, or until terminated as provided herein.

B. Either Party may terminate this Agreement upon 30 days advance written notice. The Town shall pay Consultant for all work previously authorized and completed prior to the date of termination. If, however, Consultant has substantially or materially breached this Agreement, the Town shall have any remedy or right of set-off available at law and equity.

III. Compensation

In consideration for the completion of the Scope of Services by Consultant, the Town agrees to pay Consultant an amount not to exceed **fifteen thousand** Dollars ($15,000.00). This compensation represents the full scope and summary as proposed in **Exhibit B**. This amount shall include all fees, costs and expenses incurred by Consultant, and no additional amounts shall be paid by the Town for such fees, costs and expenses. Consultant may submit periodic invoices, which shall be paid by the Town within 30 days of receipt.

IV. Professional Responsibility

A. Consultant hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law. The work performed by Consultant shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community.

B. The Town's review, approval or acceptance of, or payment for any services shall not be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

C. Because the Town has hired Consultant for its professional expertise, Consultant agrees not to employ subcontractors to perform any work under this Agreement, except as expressly set forth in the Scope of Services.

D. Consultant shall at all times comply with all applicable law, including all federal, state and local statutes, regulations, ordinances, decrees and rules relating to the emission, discharge, release or threatened release of a hazardous material into the air, surface water, groundwater or land, the manufacturing, processing, use, generation, treatment, storage, disposal, transportation, handling, removal, remediation or investigation of a hazardous material, and the protection of human health and safety, including without limitation the following, as amended: the Comprehensive Environmental Response, Compensation and Liability Act; the Hazardous Materials Transportation Act; the Resource Conservation and Recovery Act; the Toxic Substances Control Act; the Clean Water Act; the Clean Air Act; the Occupational Safety and Health Act; the Solid Waste Disposal Act; the Davis Bacon Act; the Copeland Act; the Contract Work Hours and Safety Standards Act; the Byrd Anti-Lobbying Amendment; the Housing and Community Development Act; and the Energy Policy and Conservation Act.

E. Consultant shall comply with the accessibility standards for an individual with a disability adopted by the State Office of Information Technology pursuant to C.R.S. § 24-85-103, and shall indemnify, hold harmless and assume liability on behalf of the Town and its officers, employees, agents and attorneys for all costs, expenses, claims, damages, liabilities, court awards, attorney fees and related costs, and any other amounts incurred by the Town in relation to Consultant's noncompliance with such accessibility standards.

F. The deliverables created by Consultant shall comply with all current local, state, and federal building codes.

V. Ownership

Any materials, items, and work specified in the Scope of Services, and any and all related documentation and materials provided or developed by Consultant shall be exclusively owned by the Town. Consultant expressly acknowledges and agrees that all work performed under the Scope of Services constitutes a "work made for hire." To the extent, if at all, that it does not constitute a "work made for hire," Consultant hereby transfers, sells, and assigns to the Town all of its right, title, and interest in such work. The Town may, with respect to all or any portion of such work, use, publish, display, reproduce, distribute, destroy, alter, retouch, modify, adapt, translate, or change the Work Product without providing notice to or receiving consent from Consultant; provided that Consultant shall have no liability for any work that has been modified by the Town.

VI. Independent Consultant

Consultant is an independent contractor. Notwithstanding any other provision of this Agreement, all personnel assigned by Consultant to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Consultant for all purposes. Consultant shall make no representation that it is a Town employee for any purposes.

VII. Insurance

A. Consultant agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Consultant pursuant to this Agreement. At a minimum, Consultant shall procure and maintain, and shall cause any subcontractor to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

1. Worker's Compensation insurance as required by law.

2. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations, and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and contractors as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

3. Professional liability insurance with minimum limits of $1,000,000 each claim and $2,000,000 general aggregate.

B. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees or its contractors shall be excess and not contributory insurance to that provided by Consultant. Consultant shall be solely responsible for any deductible losses under any policy.

C. Consultant shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Agreement.

VIII. Indemnification

A. Consultant agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including reasonable attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Agreement if such injury, loss, or damage is caused in whole or in part by, the omission, error, professional error, mistake, negligence, or other fault of Consultant, any subcontractor of Consultant, or any officer, employee, representative, or agent of Consultant, or which arise out of a worker's compensation claim of any employee of Consultant or of any employee of any subcontractor of Consultant; provided that Consultant's liability under this indemnification provision shall be to the fullest extent of, but shall not exceed, that amount represented by the degree or percentage of negligence or fault attributable to Consultant, any subcontractor of Consultant, or any officer, employee, representative, or agent of Consultant or of any subcontractor of Consultant.

B. If Consultant is providing architectural, engineering, surveying or other design services under this Agreement, the extent of Consultant's obligation to indemnify and hold harmless the Town may be determined only after Consultant's liability or fault has been determined by adjudication, alternative dispute resolution or otherwise resolved by mutual agreement between the Parties, as provided by C.R.S. § 13-50.5-102(8)(c).

IX. Miscellaneous

A. *Governing Law and Venue*. This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Larimer County, Colorado.

B. *No Waiver*. Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the Town shall not constitute a waiver of any of the other terms or obligation of this Agreement.

C. *Integration*. This Agreement constitutes the entire agreement between the Parties, superseding all prior oral or written communications.

D. *Third Parties*. There are no intended third-party beneficiaries to this Agreement.

E. *Notice*. Any notice under this Agreement shall be in writing and shall be deemed sufficient when directly presented or sent pre-paid, first-class U.S. Mail to the Party at the address set forth on the first page of this Agreement.

F. *Severability*. If any provision of this Agreement is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

G. *Modification*. This Agreement may only be modified upon written agreement of the Parties.

H. *Assignment*. Neither this Agreement nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

I. *Governmental Immunity*. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities or protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

J. *Rights and Remedies*. The rights and remedies of the Town under this Agreement are in addition to any other rights and remedies provided by law. The expiration of this Agreement shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

K. *Subject to Annual Appropriation*. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

L. *Force Majeure*. No Party shall be in breach of this Agreement if such Party's failure to perform any of the duties under this Agreement is due to Force Majeure, which shall be defined as the inability to undertake or perform any of the duties under this Agreement due to acts of God, floods, fires, sabotage, terrorist attack, strikes, riots, war, labor disputes, forces of nature, the authority and orders of government or pandemics.

M. *Electronic Signatures*. The Parties intend that this Agreement be governed by the Uniform Electronic Transactions Act, C.R.S. § 24-71.3-101, *et seq*.

In Witness Whereof, the Parties have executed this Agreement as of the Effective Date.

Town of Berthoud, Colorado

_____
Chris Kirk, Town Administrator

Attest:

_____
Christian R. Samora, CMC, Town Clerk

Consultant

By: _____

State of Colorado)
) ss.
County of _____)

The foregoing instrument was subscribed, sworn to and acknowledged before me this ___ day of _____, 2026, by _____ as _____ of _____.

My commission expires:

(Seal)

_____
Notary Public

Exhibit A
Scope of Services

Consultant shall represent the Town's interest in providing pre-construction services to the Town in conjunction with the efforts of the Town's design consultant, Wenk Associates, Inc.

I. Scope of Work Overview. Below is an overview of the Scope of Services. A more detailed Scope of Services and breakdown of costs is included in this Exhibit A.

a. Feasibility. GTC will provide expert guidance regarding the feasibility and constructability of the final project designs.

b. Schedule. GTC will determine long-lead items and procurement opportunities to maintain the project schedule. GTC will create a comprehensive construction schedule and identify critical path tasks.

c. Safety. GTC will provide a comprehensive site safety plan. This will be amended throughout construction to include all trades and activities.

d. Value Engineering (VE). GTC will provide guidance on value engineering options to pursue to maintain project scope and quality at a reduced cost.

e. Subcontractor Selection. GTC will provide selection of pre-qualified subcontractors for review and approval by Town staff.

f. Guaranteed Maximum Price. Upon completion of requisite tasks, GTC will establish the guaranteed maximum price (GMP) for construction. This will be presented to the Town Board of Trustees (BoT) for approval.

II. Deliverables

a. Project Schedule – Comprehensive project schedule including construction phasing plan, expected opening and occupancy dates and definition of project critical path items.
b. Safety Plan – Comprehensive project-specific document that informs Town and emergency services of the site standard operating procedures (SOPs) for mitigating managing hazards.
c. Guaranteed Maximum Price – Document to be approved by BoT with a stated price that the project must not exceed to reach completion.

EXHIBIT B

Berthoud Arboretum

Proposal Letter
May 15, 2026

Daniel Buendia
Town of Berthoud
807 Mountain Avenue
Berthoud, CO 80513

RE: **Preconstruction Services Agreement (Exhibit B)**

Dear Mr. Buendia,

Golden Triangle Construction, LLC is pleased to propose the following sum to provide preconstruction services as listed below:

Cost Summary

Feasibility & Constructability Guidance	$	1,500
Project Scheduling	$	1,350
Site Safety Plan	$	1,350
Value Engineering	$	3,250
Subcontractor Selection	$	1,050
Establish Guaranteed Maximum Price	$	6,500
Current Proposal	**$**	15,000

GTC appreciates the opportunity to submit this preconstruction services proposal for your review. If accepted, GTC would waive these fees upon execution of the Guaranteed Maximum Price contract.

If you have any questions, please do not hesitate to contact us at your convenience.

Respectfully Submitted,

Golden Triangle Construction, LLC

Nicole Wempe
Vice President



Agreement for Professional Services
(Fixed Fee)

This Agreement for Professional Services (the "Agreement") is made and entered into this _____ day of _____, 2026 (the "Effective Date"), by and between the Town of Berthoud, a Colorado municipal corporation with an address of 807 Mountain Avenue, Berthoud, CO 80513 (the "Town"), and Wenk Associates, Inc., an independent contractor with a principal place of business at 1130 31st St. 101, Denver, CO 80205 ("Consultant") (each a "Party" and collectively the "Parties").

Whereas, the Town requires professional services; and

Whereas, Consultant has held itself out to the Town as having the requisite expertise and experience to perform the required professional services.

Now Therefore, for the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

I. Scope of Services

A. Consultant shall furnish all labor and materials required for the complete and prompt execution and performance of all duties, obligations, and responsibilities which are described or reasonably implied from the Scope of Services set forth in **Exhibit A**, attached hereto and incorporated herein by this reference, and known as **Scope of Services.**

B. A change in the Scope of Services shall not be effective unless authorized as an amendment to this Agreement. If Consultant proceeds without such written authorization, Consultant shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the Town is authorized to modify any term of this Agreement, either directly or implied by a course of action.

II. Term and Termination

A. This Agreement shall commence on the Effective Date and shall continue until Consultant completes the Scope of Services to the satisfaction of the Town, or until terminated as provided herein.

B. Either Party may terminate this Agreement upon 30 days advance written notice. The Town shall pay Consultant for all work previously authorized and completed prior to the date of termination. If, however, Consultant has substantially or materially breached this Agreement, the Town shall have any remedy or right of set-off available at law and equity.

III. Compensation

In consideration for the completion of the Scope of Services by Consultant, the Town shall pay Consultant $5,000. Refer to **Exhibit B** for the proposal provided by Consultant. This amount shall include all fees, costs and expenses incurred by Consultant, and no additional amounts shall be paid by the Town for such fees, costs and expenses. Consultant may submit periodic invoices, which shall be paid by the Town within 30 days of receipt.

IV. Professional Responsibility

A. Consultant hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law. The work performed by Consultant shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community.

B. The Town's review, approval or acceptance of, or payment for any services shall not be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

C. Because the Town has hired Consultant for its professional expertise, Consultant agrees not to employ subcontractors to perform any work under this Agreement, except as expressly set forth in the Scope of Services.

D. Consultant shall at all times comply with all applicable law, including all federal, state and local statutes, regulations, ordinances, decrees and rules relating to the emission, discharge, release or threatened release of a hazardous material into the air, surface water, groundwater or land, the manufacturing, processing, use, generation, treatment, storage, disposal, transportation, handling, removal, remediation or investigation of a hazardous material, and the protection of human health and safety, including without limitation the following, as amended: the Comprehensive Environmental Response, Compensation and Liability Act; the Hazardous Materials Transportation Act; the Resource Conservation and Recovery Act; the Toxic Substances Control Act; the Clean Water Act; the Clean Air Act; the Occupational Safety and Health Act; the Solid Waste Disposal Act; the Davis Bacon Act; the Copeland Act; the Contract Work Hours and Safety Standards Act; the Byrd Anti-Lobbying Amendment; the Housing and Community Development Act; and the Energy Policy and Conservation Act.

E. Consultant shall comply with the accessibility standards for an individual with a disability adopted by the State Office of Information Technology pursuant to C.R.S. § 24-85-103, and shall indemnify, hold harmless and assume liability on behalf of the Town and its officers, employees, agents and attorneys for all costs, expenses, claims, damages, liabilities, court awards, attorney fees and related costs, and any other amounts incurred by the Town in relation to Consultant's noncompliance with such accessibility standards.

V. Ownership

Any materials, items, and work specified in the Scope of Services, and any and all related documentation and materials provided or developed by Consultant shall be exclusively owned by the Town. Consultant expressly acknowledges and agrees that all work performed under the Scope of Services constitutes a "work made for hire." To the extent, if at all, that it does not constitute a "work made for hire," Consultant hereby transfers, sells, and assigns to the Town all of its right, title, and interest in such work. The Town may, with respect to all or any portion of such work, use, publish, display, reproduce, distribute, destroy, alter, retouch, modify, adapt, translate, or change the Work Product without providing notice to or receiving consent from Consultant; provided that Consultant shall have no liability for any work that has been modified by the Town.

VI. Independent Consultant

Consultant is an independent contractor. Notwithstanding any other provision of this Agreement, all personnel assigned by Consultant to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Consultant for all purposes. Consultant shall make no representation that it is a Town employee for any purposes.

VII. Insurance

A. Consultant agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Consultant pursuant to this Agreement. At a minimum, Consultant shall procure and maintain, and shall cause any subcontractor to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

1. Worker's Compensation insurance as required by law.

2. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations, and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and contractors as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

3. Professional liability insurance with minimum limits of $1,000,000 each claim and $2,000,000 general aggregate.

B. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or materially

changed without at least 30 days prior written notice to the Town. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees or its contractors shall be excess and not contributory insurance to that provided by Consultant. Consultant shall be solely responsible for any deductible losses under any policy.

C. Consultant shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect. The certificate shall identify this Agreement.

VIII. Indemnification

A. Consultant agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including reasonable attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Agreement if such injury, loss, or damage is caused in whole or in part by, the omission, error, professional error, mistake, negligence, or other fault of Consultant, any subcontractor of Consultant, or any officer, employee, representative, or agent of Consultant, or which arise out of a worker's compensation claim of any employee of Consultant or of any employee of any subcontractor of Consultant; provided that Consultant's liability under this indemnification provision shall be to the fullest extent of, but shall not exceed, that amount represented by the degree or percentage of negligence or fault attributable to Consultant, any subcontractor of Consultant, or any officer, employee, representative, or agent of Consultant or of any subcontractor of Consultant.

B. If Consultant is providing architectural, engineering, surveying or other design services under this Agreement, the extent of Consultant's obligation to indemnify and hold harmless the Town may be determined only after Consultant's liability or fault has been determined by adjudication, alternative dispute resolution or otherwise resolved by mutual agreement between the Parties, as provided by C.R.S. § 13-50.5-102(8)(c).

IX. Miscellaneous

A. *Governing Law and Venue*. This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Larimer County, Colorado.

B. *No Waiver*. Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the Town shall not constitute a waiver of any of the other terms or obligation of this Agreement.

C. *Integration*. This Agreement constitutes the entire agreement between the Parties, superseding all prior oral or written communications.

D. *Third Parties*. There are no intended third-party beneficiaries to this Agreement.

E. *Notice*. Any notice under this Agreement shall be in writing, and shall be deemed sufficient when directly presented or sent pre-paid, first class U.S. Mail to the Party at the address set forth on the first page of this Agreement.

F. *Severability*. If any provision of this Agreement is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

G. *Modification*. This Agreement may only be modified upon written agreement of the Parties.

H. *Assignment*. Neither this Agreement nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

I. *Governmental Immunity*. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities or protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

J. *Rights and Remedies*. The rights and remedies of the Town under this Agreement are in addition to any other rights and remedies provided by law. The expiration of this Agreement shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

K. *Subject to Annual Appropriation*. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

L. *Force Majeure*. No Party shall be in breach of this Agreement if such Party's failure to perform any of the duties under this Agreement is due to Force Majeure, which shall be defined as the inability to undertake or perform any of the duties under this Agreement due to acts of God, floods, fires, sabotage, terrorist attack, strikes, riots, war, labor disputes, forces of nature, the authority and orders of government or pandemics.

M. *Electronic Signatures*. The Parties intend that this Agreement be governed by the Uniform Electronic Transactions Act, C.R.S. § 24-71.3-101, *et seq*.

In Witness Whereof, the Parties have executed this Agreement as of the Effective Date.

Town of Berthoud, Colorado

_____
Chris Kirk, Town Administrator

Attest:

_____
Christian R. Samora, CMC, Town Clerk

Consultant

By: _____

State of Colorado)
) ss.
County of _____)

The foregoing instrument was subscribed, sworn to and acknowledged before me this ___ day of _____, 2026, by _____ as _____ of _____.

My commission expires:

(Seal)

_____
Notary Public

Exhibit A
Scope of Services

Consultant shall represent the Town's interest in providing pre-construction services to the Town in conjunction with the efforts of the Town's construction consultant, Golden Triangle Construction, LLC.

I. Scope of Work Overview. Below is an overview of the Scope of Services.

a. Feasibility. Wenk will provide expert guidance regarding the feasibility and constructability of the final project designs.

b. Value Engineering (VE). Wenk will provide guidance on value engineering options to pursue to maintain project scope and quality at a reduced cost.

II. Deliverables

a. "For Bid" Documents – Completed drawing set that includes all modifications accepted during VE exercises that the GC may utilize for bidding purposes.

EXHIBIT B

06/03/2026

Wenk Contract Adjustment for Landscape Architecture Services: Berthoud Arboretum at Waggener Farm Park

---

To: Keith Knoll
Public Works Operational Manager
Town of Berthoud
807 Mountain Ave.
Berthoud, CO 80513

RE: Contract Amendment for Value Engineering

Dear Keith,

This letter serves to modify the Newell Farm Park contract by increasing funding by $5,000 to cover additional work requested to assist the selected contractor in value engineering. We will invoice time and materials not to exceed $5,000 based on the Berthoud Arboretum contract billing rates.

Tasks and exclusions are outlined below:

- Assist contractor in value engineering to establish a GMP for the Board of Trustees
- Attend virtual meetings with the Town of Berthoud and the selected contractor
- Respond to RFI's as needed
- The fee for construction document revisions due to Value Engineering (VE) efforts is not included in this proposal – VE construction document revisions can be provided at a later date based on VE ideas and 2026 billing rates

Summary:

Original Fee:	$585,233
Total Fee Adjustment Request:	$5,000
Total Revised Fee:	$590,233

With your written approval, we will begin work coordinating with the selected contractor and document this work separately in future invoices. Please feel free to reach out to me with any questions, concerns, or requests for additional documentation.

Sincerely,

Nicole K. Horst
President/Principal

Board of Trustees Information

Community Development Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**2nd Amendment to Westside Crossing Commercial Development Agreement**
Type of Item:	**Consent Agenda**
Purpose:	**Approve the 2nd Amendment to the Westside Crossing Development Agreement and authorize the Mayor to sign.**
Presented by:	**Anne Johnson**

Attachments:

1. 01 Notice of Default
2. 02 Berthoud DA #2 signed by Berthoud Gateway
3. 03 Exhibit to DA #2 Signal Lights Estimated Cost
4. 04 Original DA Recorded
5. 05 Amended DA Recorded

Background:

The Westside Crossing development, located at the Northeast corner of Hwy 287 and Mountain Avenue, received approval of the Final Plat on March 14, 2024. Subsequent to that approval, the Developer and the Town entered into a Development Agreement on May 14, 2024 inclusive of the two following performance measures found in Exhibit C of the attached original Development Agreement:

- Signalized intersection at Mountain Avenue (State Highway 56) and Meadlowlark Drive including pedestrian push buttons and ADA access.
- Infrastructure required for the signalized intersection of Mountain Avenue (State Highway 56) and Meadlowlark Drive.

An Amended Development Agreement was entered into on April 10, 2025 to allow landscaping on the south side of Glacier Avenue to be included in the Commercial phase of the project rather than the northern residential phase.

The developer received notice of Construction Acceptance of Phase 1 (the residential component) on November 25, 2025. This notice triggered two requirements of the developer:

1. The signalized intersection of Mountain Avenue (State Highway 56) and Meadlowlark Drive was to commence within 90 days of Construction Acceptance (February 23, 2026) and be completed on or before 90 days following commencement.

2. Surety for both Phase 1 and 2 are due as specified in the Development Agreement.

The developer filed a request to amend the Development Agreement to allow additional time to install the signalized intersection at Mountain Avenue (State Highway 56) and Meadlowlark Drive. The proposed date for installation completion is December 31, 2026. While Town staff believes this extension is warranted, a $500/day penalty is also included in the amendment that will be applied for each day that the signal work is not complete after the deadline. In addition, financial collateral shall be made in the form of cash or a Letter of Credit at 125% of the engineer's estimated cost of construction.

For multiple decades, the Town Administrator has signed and approved development agreements for all Board-approved development projects. These agreements do not modify Board approvals but specify the timelines and procedures for constructing infrastructure that will be ultimately dedicated to the Town. On recommendation of the Town Attorneys, development agreements and amendments will be brought to the Town Board for approval from here forward.

Update/Next Steps:

Upon approval of the content of the 2nd Amended DA, the Trustees should authorize the Mayor to sign.

Fiscal Impact and Fund Source:

There is no negative fiscal impact of this request to delay installation of the lighted intersection at Mountain Avenue (State Highway 56) and Meadlowlark Drive by approximately 9 months.

Community Touchstones:

Installing the lighted intersection as well as adhering to the Development Agreement performance expectations adheres to the community touchstones of Resilience, and Sustainability.

Recommended Action(s):

Staff and the Town Attorneys have collaborated with the developer and their attorney to reach the terms outlined in the attached 2nd Amended Development Agreement and recommend the Board authorize the Mayor to sign.

Hoffmann Parker Wilson & Carberry | P.C.

Corey Y. Hoffmann
Kendra L. Carberry
Jefferson H. Parker
M. Patrick Wilson
Hilary M. Graham
Kathryn M. Sellars

Of Counsel
J. Matthew Mire
Daniel P. Harvey
Austin P. Flanagan

511 16th Street, Suite 610
Denver, CO 80202-4260
(303) 825-6444

Katharine J. Vera
Elizabeth G. LeBuhn
Kunal A. Parikh
Bria I. May
Nicholas A. Hartman
Nathan T. Cash
Tatiana A. Follett
Amanda L. Bruning

March 27, 2026

Berthoud Gateway LLC
Attn: Scott Charpentier
8340 Louden Circle
Windsor, CO 80528
Via U.S. mail and email to: scott@fcmmoney.com

Re: Notice of Default Regarding the Westside Crossing Commercial Development Agreement and Related Issues

Mr. Charpentier:

Our firm represents the Town of Berthoud (the "Town"), and writes today to formally notify you of default on behalf of Berthoud Gateway LLC ("Gateway") regarding its obligations under the Westside Crossing Commercial Development Agreement between Gateway and the Town, dated May 14, 2024, and at Larimer County Clerk and Recorder Reception No. 20240019270 (the "DA"), as amended by the First Amendment to Development Agreement between Gateway and the Town, dated April 10, 2025 (the "First Amendment, and collectively with the DA, the "Amended DA"), and related issues.

In sum, the Town hereby holds Gateway in default of the Amended DA for failure to initiate construction of the Phase 2 Traffic Signal Improvements (the "Traffic Signals") by the deadline featured in the Amended DA. Additionally, Gateway remains delinquent on its Development Review Deposit with the Town in the amount of $1,790.

Traffic Signals

The Amended DA, at Paragraph 18.F.ii, states that Phase 2 Improvements, including the Traffic Signals, shall be installed according to the timeline provided in Exhibit C. Exhibit C states, in Section A, that such installation "shall commence within 90 days after the site has reached Construction Acceptance." The site reached Construction Acceptance on November 25, 2025. **Exhibit A.** Therefore, installation of the Traffic Signals should have commenced on or before

February 23, 2026. Gateway has failed to do so and has further not taken any other steps to do so, including without limitation holding its Pre-Construction Meeting with the Town in accordance with Paragraph 13 of the Amended DA or posting the required Phase 2 Financial Collateral as required by Paragraph 23 of the Amended DA.

The Town hereby demands that Gateway begin development of the Traffic Signals, including without limitation scheduling a Pre-Construction Meeting with the Town and posting Financial Collateral, all in accordance with the Amended DA, as soon as possible, but in no event no later than 30 days after receipt of this letter. Failure to do so will result in the Town taking all necessary action pursuant to Paragraph 25 of the Amended DA, regarding Remedies on Default.

Development Review Deposit

On August 20, 2023, Gateway signed a Memorandum of Understanding for Payment of Review and Development Expenses Incurred by the Town (the "MOU"). **Exhibit B.** The MOU requires it to provide funds sufficient to cover the costs of the Town's review of its development application. Paragraph 1 of the MOU provides that the Town may request additional funds should the initial Development Review Deposit become exhausted. To date, Gateway owes the Town an additional $1,790 to continue covering the cost of development application review. **Exhibit C.** Pursuant to Paragraph 1, the Town will hereby cease to process Gateway's development application and may, at its election, proceed to collect the delinquent funds pursuant to Paragraph 4 absent timely payment within 15 days of the date of this letter.

Conclusion

The Town hereby demands that the Traffic Signals construction commence within 30 days of the date of this letter and further demands that Gateway's Development Review Deposit be replenished in the amount of $1,790 within 15 days of this letter. Failure to complete both of these tasks will result in the Town acting using all remedies available under the Amended DA, the MOU, and any other remedies it may have available to it at law and equity.

Sincerely,

Kendra L. Carberry

c: Anne B. Johnson, AICP MBA, Town Community Development Director

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513
970.532.2643

EXHIBIT A

WRITTEN NOTICE OF CONSTRUCTION ACCEPTANCE/START OF WARRANTY

Date: November 25th, 2025

Project Name: Westside Crossing Phase 2 (commercial phase 1)
Scott Charpentier

Prepared by: Mark Spaulding, Inspector – Town of Berthoud

Mr. Charpentier,

Based on the project walk through inspections completed by the Town of Berthoud, the Town acknowledges your request for Construction Acceptance of the public improvements for Phase 1 of the Westside Crossing Phase 2 Commercial Development project.

This Notice of Construction Acceptance does constitute the Start of Warranty acceptance period for the Phase 1 infrastructure as outlined in the Development Agreement.

This letter covers all lots located in the Westside Crossing Phase 2 Commercial Development project as outlined in the development agreement and the map included herein. This Construction Acceptance pertains to the following public improvements, Phase 1 only.

- Road improvements.
- Curb and Gutter improvements.
- Sidewalk/Trail improvements.
- Sanitary system improvements.
- Potable Water System improvements.
- Storm Drainage system improvements.
- Common area landscaping

The Town of Berthoud Engineering Standards govern the issuance of building permits and Certificates of Occupancy, (CO). This Construction Acceptance letter does not change the terms and conditions of any of the requirements outlined in the Engineering Standards. Nothing in this letter shall be construed or relied upon as an assurance or guarantee that building permits or Certificates of Occupancy will be issued, nor as a guarantee of the timing of any such issuance. The developer shall continue to coordinate with the Community Development Department regarding the ability of the developer or any third party to apply for a building permit/Certificate of Occupancy.

Below is a summary of outstanding requirements at the time of this notification. All noted items will need to be completed prior to first Certificate of Occupancy unless otherwise indicated.

ADDITIONAL REQUIREMENTS:

1. PHASE 2 INFRASTRUCTURE IMPROVEMENTS PER DEVELOPMENT AGREEMENT, INCLUDING BUT NOT LIMITED TO, TRAFFIC SIGNAL AND ADA RAMPS INSTALLATIONS.
2. INDIVIDUAL LOT: CURB AND GUTTER, SIDEWALK/TRAIL CONNECTIONS, WATER AND SANITARY TAPS, LOT LANDSCAPING.

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513
970.532.2643

ADDITIONAL NOTATIONS:

1. THE PROJECT IS SUBJECT TO ALL REQUIREMENTS NOTED IN THE DEVELOPMENT AGREEMENT
2. THIS LETTER IS FOR NOTIFICATION OF START OF WARRANTY ONLY, IT DOES NOT GUARANTEE THE RETURN OR REDUCTION OF ANY SURETY OR BOND FUNDS.
3. THE DEVELOPER SHALL BE RESPONSIBLE FOR CLEANING NEARBY PUBLIC STREETS OF MUD OR DEBRIS DUE TO CONSTRUCTION ACTIVITY. ALL PERMIT BMP'S ARE TO BE MAINTAINED AT ALL TIMES UNTIL PERMIT IS PROPERLY TERMINATED.
4. THE DEVELOPER IS REQUIRED TO PROVIDE AND MAINTAIN COMMON EROSION AND SEDIMENT CONTROL MEASURES AND SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY THE TOWN OF BERTHOUD.
5. TWENTY (20) MONTHS AFTER CONSTRUCTION AND PRIOR TO THE EXPIRATION OF WARRANTY, THE DEVELOPER SHALL CAMERA/VIDEO THE SANITARY SEWER LINES AND PROVIDE AN ELECTRONIC COPY TO THE TOWN FOR REVIEW AND ACCEPTANCE. ANY DEFICIANCIES MUST BE CORRECTED PRIOR TO TOWN ACCEPTENCE.
6. TWENTY (20) MONTHS AFTER CONSTRUCTION, PRIOR TO THE EXPIRATION OF WARRANTY, THE DEVELOPER SHALL SCHEDULE AN END OF WARRANTY WALK THROUGH WITH THE TOWN WHICH WILL INCLUDE STREETS, CURB AND GUTTER, SIDEWALKS, WATER VALVES AND HYDRANTS. ANY DEFICIENCIES MUST BE CORRECTED PRIOR TO TOWN ACCEPTENCE.

Please let me know if you have any further questions,

Sincerely,

Luke Seeber, P.E.
Town of Berthoud.

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513
970.532.2643

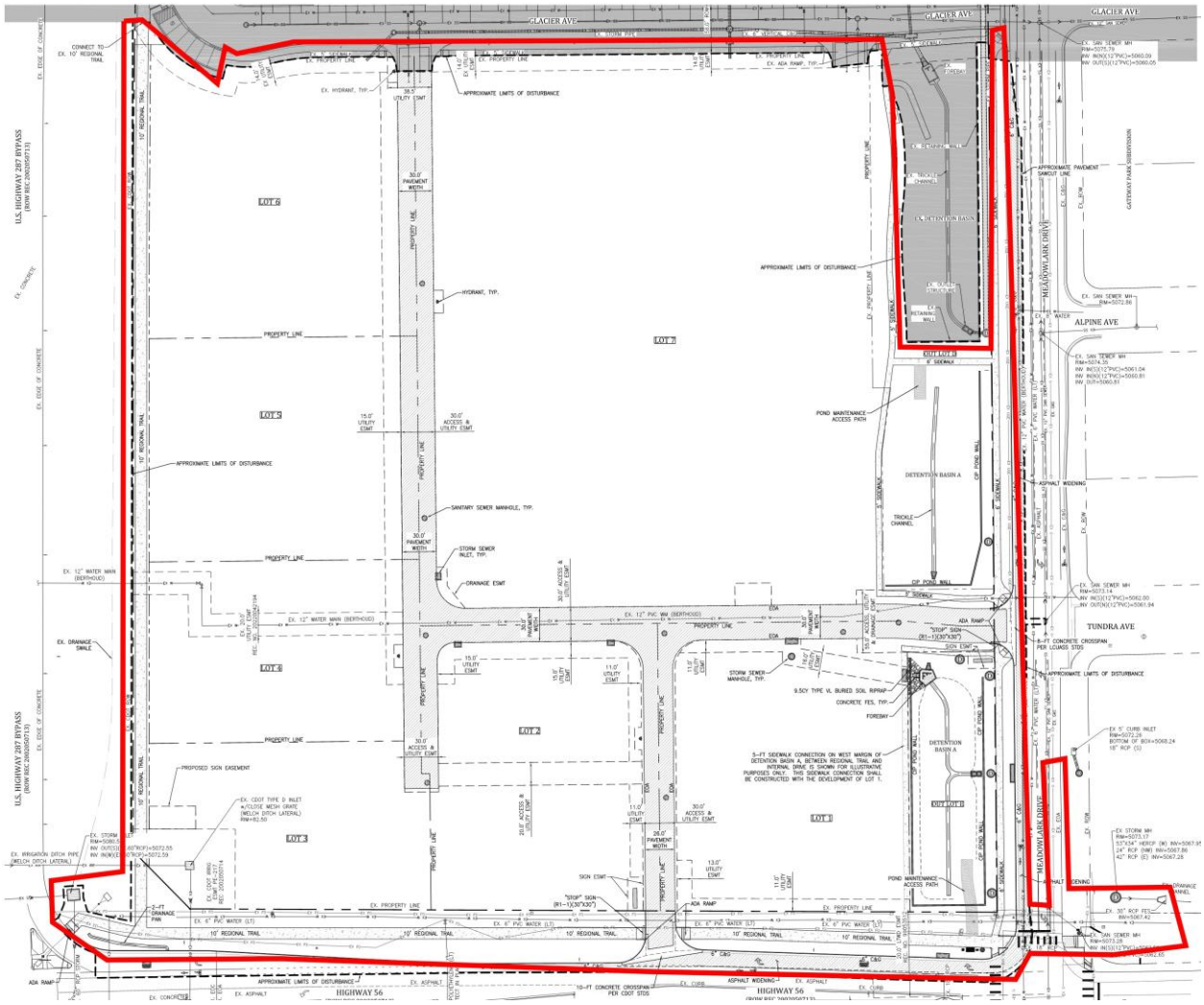


EXHIBIT B

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513
970.532.2643

MEMORANDUM OF UNDERSTANDING
FOR PAYMENT OF REVIEW AND DEVELOPMENT
EXPENSES INCURRED BY THE TOWN

This Memorandum of Understanding, with the Town of Berthoud, Colorado, a municipal Corporation, hereinafter referred to as "the Town," and Berthoud Gateway, LLC, hereinafter referred to as "the Applicant," is executed so as to prevent confusion on the part of the Applicant as to the Town's reimbursement policies.

WHEREAS, the Applicant of certain property situated in the County of Larimer, State of Colorado, which is more particularly described in **Exhibit A** attached hereto and incorporated herein, and is commonly referred to as Westside Crossing (Project Name); and

WHEREAS, the Board of Trustees has determined that the fiscal impact of annexation, subdivision and development should properly be borne by those parties who receive the benefits; and

WHEREAS, on August 9, 1994, the Board of Trustees passed Ordinance No. 707, establishing policies for reimbursement of professional fees and established fees for applications including, but not limited to, legal notification, planning fees, engineering fees, attorney fees, consultant fees, reproduction of material, public hearing expenses and recording documents; and

WHEREAS, on February 28, 1995, the Board of Trustees passed Ordinance No. 722, adopting a Development Code for the Town of Berthoud, which included the setting of new submittal review fees in Chapter 10; and

WHEREAS, on January 13, 2004, the Board of Trustees passed Ordinance No. 985, establishing new and/or revising existing fees as provided for in Chapter 10 of the Development Code; establishing an hourly fee for Town Personnel involved in development review; amending Section 30-10-104 of the Town of Berthoud Development Code; repealing Ordinance 707 and all ordinances in conflict herewith; providing a severability clause; providing an applicability clause; and providing for an effective date; and

WHEREAS, on February 14, 2006, the Board of Trustees passed Ordinance No. 1025, an Ordinance revising those fees established in Ordinance No. 985; and

WHEREAS, the Town's staff has determined the typical municipal expenditures incurred by the Town in processing subdivision and zoning related applications; and

WHEREAS, the Applicant desires to develop said property and has made a complete application to the Town of Berthoud for development; and

WHEREAS, the Parties hereto recognize that the Town will incur development expenses throughout the entire development process until final completion of the project, including, but not limited to, planning fees, engineering fees, attorney fees, consultant fees, reproduction of material, securing permits and easements, and recording fees;

NOW, THEREFORE, the Applicant understands that:

1. DEVELOPMENT REVIEW DEPOSIT

Development Review Deposit Schedule. In addition to the Application Fee(s), development review deposit(s) shall be provided to the Town at the time of submittal of a Development Review Application. It is the Applicant's responsibility to bear all costs related to the processing of a Development Review Application, including costs for review by consultants hired by the Town to assist with technical review of development projects. These consultants include, but are not limited to, engineering, planning, transportation, and legal. In order to keep track of the expenses incurred by the Town, the Town's staff, including, but not limited to, public works, planning, and administration, shall keep track of the time expended by each person involved in the process precipitated by the submittal of a Development Review Application. The Applicant is also responsible for paying incidental costs such as postage, recording, mileage and publication fees.

Due to numerous unforeseen factors, it is impossible to determine the actual expenses that may be incurred for review of development proposals. Therefore, at such time as expenses are in excess of the development review fee deposit amount, subsequent deposits shall be requested by the Planning Director. This amount will be based upon the status of the project and outstanding issues. In no event will review of a project continue once deposited development review fees have been exhausted until the Town has received a further deposit sufficient to cover anticipated expenses. Said payment shall be made within ten (10) days of the Town submitting an invoice for the expenses. Failure by the Applicant to pay within the specified time shall be cause for the Town to cease processing the application including any public hearing, deny approval of the application, and withhold the issuance of building permits or certificates of occupancy. Once final review is completed, any remaining development review fee deposit funds will be remitted to the Applicant.

2. FULL AND SEPARATE ACCOUNTING OF REVIEW AND DEVELOPMENT EXPENSES

The Town will maintain separate accounts of all monies expended as a result of the review of the above referenced application throughout the development process. The Town on a regular basis will provide statements of expenses incurred to the Applicant.

3. APPLICATION TERMINATION

Except where the law or an agreement with the Town provides otherwise, the Applicant may terminate its development application at any time by giving written notice to the Town. The Town shall take all reasonable steps necessary to terminate the accrual of costs to the Applicant e.g., notify newspapers to cancel publications, etc. The Applicant will be liable for all costs reasonably incurred by the Town to terminate the application.

4. COLLECTION OF FEES AND COSTS

If the Applicant fails to pay the fees required herein when due, the Town may proceed to collect the balance due by that Applicant. The Town shall also be entitled to all its filing fees, attorney's fees, expert witness fees, and other costs incurred in collection plus interest on the amount due at a rate of 18% per annum.

By signing this Memorandum of Understanding, the Applicant acknowledges that he/she has read this Memorandum of Understanding in its entirety, and agrees that by processing its application it will be required to comply with the Town's ordinances and the provisions set forth.

Applicant: _____ 8-20-23
Date

Applicant: _____
Date

Applicant: _____
Date

(attach additional signatures as necessary)

EXHIBIT C

Town of Berthoud

PO Box 1229
Berthoud, CO 80513
P: 970-532-2643
F: 970-532-0640
cleach@berthoud.org

Bill To: Berthoud Gateway-Westside Crossing
Address: 8340 Louden Cir
Windsor, CO 80528

Invoice #:
Invoice Date: 2/28/2026

Invoice For:

Date	Description	Deposit	Payment	Charge	Balance Due
10/31/25	Balance forward				$ 972.50
11/30/25	Payment		972.50		$ (972.50)
11/30/25	Luke Seeber engineer .5 hours @ $130				$ 65.00
11/30/25	Mark Spaulding inspector 5 hours @ $100				$ 500.00
11/30/25	Anne Johnson planner .75 hours @ $130				$ 97.50
12/31/25	Payment		662.50		$ (662.50)
12/31/25	Anne Johnson planner .5 hours @ $130			65.00	$ 65.00
12/31/25	Mark Spaulding inspector 3 hours @ $100			300.00	$ 300.00
01/31/26	Mark Spaulding inspector 5 hours @ $100			500.00	$ 500.00
01/31/26	Anne Johnson planner 1.25 hours @ $130			162.50	$ 162.50
02/28/26	Payment		365.00		$ (365.00)
02/28/26	Payment		982.50		$ (982.50)
02/28/26	Hoffman attorney fees			137.50	$ 137.50
02/28/26	Mark Spaulding inspector .5 hours @ $100			50.00	$ 50.00
02/28/26	Anne Johnson planner 3.25 hours @ $130			422.50	$ 422.50
	ADDITIONAL DEPOSIT				$ 1,500.00
				Invoice Subtotal	$ 1,790.00
				Tax Rate	
				Sales Tax	-
				Other	
				Deposit Received	
				TOTAL	$ 1,790.00

Make all checks payable to TOWN OF BERTHOUD
Total due in 15 days.

Town of Berthoud

PO Box 1229
Berthoud, CO 80513

P: 970-532-2643
F: 970-532-0640

Bill To: Berthoud Gateway-Westside Crossing
Address: 8340 Louden Cir
Windsor, CO 80528

Invoice #:
Invoice Date: 12/31/2025

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

Berthoud Gateway LLC
8340 LOUDEN CIR
WINDSOR, CO 80528
9702227268

WELLS FARGO BANK WEST, NA
MAIN ST
WINDSOR, CO 80550
23-7/1020

6119

2/20/2026

PAY TO THE ORDER OF Town Of Berthoud $**365.00

Three Hundred Sixty-Five and 00/100********** DOLLARS

Town Of Berthoud
807 Mountain Ave
Berthoud, Co 80513

MEMO end of year

⑈006119⑈ ⑆102000076⑆ 3376926782⑈

© 2011 INTUIT INC. # 872 1-800-433-8810

	ADDITIONAL DEPOSIT				$ 1,500.00
	Project has been signed off				

Invoice Subtotal	$ 1,865.00
Tax Rate	
Sales Tax	-
Other	
Deposit Received	
TOTAL	$ 1,865.00

Make all checks payable to TOWN OF BERTHOUD
Total due in 15 days.

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

Berthoud Gateway LLC
8340 LOUDEN CIR
WINDSOR, CO 80528
9702227268

WELLS FARGO BANK WEST, NA
MAIN ST
WINDSOR, CO 80550
23-7/1020

6122

3/11/2026

PAY TO THE ORDER OF Town Of Berthoud $**982.50

Nine Hundred Eighty-Two and 50/100********** DOLLARS

Town Of Berthoud
807 Mountain Ave
Berthoud, Co 80513

MEMO Straw Inspection and annes time on agreement

⑈006122⑈ ⑆102000076⑆ 337692678 2⑈

© 2011 INTUIT INC # 872 1-800-433-8810

Berthoud Gateway LLC 6122

Town Of Berthoud 3/11/2026

Date	Type	Reference	Original Amt.	Balance Due	Discount	Payment
3/11/2026	Bill	01/31/26	982.50	982.50		982.50
					Check Amount	982.50

WFB Checking	Straw Inspection and annes time on agreement	982.50

MARK SPAULDING - INSPECTOR - FEBRUARY 2026																					
Application	Time	Activity	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	9-Feb	10-Feb	11-Feb	12-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	23-Feb	24-Feb	25-Feb	27-Feb	
Westside Crossing Phase 2 Commercial	0.50	Project Inspections, MS4 Inspections, TCP inspections, Construction coordination, material submittals, RFI requests, developer meetings, Punch Inspections							0.50												
	0.50		0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50

ANNE JOHNSON - PLANNING DIRECTOR - FEBRUARY 2026														
Application	Time	Activity	4-Feb	5-Feb	9-Feb	10-Feb	11-Feb	12-Feb	17-Feb	18-Feb	19-Feb	24-Feb	25-Feb	26-Feb	
Westside Crossing	3.25	Meeting with developer and C. Kirk re DA timing; discount meeting by 50%; follow up conversation with Engineering; email re Phase 2 defer out to CK and LS; discussion with Town Attorney; confirmation on approach with Chris and email to attorney			0.50			1.75			0.25	0.50	0.25		
	3.25		0.00	0.00	0.50	0.00	0.00	1.75	0.00	0.00	0.25	0.50	0.25	0.00	3.25

Second Amendment to the Development Agreement
(Westside Crossing)

This Second Amendment to the Development Agreement (the "Second Amendment") is made and entered into this ____ day of _____, 2026 (the "Effective Date"), by and between the Town of Berthoud, a Colorado municipal corporation with an address of 807 Mountain Avenue, Berthoud, CO 80513 (the "Town"), and Berthoud Gateway, LLC, a Colorado corporation with an address of 8340 Louden Circle, Windsor, CO 80528 ("Developer") (each a "Party" and collectively the "Parties").

Whereas, on May 14, 2024, the Parties entered into a Development Agreement (the "Agreement");

Whereas, on April 10, 2025, the Parties amended the Agreement to add additional landscaping improvements to the list of Onsite Improvements (the "First Amendment"); and

Whereas, the Parties desire to amend the Agreement again as set forth herein.

Now, therefore, in consideration of the promises and the mutual covenants herein contained, the sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Posting of New Financial Collateral. Paragraph 23 of the Agreement is amended to read as follows:

> 23. **Financial Collateral**. Prior to the start of construction on an individual phase, the Developer shall provide the Town with collateral in a form acceptable to the Town in the amount established in this Section for the completion of the Subdivision (the "Financial Collateral"). The Developer shall provide collateral, as described in Exhibit B equal to the following: (i) Letter of credit in the amount of either 115%, or in another amount as specified herein, of the Estimated Costs; or (ii) Cash or certified funds as approved by the Town in the amount of 25% of the Estimated Costs.
>
> * * *
>
> B. After Initial Construction Acceptance and upon the commencement of the warranty period, all remaining Financial Collateral shall be released by the Town except for a continuing ten (10) percent of total costs, which shall be maintained through the warranty period and replaced as necessary to stay current. Upon expiration of the warranty period, all remaining Financial Collateral for the Development Improvements shall be released.
>
> * * *
>
> C. Financial Collateral shall be provided for all Development Improvements within each construction phase, including the off-site public improvements

included with each phase as described above. Financial Collateral shall be provided for each of the following elements of construction:

* * *

v. Signalized Intersection at Mountain Avenue (State Highway 56) and Meadowlark Drive – financial collateral for the Signalized Intersection Improvements at Mountain Avenue (State Highway 56) and Meadowlark Drive, as further described in Exhibit C, shall be in the amount of 125% of the Estimated Costs and in place and approved by the Town Engineer prior to the Pre-Construction Meeting for the Signalized Intersection Improvements at Mountain Avenue (State Highway 56) and Meadowlark Drive, or July 1, 2026, whichever comes first.

* * *

2. Addition of Liquidated Damages. The Agreement is amended by the addition of a new Paragraph 38 to read as follows:

38. **Liquidated Damages for the Signalized Intersection at Mountain Avenue (State Highway 56) and Meadowlark Drive**.

A. Because time is of the essence and delayed performance causes compensable, yet difficult to ascertain, damage to the Town and its residents, the liquidated damages established in this Section shall be enforced. Such damages are not a penalty. For each day installation by Developer, operation, and acceptance by the Town, including any required review and acceptance by the Colorado Department of Transportation, of the Signalized Intersection at Mountain Avenue (State Highway 56) is delayed after December 31, 2026, Developer shall be assessed $500 per day, which constitutes a reasonable estimate of the actual damages such delay would cause the Town. The Town may draw from the financial collateral provided for by Paragraph 23.C.v for such assessment.

B. Allowing Developer to continue and finish the Signalized Intersection at Mountain Avenue (State Highway 56) and Meadowlark Drive, or any part thereof, after December 31, 2026, shall not operate as a waiver on the part of the Town of any of its rights under the Agreement, as amended. Any liquidated damages assessed shall not relieve Developer from liability for any damages or costs of other contractors caused by a failure of Developer to complete the Signalized Intersection at Mountain Avenue (State Highway 56) and Meadowlark Drive on or before December 31, 2026, nor for any attorneys' fees or costs that are otherwise allowable under the Agreement, as amended, or applicable law. Liquidated damages may be

deducted from the financial collateral provided for by Paragraph 23.C.v for such assessment. If the liquidated damages exceed such financial collateral, Developer shall pay the Town within 30 days of the Town's written demand for such payment.

3. Amendment of Signalized Intersection Improvement Timing. The first subparagraph of Exhibit C, Paragraph A, of the Agreement is amended as follows:

- Signalized intersection at Mountain Avenue (State Highway 56) and Meadowlark Drive including pedestrian push buttons and ADA access.
    - The signal poles shall be installed, operational and accepted by the Town, including any required approvals from the Colorado Department of Transportation, on or before December 31, 2026.

4. Update to Estimated Costs for the Signalized Intersection. Exhibit C-1c of the Agreement is hereby replaced with **Exhibit A**, attached hereto and incorporated herein, to remain labeled as Exhibit C-1c in the Agreement.

5. Force Majeure. No Party shall be in breach of the Agreement if such Party's failure to perform any of the duties under this Agreement is due to Force Majeure, which shall be defined as the inability to undertake or perform any of the duties under the Agreement due to acts of God, floods, storms, fires, sabotage, terrorist attack, strikes, riots, war, labor disputes, forces of nature, the authority and orders of government or pandemics.

6. Agreement Remains in Full Force and Effect. All provisions of the Agreement not expressly modified in the First Amendment or this Second Amendment shall remain in full force and effect.

In Witness Whereof, the Parties have executed this Agreement as of the Effective Date.

Town of Berthoud, Colorado

_____
William Karspeck, Mayor

Attest:

_____
Christian R. Samora, CMC, Town Clerk

Developer

By: _____

State of Colorado)
) ss.
County of ~~Larimer~~ Weld)

The foregoing instrument was subscribed, sworn to and acknowledged before me this 21 day of May 2026, 2026, by Scott T. Charpentier as Managing Memberr of Berthoud Gateway, LLC.

My commission expires: 05-04-2027

(Seal)

LYNELLE TSIKEWA
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20234016991
My Commission Expires: May 04, 2027

_____
Notary Public

Exhibit A
Updated Signalized Intersection Costs

Phase 1 Traffic Signal Cost Estimate

CO-56 & Meadowlark Dr.

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	Est. Cost	TOTAL
613-00306	3 inch Electrical Conduit (Bored)	LF	600	$ 20.00	$ 12,000.00
613-00200	2 inch Electrical Conduit (Bored)	LF	680	$ 20.00	$ 13,600.00
613-07005	Pull Box Type 5	EA	1	$ 1,100.00	$ 1,100.00
613-07004	Pull Box Type 4	EA	1	$ 1,000.00	$ 1,000.00
613-07003	Pull Box Type 3	EA	2	$ 1,000.00	$ 2,000.00
	Total Engineer's Opinion of Cost				**$ 29,700.00**
	Engineer's Contingency (35%)				**$ 40,095.00**

Phase 2 Traffic Signal Cost Estimate

CO-56 & Meadowlark Dr.

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	Est. Cost	TOTAL
203-01597	Potholing	HRS	20	$ 300.00	$ 6,000.00
503-00036	Drilled Shaft 36"	LF	57	$ 400.00	$ 22,800.00
503-00048	Drilled Shaft 48"	LF	21	$ 500.00	$ 10,500.00
614-86248	Traffic Signal Controller (Intelight 2070LC) and Cabinet (Model 332D)	EA	1	$ 30,000.00	$ 30,000.00
614-87320	CCTV (CDOT/ITS spec) mounted on pole closest to controller cabinet	EA	1	$ 1,000.00	$ 1,000.00
613-10000	Wiring	LS	1	$ 50,000.00	$ 50,000.00
614-70336	Signal Head 12-12-12 (LED)	EA	12	$ 700.00	$ 8,400.00
614-70338	Signal Head 12-12-12-12 (LED)	EA	4	$ 900.00	$ 3,600.00
614-70150	Signal Head 16" Pedestrian (LED)	EA	8	$ 500.00	$ 4,000.00
614-72863	APS Push Button & Signs w/ Rack Mounted Central Control Unit	EA	8	$ 2,000.00	$ 16,000.00
614-72886	Fire Preemption Unit & Timer - Opticom 722, 764	EA	1	$ 3,200.00	$ 3,200.00
614-81166	Traffic Signal Pole with 55' Mast Arm & 15' Luminaire	EA	1	$ 25,000.00	$ 25,000.00
614-81135	Traffic Signal Pole with 35' Mast Arm & 15' Luminaire	EA	1	$ 17,000.00	$ 17,000.00
614-81150	Traffic Signal Pole with 50' Mast Arm & 15' Luminaire	EA	1	$ 22,000.00	$ 22,000.00
614-81140	Traffic Signal Pole with 40' Mast Arm & 15' Luminaire	EA	1	$ 18,000.00	$ 18,000.00
614-84000	Pedestrian Post w/Push Button & Sign	EA	8	$ 1,500.00	$ 12,000.00
614-79886	Iteris Vantage Next Video Camera on 5' extension pole w/Sky Brackets	EA	4	$ 12,500.00	$ 50,000.00
614-00011	Sign Class 1	SF	105	$ 30.00	$ 3,150.00
614-00012	Traffic Control	LS	1	$ 20,000.00	$ 20,000.00
	Total Engineer's Opinion of Cost				**$ 322,650.00**
	Engineer's Contingency (35%)				**$ 435,577.50**



Engineer's Certification

This cost estimate for the CO-56 traffic signal was prepared by me (or under my direct supervision in accordance with the Colorado Department of Transportation.

5-1-24

By: John M.W. Aldridge, P.E.
Licensed Professional Engineer
State of Colorado No. 34193

RECEPTION #20240019270, 5/15/2024 11:55:18 AM,
1 of 25, $133.00
Tina Harris, Clerk & Recorder, Larimer County, CO

Town of Berthoud
Development Agreement

Westside Crossing Commercial

Town of Berthoud, Counties of Larimer and Weld, State of Colorado.

THIS DEVELOPMENT AGREEMENT (this "Agreement"), is made and entered into this 14 day of May, 2024, between the TOWN OF BERTHOUD, COLORADO, a Municipal Corporation, hereinafter referred to as the "Town," and Berthoud Gateway LLC, a Colorado Limited Liability Company, its successors and permitted assigns, hereinafter referred to as "Developer" and "Owner", collectively referred to as "Developer."

WHEREAS, Owners desire to construct certain infrastructure improvements pursuant to the Final Plat (the "Plat") for the Westside Crossing Replat #2; and

WHEREAS, the parties desire to set forth their agreement with regard to the construction, ownership, operation and maintenance of improvements constructed by Developer as set forth in this Agreement; and

WHEREAS, Sections 24-68-101, *et seq.*, of the Colorado Revised Statutes (the "Vested Property Rights Statute") and Section 30-4-102, *et seq.*, of the Berthoud Development Code authorize the Town to enter into development agreements with landowners and to designate such development agreements and certain other documents as site specific development plans providing for vesting of property development rights for a period of three (3) years; and

WHEREAS, accordingly, the Plat and this Agreement together shall be designated as a site specific development plan, subject to the terms, conditions and limitations set forth in such Plat and this Agreement.

NOW THEREFORE, IN CONSIDERATION OF THE FOREGOING RECITALS AND THE MUTUAL COVENANTS AND PROMISES CONTAINED HEREIN, THE RECEIPT AND SUFFICIENCY OF WHICH IS HEREBY ACKNOWLEDGED, THE TOWN AND OWNER AGREE AS FOLLOWS:

1. **Definitions of Specific Terms.**

A. "Water Improvements" shall mean the improvements needed for the delivery of potable water to residents and property owners within the Property for domestic use, all as more fully set forth in the Plat and Plans.

B. "Wastewater Improvements" shall mean improvements needed for the collection and treatment of wastewater within the Property and for the discharge of treated wastewater, all as more fully set forth in the Plat and Plans.

C. "Non-Potable Irrigation Water Improvements" shall mean improvements needed for the storage and delivery of non-potable irrigation water to serve individual lots and common areas, all as more fully set forth in the Plat and Plans.

D. "Street Improvements" shall mean improvements needed for public streets within the Property, including, but not limited to, curbs, gutters, sidewalks, drainage facilities, medians, parkways, and other related improvements and appurtenances, all as more fully set forth in the Plat and Plans. "Perimeter Street Improvements" shall mean Street Improvements along or associated with Meadowlark Lane inclusive of the landscaping, curb, gutter, street improvements; and trail/sidewalk installation. "Highway Street Improvements" shall mean Street Improvements along or associated with and State Highway 56 inclusive of the landscaping, curb, gutter, street improvements; and trail/sidewalk installation. "Internal Street Improvements" shall mean all other Street Improvements that are neither Highway Street Improvements nor Perimeter Street Improvements.

E. "Storm Drainage Improvements" shall mean the off-roadway improvements and facilities needed for the collection, conveyance, detention and release of storm water, as more fully set forth in the Plat and Plans.

F. "Landscape Improvements" shall mean landscaping and associated irrigation systems in the common areas, opens space, and those associated with Street Improvements, including those in the tree lawn and other portions of the public rights of way, all as more specifically described in the Plat, and Plans.

G. "Property" shall mean the real property commonly known as the Westside Crossing Replat #2 Final Plat, located in the Town of Berthoud, County of Larimer, State of Colorado, as more particularly described in **Exhibit A** attached hereto and made a part of this Agreement. The Property as it is to be improved in compliance with the Plat and this Agreement may be referred to as the "Subdivision."

I. "Plans" shall mean any and all plans and specifications approved by the Town, and any other governmental or quasi-governmental entity required by the Town, in connection with the Plat, inclusive of the following:

1. The Final Plat for the Westside Crossing Replat #2 recorded with the Larimer County Recorder at Reception 2024<u>0019268</u>; and

2. Construction Drawings associated with the Final Plat for the Westside Crossing Replat #2 development prepared by Kiowa Engineering Corporation updated February 15, 2024 and accepted by the Town Engineer on March 7, 2024; and

3. Landscape Plans (the "Landscape Plans") prepared by StackLot dated July 31, 2023, as updated after the Final Plat has been recorded to conform to the Town's Landscape Design Guidelines and to be approved by the Town.

J. "Development Improvements" shall mean all of the improvements necessary or required by the Town to establish buildable lots on the Property in accordance with the Plans and the terms and conditions of this Agreement, including, but not limited to, all Water Improvements, Wastewater Improvements, Street Improvements, Storm Drainage Improvements, Signage, Landscape Improvements, the Signalized Intersection Improvements at Mountain Avenue and Meadowlark Drive, and other improvements on and off the Property. All of the Development Improvements required for the Property, together

with the entity to which they will be dedicated upon satisfactory completion, are set forth in the dedication map attached hereto as **Exhibit B**.

2. **Effective Date.** As of the date of mutual execution of this Agreement (the "Effective Date"), Developer shall construct all Development Improvements in accordance with the terms set forth in **Exhibit C**, attached hereto and incorporated herein by reference. In addition, when constructed, all Development Improvements specified on the Plans affecting the Property shall be constructed and completed by the Developer in accordance with this Agreement and the Plans.

The Town and Developer acknowledge that said Development Improvements are reasonable, necessary, and appropriate conditions and obligations of the Developer. The Town and Developer further acknowledge that said Development Improvements are an integral part of the Town's approval, execution and acceptance of the Plans and any associated schedule. The installation of such improvements is necessary to protect, promote and enhance the public welfare.

Developer shall cause future lot owners to construct those certain improvements as more specifically described in **Exhibit D**, including curb, gutters, sidewalks, irrigated tree lawns, street trees and connection to the external trail system.

3. **Binding Effect.** All Development Improvements required to be constructed, installed, completed and paid for by the Developer, as well as all other matters herein agreed to be performed are contractually binding on the parties to this Agreement, their assignees, heirs, devisees and successors and shall run as covenants with the land itself. It is the intention of the parties that this Agreement shall be recorded with the Larimer County Clerk and Recorder and shall run with the Subdivision.

4. **Development Improvements Plan.** All Development Improvements required to be constructed, installed, completed and paid for by the Developer, as well as all other matters agreed to be performed, shall be constructed, installed and completed by the Developer in accordance with **Exhibit B.**

5. **Site Specific Agreements.** Additional site-specific agreements for lots within Property may be entered into by and between the Town and future Developers on individual lots.

6. **Vested Rights.**

A. The Town agrees that the vested property rights established under this Agreement shall be effective during the period of the Vesting Term.

B. The Developer and The Town agree that the Plat and this Agreement (together the "Development Documents") constitute an approved "site specific development plan" as defined in the Vested Property Rights Statute and Chapter 30, Section 4 of the Development Code, as the same may be amended from time to time, and that pursuant to the Vested Property Rights Statute and, further pursuant to the contractual commitments made herein, the Developer shall have a vested property right to undertake and complete the development and use of the Property limited to and under the terms and conditions of the Development Documents during the period of the Vesting Term.

C. Site-Specific Development Plan. Notwithstanding any provision of the Vested Property Rights Statute, as amended from time to time, the Development Documents, individually and collectively, constitute a Site Specific Development Plan, pursuant to the Vested Property Rights Statute.

D. Vesting Term. The term of the vested property rights established under this Agreement will commence on the Effective Date and will continue until the third anniversary of the Effective Date (the "**Vesting Term**"), unless extended by mutual agreement of Developer and the Town. After the expiration of the Vesting Term, the vested property rights established by this Agreement will be deemed terminated and of no further force or effect.

7. **Phasing.** The Property shall be developed in two phases as described below and more specifically detailed in Exhibits B and C:

Phase 1:

All Development Improvements not included in the Phase 2 Development Improvements and including but not limited to:

1. **Sidewalks and Northwestern ADA Ramp:** Installation of all sidewalks directly adjacent to the project frontage along Mountain Avenue and Meadowlark are required. The sidewalks are to be constructed to meet current Town standards for safety and accessibility and this requirement also includes the ADA-compliant ramps at the northwest corner of the intersection. These ramps are to ensure accessibility for all pedestrians, including those with disabilities, in accordance with federal and state regulations.

2. **Conduits and Pull Boxes:** Installation of all necessary conduits at each corner of Mountain Avenue and Meadowlark. These installations are intended to support the electrical and communication requirements for traffic signals to be installed in Phase 2.

Phase 2:

1. **Traffic Signals**: Installation of all traffic signals at the intersection of Mountain Avenue and Meadowlark. This includes the full setup of signal poles, lights, and associated control systems to manage intersection traffic flow efficiently.

2. **ADA Ramps**: Construction of all remaining ADA-compliant ramps at all corners of the Mountain Avenue and Meadowlark intersection. These ramps are to ensure accessibility for all pedestrians, including those with disabilities, in accordance with federal and state regulations.

8. **Fees & Reimbursements.** Pursuant to the Town's Ordinances, the Developer agrees to reimburse the Town for all administrative and professional fees and other costs incurred by the Town that are related to the development of the Property. Professional fees subject to reimbursement to the Town generally include those expenses and fees incurred by the Town during the planning, review, processing and approval of plans associated with the Town of Berthoud Development Application for this Property such as, without limitation, engineering, inspection, administrative and

legal fees and subsequent inspection and acceptance of Development Improvements.

9. **Construction Standards.** All construction shall be performed in a good and workmanlike manner and in full conformance with the Plans, the Town of Berthoud Development Code and all applicable standards, rules, regulations and ordinances governing construction of Development Improvements. No deviations to the Plans will be allowed or accepted by the Town without prior written consent of the Town.

10. **Owners to Indemnify Town.** Owners shall indemnify and hold harmless the Town from any and all liability, loss and damage the Town may suffer as a result of suits, actions or claims of every nature and description caused by, arising from, or on account of any design and construction of improvements within or for the Property and pay any and all judgments, fines or penalties rendered against the Town on account of any such suit, action or claim, together with all reasonable expenses and attorneys' fees incurred by the Town in defending such suit, action or claim. Any provision for indemnification of the Town by Owners as provided in this Agreement shall be subject to the limitation that such indemnification shall not extend to claims, acts or other liabilities arising solely as a result of negligence, willful misconduct, or the direct acts or omissions of the Town, its agents or representatives. Furthermore, the Town agrees to provide notice to Owners of any claim made against the Town to which any such indemnity by Owners could apply, and Owners shall have the right to defend any lawsuit based on such claim and to settle any such claim (provided that Owners must obtain a complete discharge of all Town liability through any such settlement). Notwithstanding any contrary provision, failure of the Town to give Notice of any such claim to Owners shall not affect the Owners' indemnification obligation.

11. **Easements.** Development of the Project may require off-site easements for the construction of facilities that will serve this Property as well as benefit the Town. The Owners shall use good faith efforts to obtain required easements or rights of way for the same in a reasonably direct route, including paying fair market value compensation. If the Owners are unable to obtain such easements or rights of way, the Town, in good faith, may, after written request, use its powers of eminent domain to acquire the same. In the event the Town does not elect to or is unable to acquire the easement or right of way necessary for the installation of the infrastructure as contemplated under the construction plans, the Town will not unreasonably withhold approval of an alternate utility plan to serve the Property. All of Owners' rights to the real property within the Property containing Development Improvements shall be dedicated to the Town in fee, and any area noted on the Plat as dedicated to the Public shall be dedicated as to all rights and uses, not merely those intended at the time of this Agreement.

12. **Erosion Control and Operations.** Developer shall apply for and receive approval of a Town-approved erosion control and stormwater management plan/permit. Developer shall implement a Town-approved erosion control and stormwater management plan for all site disturbance activities, prior to the pre-construction meeting. No site disturbance is permitted prior to the pre-construction meeting. Further, Developer shall comply with the Town-approved erosion control plan and shall install and maintain all requirements of such erosion control plan throughout the construction of Development Improvements inclusive of Public Improvements and shall not be removed or abandoned by the Developer until authorized by the Town. The Developer shall provide the Town with a copy of the approved stormwater discharge permit issued from the State prior to the pre-construction meeting. Regular inspections of erosion control measures will be conducted pursuant to the regulations adopted by Colorado Department of Public Health and Environment (CDPHE) by the Developer and copies of the same delivered to the Public Works Department / Town Engineer not less than every two weeks during the course of construction. At all times during construction on

the Property, or off-site projects associated with development of the Property, Owners shall maintain all streets, drainage and drainage facilities in an orderly and workmanlike fashion. Owners shall remove all construction debris and waste, shall sweep or otherwise remove mud and debris from existing streets and shall maintain an orderly and clean construction site.

13. **Pre-Construction Meeting.** The Developer agrees that prior to commencement of construction of Development Improvements, a preconstruction meeting ("Pre-Construction Meeting") will be conducted. This meeting shall include the following: Developers construction team including project and construction contractor, Town community development, engineering, public works, water and wastewater department representatives, and representatives of all applicable utility companies or agencies. All construction specifications and other submittal materials will be provided to the Town engineer at least two weeks prior to scheduling the Pre-Construction Meeting along with a written construction schedule and a copy of the approved stormwater discharge permit issued from the State. The construction schedule will include time frames and completion dates and indicate the anticipated scheduling of the construction of the Development Improvements, including, but not limited to, excavating, grading, sewer, water, storm sewer, streets, sidewalks, trails, curb, gutter, landscaping, electric, cable, gas, and telephone.

In addition, the Developer shall also provide the following information for Town review and approval prior to scheduling the Pre-Construction Meeting for the overall site grading or submittal of the first Site Plan or Special Use Permit application for any portion of the Property, whichever occurs first:

a. A Comprehensive Sign Plan for the entire Subdivision - the Comprehensive Sign Plan shall adhere to the requirements of the Development Code, including the Dark Sky Standards, the Sign Code, and the Mountain Avenue Overlay District Guidelines.
    i. Developer shall provide the signage for CDOT right-of-way along State Highway 287 and Mountain Avenue for the Town's approval prior to Developer submitting it to CDOT for approval.
b. Architectural Design Standards for the entire Subdivision, which Architectural Design Standards shall comply with the Architectural Standards of the Development Code, including the Mountain Overlay District Standards and be consistent with and based on the Town of Berthoud Architectural Standards Guidelines.
c. Construction Plans and Profiles.
d. The irrigation plan for the common areas.

14. **Notice to Town and Inspection.** The Developer agrees to notify the Town at least two full working days prior to the commencement of installation of Development Improvements. The Town shall also be given not less than 48 hours (during at least 2 working days) notice prior to the closure/covering of any infrastructure. In the event that any Development Improvements are covered and/or concealed from inspection prior to approval by the Town, the Developer shall expose any and all improvements at the request of the Town and at the Developer's expense. If the Town cannot complete inspections in a timely manner, the Town will use contract inspection services, the cost of which will be reimbursed to the Town by the Developer.

15. **Required Infrastructure.** Notwithstanding any provision in **Exhibit C**, building permits for any type of structure regulated by the Town's adopted building codes will not be accepted for application by the Town until all Development Improvements identified in **Exhibits B and C** have been completed by the Developer and accepted by the Town through the Construction Acceptance

process identified in this Agreement.

16. **Over-lot Grading**. All development lot grading generally referred to as "over-lot" grading as depicted in the Development Grading and Drainage plan(s) as approved by the Town must be completed by the Developer prior to Construction Acceptance per the Town of Berthoud Development Code as amended. Final "as-built" construction plans shall be prepared by the Engineer of Record and provided to the Town in accordance with all applicable Town standards.

17. **Utilities From Providers Other Than Town**. In instances where the Town is not the provider of one or more utilities, easements for such utilities are specifically exempted from dedication and acceptance by the Town. However, the Town deems these utilities as essential Development Improvements necessary for the preservation of the health, safety and welfare of the owners within this Subdivision. Therefore, the Town requires that these utilities to be completed and fully functioning prior to the issuance of a Certificate of Occupancy; provided, however, the dry utilities shall be deemed completed and fully functioning for purposes of the Town issuing building permits (but not certificates of occupancy) under this Agreement as long as the Developer has paid for the contracts with the applicable service providers and is using commercially reasonable efforts to cause such service providers to complete installation. The Town understands that the completion of these utilities may involve agreements and contracts executed between the Developer and the utility provider to which the Town is not a party. These utilities operate within the Town of Berthoud pursuant to agreements or franchises with the Town. Prior to commencement of installation and construction of any non-municipal utilities, including but not limited to gas, electric, telephone or cable utilities, the Developer shall submit to the Town copies of utility company approved construction plans and any contractual agreement entered into between the Developer and the utility provider. The Town may review such plans to determine whether the placement of such utilities, equipment and appurtenances is or will be in conflict with any Town-owned utilities, easements, public rights-of-way or any other Town interests. Upon completion of gas, electric, telephone or cable utilities, the Developer shall provide a written notice of completion from each utility company certifying that the utilities are completed, accompanied by two original sets of "As Built" construction plans.

Under no circumstances shall any structure be eligible to obtain a Certificate of Occupancy until such time as all utilities are completed, connected to the commercial structure and certified in writing as completed by the serving utility. Under no circumstances shall a building permit be issued in a phase until the Town has granted Construction Acceptance of all Development Improvements for that phase.

18. **Construction Acceptance**. "Construction Acceptance" of Development Improvements shall be initiated by the Developer. Upon completion of all Development Improvements for any phase of the Project, as applicable, the Developer shall notify the Town, in writing, that the Development Improvements have been completed in accordance with the Plans and that said improvements are ready for construction acceptance inspection and provide the Town with two copies of "As Built" construction plans for all utilities (each a "**Completion Notice**"). Once inspected, reviewed and accepted, the Developer shall provide a copy of the "As Built" construction plans to the Town in a form acceptable to the Town including electronic submittal.

A. Development Improvements Inspections. Within approximately five business days of receipt of the Developer's Completion Notice, the Town will proceed to provide said inspection of all applicable Development Improvements. If the Town is unable to inspect the Development Improvements within five business days, the Town will

provide written notice to the Developer and identify an extended timeframe not to exceed 10 days for those inspections. At the time of said inspection, if any deficiencies are discovered by the Town, the Town will create a written notice of the deficiency and make recommendations for correction in the notice and forward it to the Developer. The deficiency correction notice shall generally describe each deficiency to be corrected by the Developer to repair or rehabilitate the Development Improvement sufficient for the Town to accept said improvement.

B. Corrective Action. All corrective actions shall be completed by the Developer within one month of receipt of the Town's written deficiency correction notice, unless additional time is requested by the Developer in writing and agreed to by the Town in writing. The Town may grant a reasonable extension of time where the Developer has suffered delays beyond the Developer's reasonable control (such as acts of God, pandemic, strikes or labor disputes, materials shortages or unreasonable delays in deliveries) and not due to the fault or negligence of Developer when satisfactory evidence of such cause is presented to the Town. Upon completion of any corrective action by the Developer, the Developer shall again, notify the Town in writing that all Development Improvement deficiencies have been corrected and are ready for re-inspection. The Town shall proceed with inspections in the same manner previously described.

C. Landscape Improvements. Except as otherwise provided below, Landscape Improvements within public rights-of-way and portions of the property adjacent to Meadowlark Avenue and Mountain Avenue are expected to be completed at the time of Construction Acceptance. In the event of a weather caused delay, the Town may grant a reasonable extension of time provided that Developer delivers to Town a performance guaranty in a form satisfactory to the Town, separate from the Financial Collateral, in the amount equal to the landscape materials and installation costs.

D. To the extent the Development Improvements have been completed in accordance with the Plans in the Town's sole discretion, the Town will grant Construction Acceptance of the Development Improvements, with such minor deficiencies to be corrected after Construction Acceptance in accordance with the terms and conditions, including schedule and deadlines, of the Construction Acceptance notification.

E. Warranty Period. The Warranty Period described in the Warranty Section below does not begin until the Developer corrects all minor deficiencies in accordance with the terms and conditions of the Construction Acceptance notice.

F. Installation Timing.

i. Phase 1. All Phase 1 Development Improvements, including the Signalized Intersection Improvements at Mountain Avenue and Meadowlark Drive, all trails, sidewalks, Subdivision Identity Standards, stormwater management, common area landscaping and seeding of open space, and all public and private improvements including, as required by the Berthoud Development Code, the Engineering and Infrastructure Standards and as a condition of development approval, shall be completed as a condition of Developer submitting a Completion Notice for any phase of the Subdivision, as applicable. No building permits will be accepted prior to completion of all such

improvements. No building permit may be applied for until the Town has issued Construction Acceptance for the Subdivision, except that:

(a) All open space, common area landscaping and disturbed areas must be seeded and/or sod laid before the first building permit can be applied for, when application is submitted between April 1 and September 30; or by July 4 when the application is submitted between October 1 and March 31.

(b) All common open space trees and shrubs, and street trees and shrubs, must be planted before the first building permit can be applied for, when application is submitted between April 1 and September 30; or by July 4 when the application is submitted between October 1 and March 31.

ii. Phase 2. All Phase 2 Development Improvements shall be installed according to the timeline provided in Exhibit C.

19. **Maintenance After Construction Acceptance**. Construction Acceptance of Development Improvements shall be provided by written notice to the Developer after review as outlined in this Agreement and, specifically, the Construction Acceptance Section, in accordance with provisions of the Town of Berthoud Development Code. All Development Improvements shall remain the Developer's responsibility, which shall include but not be limited to all maintenance and repairs, until the Town provides written notice of Final Acceptance of the Development Improvements to be accepted by and dedicated to the Town. Except as otherwise provided herein, the Town will generally not consider partial acceptance or acceptance of any Development Improvements not fully completed and fully functioning as part of a completed Subdivision phase.

Landscape Improvements shall remain the responsibility of the Developer for the warranty period of three (3) years. Landscaping shall be irrigated, maintained in a healthy condition, and replaced within the same growing season as the removal. The Town's landscape guidelines, standards and specifications shall be adhered to. After warranty, the perpetual maintenance of the landscaping and irrigation shall be the responsibility of the Association or individual parcel owner including up to the edge of pavement.

20. **Final Plan Documents**. Upon completion of all of the Development Improvements and conditions agreed to herein, and prior to any Construction Acceptance of any individual Development Improvement(s) by the Town, the Developer shall provide the Town with a written certification from a professional engineer, except to the extent that elevations or metes and bounds are certified by a licensed surveyor, indicating that the Development Improvements were constructed in compliance with the Plans or Town-approved written amendments thereto. The Developer shall also provide the Town with a complete full-size and one complete one/half-size set of "as-built" plans approved paper sets stamped and signed by the engineer of record submitted with compatible AutoCAD and PDF files. "As Built" plans shall be certified as to their accuracy by a professional engineer or as elevations or metes and bounds are certified by a licensed surveyor and shall clearly designate all approved changes made by the Developer and/or the sub-contractors.

21. **Warranty**. The warranty for any and all Development Improvement(s) to be dedicated to and accepted by the Town will commence upon Construction Acceptance. Upon Construction Acceptance, the Town will issue a written notice of acceptance to Developer, and after Developer corrects all minor deficiencies in accordance with the terms and conditions of the Construction Acceptance notice the warranty period shall commence and date of expiration will be determined. The warranty period for any and all Development Improvement(s) shall be for two years in

accordance with Town Code Section 30-6-116.H, with the exception of the Maintenance After Construction Acceptance Section above. The Developer shall remain responsible for maintenance and repair of any and all Development Improvement(s) during the warranty period. Any deficiency that occurs or is discovered during the warranty period will be identified in a written notice of deficiency prepared by the Town and forwarded to the Developer. The notice of deficiency shall identify any necessary corrective action. All corrective actions shall be completed by the Developer within one month of receipt of the Town's written notice of deficiency unless additional time is requested by the Developer and agreed to by the Town in writing, or if immediate repairs are needed for the protection of health and safety, in such expedited time period as is required under the circumstances.

A. Final Acceptance. If at the end of the warranty period, no major repairs are presently required and all minor repairs have been completed and accepted, the applicable Development Improvement(s) shall be accepted by the Town ("**Final Acceptance**").

B. Repair Warranties. Any repairs/correction of deficiencies required during the warranty period shall be warranted for an additional 2 years from the date such repair or corrections have been accepted by the Town. This extended warranty period shall only apply to that segment of the Development Improvement that has been repaired or for with there has been a correction made, which segment shall be delineated and defined by the Town Engineer. The extent of repairs/corrections necessary due to any deficiency of the public improvement shall be determined by the Town Engineer.

C. Landscaping. Developer shall be responsible for the installation of landscaping and irrigation systems in the common elements and in the tree lawns. Developer or its assigns/successors shall be responsible for keeping the irrigation in working condition and for the long-term health and well-being of the landscaping in the common elements and in the tree lawns.

22. **Estimated Costs.** The estimated costs of constructing the Development Improvements for each phase, as applicable ("**Estimated Costs**"), are set forth on Exhibit C. An engineer's cost estimate shall be provided by Developer to the Town at least two weeks prior to the required Pre-Construction meeting. The Developer shall provide the estimated construction costs, for each Development Improvement and evidence that the estimates have been established by executed contracts or estimates certified by the engineer of record. Estimates shall include a contingency equal to fifteen percent of the total project completion estimate. If the estimated costs are more than six months old, the Developer shall update the estimated construction costs, in conformance with the above requirements, and amend Exhibit B accordingly prior to starting construction. Changes that are made and comply with the above requirements shall be approved by the Town's Engineer within a reasonable period of time.

23. **Financial Collateral.** Prior to the start of construction on an individual phase, the Developer shall provide the Town with collateral in a form acceptable to the Town in the amount established in this Section for the completion of the Subdivision (the "Financial Collateral"). The Developer shall provide collateral, as described in Exhibit B equal to the following: (i) Letter of credit in the amount of 115% of the Estimated Costs, or (ii) Cash or certified funds as approved by the Town in the amount of 25% of the Estimated Costs. Collateral which is neither cash, certified funds, nor irrevocable letters of credit shall be reviewed and evaluated by the Town, and the Town will determine whether to accept said collateral based on whether it is equally secure, in its sole and absolute discretion, and whether said collateral is capable of being immediately liquidated.

A. The Financial Collateral shall be kept current by Developer with replacement Financial Collateral provided annually to the Town.

B. After Initial Construction Acceptance and upon the commencement of the warranty period, all remaining Financial Collateral shall be released by the Town except for a continuing ten (10) percent of total costs, which shall be maintained through the warranty period. Upon expiration of the warranty period, all remaining Financial Collateral for the Development Improvements shall be released.

C. Financial Collateral shall be provided for all Development Improvements within each construction phase, including the off-site public improvements included with each phase as described above. Financial Collateral shall be provided for each of the following elements of construction:

i. Erosion Control – financial collateral for erosion control shall be in place and approved by the Town Engineer prior to scheduling a Pre-Construction Meeting.

ii. Water Improvements, Wastewater Improvements, Storm Drainage Improvements – Financial Collateral shall be in place and approved by the Town Engineer ten business days prior to the commencement of construction.

iii. Street Improvements - Financial Collateral for the Street Improvements shall be in place and approved by the Town Engineer ten business days prior to the commencement of construction.

iv. Landscaping - financial collateral for public landscaping (medians, tree lawns, parks, open space, trails, irrigation, etc.) shall be in place and approved by the Town Engineer ten business days prior to the commencement of landscaping installation.

The purpose of the Financial Collateral is to guarantee that the Development Improvements are completed and that any defective conditions found within the Development Improvements are corrected in full and timely compliance with this Agreement. With respect to the off-site improvements as more particularly described in Exhibits "B" and "C", in the event that any portion of the work or Development Improvements has not been made, installed, completed or performed by the Developer in full and timely compliance with this Agreement and the Town's ordinances and regulations, the Town may, in its sole discretion, being under no obligation to do so, close the work or improvement at the current stage of completion or have such remaining work and improvements completed by such means and in such manner, by contract, with or without public letting, or otherwise, as it may deem advisable. The Developer agrees that the Town shall be entitled to use the collateral for these purposes. In the event that the collateral is insufficient to complete or close the work and improvements the Town shall be entitled to payment of such excesses by the Developer in any way permitted by law, including placing a lien or certification of assessment through property taxes in the amount of the value of that work or improvement.

The procedures for completion of the improvements and work by the Town and reimbursement to the Town from the collateral shall apply whether there be one or more defaults, or a succession of defaults on the part of the Developer in performing the terms, conditions, and covenants in this

Agreement. The Developer hereby waives any and all claims and defenses it may have against the issuer of the collateral instrument and the Town's application thereof in the event the Town deems it necessary to demand payment of all or a portion of the collateral. The Town agrees to provide the Developer with the opportunity to contest any claim against the Developer's letter of credit. Any use by the Town of Developer's funds generated by its call on the performance and payment bond, letter of credit, or other instrument will be separately accounted for and any balance refunded to the Developer.

24. **Release of Security**. No security will be released to Developer until the expiration of the warranty period. The required warranty period shall commence upon issuance of a written notice of commencement of warranty by the Town, as provided for in the Warranty and Construction Acceptance Sections of this Agreement.

25. **Remedies on Default**. Upon default of the provisions of this Agreement (after the applicable cure period provided herein) the parties agree that this Agreement may be specifically enforced. Nothing herein shall be construed as requiring the Town to complete all or a portion of the improvements specified to finance the closure or completion of the infrastructure. In addition, in the event of Developer's default of any of its obligations hereunder, the Town will deliver to Developer written notice of such default. If Developer does not cure such default within thirty days of receipt of such notice, or such additional time as may be granted by the Town in writing, provided Developer is diligently pursuing such cure to completion, the Town may in its discretion, without limiting any other remedies it may have:

A. Demand payment of, negotiate or liquidate any collateral provided by the Developer with such funds to be used for the Town's construction of the Development Improvements; or

B. Issue a written notice to the Developer to appear and show cause as to why the final plat should not be vacated, which vacation the Developer specially consents to in consideration of the Town's approval of the final plat and this Agreement. Giving the notice shall be deemed complete upon mailing the same certified mail to the address stated herein. Said notice shall designate the date, time and place the Town of Berthoud Board of Trustees will conduct a hearing to consider vacating the plat and construction approvals granted by this Agreement. Said hearing shall be not less than one month or more than two months from the date of the notice; or

C. Proceed in the manner described in the Town of Berthoud's Development Code as amended or State Statutes for a violation of a local subdivision regulation;

D. Withholding building permits or certificates of occupancy; or

E. Proceed in any other manner authorized by law for breach of contract.

The remedies set forth above are cumulative and the election to use one shall not preclude the use of others. Notwithstanding any contrary provision, failure of the Town to give notice of default shall not affect the Owners' obligation to cure such default.

26. **Fees for Enforcement**. In the event of default by either party, the defaulting party agrees to pay all reasonable expenses incurred by the non-defaulting party occasioned by said default, including, but not limited to expenses for administrative, engineering and legal fees in enforcing this

Agreement.

27. **Supplemented by Municipal Code**. This Agreement, and the terms, conditions and covenants herein contained, shall be deemed to complement and shall be in addition to the conditions and requirements of the Town of Berthoud's Development Code including but not limited to provisions of Section 30-5-101 "Enforcement Methods", as amended and other applicable ordinances, rules and regulations as amended, notwithstanding anything herein contained or referred to the contrary. The Developer has reviewed these terms and agrees to fully comply with them.

28. **Final Plat Approval**. The Town has recorded the Final Plat with express understanding this Agreement will be executed. Developer understands development activity cannot continue beyond any grading of the Property as permitted by any early grading permit until Developer has delivered to Town acceptable financial collateral and this Agreement has been executed. Developer continues to pay professional fees and other costs to the Town.

29. **Other Documents Included**. References to the Subdivision plat contained herein shall apply in the same manner to an Annexation Map, a Subdivision or Subdivision Plat, a Planned Unit Development, or a Site Plan plat when this agreement is used in connection with approval of a Subdivision Plat or Planned Unit Development plat or Site Plan. All conditions and notes on the Plat shall be deemed to be part of this Agreement. All such notes and conditions, including but not limited to those requiring Owners to be responsible for maintenance of drainage facilities installed pursuant to any development agreement with the Town with respect to the Property shall be noted on all transfer deeds of any interest in the Property. Requirements include, but are not limited to, maintaining the specified storm water detention/retention volumes, maintaining outlet structures, flow restriction devices and facilities needed to convey to the said basins.

30. **Severability.** If any part, term, or provision of this Agreement is held by the courts to be illegal or otherwise unenforceable, such illegality or un-enforceability shall not affect the validity of any other part, term, or provision, and the rights of the parties shall be construed as if the part, term, or provision was never part of this Agreement.

31. **Modification**. The parties to this Agreement may amend or modify this Agreement only by written instrument executed on behalf of the Town Board of Trustees and by the Developer.

32. **Third Party Beneficiaries**. Unless otherwise expressly provided to the contrary herein, this Agreement shall not be construed as or deemed to be an agreement for the benefit of any third party or parties, and no third party or parties shall have any right of action hereunder for any cause whatsoever.

33. **Venue**. This Agreement is being executed and delivered and is intended to be performed in the State of Colorado, and the laws of the State of Colorado shall govern the validity, construction, enforcement and interpretation of this Agreement. Further, venue for any and all legal action at law or in equity regarding this Agreement shall be in the Larimer County District Court, State of Colorado.

34. **No Waiver**. No failure by either party hereto to insist upon the strict performance of any covenant, duty, agreement or condition of this Agreement, or to exercise any right or remedy consequent to a breach of this Agreement, shall constitute a waiver of any such breach or any other covenant, agreement, term or condition.

35. **Captions**. The captions of the articles and sections of this Agreement are set forth only for the convenience and reference of the parties and are not intended in any way to define, limit, or describe the scope or intent of this Agreement.

36. **Incorporation of Recitals and Exhibits**. All recitals set forth in this Agreement and all exhibits attached to this Agreement are incorporated into and made a part of this Agreement.

37. **Governmental Immunity.** Nothing herein shall be construed as a waiver by the Town of any right, privilege or immunity afforded the Town pursuant to the Colorado Governmental Immunity Act, C.R.S. Section 24-10-101, *et seq.* as the same may be amended from time to time.

[INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto have set their hands and seals this day and year first above written.

BERTHOUD GATEWAY LLC
8340 Louden Cir
Windsor Colorado 80528 970-222-7268
ATTN: Scott T. Charpentier

[Scott T. Charpentier Manager]

STATE OF COLORADO)
) ss
COUNTY OF)

Acknowledged before me by Scott T. Charpentier, on behalf of and with authority from Berthoud Gateway, LLC, a Colorado limited liability company, this 13 day of May, 2024.

Notary

Date my commission expires 05-04-2027

LYNELLE TSIKEWA
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20234016991
My Commission Expires: May 04, 2027

TOWN OF BERTHOUD:

Chris Kirk, Town Administrator

Christian Samora, Town Clerk

Approved as to form:

Erin Smith, Town Attorney

Town of Berthoud
Final Plat, Westside Crossing Replat #2
Westside Crossing Commercial Development Agreement, Exhibit A

LEGAL DESCRIPTION

Tract A, Westside Crossing, recorded July 5, 2022 as Reception No. 20220042194 of the Records of Larimer County

Town of Berthoud
Final Plat, Westside Crossing Replat #2
Westside Crossing Commercial
Development Agreement, Exhibit B
Development Improvements

Effective Date. As of the date of mutual execution of this Agreement (the "Effective Date"), Developer shall construct all Development Improvements in accordance with the terms set forth in **Exhibit C**, attached hereto and incorporated herein by reference. In addition, when constructed, all Development Improvements specified on the Plans affecting the Property shall be constructed and completed by the Developer in accordance with this Agreement and the Plans.

Development Improvements for the purposes of this Development Agreement are defined as public improvements dedicated to the Town.

Prior to the commencement of construction of each phase, a construction schedule and construction budget for all Development Improvements shall be prepared and submitted to the Town for approval by the Town Engineer and added to this Exhibit as an amendment to this Development Agreement. Developer shall submit such schedule and budget, with revisions as necessary in order to obtain the Town Engineer's approval and obtain the Town Engineer's approval prior to the scheduling of the required pre-construction meeting. The pre-construction meeting must take place a minimum of two weeks prior to the commencement of construction.

The documents listed below shall be and are hereby incorporated into and made a part of this Development Agreement incorporated into this Exhibit to define the scope of the overall development of each Phase.

1. The Final Plat for the Westside Crossing Replat #2 recorded with the Larimer County Recorder at Reception 2024[illegible]; and

2. Construction Drawings associated with the Final Plat for the Westside Crossing Replat #2 development prepared by Kiowa Engineering Corporation updated February 15, 2024 and accepted by the Town Engineer on March 7, 2024; and

3. Landscape Plans (the "Landscape Plans") prepared by StackLot dated July 31, 2023, as updated after the Final Plat has been recorded to conform to the Town's Landscape Design Guidelines and to be approved by the Town.

Town of Berthoud
Final Plat, Westside Crossing Replat #2
Westside Crossing Commercial
Development Agreement, Exhibit C
Development Improvements

DEVELOPMENT IMPROVEMENTS
PROPOSED COST OF CONSTRUCTION & CONTINGENCY

A. Description of Off-site Improvements. The following off-site improvements are contained in the Plans and described below.

- Signalized intersection at Mountain Avenue (State Highway 56) and Meadowlark Drive including pedestrian push buttons and ADA access.
    - The installation of the signal poles shall commence within 90 days after the site has reached Construction Acceptance (aka Substantial Completion). The installation and acceptance of the signal poles shall be finalized within 90 days after construction commencement. The terms of this Agreement shall apply to the installation of the signal poles including, but not limited to Sections 13, 18 and 23.
- Infrastructure required for the signalized intersection at Mountain Avenue (State Highway 56) and Meadowlark Drive.
- Right-in/Right-out drive access off of Highway 56 including ADA ramps and cross-pan.
- Full Access drive access off of Meadowlark Drive including ADA ramps and cross-pan.
- Striping within Meadowlark Drive and Highway 56 including bike lane striping, turn arrows, crosswalk and stop bar striping at the intersection, and lane lines.
- Detached 6-ft sidewalk within Meadowlark Drive right-of-way and detached 10-ft regional trail within Mountain Avenue (State Highway 56) right-of-way with connectivity within the development to be established through development of individual lots through the Site Plan or Use by Special Review processes. See exhibit on the following page illustrating the location of pedestrian connectivity.
- Tree lawn landscaping within Meadowlark Drive right-of-way and Mountain Avenue (State Highway 56) right-of-way.
- Curb and gutter within Meadowlark Drive and Highway 56 right-of-way.
- Asphalt widening within Meadowlark Drive and Highway 56 right-of-way.
- Signage within Highway 56 right-of-way.
- Storm infrastructure within Highway 56 right-of-way consisting of: one (1) 10-ft Type R curb inlet, 18-inch RCP storm pipe and flared-end section, and 12-inch PVC pipe.
- Storm infrastructure within Meadowlark Drive right-of-way consisting of: 53"X34" horizontal elliptical RCP pipe, 24-inch RCP pipe, 5-foot and 8-foot diameter storm manholes, and one (1) 15-foot Type R curb inlet,
- One (1) 8-inch sanitary main connection to existing sanitary main within Meadowlark Drive right-of-way

B. Description of Onsite Improvements. The following on-site improvements are contained in the Plans and described below.

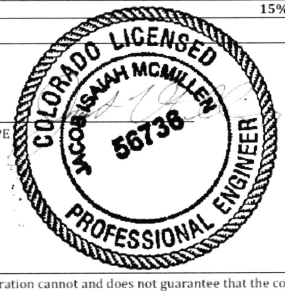
- Storm infrastructure consisting of: 53"X34" horizontal elliptical RCP pipe, 30-inch RCP pipe, 24-inch RCP pipe, 18-inch RCP pipe, 30-inch flared-end section, 24-inch flared-end section, 6-foot & 7-foot storm manholes, 5-foot & 10-foot Type R curb inlets, and detention pond(s) with outlet structure, forebay, cast-in-place concrete pond walls, maintenance access path, and trickle channels.
- 8-inch PVC sanitary main
- 4-ft sanitary manholes
- 8-inch PVC water main
- 6-inch PVC hydrant lateral
- 3 Fire hydrants
- 1,136 linear feet Asphalt drive as illustrated in the attached exhibit
- All Development Improvements shall be constructed in accordance with the Plat and Plans as well as the requirements of the Berthoud Municipal Code, design standards and guidelines, and Master Plans governing the Property and the Development Agreement entered into between the Developer and the Town of Berthoud.
    - Future lot owners shall construct curb, gutters, sidewalks, irrigated tree lawns, street trees and provide a connection to the external trail system.
    - Developer is required to construct the final lift on the internal street after all lots have been constructed or in three years past the approval date of this Final Plat, whichever comes first.
    - Developer is obligated to install street trees along the northern property boundary as illustrated in the landscape plan prepared by StackLot.
- 5-foot and 6-foot sidewalks
- 10-foot regional trail
- Detention pond landscaping

C.1. Phase 1 Development Improvements; Public Improvements

Kiowa
Engineering Corporation

EXHIBIT C (PHASE 1) - ENGINEER'S OPINION OF PROBABLE COST ESTIMATE
Westside Crossing - Commercial Development
Kiowa Project #19043.2 **Date: 5/7/2024**

Item #	Description	Quantity	Unit	Unit Price	Estimated Construction Cost	Completed Construction Cost
	Site and Street Items					
	Remove Ex. Barbed Wire Fence	1,500	LF	$ 3.00	$ 4,500.00	
	Remove Ex. Trees	29	EA	$ 200.00	$ 5,800.00	
	Remove and Reset Ex. Sign	1	EA	$ 250.00	$ 250.00	
	Remove Ex. Asphalt	2,200	SF	$ 5.00	$ 11,000.00	
	Earthwork	15,500	CY	$ 3.00	$ 46,500.00	
	HWY 56					
	Aggregate Base Course (19" Thk)	228	CY	$ 120.00	$ 27,360.00	
	Asphalt Pavement (12" thick)	287	TON	$ 160.00	$ 45,920.00	
	Meadowlark Drive					
	Aggregate Base Course (8" Thk)	150	CY	$ 120.00	$ 18,000.00	
	Asphalt Pavement (5.5" thick)	200	TON	$ 160.00	$ 32,000.00	
	Regulatory Sign/Advisory Sign	3	EA	$ 650.00	$ 1,950.00	
	Epoxy Pavement Marking	4928	LF	$ 5.50	$ 27,104.00	
	Thermoplastic Pavement Marking	859	SF	$ 25.00	$ 21,475.00	
	Curb and Gutter - 6" Vertical	1630	LF	$ 27.75	$ 45,232.50	
	Sidewalk (5') (Including park walks)	351.6	SY	$ 50.00	$ 17,580.00	
	Sidewalk (6') (Including park walks)	534.9	SY	$ 50.00	$ 26,745.00	
	Sidewalk (10') (Including park walks)	1784.8	SY	$ 50.00	$ 89,240.00	
	Pedestrian Ramp	7	EA	$ 1,500.00	$ 10,500.00	
	Crosspans - Concrete (8" Thick)	58	SY	$ 80.00	$ 4,623.20	
	Crosspans - Concrete (6" Thick)	77	SY	$ 80.00	$ 6,140.00	
	Retaining Wall - Cast in Place Concrete	231	CY	$ 1,033.00	$ 238,623.00	
					$ -	$ -
	Site and Street Items Subtotal				**$ 680,542.70**	**$ -**
	Erosion and Sediment Control					
	Silt Fence	1,673	LF	$ 1.35	$ 2,258.55	
	Sediment Control Log	634	LF	$ 2.00	$ 1,268.26	
	Vehicle Tracking Control	2	EA	$ 4,000.00	$ 8,000.00	
	Stabilized Staging Area	897	SY	$ 8.00	$ 7,176.24	
	Concrete Washout	2	EA	$ 2,500.00	$ 5,000.00	
	Inlet Protection	5	EA	$ 400.00	$ 2,000.00	
	Rock Socks	13	EA	$ 9.00	$ 117.00	
	Temporary Stream Crossing	1	EA	$ 2,500.00	$ 2,500.00	
	Erosion Control Blanket	0	SY	$ 3.00	$ -	
	Check Dam	0	EA	$ 1,200.00	$ -	
	Sediment Basin	1	EA	$ 4,500.00	$ 4,500.00	
	Seeding & Mulch	34.16	AC	$ 950.00	$ 32,452.00	
					$ -	$ -
	Erosion and Sediment Control Subtotal				**$ 65,272.05**	**$ -**
	Utilities: Water and Sanitary Sewer					
	Water: 6" PVC	50	LF	$ 50.00	$ 2,500.00	
	Water: 8" PVC Water Main	948	LF	$ 55.00	$ 52,140.00	
	Water: 8" x 6" Swivel Tee (Fire Hydrant)	3	EA	$ 1,200.00	$ 3,600.00	
	Water: 12"x8" Wet Tap	2	EA	$ 3,000.00	$ 6,000.00	
	Water: 8" Bend	4	EA	$ 600.00	$ 2,400.00	
	Water: 6" Valve	3	EA	$ 1,600.00	$ 4,800.00	
	Water: 8" Valve	6	EA	$ 1,800.00	$ 10,800.00	
	Water: Fire Hydrant Assembly	3	EA	$ 6,500.00	$ 19,500.00	
	Water: 8" Waterline Lowering	2	LS	$ 5,500.00	$ 11,000.00	
	Sanitary: 8" PVC Sanitary Sewer	1,100	LF	$ 50.00	$ 55,000.00	
	Sanitary: Manhole (4' diameter)	8	EA	$ 5,000.00	$ 40,000.00	
	Sanitary: Connection to Ex. Manhole	1	EA	$ 3,000.00	$ 3,000.00	
					$ -	$ -
	Utilities: Water and Sanitary Sewer Subtotal				**$ 210,740.00**	**$ -**
	Utilities: Storm Sewer System and Detention					
	53" x 34" HERCP (Class III)	620	LF	$ 240.00	$ 148,800.00	
	24" RCP Storm Sewer (Class III)	86	LF	$ 85.00	$ 7,310.00	
	24" RCP FES	2	EA	$ 900.00	$ 1,800.00	
	30" RCP Storm Sewer (Class III)	14	LF	$ 105.00	$ 1,470.00	
	30" RCP FES	1	EA	$ 1,000.00	$ 1,000.00	
	Manhole - Storm Sewer (5' diameter)	1	EA	$ 5,500.00	$ 5,500.00	
	Manhole - Storm Sewer (6' diameter)	3	EA	$ 6,500.00	$ 19,500.00	
	Manhole - Storm Sewer (7' diameter)	3	EA	$ 7,500.00	$ 22,500.00	
	Manhole - Storm Sewer (8' diameter)	1	EA	$ 8,500.00	$ 8,500.00	
	Type L Riprap	7	CY	$ 80.00	$ 560.00	
	Forebay - Concrete	1	EA	$ 7,000.00	$ 7,000.00	
	Detention Basin Outlet Structure and grate	1	EA	$ 11,000.00	$ 11,000.00	
	Trickle Channel (3' Wide)	377	LF	$ 30.00	$ 11,310.00	
					$ -	$ -
	Utilities: Storm Sewer System and Detention Subtotal				**$ 246,250.00**	**$ -**
	15% Contingency				**$ 180,420.71**	**$ -**
	Total				**$ 1,383,225.46**	**$ -**



05/07/2024

Signed: Jacob McMillen, PE Date

Kiowa Engineering Corporation cannot and does not guarantee that the costs will not vary from this opinion of probable construction costs. This opinion represents our best judgement of construction costs, as design professionals familiar with the construction industry and this type of development in particular.

EMS0071825

Kiowa
Engineering Corporation

EXHIBIT C (PHASE 2) - ENGINEER'S OPINION OF PROBABLE COST ESTIMATE
Westside Crossing - Commercial Development
Kiowa Project #19043.2 **Date: 5/7/2024**

Item #	Description	Quantity	Unit	Unit Price	Estimated Construction Cost	Completed Construction Cost
	Site and Street Items					
	Aggregate Base Course (19" Thk)	10	CY	$ 120.00	$ 1,200.00	
	Asphalt Pavement (12" thick)	13	TON	$ 160.00	$ 2,080.00	
	Pedestrian Ramp	6	EA	$ 1,500.00	$ 9,000.00	
					$ -	$ -
	Site and Street Items			**Subtotal**	**$ 12,280.00**	**$ -**
	Erosion and Sediment Control					
	Silt Fence	342	LF	$ 1.35	$ 461.70	
					$ -	$ -
	Erosion and Sediment Control			**Subtotal**	**$ 461.70**	**$ -**
				15% Contingency	**$ 1,911.26**	**$ -**
				Total	**$ 14,652.96**	**$ -**



Signed: Jacob McMillen, PE

05/07/2024
Date

Kiowa Engineering Corporation cannot and does not guarantee that the costs will not vary from this opinion of probable construction costs. This opinion represents our best judgement of construction costs, as design professionals familiar with the construction industry and this type of development in particular.

Phase 1 Traffic Signal Cost Estimate
CO-56 & Meadowlark Dr.

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	Est. Cost	TOTAL
613-00306	3 inch Electrical Conduit (Bored)	LF	600	$ 20.00	$ 12,000.00
613-00200	2 inch Electrical Conduit (Bored)	LF	680	$ 20.00	$ 13,600.00
613-07005	Pull Box Type 5	EA	1	$ 1,100.00	$ 1,100.00
613-07004	Pull Box Type 4	EA	1	$ 1,000.00	$ 1,000.00
613-07003	Pull Box Type 3	EA	2	$ 1,000.00	$ 2,000.00
	Total Engineer's Opinion of Cost				**$ 29,700.00**
	Engineer's Contingency (35%)				**$ 40,095.00**

Phase 2 Traffic Signal Cost Estimate
CO-56 & Meadowlark Dr.

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	Est. Cost	TOTAL
203-01597	Potholing	HRS	20	$ 300.00	$ 6,000.00
503-00036	Drilled Shaft 36"	LF	57	$ 400.00	$ 22,800.00
503-00048	Drilled Shaft 48"	LF	21	$ 500.00	$ 10,500.00
614-86248	Traffic Signal Controller (Intelight 2070LC) and Cabinet (Model 332D)	EA	1	$ 30,000.00	$ 30,000.00
614-87320	CCTV (CDOT/ITS spec) mounted on pole closest to controller cabinet	EA	1	$ 1,000.00	$ 1,000.00
613-10000	Wiring	LS	1	$ 50,000.00	$ 50,000.00
614-70336	Signal Head 12-12-12 (LED)	EA	12	$ 700.00	$ 8,400.00
614-70338	Signal Head 12-12-12-12 (LED)	EA	4	$ 900.00	$ 3,600.00
614-70150	Signal Head 16" Pedestrian (LED)	EA	8	$ 500.00	$ 4,000.00
614-72863	APS Push Button & Signs w/ Rack Mounted Central Control Unit	EA	8	$ 2,000.00	$ 16,000.00
614-72886	Fire Preemption Unit & Timer - Opticom 722, 764	EA	1	$ 3,200.00	$ 3,200.00
614-81166	Traffic Signal Pole with 55' Mast Arm & 15' Luminaire	EA	1	$ 25,000.00	$ 25,000.00
614-81135	Traffic Signal Pole with 35' Mast Arm & 15' Luminaire	EA	1	$ 17,000.00	$ 17,000.00
614-81150	Traffic Signal Pole with 50' Mast Arm & 15' Luminaire	EA	1	$ 22,000.00	$ 22,000.00
614-81140	Traffic Signal Pole with 40' Mast Arm & 15' Luminaire	EA	1	$ 18,000.00	$ 18,000.00
614-84000	Pedestrian Post w/Push Button & Sign	EA	8	$ 1,500.00	$ 12,000.00
614-79886	Iteris Vantage Next Video Camera on 5' extension pole w/Sky Brackets	EA	4	$ 12,500.00	$ 50,000.00
614-00011	Sign Class 1	SF	105	$ 30.00	$ 3,150.00
614-00012	Traffic Control	LS	1	$ 20,000.00	$ 20,000.00
	Total Engineer's Opinion of Cost				**$ 322,650.00**
	Engineer's Contingency (35%)				**$ 435,577.50**



Engineer's Certification

This cost estimate for the CO-56 traffic signal was prepared by me (or under my direct supervision in accordance with the Colorado Department of Transportation.

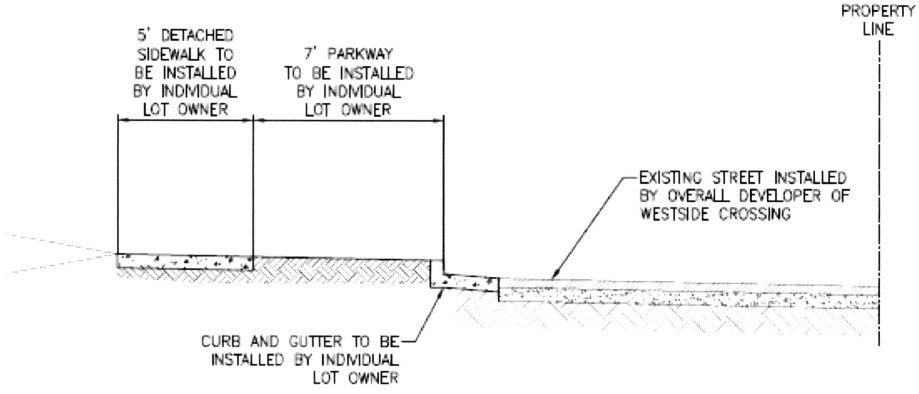
5-1-24

By: John M.W. Aldridge, P.E.
Licensed Professional Engineer
State of Colorado No. 34193

D. Site Specific Agreements and Provisions

In addition to the general overall terms and conditions relating to the Development Improvements set forth elsewhere in this Agreement, the parties agree that the site-specific agreements set forth in this Exhibit "C" shall apply. In the event any provision contained in this Exhibit "C" conflicts with any other provision contained in the Agreement, the provisions of this Exhibit "C" shall control.

The Developer may provide separate Letters of Credit for the improvements listed in Exhibit C, Sections C.1 and C.2. Timing of delivery of the Letters of Credit shall comply with Section 23 of this Agreement.



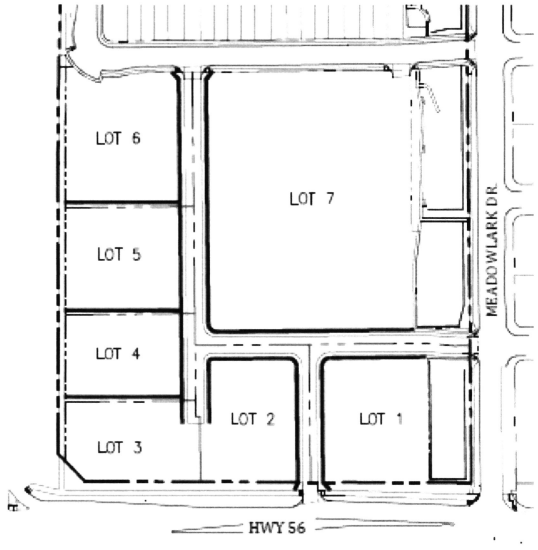
TYPICAL INDIVIDUAL LOT OWNER STREET FRONTAGE

SCALE: NTS

INDIVIDUAL LOT OWNER RESPONSIBILITIES FOR LOT FRONTAGES INCLUDE CONSTRUCTION OF:

1. 6-IN VERTICAL CURB AND GUTTER.
2. 7-FT LANDSCAPED AND IRRIGATED PARKWAY.
3. DETACHED 5-FT CONCRETE SIDEWALK.
4. ANY NECESSARY DRIVE CUTS THAT SERVE LOT BEING DEVELOPED.
5. INTERNAL 5-FT SIDEWALKS PROVIDING CONNECTIVITY TO ADJACENT 10-FT REGIONAL TRAILS AND/OR ADJACENT FRONTAGE DETACHED SIDEWALKS ENSURING CIRCULATION THROUGHOUT THE COMMERCIAL DEVELOPMENT. PLACEMENT TO BE DETERMINED BY THE TOWN DURING THE SITE-SPECIFIC DEVELOPMENT REVIEW OF EACH LOT.

NOTE: INDIVIDUAL LOT DEVELOPMENTS WILL REQUIRE EITHER A SITE PLAN OR SPECIAL USE PLAN REVIEW



LOT FRONTAGE LOCATIONS

SCALE: 1"=250'

WESTSIDE CROSSING
EXHIBIT D
INDIVIDUAL LOT OWNER RESPONSIBILITIES
BERTHOUD, COLORADO

Kiowa Engineering Corporation
5951 Middlefield Road, Suite 200
Littleton, Colorado 80123
(303) 692-0989

RECEPTION #20250016523, 4/21/2025 2:26:06 PM,
1 of 6, $38.00
Tina Harris, Clerk & Recorder, Larimer County, CO

Town of Berthoud
First Amendment to Development Agreement

Westside Crossing Commercial

Town of Berthoud, Counties of Larimer and Weld, State of Colorado.

THIS FIRST AMENDMENT TO THE WESTSIDE CROSSING COMMERCIAL DEVELOPMENT AGREEMENT (this "First Amendment") is entered into by and between the TOWN OF BERTHOUD, COLORADO, a Municipal Corporation, by its Board of Trustees ("Town") and BERTHOUD GATEWAY, LLC, ("Developer") as of this 10 day of April, ~~2024~~ 2025 (the "Effective Date"). Town and Developer are referred to collectively as the "Parties".

WHEREAS, Town and Developer entered into that certain Development Agreement dated May 14, 2024 and recorded on May 15, 2024 with the Clerk and Recorder of Larimer County at Reception #20240019270 (the "Agreement") relating to construction, ownership, operation and maintenance of improvements constructed by Developer as set forth in the Agreement for the property more particularly described in Exhibit A to the Agreement (the "Property"). Capitalized terms used herein and not otherwise defined shall have the meanings assigned to such terms in the Agreement.

WHEREAS, Town and Developer desire to amend the Agreement as set forth below.

NOW, THEREFORE, in consideration of the foregoing and the mutual representations, warranties, covenants and agreements herein contained, the Parties hereto agree as follows:

1. Landscaping Improvements. Exhibit C, Paragraph B of the Agreement is amended to include the following in the list of Onsite Improvements:

- Planting of a row of trees on the south side of Glacier Avenue, as shown on Sheet L1.1 of the Westside Crossing Final Plat Overall Residential Landscape & Tree Removal Plan.

2. The Agreement is hereby amended by the inclusion of a new Exhibit C-1d setting forth the engineer's cost estimate, plus contingency, for the planting of trees referenced in item 1 above.

3. Except as expressly provided in this First Amendment, all terms and provisions of the Agreement remain in effect.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, the Parties hereto have set their hands and seals this day and year first above written.

BERTHOUD GATEWAY LLC
840 Louden Cir
Windsor, Colorado 80528
Attn: Scott T. Charpentier

By: _____
Scott T. Charpentier, Manager

STATE OF COLORADO)
) ss
COUNTY OF WELD)

Acknowledged before me by Scott T. Charpentier on behalf of and with authority from the Developer, this 16TH day of DECEMBER, 2024.

_____
Notary

Date my commission expires 4/5/2027

DARIN LANCKRIET
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19994009241
My Commission Expires: April 5, 2027

TOWN OF BERTHOUD:

_____
Chris Kirk, Town Administrator

Approved as to form:

_____
Erin Smith, Town Attorney

Alpine GARDENS
Corporate Office at Fossil Creek Nursery
7029 South College Avenue, Fort Collins CO 80525
Phone: (970) 226-2296 Fax: (970) 506-2730
www.alpinelandscaping.com

March 14, 2025

Scott Charpentier
Berthoud Gateway LLC
8340 Louden Cr
Fort Collins, CO 80538

RE: Westside Commercial PH 2 – Landscaping and Irrigation in Parkway on South Side of Glacier Ave

Dear Scott,

Below is the cost to install the landscaping and irrigation per the Westside Crossing Final Plat, second revision dated 3-22-22 along the south side of Glacier Ave. This includes the area between the curb and sidewalk and the planting bed at the SW corner of Glacier Ave and Westside Ln.

Costs include: Soil Preparation in sod/planting beds at 3cy compost/1000sf; herbicide in planting beds; irrigation (drip irrigation in planting beds and pop-up spray heads in sod areas); fine grade/bed grade; 4" cedar mulch over weed barrier in planting beds; 3/16" x 4" steel edging; plant material per plan; fescue sod; 1 year warranty and mobilization.

Plant material varieties are: Prospector Elm 2" caliper (3 EA), Swamp White Oak 2" (2 EA), Espresso Kentucky Coffeetree 2" (2 EA), Ohio Buckeye 2" (2 EA), Red Oak 2" (1 EA), Litleleaf Linden 2" (1 EA), English Oak 2" (1 EA), Western Catalpa 2" (1 EA) and Spring Snow Crabapple 2" (2 EA), Alpine Currant #5 (5 EA), Dwarf Burning Bush #5 (9 EA), Blue Mist Spirea #5 (5 EA) and Karl Foerster Feather Reed Grass #1 (3 EA).

Landscape Item	Units	Unit Cost	Total Cost
Soil Preparation/herbicide	4,290 SF	$0.353	$1,513.73
Irrigation Bed Area	640 SF	$0.90	$576.00
Irrigation Pop-up Spray	3,650 SF	$1.95	$7,117.50
Fine Grade / Bed Grade	4,290 SF	$0.147	$633.60
Steel Edging	80 LF	$5.149	$411.93
Weed Barrier	640 SF	$.317	$202.64
4" Cedar Mulch	640 SF	$1.94	$1,243.03
Deciduous Trees 2" Cal	15 EA	$752.08	$11,281.25
Deciduous Shrub #5	19 EA	$66.21	$1,258.07
Grass #1	3 EA	$25.96	$77.88
4" Cedar Tree Rings in Turf	14 EA	$24.049	$336.68
1 Year Warranty	1 LS		$2,219.14
Fescue Sod	3,650 SF	$0.973	$3,553.81

Mobilization	1 LS	$2,685.10
Total		**$33,110.36**

Please call if you have any questions.

Sincerely;



Mark Stock, Project Manager

Anne Johnson

From: Anne Johnson
Sent: Wednesday, April 9, 2025 2:19 PM
To: 'Scott Charpentier'
Subject: RE: Westside Commercial PH2 - Landscaping and Irrigation South Side of Glacier Ave

Scott,
We have discussed and we will include your email below in the DA as evidence of approval.
Sincerely,
Anne

From: Anne Johnson <AJohnson@berthoud.org>
Sent: Wednesday, March 26, 2025 8:03 AM
To: Scott Charpentier <scott@fcmmoney.com>
Subject: RE: Westside Commercial PH2 - Landscaping and Irrigation South Side of Glacier Ave

Scott,
I'll take a look at the cost estimate and the work required to see if a new LOC is needed. We had discussed this and a new LOC was always anticipated. I will look for you.
Sincerely,
Anne

From: Scott Charpentier <scott@fcmmoney.com>
Sent: Wednesday, March 26, 2025 8:02 AM
To: Anne Johnson <AJohnson@berthoud.org>
Subject: RE: Westside Commercial PH2 - Landscaping and Irrigation South Side of Glacier Ave

That's great Anne

The LOC that we have on file was way over the amount we need, certainly enough to cover that street. I would hate to go thru that process again of a new one with my lender
can't we just use the one we have, and expend it?

I also have the one on phase 1 I'm still trying to lower or eliminate

Scott T. Charpentier
Scott@fcmmoney.com
970-222-7268

From: Anne Johnson <AJohnson@berthoud.org>
Sent: Tuesday, March 25, 2025 2:35 PM
To: Scott Charpentier <scott@fcmmoney.com>
Cc: mark@alpinelandscaping.com
Subject: RE: Westside Commercial PH2 - Landscaping and Irrigation South Side of Glacier Ave

Scott and Mark,
Hello. This is good.

Scott, do you want to provide a second Letter of Credit to cover these? Once I have that surety, we're done with this.

Sincerely,
Anne

From: Scott Charpentier <scott@fcmmoney.com>
Sent: Friday, March 14, 2025 6:27 PM
To: Anne Johnson <AJohnson@berthoud.org>
Cc: mark@alpinelandscaping.com
Subject: FW: Westside Commercial PH2 - Landscaping and Irrigation South Side of Glacier Ave

Hello Anne

I am forwarding you Marks Email, He assured me that the two of you talked, and this is what you want. I hope. I hesitate a bit to ask, but please let me know

For the record , I have called, emailed, or texted no less then every 3rd day to get this done, only to find out he has been bedridden. And still is, this whole time.
I wish him well, but I also hope we can check this item off our list,

Thanks

Scott T. Charpentier
Scott@fcmmoney.com
970-222-7268

From: Mark Stock <mark@alpinelandscaping.com>
Sent: Friday, March 14, 2025 12:26 PM
To: Scott Charpentier <scott@fcmmoney.com>
Subject: Westside Commercial PH2 - Landscaping and Irrigation South Side of Glacier Ave

Scott attached is the updated costs for the landscaping and irrigation on the South side of Glacier Ave. Everything matches Anne's last email except the amount of Prospector Elms. Per the plans set there are 3 each Prospector Elms on the South side of Glacier Ave. (there are 2 each on sheet L1.2 and 1 each on sheet L1.3. Let me know if you want me to drop one of the Elms to match her last list but I think she made a mistake.

Thank You

--

Mark Stock
Alpine Gardens
Commercial Project Manager
970-226-2296 (o)
970-506-2730 (fax)
970-231-4437 (cell)
mark@alpinelandscaping.com

Board of Trustees Information

Administration Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Agreement Between the Town of Berthoud and Social Pinpoint, Inc for Berthoud Engage Community Engagement Software**
Type of Item:	**Consent Agenda**
Purpose:	**To create an interactive engagement platform where community members can learn about projects and initiatives by accessing information, project timelines, planning documents, taking surveys, and asking questions.**
Presented by:	**Stephanie Horvath**

Attachments:

1. Social Point Proposal
2. Social Point Terms and Conditions
3. Social Point Addendum

Background:

The Town's website currently includes a page dedicated to active Town projects and serves as a valuable source of project information; however, it functions primarily as a one-way communication tool. Staff is exploring the implementation of an interactive public engagement platform that would provide residents with enhanced access to project information and opportunities for participation throughout the life cycle of a project. Features could include project timelines that track progress from concept through completion, frequently asked questions, opportunities for residents to submit questions and feedback, project images and updates, public surveys, and analytics to help staff measure community engagement and identify areas of interest.

For an example of this type of platform, please visit the City of Durango's Engage Durango website. The platform provides project information, tracks project milestones, and offers multiple opportunities for community engagement and feedback, demonstrating how an interactive engagement portal can enhance transparency, communication, and public participation beyond what is possible through a traditional project webpage.

Update/Next Steps:

Upon Board approval, Open Point will begin building out the platform, Engage Berthoud, for us. I expect we will be able to roll it out in about six weeks, with a full launch at Oktoberfest.

Fiscal Impact and Fund Source:

This platform will be funded from budget GL 11-13-5020.

Community Touchstones:
This item helps shape the town's community identity by providing a space for every community member to contribute and learn about projects and other "hot-button topics. Once fully developed, community members will know where to go for information on any important topic, leading to a more resilient and sustainably engaged community.

Recommended Action(s):
We recommend approving this contract and authorizing us to proceed with the development of the Engage Berthoud platform.

Accept & Sign

SOCIAL POINT
BY OPEN POINT

UNLOCK GREATER INSIGHTS THROUGH MEANINGFUL PARTICIPATION

Prepared for: Town of Berthoud, Colorado

By: Joey Heath

Thank You for the Consideration

Social Point is excited to present this proposal for your consideration. With a presence across North America and further support from our international team based in Australia, we have consistently demonstrated innovation, professionalism, and trustworthiness. We have successfully provided comprehensive digital engagement services to an array of government organizations across four countries.

We firmly believe that Social Point offers the optimal solution to meet your public engagement goals. Our digital engagement platform is one of the most versatile and feature-rich in the world, offering over 40 specialized tools and an array of additional functionalities. The software promotes next-generation participatory technology designed to enable governments to explore new avenues of public participation, democracy, and deep engagement with their citizens.

We eagerly await the opportunity to collaborate in enhancing citizen pa
community engagement more meaningful, equitable, and effective.

Accept & Sign

Thank you for considering our proposal. We are available at your convenience to discuss it in further detail.

The Social Point Team

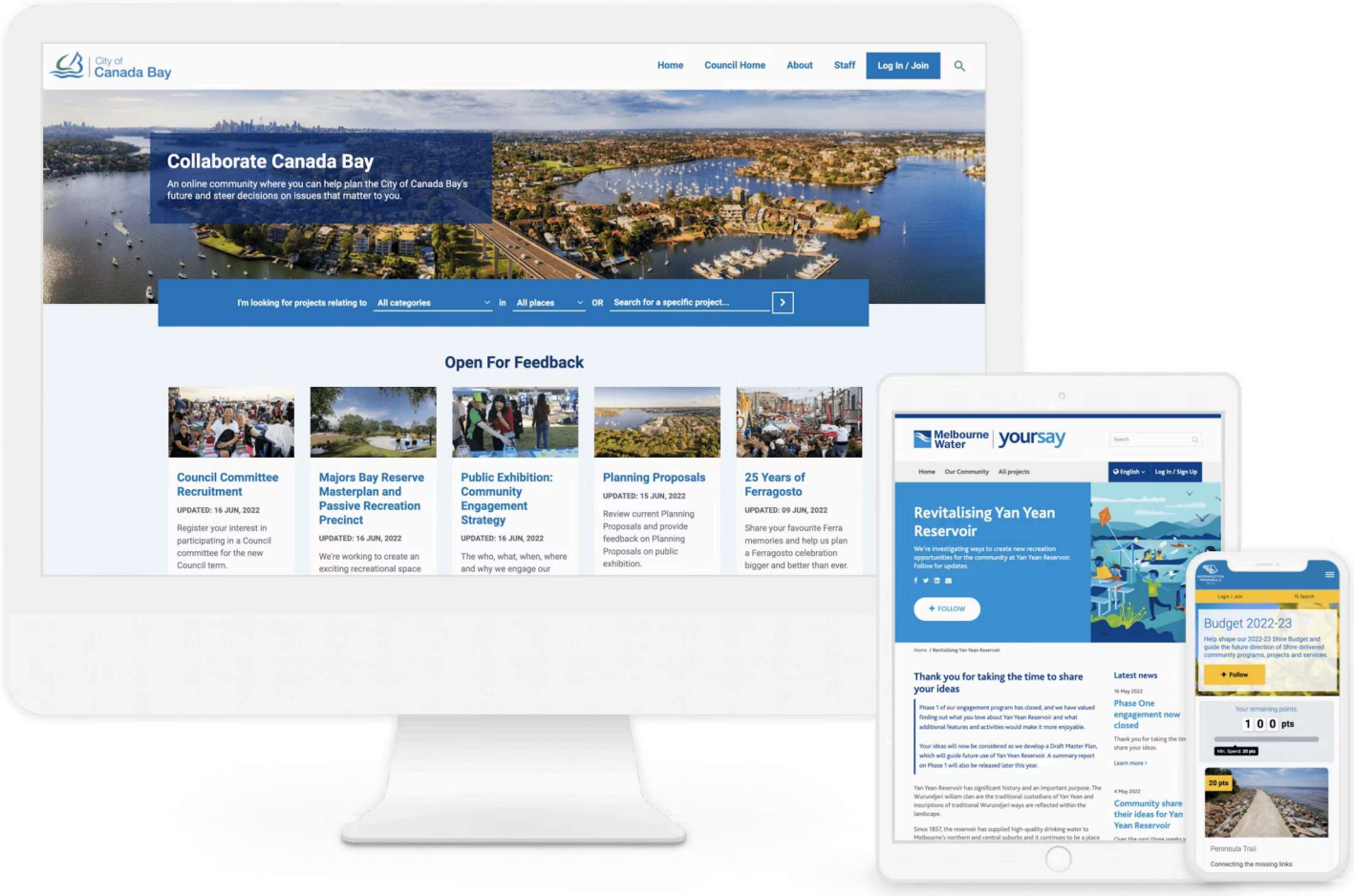
UNLOCK MEANINGFUL PARTICIPATION 🙌

People want their voices heard in the decisions that impact their lives.

Social Point is a comprehensive online platform that helps you to create meaningful and accessible engagement opportunities that bring your community together.

Build better relationships with a broader range of stakeholders online, operate transparently, and improve representation in decision-making.

We continuously re-invest into our technology so that you can adapt your approach for every project, constantly grow your capabilities, and stay at the cutting edge of community engagement.



Capture Community Expertise

Accept & Sign

Spend your time enabling public thinking, rather than responding to raw public opinion.

Attract positive attention and provide transparency as you tap into 40+ different participation and content tools to better communicate your plans, strategies, policies, and programs.

> "Our community has really taken to Social Point compared to our previous platform. This has resulted in an incredible uptake in internal use as almost every team is now using SPP in some form to conduct community engagement." – *City of Parramatta*

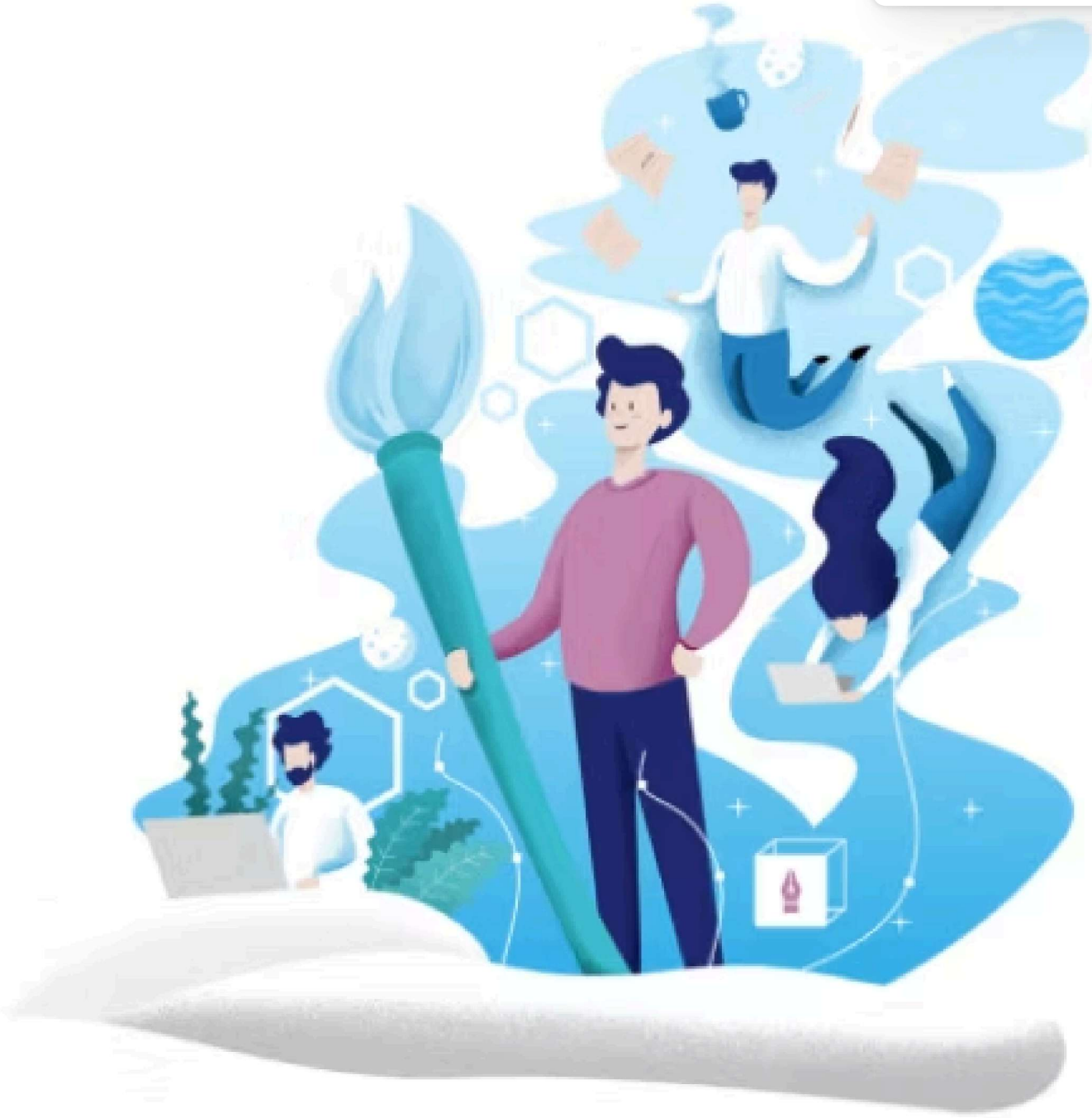
The Benefits

HOW SOCIAL POINT WORKS

1. Create and Tailor

Create a captivating online space to inform and engage your community and tailor each and every engagement with 40 participation and content tools to choose from.

Accept & Sign





2. Gather and Build

Gather robust and representative community feedback to skyrocket and build active participation with sign-up prompts and automated notifications.

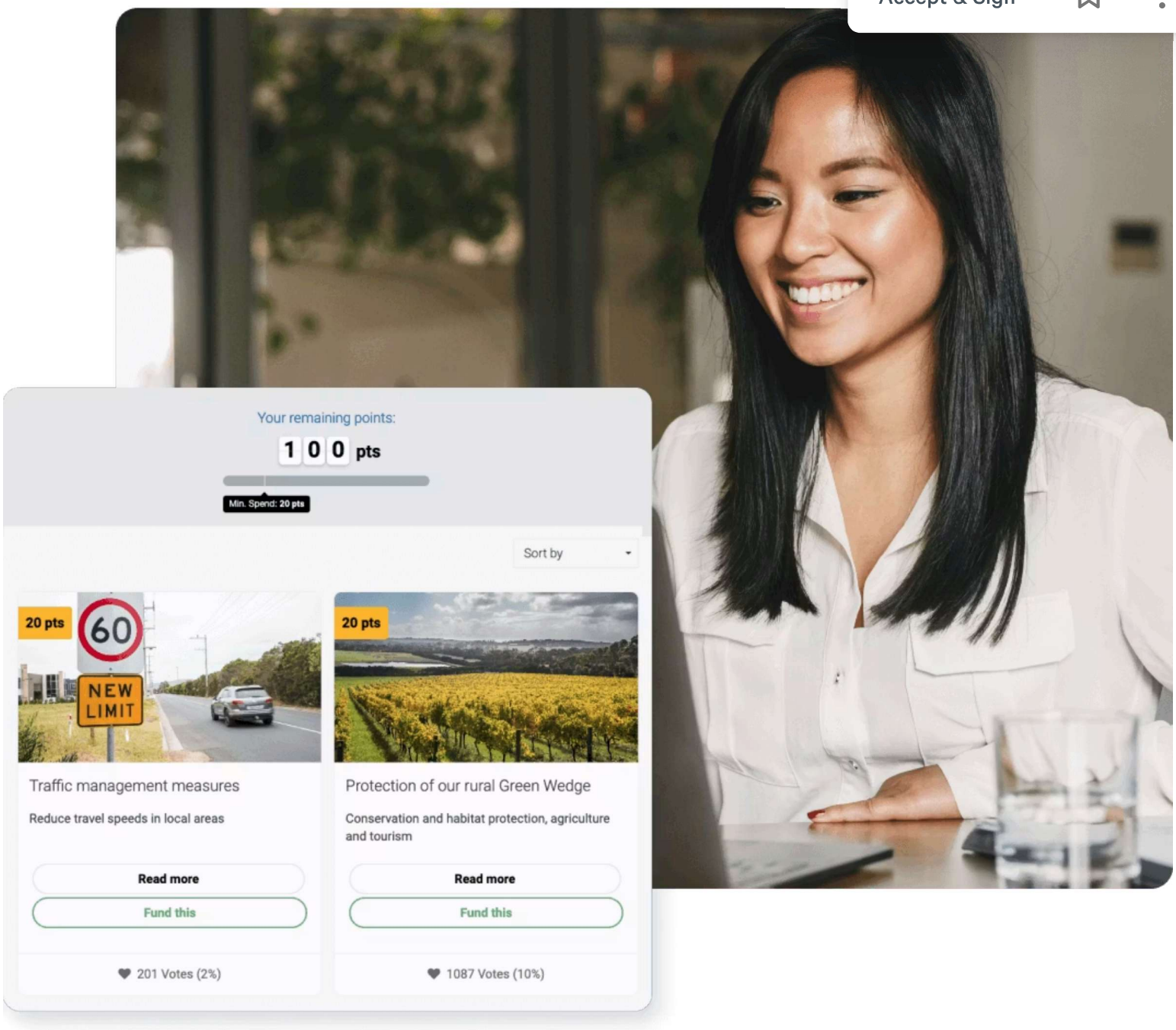
3. Unlock and Understand

Unlock meaningful insights with powerful analytics tools and easy-to-read reports and understand what your community cares about.

Accept & Sign



PARTICIPATION TOOLS



Social Map → Learn More

Collect information about places and spaces by letting your visitors pin their comments and images on an interactive map. Invite other participations to rate contributions so you can gain deeper insight into community agreement.

Gather → Learn More

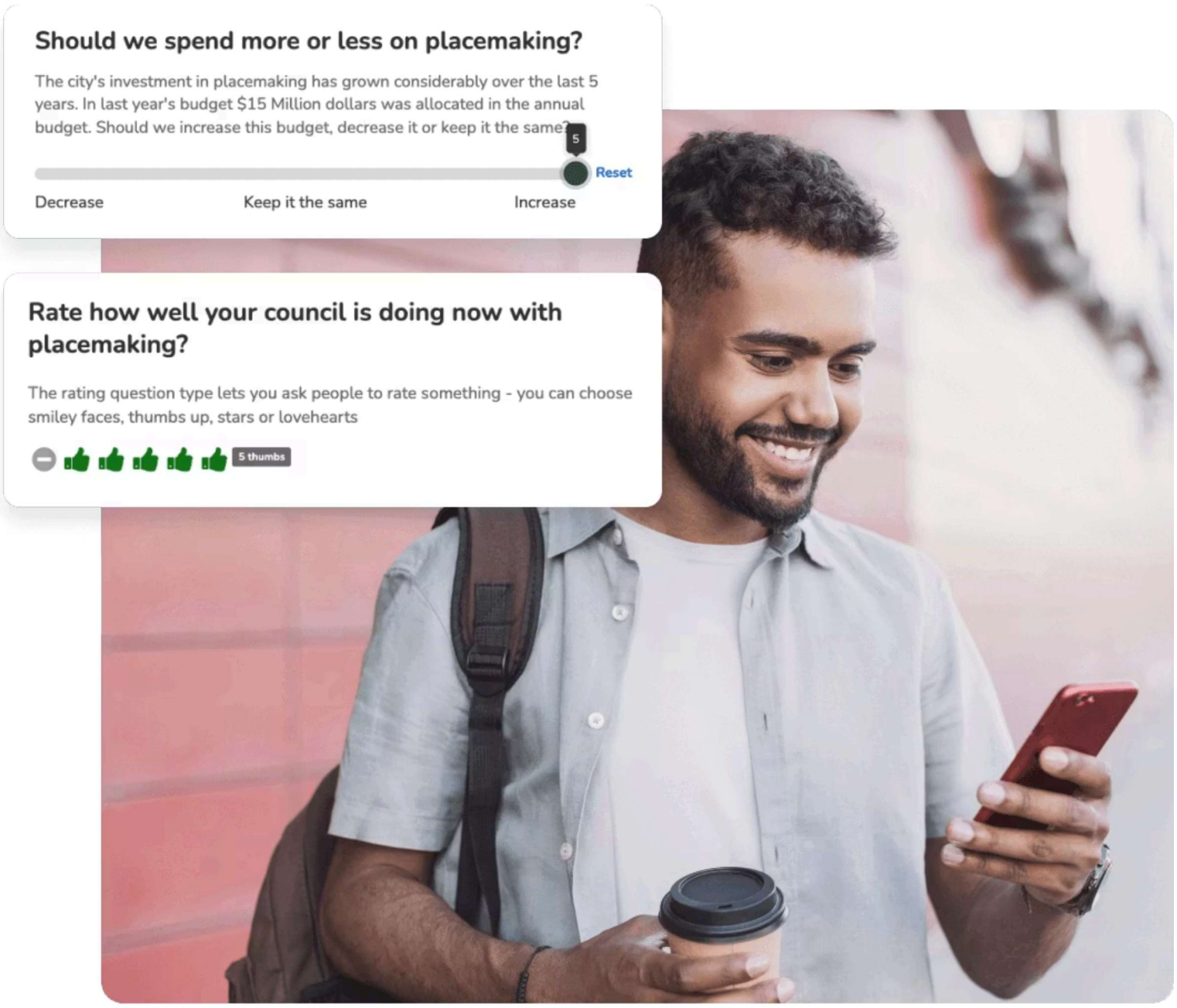
Enable community members to share their stories and ideas. Participants can add text, photos, or videos to express their deeper thoughts in a collaborative and deliberate way.

Fund It → Learn More

Involve people in budget-related decisions and empower them to consid
priorities when they 'fund' potential projects, proposals, and programs.

Accept & Sign

"Since migrating to Social Point we have seen a **312% increase** in the average views we receive each month. We believe this is largely attributed to the automatic email notifications that our community receives when a relevant project is published."
– *City of Canterbury Bankstown*



Accept & Sign

Visioner → Learn More

Collect big and bold ideas by allowing community members to place virtual ‘post-it’ notes. Identify the most popular options that have been voted on by other community members.

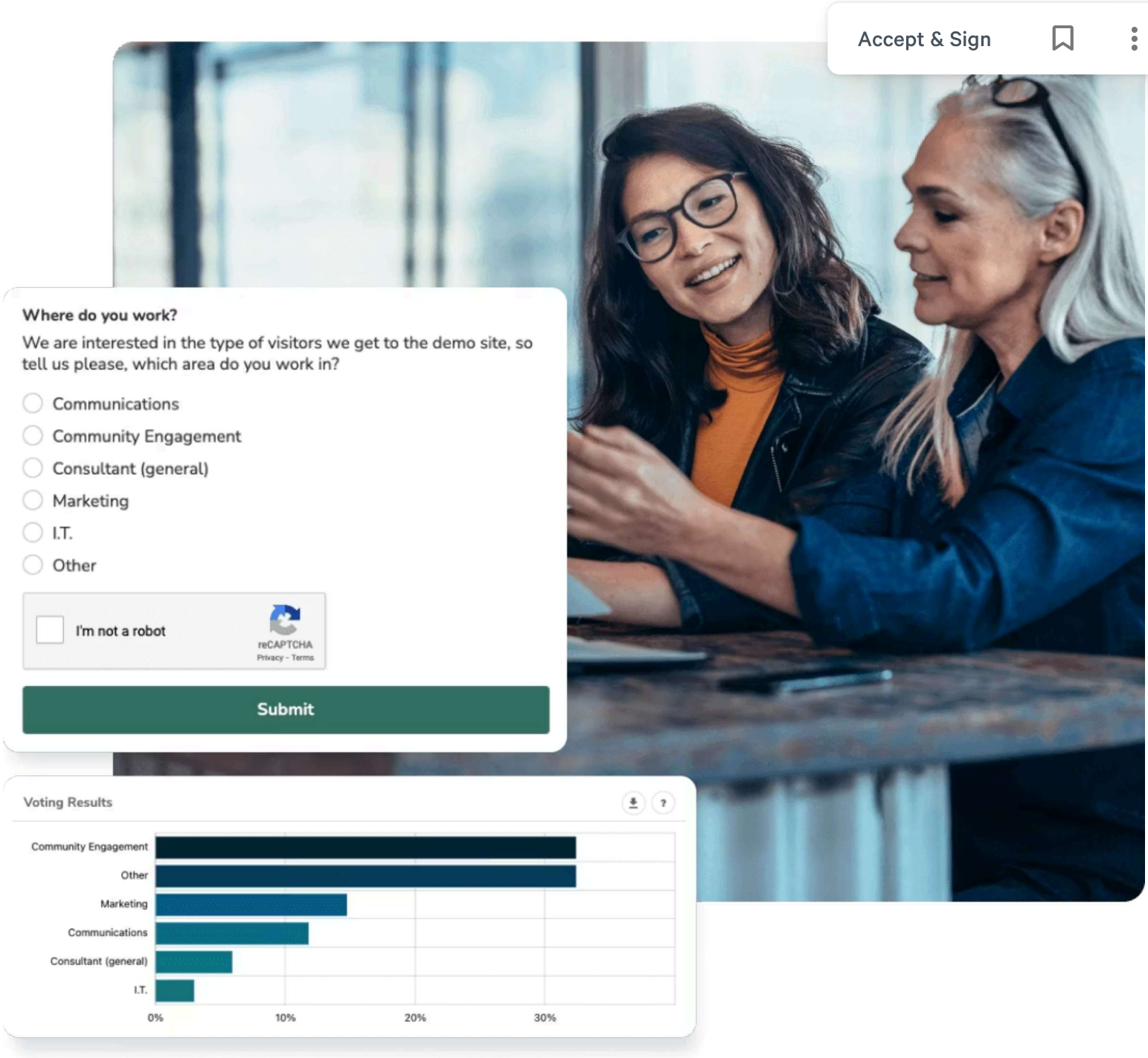
Forum → Learn More

Host productive online conversations about relevant topics and themes. Creating a space for transparent discussions makes public opinion less likely to circulate on social media.

Form → Learn More

Conduct social research and gather feedback with dynamic surveys and forms. You can select from 3 templates, add informative multimedia content, use 16 different question types, set up conditional logic, and produce detailed reports.

> "We felt stuck in a rut repeating the same styles of engagement with our previous platform. Rigid templates and limited tools hampered our creativity and we knew we had to make a switch to Social Point. We have seen an incredible increase in participation of 300% which continues to grow."
> – *City of Casey*



Question & Answer → Learn More

Invite participants to ask questions to key decision-makers in an open and transparent way. Allowing community members to reach out and engage with your project positions your organization as responsive and informed.

Conversation → Learn More

Spark online discussions by allowing visitors to share comments, respond to each other, and upvote other comments. Real-time comment loading also enables you to use the tool in a live setting.

Quick Poll → Learn More

Accept & Sign

Poll your audience to quickly measure sentiment or opinions on an important issue. Get a quick response by using single or multiple-choice questions that are easy to respond to.

PRICING SCHEDULE

Social Point is provided on a subscription basis under a software as a service model. This means there is no software to install and the service can be accessed from any compatible web browser.

Premium Subscription

YEARLY
$10,000.00

Description	Item	Quantity	Price
☑ **Unlimited Annual Subscription** Includes: - Unlimited Projects - Premium Content tools and Engagement Tools - 24/7 Live Human Moderation - 10 Admin Users (2 Site Admins and 8 General Users) - Customizable Design Theme - Custom Registration and Social Sign-in - Page Versioning and Scheduling Publishing - Customizable User Roles and Page Templates	$10,000.00	1 Years	$10,000.00 / year

Description	Item	Quanti

- Domain Configuration and Complementary SSL Certificate
- Highest Level of Usage Limits
- Project Category and Location Tagging
- Mailer Access and 'Follower' Functionality
- Full API Access
- Analysis Assistant to automatically detect sentiment, language, key phrases, and named entities (100K / year Free)
- Approval Workflow, 'Teams', First-Time Publishing Permissions and Hub Pages
- Multi-Domain Support

Onboarding & Ongoing Support

- Customer Success Partner
- Tailored Onboarding & Site Framework Build
- Access to Best Practice Learning Centre
- Ongoing Support & SLA

Accept & Sign

Optional Add-ons

SUBTOTAL
$1,000.00

Description	Item	Quantity	Price
☐ Single Sign On	$1,500.00	1 Year	$1,500.00 / year
☐ EngagementHQ Migration - 30 Projects	$0.00	1 Year	$0.00

Description	Item	Quanti	
☐ Translation Add-on	$2,000.00	1 Unit	$2,000.00 / year
☐ Additional Site Admin User License	$1,500.00	1 Users	$1,500.00 / year
☐ Additional General Admin User License	$250.00	1 Users	$250.00 / year
☑ Video Banner Integration	$1,000.00	1 Unit	$1,000.00
☐ Project Mapping Display (Example)	$1,000.00	1 Unit	$1,000.00 / year
☐ Hub Functionality (Upon Scope)	$0.00	1 Unit	$0.00

Social Point *also offers an Integrated Stakeholder Relationship Management System & modular customizations upon request.*

Please inquire for a scoping session to confirm price.

Optional Professional Services

SUBTOTAL
$0.00

Description	Item	Quantity	Price
☐ **Enhanced Implementation** - Kickoff Call with Implementation Specialist and Practice Lead	$5,000.00	1 Unit	$5,000.00

Accept & Sign

Description	Item	Quanti	
- Pre-release site review (15 minutes) - White Glove Template Project: Creation of a standard page that can be replicated for each additional engagement.) - 1 Co-created Project Build (Bring your content and we'll design the engagement together) to be used in the first year.			
Project/Engagement Build - Visioning Workshop (30 minutes) - Client to share content and desired tools - Practice Lead/CSM to turnaround draft in 2-3 business days - Review Meeting (30 minutes) - 24 hours to implement changes Final delivery	$2,000.00	1 Unit	$2,000.00
Advanced Report Generation - Branded, consolidated overview of results (Charts, Results, Summaries) of participation in a format that can be shared with the community.	$1,000.00	1 Unit	$1,000.00
Hybrid Engagement Design Office Hours - 1-Hour Engagement Consultation Co-creation of map/survey/page and recommendations for in-person and digital engagement.	$300.00	1 Unit	$300.00
A LA Carte Training 1-hour customized training session	$300.00	1 Unit	$300.00

Description	Item	Quanti	
Hybrid Engagement Design Office Hours - 1-Hour Engagement Consultation Co-creation of map/survey/page and recommendations for in-person and digital engagement.	$300.00	1 Unit	$300.00
Certification Program - In-depth product training (backend orientation, tool overview and creation) - Mapping SPP to common engagements (page design) - Digital and Hybrid Engagement Best Practices - Driving people to the site, analyzing results, and project showcase	$1,500.00	1 Unit	$1,500.00

Total Due Today One Off	$1,000.00
Total Due Today Recurring	$10,000.00 / year
Total Due Today Total Due Over Term	$11,000.00

ACCEPT AND SIGN PROPOSAL

By completing this proposal you are agreeing with our Terms and Conditions. If you have any questions or hesitations, please reach out to us. Clicking the below button will prompt a form to complete relating to your organization.

Accept & Sign

SOCIAL POINT TERMS & CONDITIONS – UNITED STATES

In these terms and conditions, capitalized words have the following meanings:

1. Acceptable Use Policy – Means Our policy governing the acceptable use of Our Services published on Our website which may be varied from time to time.

2. Agreement – Means these terms and conditions together with the Customer Registration, the Service Level Agreement, and the Privacy Policy.

3. Application – Means the computer software application called 'Open Point' (in particular, any functionality historically known as Social Pinpoint) which is to be made available by Us to You pursuant to this Agreement.

4. Authorized User – Means a user permitted to access Your Social Pinpoint instance under this Agreement.

5. Fees – Means the fees for Our Services as specified in the Customer Registration or as notified by Us in accordance with this Agreement.

6. Content – Means any Data and information available through Our Services or contained within Our Services.

7. Customer Registration – Means the form described as such, or any other document completed upon signing up with Social Pinpoint that outlines a description of Our Services including contract dates and agreed pricing.

8. Data – Means data owned or supplied by You to which We are provided access pursuant to the Agreement or data which may otherwise be generated, compiled, arranged or developed using Social Pinpoint by You but excluding the Intellectual Property.

acts of war, terrorism, riots, civil commotion, malicious damages, sabotage, revolution and strikes.

10. Intellectual Property – Means any IP Rights in Social Pinpoint and any associated customisations, enhancements, or modifications to Social Pinpoint after commencement of this Agreement, whether at Your request or otherwise.

11. IP Rights – means all intellectual property rights in any jurisdiction and other rights of a similar nature, including copyright, trademarks, patents, design and design rights for all software or computer programs, trade or other proprietary rights or any rights to registration, whether created before or after the commencement of this Agreement.

12. Moderation Policy – Means Our policy for the moderation of comments published on Our website which may be varied from time to time.

13. Our Services – Consists of all services, products, and Applications that Social Pinpoint provides now or in the future and made available by Us to You in accordance with this Agreement, including access to the Application.

14. Privacy Policy – means the privacy policy published on our website which may be varied from time to time.

15. Service Level Agreement – means the service level agreement published on our website which may be varied from time to time.

16. Security Statement Document – means the system security document published on our website which may be varied from time to time.

17. You – When we say You, You've or Your, we mean both you and any entity or firm you're authorized to represent.

18. Applicable Law – This Agreement will be governed by the laws of Delaware, United States. Notices under this Agreement may be delivered by email to Us at the addresses specified in the Customer Registration Form, and to You at the email addresses You specify to Us in Your Customer Registration Form. Notice will be deemed given upon sending the transmission if sent before 5 pm on a business day or otherwise at the commencement of the first business day following transmission. In this clause "business day" means Monday to Friday excluding public holidays in Delaware.

Access to Social Pinpoint

20. Set Up & Maintenance – We provide Social Pinpoint as a tool to assist You in designing, setting up and maintaining a website for end users. Unless we expressly agree in the Customer Registration to assist You with the design, set up or maintenance of the website, You are solely responsible for using Social Pinpoint to carry out such activities.

21. No assignment – Unless otherwise agreed in writing by Us, access to Our Services are personal to You and use is not permitted by any other person or entity other than Your employees, contractors or third parties who are reasonably required to access the system for use on Your projects.

22. Intellectual Property – You acknowledge and agree that any Intellectual Property is retained by Us and shall not be available in any form for use by any third parties. Nothing in this Agreement is to be taken to be a transfer or assignment of the Intellectual Property or any of Our IP rights to You.

23. Authorized Users – You agree that the Agreement permits You to access and use Social Pinpoint in accordance with the number of Authorized Users set out in the Customer Registration, or the number of users applicable to Social Pinpoint subscription tier You are paying for. Subject to You agreeing to any relevant increase in Fees, You may request an increase in the number of Authorized Users by submitting a request in writing to Us.

Duration of Agreement

24. Contract Period – The contract period shall commence upon completing and signing Your Customer Registration and continues for the term indicated in the Customer Registration (Contract Period).

25. Automatic Renewal – Prior to the end of the Contract Period, We will issue an invoice for the Subsequent Period. Unless We receive a response from You indicating termination of the Agreement, the Agreement will be automatically renewed for a further term of the same duration as the original Contract Period (Subsequent Term).

26. Survival – Any terms which are capable of having effect after the expiration of this Agreement shall remain in full force and effect following the expiration of this Agreement.

Privacy and Data Use

27. Privacy – Social Pinpoint uses Your data to provide services to You. Our privacy policy is an important part of this Agreement and how we deal with personal data.

28. Data Use – Subject to any lien arising because of unpaid Fees and to any further encumbrances arising outside our control, we acknowledge that Your Data remains the property of You. While we

- Enable You to use Our Services;
- Allow Us to improve, develop and protect Our Services; create new services;
- Communicate with You about this Agreement or Our Services;
- And send information We think may be of interest to You.

29. Delivery of Your Data where lawfully required – If required by any applicable law or legally binding order of any court, government, semi- government authority or administrative or judicial body or the applicable rules of any securities exchange, We may disclose Your Data or related data, documentation or records or confidential information.

30. Anonymous statistical data – When You use Our Services, We may create anonymous statistical data from Your Data and usage of Our Services, including through aggregation. Once anonymized, We may use it for Our own purposes, such as to provide and improve Our Services, to develop new services or product offerings, to identify business trends, and for other uses We communicate to You.

31. Marketing & Promotion

- Your Brand - Unless instructed by You in writing upon signing, You hereby irrevocably acknowledge and agree that We may use Your logo or organization name on our marketing collateral in any form or medium, (including but not limited to our website, sales proposals, information sheets, social media posts, and public displays) to indicate or represent that You are a current client of Our business. For the purpose of this clause, You give Us a non-exclusive, worldwide, fee-free licence to use the IP Rights in Your logo or organization name whilst You use any of Our Services for the limited purposes set out in this clause unless revoked by written notice by You to Us in accordance with this Agreement.
- Our Brand – We incorporate our corporate, service and product logos, marks and other branding elements into the footer (or an alternative location agreed with you) of each website which you publish or otherwise make publicly available using Social Pinpoint, and this may not be removed, unless otherwise agreed in writing by us.

32. General Data Protection Regulation (GDPR) – Because We do not collect or determine the use of any personal data contained in Your Data, Social Pinpoint is not acting in the capacity of data controller in terms of the European Union's General Data Protection Regulation (Regulation (EU) 2016/679, "GDPR") and does not have the associated responsibilities under the GDPR. Social Pinpoint should be considered only as a processor on behalf of You and Your users as to any Data containing personal data that is subject to the requirements of the GDPR. Except as provided in the privacy policy, Social Pinpoint does not independently cause Your Data stored in connection with Our Services to be transferred or otherwise made available to third parties, except to third

You and Your users are the data controllers under the regulations, meaning that You and Your users control the manner in which any personal data is collected and used as well as the determination of the purposes and means of the processing of such personal data.

Social Pinpoint is not responsible for the content of the personal data contained in Your Data or other information stored on Our servers (or its sub-contractors' servers) at the discretion of the You and Your users, nor is Social Pinpoint responsible for the manner in which You collect, handle disclosure, distribute or otherwise process such information.

33. System Security – Refer to Our Security Statement Document for more information relating to Your data and security.

Maintenance, Downtime, and Data Loss

34. Service Acknowledgements – As with all computers and internet driven software applications, there may be times that Our chosen server is not operational or has been shut down for maintenance. There may also be software errors or other interruptions in use affecting Our chosen server or Our Services. Despite taking all reasonable security measures, Our chosen server may be vulnerable to hackers, viruses, and unauthorized access and We do not guarantee the integrity of data, and that as a result of any of these events there may be interruption of Your business.

35. Breach of Security – Subject to the clauses under the 'Liability' section below, You are responsible for any breach of security at Your premises or to Your computer system, which results in any loss or damage to Us and We are equally responsible for any breach at Our premises or to Our computer system, which results in any loss or damage to You.

36. Malfunction – We do not warrant that Our Services are or will be completely error free.

37. Failure of Our Services – We shall not be responsible for any failure of Our Services, if such failure is caused by factors beyond Our reasonable control including, but not limited to, a Force Majeure event, telecommunications failure or fault, defective network or Internet connections, poor reception, defective equipment utilized by or incorrect operation by You of Your own access facilities, or the loss of service from the service provider hosting the Application.

38. Modifications – We may exercise our discretion as to the configuration of Our Services, release new updates, modifications, and enhancements to Our Services, and in some cases discontinue features without prior notification to You. Where this occurs, we will Endeavor to notify You.

39. Your Acknowledgement – All Content is the sole responsibility of the person who made the Content available, and You are solely liable and responsible for Your Content. You shall not:

- Undermine the security or integrity of Our computing systems or networks.
- Use Our Services in any way that might impair functionality or interfere with other people's use.
- Access any system without Our permission.
- Introduce or upload anything that: (a) infringes any IP Rights or other proprietary rights of any party; (b) violates any applicable law or is illegal; or (c) violates any third-party's right, including right to privacy.
- Introduce or upload anything that contains software viruses, trojan horses, worms, time bombs, cancelbots or any other computer code, files or programs designed to or that may interrupt, destroy or limit the functionality of any computer software or hardware or telecommunications equipment.
- Impersonate any person or entity, including without limitation a Social Pinpoint representative or another user of Social Pinpoint, or falsely state or otherwise misrepresent Your affiliation with a person or entity.
- Create a false identity for the purpose of misleading others as to Your identity or the originator of a message.
- Interfere with or disrupt Our website or servers or networks connected to Our website, or disobey any requirements, procedures, policies or regulations of networks connected to Our website.
- Modify, copy, adapt, reproduce, disassemble, decompile, reverse engineer, or extract the source code of any part of Our Services.

If you become aware that any Authorized User has breached this Agreement or our Acceptable Use Policy, you must promptly notify us. On becoming aware of such a breach, whether from your notice or otherwise, we may immediately suspend that Authorized User's access without notice, or request that you suspend their access and you agree to immediately implement such suspension.

40. Your Access – You are responsible for providing Your own internal facilities and equipment necessary to access the Application. We accept no responsibility for any deficiency in Your access facilities.

Pricing

making available Our Services and any of our other goods and services to You for the period to which that Fee relates and but for valid termination for a Force Majeure event, are not refundable in any instance. For the avoidance of doubt, this clause applies if this Agreement is terminated before the end of the Contract Period (or Subsequent Term) so that Fees for the full Contract Period (or Subsequent Term) remain payable.

42. Upgrades - In the event that You exceed the limits of Your current subscription outlined in Your Customer Registration at any time during the Contract Period, You will automatically be upgraded to a new subscription tier. You must pay a pro-rata amount equal to the difference between the Fees outlined in Your Customer Registration and the price of Your new subscription tier. The pro-rata amount will be based on the number of days left in the relevant Contract Period and pricing available upon request from Your customer success manager.

43. Price Increases - We may increase Our pricing annually on the anniversary of the commencement of Your Agreement. You will be notified by Us of any increased Fees at least thirty (30) days before the increase takes effect. If the increase in Fees is by 5.0% or less, You agree to pay the increased Fees and there is nothing more You need to do. If the increase in Fees is greater than 5.0%, and You do not agree to pay the increased Fees, You may notify Us within 30 days and request that We terminate this Agreement at the end of Your Contract Period (or Subsequent Term).

44. Importance of timely payments – In order to continue accessing Our Services, You need to make timely payments based on the pricing plan You selected. If we do not receive timely payments, we may suspend access to Our Services until the payment is made.

45. Exclusion of Taxes – The Fees are exclusive of taxes, duties and fees imposed or levied in connection with Your access to Our Services. Without limiting the foregoing, You shall be liable for any new taxes, duties or Fees during the term in respect of the Access to Our Services.

Termination

46. Termination by a party – Without limiting the generality of any other clause in this Agreement, a party may terminate this Agreement immediately by notice in writing if:

- the other party ("defaulting party") is in breach of any term of this Agreement and such breach is not remedied within thirty (30) days of the other party notifying the defaulting party of that breach;
- a party becomes, threatens, or resolves to become or are in jeopardy of becoming subject to any form of insolvency administration; any party, being a partnership, dissolves, threatens or resolves to dissolve or is in jeopardy of dissolving;

period of sixty (60) days or more due to an event of Force Majeure.

47. Payments upon termination – In the event this Agreement is terminated prior to the end the Contract Period (or Subsequent Term) due to a breach of this Agreement by You, Fees for the remaining Contract Period must be paid by You within 14 days of the date of termination. It is agreed that the outstanding Fees are either a fee for service and in consideration of Us making Our Services available for the Contract Period or Subsequent Term (as the case may be) and/or is not a penalty and is a genuine pre-estimate of the loss we will suffer from early termination, bearing in mind Our Services are a SaaS service.

48. Refunds – If You cancel Our Services provided to You, or your access to Our Services is cancelled or suspended by Us in accordance with these terms, You understand that you are not entitled to a refund of any prepaid amount since such Fees are made in consideration of making Our Services available for the Contract Period (or Subsequent Period). If this Agreement is validly terminated due to Force Majeure event or a breach of this Agreement by Us (but not otherwise), We will refund, on a pro rata basis, moneys previously paid by You pursuant to this Agreement for Our Services not provided by Us to You.

49. Retention of Your data – Once this Agreement is terminated by You or Us, it is retained for a period of time in accordance with Our disengagement plan, available upon request.

Indemnity

50. Mutual Indemnity – Each party shall at all times indemnify and hold harmless the other party, its officers, employees and agents ("those indemnified") from and against any loss (including reasonable legal costs and expenses) or liability reasonably incurred or suffered by any of those indemnified arising from any proceedings against those indemnified where such loss or liability was caused by:

- a breach by the indemnifying party of its obligations under this Agreement.
- any wilful, unlawful, or negligent act or omission of the indemnifying party.

Liability

51. No Reliance – You agree that You have not relied on any representations or warranties made by Us which have not otherwise been expressly stated in this Agreement.

53. Limitation of Liability – Notwithstanding any other clause of this Agreement, the total liability of Us to You arising out of breach of our obligations under this Agreement (whether for breach of contract or warranty, under an indemnity, pursuant to any liquidated or other damages clause, for tort including negligence, for strict liability or on any other legal basis) is limited to:

- an amount equal to one year's Fees under this document;
- minus any amount which You recover from another third party as a result of an action by You against that third party, and notwithstanding any other provision of this Agreement, neither party will be liable to the other under this Agreement in contract, tort or otherwise:
- to the extent that any loss is caused or contributed to by the negligence or default by the other party or their personnel;
- for any indirect consequential loss related to or connected with this Agreement.

For the avoidance of doubt, this clause does not exclude or limit Your liability for the payment of Fees under this Agreement.

54. Terms Implied by Law – Where legislation implies in this Agreement any condition or warranty, and that legislation avoids or prohibits provisions in a contract excluding or modifying the application of or exercise of or liability under such condition or warranty, the condition or warranty shall be deemed to be included in this Agreement. However, Our liability for any breach of such condition or warranty shall be limited, at Our option, to one or more of the following:

(A) the supplying of the services again; or

(B) the payment of the cost of having the services supplied again.

Sub-Contracts

55. Our Right – We may sub-contract for the performance of this Agreement without Your prior consent, provided that We remain responsible for our obligations to You under this Agreement.

Changes to the Terms and Conditions

56. We may change these terms and conditions from time to time. Material changes will be published on our website.

Extension of Offer

57. You acknowledge and agree that the pricing, terms and conditions contained in this Agreement may be made available by Social Pinpoint to other government or public sector entities, including but not limited to municipalities, counties, state agencies, educational institutions, and special districts. Upon request and subject to mutual written agreement, such entities may procure the same or similar services from Social Pinpoint under the terms of this Agreement, to the extent permitted by applicable procurement laws and regulations. This provision does not obligate Social Pinpoint to enter into any agreement with third parties, nor does it impose any obligation on You beyond this Agreement.

OPEN POINT

Community and Stakeholder Engagement Insights, Direct to Your Inbox.

Email*

By subscribing you agree with our Privacy Policy.

Submit

Platform

What is Open Point

Products

Community Engagement

Industries

Energy & Utilities

Infrastructure Planning

Local & State Government

Resources & Mining

Resources

Blog

Case studies

Webinars

Company

Book a Demo

Request Pricing

About Us

Careers

Contact Us

© 2026 Open Point. All rights reserved.

Agreement Addendum

This Agreement Addendum (the "Addendum") is made and entered into this _____ day of _____, 2026 (the "Effective Date"), by and between the Town of Berthoud, a Colorado statutory municipal corporation (the "Town"), and Social Pinpoint, Inc., an independent contractor with an address of 600 North Broad Street, Suite 5 #2159, Middletown, DE 19709 ("Open Point") (each a "Party" and collectively the "Parties").

Whereas, the Town is purchasing Social Point community engagement software as a service subscription (the "Software") from Open Point under the Terms & Conditions, Customer Registration, Service Level Agreement, Privacy Policy, and Proposal to the Town, as each was then effective as of the Effective Date (collectively the "Agreement"); and

Whereas, the Parties wish to modify the terms of the Agreement as it applies to the Town as provided herein.

Now, Therefore, for the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Effect of Addendum. The provisions of this Addendum shall supersede any conflicting provisions in the Agreement and any other terms and conditions in any other agreements with Open Point, whether in place now or added later. Except as expressly modified by this Addendum, all terms and conditions of the Agreement shall remain in full force and effect. In the event of any conflict between the terms of this Addendum and the Agreement, the terms of this Addendum shall prevail only to the extent of such conflict.

2. Term and Termination.

a. This Addendum shall commence on the Effective Date, and shall continue for the term of the Agreement.

b. Either Party may terminate the Agreement upon 30 days advance written notice. If the Agreement is terminated early, the Town shall pay a prorated portion of the annual fee. However, the Town will not pay liquidated damages or pay a penalty for early termination under any circumstances, and if Open Point has substantially or materially breached the Agreement, the Town shall have any remedy or right of set-off available by law and equity. In the event of termination for convenience, no refund will be owed for pre-paid fees.

3. Payments. Open Point shall provide to the Town reasonable proof of all estimates and invoices prior to issuance. The Town agrees to pay all invoices and make all payments within 30 days from the date of the invoice or notice of payment.

4. Responsibility. Open Point hereby warrants that it is qualified to assume the responsibilities and render the services described in the Agreement and has all requisite corporate authority and licenses in good standing, as required by law. The Town's review, approval or acceptance of, or payment for any services, shall not be construed to operate as a

waiver of any rights under the Agreement or of any cause of action arising out of the performance of the Agreement. Open Point warrants that it is authorized to execute this Addendum.

5. Compliance with Law. Open Point shall at all times comply with all applicable laws, including all federal, state and local statutes, regulations, ordinances, decrees and rules relating to the emission, discharge, release or threatened release of a hazardous material into the air, surface water, groundwater or land, the manufacturing, processing, use, generation, treatment, storage, disposal, transportation, handling, removal, remediation or investigation of a hazardous material, and the protection of human health and safety, including without limitation the following, as amended: the Comprehensive Environmental Response, Compensation and Liability Act; the Hazardous Materials Transportation Act; the Resource Conservation and Recovery Act; the Toxic Substances Control Act; the Clean Water Act; the Clean Air Act; the Occupational Safety and Health Act; the Solid Waste Disposal Act; the Davis Bacon Act; the Copeland Act; the Contract Work Hours and Safety Standards Act; the Byrd Anti-Lobbying Amendment; the Housing and Community Development Act; and the Energy Policy and Conservation Act.

6. Independent Contractor. Open Point is an independent contractor. Notwithstanding any other provision of the Agreement, all personnel assigned by Open Point to perform services under the Agreement shall be, and remain at all times, employees or agents of Open Point, for all purposes.

7. Insurance.

a. Open Point shall procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Open Point pursuant to the Agreement. At a minimum, Open Point shall procure and maintain, and shall cause any subcontractor to procure and maintain, the insurance coverages listed below, with forms and insurers acceptable to the Town.

i. Worker's Compensation insurance as required by law.

ii. Commercial General Liability insurance with minimum combined single limits of $1,000,000 each occurrence and $2,000,000 general aggregate. The policy shall be applicable to all premises and operations, and shall include coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision, and shall include the Town and the Town's officers, employees, and contractors as additional insureds. No additional insured endorsement shall contain any exclusion for bodily injury or property damage arising from completed operations.

b. Such insurance shall be in addition to any other insurance requirements imposed by law. The coverages afforded under the policies shall not be canceled, terminated or reduced in coverage without at least 30 days prior written notice to the Town. In the case of any claims-

made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Any insurance carried by the Town, its officers, its employees, or its contractors shall be excess and not contributory insurance, and the Town shall not be responsible for any deductible losses under any policy.

c. Open Point shall provide to the Town a certificate of insurance as evidence that the required policies are in full force and effect.

8. Indemnification.

a. Open Point agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including reasonable attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of Open Point's work or the Software if such injury, loss, or damage is caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other fault of Open Point, or any subcontractor, officer, employee, representative, or agent of either, or which arise out of a worker's compensation claim of any employee of either.

b. The Town does not and will not indemnify Open Point under any circumstances.

9. Limitations of Liability.

a. Except with respect to damages caused by gross negligence, willful misconduct or fraud in no event shall Open Point's total aggregate liability arising out of or relating to the Agreement shall exceed $200,000 No other limitations of liability shall be effective against the Town.

b. Neither party shall be liable for lost profits, loss of use or date, business interruption or indirect, special, incidental or consequential damages, whether in contract, tort or otherwise.

c. The Town shall not be liable to Open Point for any breach of security that occurs at its premises or to its computer system, which results in any loss of damage to Open Point.

10. Arbitration and Waivers. The Town shall not be obligated to participate in any arbitration for any dispute related to the Agreement, and the Town does not waive its right to a jury trial or its right to participate in a class action under any circumstances.

11. Taxes. Consistent with C.R.S. § 39-26-704, the Town shall be exempt from paying any taxes on the purchase of the Software.

12. Confidentiality. The Parties agree that any confidentiality provisions in the Agreement shall be subject to the Colorado Open Records Act, C.R.S. § 24-72-200.1, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

13. Customer Data. If the Agreement is terminated, the Town shall have access to all of its customer and personal data that is stored on the Software. The Town shall not be charged a fee for retrieving its customer or personal data by Open Point or any other party.

14. Miscellaneous.

a. *Governing Law and Venue*. The Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning any of the provisions of the Agreement shall be brought in Larimer County, Colorado.

b. *No Waiver*. Delays in enforcement or the waiver of any one or more defaults or breaches of the Agreement by the Town shall not constitute a waiver of any of the other terms or obligation of the Agreement.

c. *Third Parties*. There are no intended third-party beneficiaries to the Agreement.

d. *Severability*. If any provision of the Agreement is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

e. *Modification*. The Agreement, including changes to the scope of work, may only be modified upon written agreement of the Parties.

f. *Assignment*. Neither the Agreement nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

g. *Rights and Remedies*. The rights and remedies of the Town under the Agreement are in addition to any other rights and remedies provided by law. The expiration of the Agreement shall in no way limit the Town's legal or equitable remedies, or the period in which such remedies may be asserted, for work negligently or defectively performed.

h. *Governmental Immunity*. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of the Agreement, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

i. *Subject to Annual Appropriation*. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

j. *Force Majeure*. No Party shall be in breach of the Agreement if such Party's failure to perform any of the duties under the Agreement is due to Force Majeure, which shall be defined as the inability to undertake or perform any of the duties under the Agreement due to acts of

God, floods, fires, sabotage, terrorist attack, strikes, riots, war, labor disputes, forces of nature, the authority and orders of government or pandemics.

k. *Accessibility*. Open Point shall comply with the accessibility standards for an individual with a disability adopted by the State Office of Information Technology pursuant to C.R.S. § 24-85-103, and shall indemnify, hold harmless and assume liability on behalf of the Town and its officers, employees, agents and attorneys for all costs, expenses, claims, damages, liabilities, court awards, attorney fees and related costs, and any other amounts incurred by the Town in relation to Open Point's noncompliance with such accessibility standards.

l. *Electronic Signatures*. The Parties intend that this Addendum be governed by the Uniform Electronic Transactions Act, C.R.S. § 24-71.3-101, *et seq*.

In Witness Whereof, the Parties have executed this Addendum as of the Effective Date.

Town of Berthoud, Colorado

_____
William Karspeck, Mayor

Attest:

_____
Christian R. Samora, CMC, Town Clerk

Social Pinpoint, Inc.

By: _____
Dan Keane, Director

State of Colorado)
) ss.
County of _____)

The foregoing instrument was subscribed, sworn to and acknowledged before me this ___ day of _____, 2026, by _____as _____of Social Pinpoint, Inc.

My commission expires:

(Seal)

_____
Notary Public

BOARD OF TRUSTEES INFORMATION

Water Utilities

Meeting Date:	**June 9th, 2026**
Agenda Title/Subject:	**Town of Erie – CBT Lease**
Type of Item:	**Consent Agenda**
Purpose:	**Lease 240 AF of CBT water from Town of Erie**
Presented by:	**Ken Matthews, Director of Water Utilities**

Attachments:

1. Erie – Berthoud Water Lease – 240 AF of CBT

Background:
The current historic drought conditions across Colorado presents an unprecedented and uncertain risk to some of Berthoud's water rights that are dependent on the available water in the Big Thompson River. Berthoud Water staff has been evaluating all available options to ensure adequate water supplies for this drought period. While the Town's water supply remains stable and is projected to meet anticipated demands, staff recommends leasing 240 acre-feet of Colorado-Big Thompson (CBT) water from the Town of Erie at a cost of $80 per acre-foot, to provide an additional backup water source this year.

This lease provides an additional margin of reliability at a fiscally responsible cost and helps ensure the Town can meet both potable and non-potable water demands throughout the irrigation season. Staff will continue to monitor water supply conditions and system demands. Depending on conditions later in the season, a portion of the leased water may be carried over into Water Year 2027 or leased to agricultural users, providing additional flexibility should drought conditions persist.

At $80 per acre-foot, the proposed lease represents a cost-effective risk management measure that enhances supply reliability during an unusually dry year

Next Steps:
Once the agreement is finalized, Berthoud will pay the Town of Erie, and the leased water will be transferred into Berthoud's Northern Water account for use as needed throughout the season.

Staff Recommendation:
Staff recommends approving the CBT lease with the Town of Erie.

Fiscal Impact and Fund Source:
The total cost of the lease is $19,200 and will be funded through the Water Department's Water Purchases budget.

Community Touchstones:
This lease will ensure the Town has sufficient water supplies to meet projected demands through the irrigation season while providing additional value through potential carryover storage for 2027 and/or supplemental water supplies for local agricultural users.

WATER LEASE

THIS LEASE of water ("Lease") is made and entered into as of the _____ day of May, 2026, by and between the Town of Erie ("Lessor") and the Town of Berthoud ("Lessee").

RECITALS

A. Lessor is the owner of Units in the Colorado-Big Thompson Project ("CBT Units") as such Units are defined in the Allotment Contract between the Northern Colorado Water Conservancy District ("NCWCD") and Lessor.

B. Lessee desires to lease water attributable to its CBT Units from Lessor's 2026 water allotment for use within the NCWCD boundaries.

C. Lessor is willing to lease two hundred (240) acre-feet currently allotted to its CBT Units to Lessee in accordance with the terms and conditions of this Lease.

AGREEMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Lease. Lessor hereby leases to Lessee the right to receive two hundred and forty (240) acre-feet currently allocated to its CBT Units during the 2026 water year (defined as November 1, 2025 through October 31, 2026). Lessee may sublease the water for irrigation purposes at a price per acre foot equal to or less than the price hereunder. Under no circumstances shall the water be used for any oil and gas or related purposes. This Lease does not grant to Lessee or any sub-lessees the right to use facilities owned or operated by Lessor or the use of any carryover capacity or additional water allotted to Lessor's CBT Units. Delivery of any and all water hereunder shall be taken by Lessee prior to November 1, 2026. Lessee shall be responsible for all necessary agreements to take delivery of the water through facilities owned by any third party.

2. Lease Payment. Lessee shall pay Lessor $80.00 per acre-foot, for a total of $19,200.00 as the lease payment. The lease payment shall be due immediately upon execution hereof.

3. NCWCD Documentation. Lessor hereby agrees to execute all necessary documentation to transfer 240 acre-feet currently allocated to the CBT Units to Lessee upon execution of this Lease and payment hereunder.

4. Additional Provisions.

4.1 Entire Agreement. This Lease constitutes the entire agreement between the parties. No supplement, modification, or amendment of this Lease shall be binding unless executed in writing by the parties.

4.2 Counterparts. This Lease may be executed in counterparts, each of which will be considered to be an original, but all of which together shall constitute one and the same instruments.

4.3 Electronic Signatures: This Lease may be executed with electronic copies of signatures which shall be binding upon the parties.

EXECUTED to be effective as of the date set forth above.

TOWN OF ERIE, LESSOR

By: _____

Title: _____

TOWN OF BERTHOUD, LESSEE

By: _____

Title: _____

Board of Trustees Information

Community Development Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Intergovernmental Agreement Between the Town of Berthoud and Larimer County Regarding the Wilson Farm Conservation Project Funding**
Type of Item:	**Consent Agenda**
Purpose:	
Presented by:	**Anne Johnson**

Attachments:

1. 01 Agreement

Background:

The Town of Berthoud applied for and received a $1,113,000 Great Outdoors Colorado (GOCO) grant in March, 2025 to support the acquisition of the Schaal and Wilson properties. Included in this grant was funding for community engagement corridor planning.

The Town also received a grant from the Colorado Water Conservation Board on April 11, 2025 in the amount of $79,650. The purpose of this grant is to develop a holistic land conservation and water supply planning to be led by Colorado Open Lands. The end goal is to engage residents and understand interests of the Town in preserving agriculture, future recreational opportunities and supporting a productive resilient river, while meeting future water supply needs along the Little Thompson River Corridor. The total project cost is $107,650 inclusive of the CWCB grant and the Town's committed match of $28,000. Results of the CWCB analysis will be presented to PORT and the Town Trustees in early Q4.

These two grants are symbiotic.

Larimer County provided a letter of support for the GOCO Grant and pledged a commitment of $100,000 toward the Town's acquisition of the Wilson property. The attached Agreement is the form required to allow the County to reimburse the Town for closing on the Wilson property. Closing will occur after the Annexation, Zoning, Neighborhood Master Plan and Minor Subdivision documents are recorded (eta week of June 8, 2026). The Town Attorneys have reviewed the Agreement and have found it to be ready for the Mayor's signature.

Update/Next Steps:

This memo is provided as background information in support of Staff's recommendation to have the Mayor sign the Agreement. Once the Mayor signs the Agreement and the Town closes on the Wilson Conservation Project property, the Town can be reimbursed by Larimer County.

Fiscal Impact and Fund Source:
There is a positive fiscal impact by allowing this request. Funding support from Larimer County illustrates a common goal of land preservation.

Community Touchstones:
Consideration of the amendment request does not negatively impact community touchstones. Consideration of this request continues the Town's efforts toward preserving the Little Thompson River Corridor and supports the touchstones of Resilience, Sustainability and Community Identity.

Recommended Action(s):
Staff recommends the Trustees authorize the Mayor to sign the attached Agreement.

Docusign Envelope ID: 68E2E9CE-CA2F-8D8D-8177-62CBDD445B40

FUNDING INTERGOVERNMENTAL AGREEMENT
WILSON FARM CONSERVATION PROJECT

This Funding Intergovernmental Agreement (the "Agreement") is entered into and effective upon the later of the dates of execution by the parties as indicated below between LARIMER COUNTY, COLORADO, a political subdivision of the State of Colorado, acting through the Department of Natural Resources whose address is 1800 S. County Road 31, Loveland, Colorado, 80537 (referred to as the "County"), the TOWN OF BERTHOUD, a Colorado municipality whose address is 807 Mountain Ave. Berthoud, CO 80513 (referred to as "Berthoud"), and COLORADO OPEN LANDS, a nonprofit organization whose mailing address is 1546 Cole Blvd. #200, Lakewood, CO 80401 (referred to as "COL") (referred to each as a "Party" and collectively as the "Parties").

WHEREAS, the County receives Help Preserve Open Space Funds from a voter-approved sales tax dedicated to preserving open space lands, and is authorized to partner with others to share costs associated with land conservation efforts in Larimer County; and

WHEREAS, the County, Berthoud, and COL share common goals in conserving land in Larimer County; and

WHEREAS, COL and Berthoud have partnered to perpetually preserve a parcel of land in Larimer County described in Exhibit A (the "Property") that will be purchased and owned by Berthoud and encumbered with a conservation easement to be held by COL (the "Conservation Easement"), with such partnership known as the Wilson Farm Conservation Project (the "Project"), as further described in Exhibit A; and

WHEREAS, in exchange for its purchase of the Property and conveyance of the Conservation Easement to COL, Berthoud has requested $50,000 from the County to help pay a portion of the purchase price of the Property; and

WHEREAS, in exchange for its purchase and administration of the Conservation Easement on the Property, COL has requested reimbursement from the County for up to $50,000 of the transaction costs associated with acquiring the Conservation Easement; and

WHEREAS, the County desires to aid Berthoud and COL in furtherance of perpetually preserving the Property which will further the County's goal of preserving open space and confer the following long-term public benefits to the citizens of Larimer County: protection of open space, native wildlife habitat, agriculture, scenic values and community buffers.

NOW THEREFORE, for sufficient consideration as set forth in this Agreement, the Parties agree as follows:

1) **RECITALS INCORPORATED.** All the above recitals and referenced exhibits are incorporated into this Agreement.

Docusign Envelope ID: 68E2E9CE-CA2F-8D8D-8177-62CBDD445B40

2) **COUNTY CONTRIBUTION.**
   a) The County agrees to contribute $50,000 towards Berthoud's purchase of the Property.
   b) The County agrees to pay a portion of COL's conservation easement transaction costs for the Project **up to a total of $50,000**. This payment shall be in the form of a reimbursement to COL and is only available to help pay for direct transaction costs actually paid by COL in closing on the Conservation Easement as identified on page 3 of Exhibit A ("Eligible Costs").
   c) The County contribution toward Berthoud's fee purchase and reimbursement of COL for Eligible Costs (collectively the "County Contribution") are contingent upon the terms of this Agreement, including Berthoud's acquisition of fee interest in the Property and conveyance of a perpetual conservation easement to be held by COL, all as set forth in the recitals above.

3) **DEADLINES & RECORDS.**
   a) Berthoud and COL shall complete the Project by closing on the purchase of the fee interest and conveyance of the conservation easement on or before March 31, 2027.
   b) Following its closing on the conservation easement, COL shall submit an invoice to the County on or before March 31, 2027, that itemizes Eligible Costs up to $50,000. COL shall maintain records sufficient to evidence the County's reimbursement of Eligible Costs until such invoice has been paid.
   c) If Berthoud or COL anticipate these deadlines will not be met, they shall notify the County as soon as possible and may request an extension from County. Any extension shall be within the sole discretion of the County.

4) **PAYMENT OF COUNTY CONTRIBUTION.**
   a) Contribution to Berthoud: Larimer County will reimburse Berthoud $50,000 towards the fee-title purchase following Berthoud's closing on the purchase of the fee interest.
   b) Reimbursement to COL: Within 60 days of its receipt of a timely itemized invoice as required by Section 3(b), the County shall pay the invoice up to a total of $50,000 so long as the amount invoiced correctly represents Eligible Costs and COL has complied with all terms of this Agreement. Prior to payment, the County reserves the right to require such additional documentation that it reasonably deems necessary to verify such eligibility and compliance. In such event, the payment deadline set forth above shall be tolled and non-payment pending receipt and review of such additional documentation shall not constitute a breach by the County.

5) **Withdrawal of Funding; Termination of Agreement.** Anything in this Agreement to the contrary notwithstanding, with prior notice to Berthoud and COL, the County reserves the right to withhold or withdraw all or a portion of the County Contribution, to require a full or partial refund, and/or terminate this Agreement if the County determines in its sole discretion that:
   a) Altered Expectations. Facts have arisen or situations have occurred that fundamentally alter the expectations of the Parties or make the purposes for the Project or the County Contribution infeasible or impractical.

Docusign Envelope ID: 68E2E9CE-CA2F-8D8D-8177-62CBDD445B40

b) Material Project Changes. Berthoud or COL materially modifies the scope or nature of the Project without prior written approval from the County.
c) Inaccuracies. Any statement or representation made or information provided by Recipient about the Project or in this Agreement is untrue, inaccurate, or incomplete in any material respect.
d) Delays. The deadlines set forth in Section 3 above are not met.
e) Termination or Non-enforcement of Use Restrictions. The use restrictions provided in the perpetual easement provided for in the Project are terminated or not enforced.

6) **INTEGRATION AND AMENDMENT**: This Agreement represents the entire agreement and understanding between the Parties and there are no oral or collateral memorandums, agreements, or understandings. This Agreement may be amended only by a written instrument signed by the Parties.

7) **NO THIRD-PARTY BENEFICIARIES.** This Agreement is for the sole benefit of the County, Berthoud, and COL, and nothing herein shall be construed as giving any benefits, rights, remedies, or claims to any other person or entity. Enforcement of this Agreement and all rights and obligations hereunder are reserved solely to County, Berthoud, and COL. Any services or benefits which third parties receive as a result of this Agreement are incidental.

8) **NO FUTURE EXPECTATION**. Berthoud and COL agree and acknowledge that the County has no obligation to distribute funds beyond those provided for in this Agreement.

9) **LIABILITY.**
a) No term or condition of this Agreement is intended nor shall be construed as a waiver of any immunity, rights, benefits, or protections available to any Party under the Colorado Governmental Immunity Act as amended or as may be amended in the future.

10) **ASSIGNMENT.** Berthoud and COL may not assign any rights or delegate any obligations under this Agreement without the express and prior written consent of the County.

11) **GOVERNING LAW AND VENUE**. This Agreement shall be governed by the laws of the State of Colorado and venue for any action arising under this Agreement shall be Larimer County, Colorado.

So agreed to by the Parties by signature of their authorized representatives and effective on the date last signed below.

Docusign Envelope ID: 68E2E9CE-CA2F-8D8D-8177-62CBDD445B40

LARIMER COUNTY, COLORADO

By: _____ 5/28/2026
Director — Date of Execution
Larimer County Natural Resources Department

COLORADO OPEN LANDS

By: Signed by: Tony Caligiuri F33DFDB57B70432 _____ 5/28/2026
Date of Execution

Printed Name: Tony Caligiuri

Title: President & CEO

TOWN OF BERTHOUD

By: _____ _____
Date of Execution

Printed Name: _____

Title: _____

Docusign Envelope ID: 68E2E9CE-CA2F-8D8D-8177-62CBDD445B40

Exhibit A

Project Summary and Budget including Direct Transaction Costs requiring County Funds
(Page 1 of 3)

Wilson Open Space, Larimer County, 69 acres

Located at the southern boundary of Berthoud, the Wilson Farm was once part of a larger irrigated farm that was purchased by a real estate developer with the intention to subdivide the farm into a dense residential neighborhood with private access to the river. Recognizing that this would forever fragment the Little Thompson River Corridor and bar any future public access, Berthoud approached the developer and entered into a contract to purchase 69 acres of the larger farm consisting of the main stem riparian corridor and adjacent Dry Creek corridor. With its robust cottonwood gallery and 2/3 of a mile of river frontage, the Wilson property is ideally suited for a public open space with a trail along the corridor and potential restoration opportunities, including the development of a buffer and muti-story canopy to improve wildlife habitat.

Together with a grant from Great Outdoors Colorado (GOCO), Berthoud is purchasing the Wilson Farm to become an open space with public trails that tie into Berthoud's existing trail network.

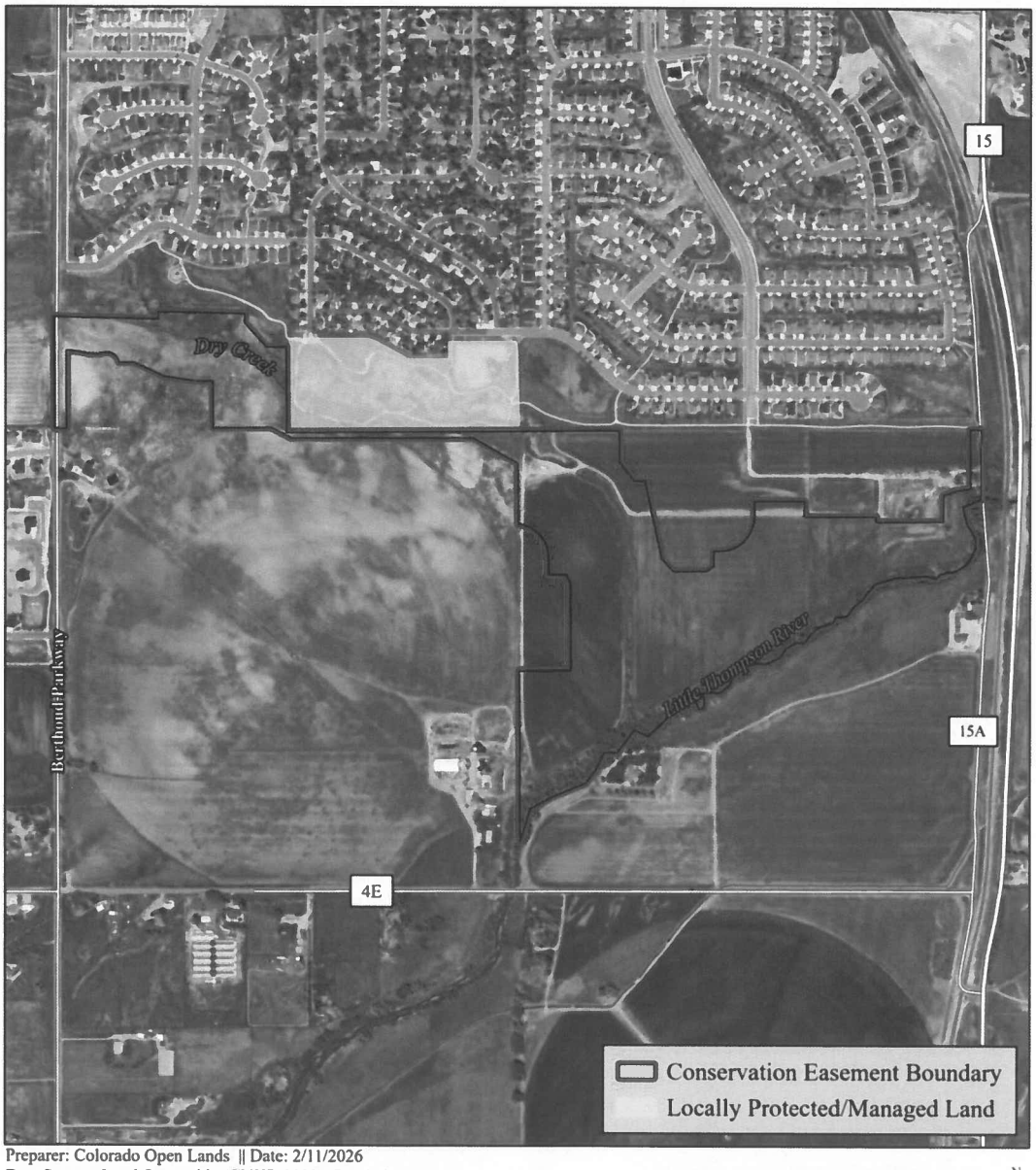
Docusign Envelope ID: 68E2E9CE-CA2F-8D8D-8177-62CBDD445B40

Exhibit A

Project Summary and Budget including Direct Transaction Costs requiring County Funds
(Page 2 of 3)

COLORADO OPEN LANDS

WILSON FARM PROPERTY MAP
68.98 ACRES - LARIMER COUNTY



Preparer: Colorado Open Lands || Date: 2/11/2026
Data Source: Land Ownership (CNHP, 2023); Roads (CDOT, 2025). This map is not a survey and should not be construed as one.

0 0.15 0.3 Miles

N

Exhibit A

Project Summary and Budget including Direct Transaction Costs requiring County Funds

Docusign Envelope ID: 68E2E9CE-CA2F-8D8D-8177-62CBDD445B40

Wilson Farm Budget - Berthoud

	GOCO	COL	Berthoud	Larimer Co.	Total
Cash					
Acquisition	$100,000.00		$1,098,000.00	$50,000.00	$1,248,000.00
Appraisal				$25,000.00	$25,000.00
Baseline Documentation				$7,000.00	$7,000.00
Closing Costs				$1,000.00	$1,000.00
Environmental Assessment			$5,000.00		$5,000.00
Title Insurance				$3,000.00	$3,000.00
Mineral Assessment				$3,000.00	$3,000.00
Land Trust Attorney's Fees	$7,000.00				$7,000.00
Mapping/Survey			$5,000.00		$5,000.00
Stewardship Endowment	$18,000.00		$18,000.00		$36,000.00
Grantee Capacity					
Project Fee, Staff Time, or Overhead	$10,000.00				$10,000.00
In-Kind					
Appraisal					$0.00
Baseline Documentation					$0.00
Environmental Assessment					$0.00
Mineral Assessment					$0.00
Applicant's Attorney's Fees					$0.00
Water Rights Due Diligence		$500.00			$500.00
Mapping/Survey		$500.00			$500.00
PROJECT COST SUBTOTAL	***$35,000.00***	***$1,000.00***	***$1,126,000.00***	***$89,000.00***	***$1,351,000.00***

*GOCO contribution to fee acquisition to be determined once appraisal is complete and overall corridor funds are allocated among Wilson and Schaal Farms.

Board of Trustees Information

Administration Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Annual Committee Report - Youth Advisory Commission**
Type of Item:	**Presentation**
Purpose:	**Presentation to the Trustees of the accomplishments over 2025 and into 2026.**
Presented by:	**Berthoud Youth Advisory Committee**

Attachments:

1. BYAC Annual Highlights

Background:

The Town of Berthoud Youth Advisory Commission was formed in 2017 with two main purposes: to empower young minds through local opportunities and community support, and to provide the Town of Berthoud with insight and access to new ideas from unheard voices on important issues facing our community. One of the committee's goals this year was to present their accomplishments and inform the board of their plans for the upcoming year. This presentation provides an overview of their accomplishments and plans for 2026 and 2027.

Update/Next Steps:

This is an informational update.

Fiscal Impact and Fund Source:

The committee is not requesting any additional funding. The committee will discuss expenses during their presentation. The funds they will be commenting on are the General Fund account 11-11-5024-01 with a budget of $3,000, the Washington DC trip account 41-00-5212-00 with a budget of $15,000, and the YAC Conference account 41-00-5213-00 with a budget of $15,000.

Community Touchstones:

A key part of Berthoud's identity is the strong bond between our youth and its government. The Board and community leaders invest their time, resources, and trust in this committee because they believe youth voices have value and can make an impact.

Recommended Action(s):

There is no need for any recommendations or actions; this presentation is strictly informational.

BERTHOUD

Youth Advisory Committee

Annual Highlights & Accomplishments

Our Previous Goals

Grow Recruitment Through Volunteering

Volunteer at Farmers Markets, Berthoud Days, Rec Center events, and more to raise awareness and attract new members.

Create a Scholarship Fund

Establish a fund to entice new members and reward committed, existing participants in our commission.

Host B-RAD Arcade Nights

Raise awareness of our commission and create a positive impact in the community, especially for Berthoud youth.

Organize a Youth Leadership Conference

Gather all NOCO commissions to share ideas and build a truly impactful presence in Berthoud and across Colorado.

Goals Achieved

Goal 1

Grow our board by recruiting new members to expand the committee's capacity and ability to serve the Berthoud community.

Result

Successfully recruited and onboarded

4 New Members

How we did it

Advertisements through social media, websites, and schools

Goal 4

- Hosted & organized the 1st Annual NOCO Youth Leadership Conference
- Brought together youth commissions from Loveland, Greeley, and Longmont
- Featured a speaker, Shark Tank team building, and a round table discussion
- Created a tradition now continuing with Greeley hosting in 2026

New Initiatives: Connecting Generations

Visiting Nursing Homes

This Summer

Our members will visit nursing homes throughout Berthoud and Northern Colorado all summer long, spending dedicated time in **memory care units** — bringing joy, connection, and companionship to residents.

What We'll Do



Conversations & Storytelling

Listen, share, and connect with residents' life stories.



Games & Activities

Bring fun and engagement to memory care units.



Music & Entertainment

Share music and performances that uplift residents.



Consistent Presence

Regular visits throughout the summer for lasting bonds.

Heading to Nashville!

National League of Cities Youth Summit

November 2026 • Nashville, Tennessee

WHAT

The premier national gathering of young civic leaders — representing cities across the U.S.

WHO

BYAC delegates will represent Berthoud alongside youth from cities nationwide.

WHY

To learn, network, and bring back ideas that strengthen our community.

IMPACT

Elevates Berthoud's profile in national youth civic engagement conversations.

New Initiatives: Support the Next Northern Colorado Youth Leadership Conference

Our Legacy: May 9, 2025

Our commission hosted the **first ever NOCO Youth Summit**, bringing together youth commissions from Loveland, Greeley, and Longmont to discuss the future of our organizations.

Motivational Speaker & Town Board Members
Spoke about continued action and engagement in our communities.

Team Building Exercise: Shark Tank
Helped committees connect, build relationships, and get to know each other's members.

Round Table Discussion
Each commission shared future goals, strengths, and weaknesses.

Greeley Hosts 2026

Our summit caught on and will be hosted by Greeley in 2026. We are proud to assist in creating a long-lasting tradition in NOCO youth commissions.

HOST CITY

Greeley, Colorado

CONFERENCE DATE

August 15, 2026

OUR ROLE

Mentoring Greeley and assisting with planning throughout the summer

What's Ahead

Key dates and commitments on the horizon

Summer 2026

Nursing Home Visits

Engaging with seniors in memory care units across the region

Summer 2026

Conference Planning Support

Working with Greeley to prepare the 2nd Annual NCYLC

August 15, 2026

NCYLC in Greeley

Supporting the conference as active partners & mentors

November 2026

NLC Youth Summit – Nashville

Representing Berthoud

Looking Ahead: Future Goals

Expanding our impact and strengthening our community



Youth Activities Scholarship Fund

Establish a scholarship for Berthoud youth to participate in activities or clubs regardless of financial barriers.



Monthly Staff Presentations

Staff-coordinated monthly presentations to keep members informed, inspired, and connected to the broader community.



Monthly Study Sessions

Host regular monthly study sessions to support the commission's success and foster peer collaboration among the commission.

Youth Advisory Expenses

General Account

11-11-5024-01

BUDGET $3,000.00

- 2025 **$544.88**
- 2026 **$288.52**

Nashville Trip

41-00-5212-00

BUDGET $15,000.00

- 2025 **$0.00**
- 2026 **$1,795.00**

YAC Conference

41-00-5213-00

BUDGET $15,000.00

- 2025 **$1,898.76**
- 2026 **$0.00**

BERTHOUD

Youth Advisory Committee

Annual Highlights & Accomplishments

Thank you

Board of Trustees Information

Utilities Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Updated Water Supply - Demand Outlook**
Type of Item:	**Presentation**
Purpose:	**This item is a periodic update regarding the Town's water supply and water demand outlook.**
Presented by:	**Ken Matthews**

Attachments:

1. Water Snapshot June 2026 Memo
2. Water Snapshot Presentation 01
3. Water Snapshot Presentation 02

Background:

The Town of Berthoud Board of Trustees requested that Staff provide a periodic update on the Town's water supply and demand outlook so the Board can continue to evaluate the Town's water dedication requirements for new development. As requested, the Town's water resources engineers have updated their water supply and demand outlook, with the most significant updates being the inclusion of updated water demand and water commitment data.

Using this updated data, the outlook now projects that under the most conservative water supply assumptions (zero yield from the Town's interest in the Windy Gap Project), the Town's current water supply would support the addition of new water taps and water service commitments at the current rate of annual growth through 2029. The Town has already made water service commitments for much of the currently planned growth within Town boundaries, and the demand for new water taps and building permits has slowed in the past year, so this estimate may over-estimate the demand for new water taps in the coming years. The Town's ability to serve additional taps and commitments increases significantly once it firms the yield of its Windy Gap Units, which underscores the importance of firming the Town's Windy Gap Units to provide an additional future water supply. Town Staff will continue efforts to firm the supply from its Windy Gap Units, and may continue with additional water rights acquisitions.

In light of the updated water supply and demand outlook, Town Staff does not recommend changes to the Town's water dedication policy at this time.

Town Staff and Water Counsel will also present an overview of the Town's water resources portfolio and water supply projects, including near-term action items.

Update/Next Steps:

This item is an informational presentation.

Fiscal Impact and Fund Source:
This item is an informational presentation.

Community Touchstones:
This update supports the Town's commitment to long-term resiliency and sustainability by evaluating current and future water supply availability to meet community needs.

Recommended Action(s):
This item is an informational presentation.

SPHEROS ENVIRONMENTAL

Technical Memorandum

June 2, 2026 R26-00173-00

To: Town of Berthoud & Lyons Gaddis

From: Andrew Case & Molly Adams, Spheros Environmental

Re: Town of Berthoud Water Snapshot – June 2026 Update

The purpose of the Berthoud Water Snapshot is to evaluate the Town's ability to serve projected treated water demands based on historical hydrologic conditions using an average yield of currently available and reliable water supplies, and a few specific short-term Windy Gap ("WG") firming water development scenarios. The last update to the Berthoud Water Snapshot was completed in December 2025.

Based upon the updated analysis of Berthoud's projected water supplies and demands, Spheros Environmental estimates that Berthoud currently has **2,321.8 single-family equivalents ("SFEs") or 719.1 acre-feet per year (AF/yr)** of unallocated water that could be sold, assuming Berthoud is achieving an average yield from its raw water supplies. This is a decrease of 10 SFEs or 3.1 AF/yr from the December 2025 update. The decrease of unallocated water that could be sold is due to Berthoud's issuance of building permits for new homes and businesses, as expected, while not acquiring additional water supplies during that time.

Note that Berthoud's code requires a raw water dedication volume of 0.4 AF/SFE, however, for the most recent drought year (2021), Spheros Environmental has calculated a raw water demand of approximately **0.31 AF/SFE**, which is what the calculations in this memorandum are based on.

The following changes and updates have been made since the most recent Water Snapshot update in December 2025:

- Inclusion of Berthoud's metered customer deliveries through April 2026 for the purpose of calculating treated and raw water demands; and
- Inclusion of Berthoud's issued water certificates through May 2026, for the purpose of estimating the total raw water demand that Berthoud has committed to serving.

Background

The dry-year yield associated with Berthoud's current water rights portfolio is summarized below in **Table 1**.

Table 1. Water Snapshot Average Annual Yield of Berthoud Water Supplies for Treatment

Water Supply	Dry Year Yield (AF/yr)
Decree Water	1,822.6
1,088 C-BT Units	652.8
40.33 Changed HDC Shares	163.3*
34 Changed RGRC Shares	0.0**
10 WG Units (Scenarios 1, 2, 3)	0.0, 630, 950
Totals (Scenarios 1, 2, 3)	**2,638.7, 3,268.7, 3,588.7**

*500 AF/yr is reserved for Heron Lakes golf course and residential non-potable use consisting of 260.8 AF/yr of HDC.
**239.2 AF/yr of RGRC share deliveries comprise the remaining Heron Lakes non-potable demand.

Three scenarios were evaluated for the yield of Berthoud's WG units:

1. Model no WG yield and that a minimum 50 AF of WG in-lieu of 50 AF C-BT water is needed to cover winter HDC return flow obligations, which reduces Berthoud's C-BT yield by 50 AF.

2. Model the average WG yield of 63 AF/Unit/yr as available each year, which is collateralized with C-BT for winter deliveries. C-BT Units are repaid in the Spring with WG pumping or lease of other C-BT water by Berthoud.

3. Model the WG yield as firmed at 95 AF/Unit/yr, which will require additional infrastructure including storage, alluvial wells, and/or firming storage in Dry Creek Reservoir).

There have been many years historically where the Windy Gap Project did not pump, so operation in this manner would result in Berthoud having to convey collateralized C-BT back to Northern Water.

The water supply analysis first uses the Decree Water, changed HDC shares, and C-BT to serve Berthoud's demands in April through October. When demands exceed that supply, and during the months of November through March, the demands are met using WG water and up to 39% (200 AF) of the active capacity of Berthoud Reservoir.

Water Demand Details

Berthoud's current Water Dedication Ordinance defines an SFE as requiring 0.4 AF/yr of raw water supply at Berthoud's WTP. Based on Berthoud's treated water meter readings since 2011, 1 residential SFE averages 0.263 AF/yr of treated water deliveries. In 2021, a recent representative drought year, residential accounts used an average of 0.275 AF/yr per SFE at the customer meter. In this analysis, Spheros Environmental has used the dry-year 2021 use, increased by the 8.35% system loss and additionally by 3% for the loss assessed by the Bureau of Reclamation for a WTP raw water demand of 0.31 AF/SFE when reporting how many estimated SFEs can be served with the Town's current water supplies. **Figure 1** summarizes the historical total annual raw water demand at Berthoud's WTP for 2012 through 2025.

In the future, if Berthoud is at its SFE capacity and experiences a drought more severe than 2021, use of the entire operating volume of Berthoud Reservoir, outdoor watering restrictions, and/or lease of additional C-BT Units may be required to adequately serve the Town's customers.

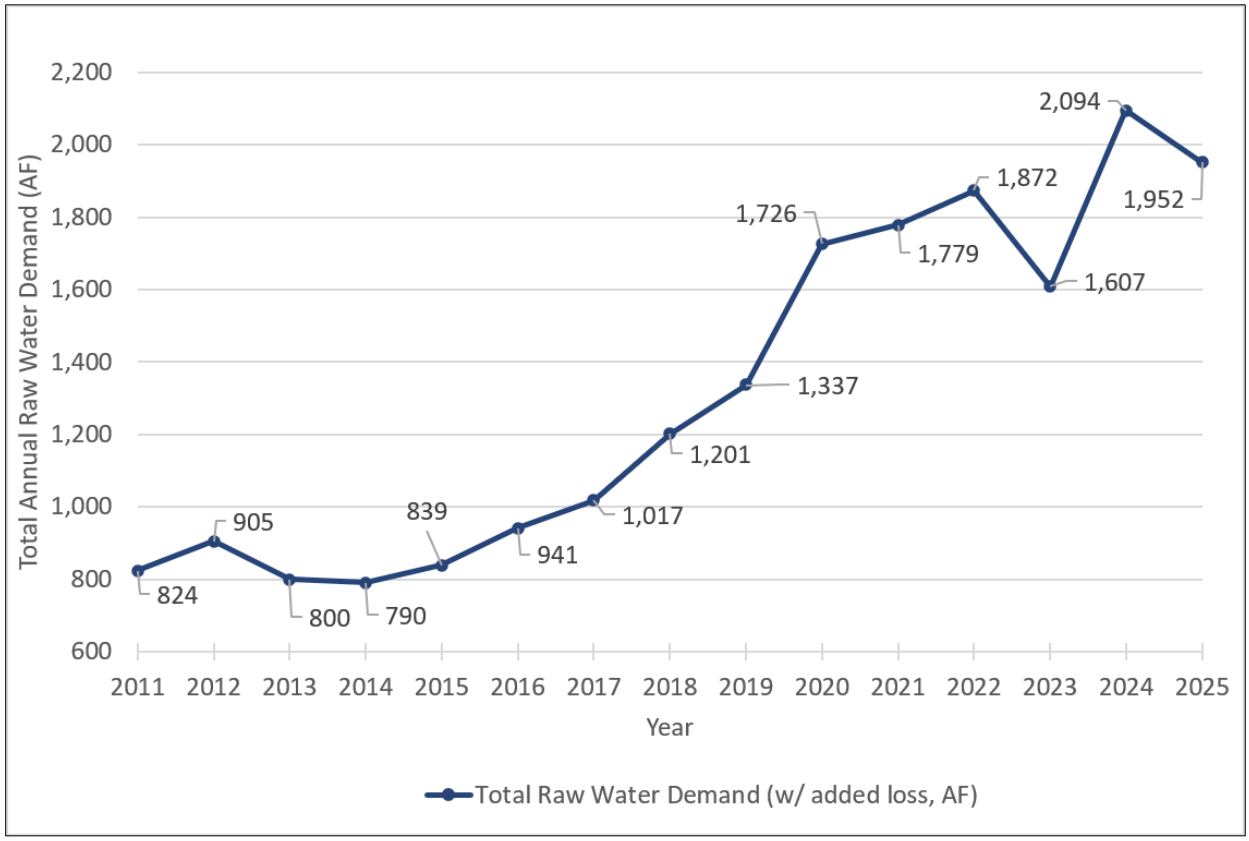


Figure 1. Town of Berthoud Raw Water Demand for 2012-2025

As of April 2026, Berthoud was serving 7,142 SFEs, which in a dry year would correspond to approximately 2,212 AF/yr of raw water demands.

Berthoud's annual raw water unit demand for each tap category based on the dry-year demand of 0.31 AF/SFE through April 2026 is shown below in **Table 2**. Table 2 also provides a summary of how Spheros Environmental estimated the current-year drought demand, by multiplying dry-year unit demands by the number of units being served by Berthoud through April 2026.

Table 2. Monthly Unit Water Demands for the Town of Berthoud

Tap Category	Dry-year Raw Water Unit Demand (AF/Unit)	Dry-Year Average SFEs/Unit	April 2026 Units	April 2026 SFEs
Residential	0.31	1.00*	5,306	5,306.0
Commercial	0.98	3.15	285	897.7
Commercial-Variance	7.54	24.33	1	24.3
Multi-family	0.98	3.17	165	522.4
Education	12.04	38.88	7	272.1
Dairy	36.98	119.41	1	119.4
Total	**-**	**-**	**5,765**	**7,142.0**

*The dry-year raw water unit demand at the WTP for residential taps of 0.31 AF/yr per tap was considered 1 SFE.

The metered customer data from Berthoud represents the Town's current total demand and deliveries of potable water. The corresponding raw water demand is referred to herein as "Actual Water Demand." The Actual Water Demand does not include the total number of SFEs that Berthoud has committed to serving, as water credits have been issued pursuant to cash-in-lieu payments for properties that are not yet developed and taking delivery of water. In addition to the 7,142.0 SFEs of Actual Water Demand (Table 1), Berthoud is committed to serving 1,726.3 additional SFEs (534.6 AF) associated with water credits it has issued. This amount of committed water demand in excess of Actual Water Demand is defined as "Unrealized Water Demand." The total of Actual Water Demand plus the Unrealized Water Demand is defined as "Actual and Unrealized Water Demand."

To determine Berthoud's Unrealized Water Demand, we relied upon data obtained from the Town's Water Bank accounting tool developed in 2023 by LRE Water (now Spheros Environmental), updated through April 2026. The tool tracks the AF volume and number of SFEs the Town has committed to serve and debits a volume of water every time a developer is issued a building permit. The remaining commitments, which include building permits issued since May 1, 2025 total 534.6 AF (1,726.3 SFEs), bringing **the Actual and Unrealized Annual Water Demand to 8,868.2 SFEs or 2,746.5 AF** at the

WTP. The Unrealized Water Demand becomes Actual Water Demand in the upcoming months and years as properties are developed and then connected to Berthoud's treated water distribution system.

For future projections, this memorandum assumes that Berthoud's Unrealized Water Demand will remain constant at 534.6 AF/yr. These assumptions could be further clarified through additional consultation with the Town's Building and Planning Departments regarding the projected water demands associated with the Town's undeveloped service area and expected annexation areas. The analysis described in the following section is focused on Berthoud's Actual and Unrealized Water Demand, and its ability to meet those demands in the near future.

Supply and Demand Scenarios

Using the monthly pattern of Berthoud's demands since 2011 and existing water supplies, Spheros Environmental projected an increase in annual Actual Raw Water Demand until a shortage occurred to estimate the total number of SFEs that the Town could reliably serve with its existing water supplies and the three Windy Gap yield supply scenarios based on 0.31 AF/SFE, with the following results:

- Scenario 1 – Windy Gap Yield of 0 AF, 50 AF in-lieu delivery reduces C-BT yield 50 AF: Berthoud can serve a total of 9,023 SFEs or 2,794.5 AF/yr of raw water demand in drought years.
- Scenario 2 – Windy Gap Average Yield of 63 AF/Unit: Berthoud can serve a total of 11,190 SFEs or 3,465.6 AF/yr of raw water demand in drought years, assuming 63 AF/Unit is available each year.
- Scenario 3 – Windy Gap Firm Yield of 95 AF/Unit: Berthoud can serve a total of 12,213 SFEs or 3,782.4 AF/yr of raw water demand in drought years, assuming 95 AF/Unit is available each year.

To estimate the total number of SFEs that Berthoud could commit to serving with its existing water supplies under the three different Windy Gap scenarios, the current annual demand was increased to a maximum demand that could be met without a shortage, allowing for 200 AF of water stored in Berthoud Reservoir to be used to meet dry-year demands. For each scenario, the maximum demand that could be met without a shortage was divided by 0.31 AF/SFE (dry-year demand) to determine the total number of SFE's that Berthoud could reliably serve with available water supplies in a typical dry year, such as 2021.

In Tetra Tech's Water and Wastewater Master Plan, it was projected that Berthoud will experience population growth of approximately 6.0%. These projections were adjusted slightly to 5.9963% for years 2025-2042 and 2.5914% for years 2043-2063 by Spheros Environmental in April 2025 based on engineering done in support of Water Court Case No. 22CW3206. If those growth rates continue, Berthoud can expect to serve approximately 9,547 SFEs by 2030 and 32,662 SFEs by 2063 (2,941 and 10,115 AF, respectively), which is an increase of 50 SFEs by 2030 compared to the projections in the December 2025 snapshot.

Table 3, below, summarizes the number of SFEs, and associated water demand for the various water supply scenarios. We estimate Berthoud can serve up to a total of 3,782 AF of annual raw water demands or 12,213 SFEs with its Decree Water, C-BT Units, use of water stored in Berthoud Reservoir, and firmed up WG supplies (Scenario 3). Water available for future sales is the number of SFEs Berthoud could serve (in each scenario) minus the Actual and Unrealized Water Demands. Firming Berthoud's WG water supplies will require reuse infrastructure to be constructed to realize the additional yield, or acquisition of firming storage in Dry Creek Reservoir or Chimney Hollow Reservoir.

Table 3. Summary of Town of Berthoud Water Snapshot Scenarios

Water Supply Scenario	SFEs Berthoud Could Serve	Estimated Demand (0.31 AF/SFE) (AF/yr)	Water Available for Future Sales
Actual SFEs Served (Apr 2026)	7,142	2,212	N/A
Actual and Unrealized Water Demands (Apr 2026)	8,868	2,747	N/A
1. Current Supply w/ No WG	9,203	2,795	155 SFEs or 48 AF
2. Current Supply w/ Avg WG 63 AF/Unit	11,190	3,466	2,322 SFEs or 719 AF
3. Current Supply w/ Firmed WG 95 AF/Unit	12,213	3,782	3,345 SFEs or 1,035 AF

Figure 2, below, shows the monthly distribution of Berthoud's Scenario 2 water supplies used to satisfy water demands for 11,190 SFEs (3,466 AF/yr), assuming average WG deliveries of 63 AF/Unit. For the analysis and discussion herein, Scenario 2 is considered to be the base scenario.

Figure 2 also shows that a sizable portion of the water demand in the months of May through October will be met with Berthoud's Decree Water. C-BT and changed water rights will be used to make up the remaining demand in the months of April, June, and July. WG supplies and excess Decree Water stored in Berthoud Reservoir will be needed in August and September and the winter months of November through March.

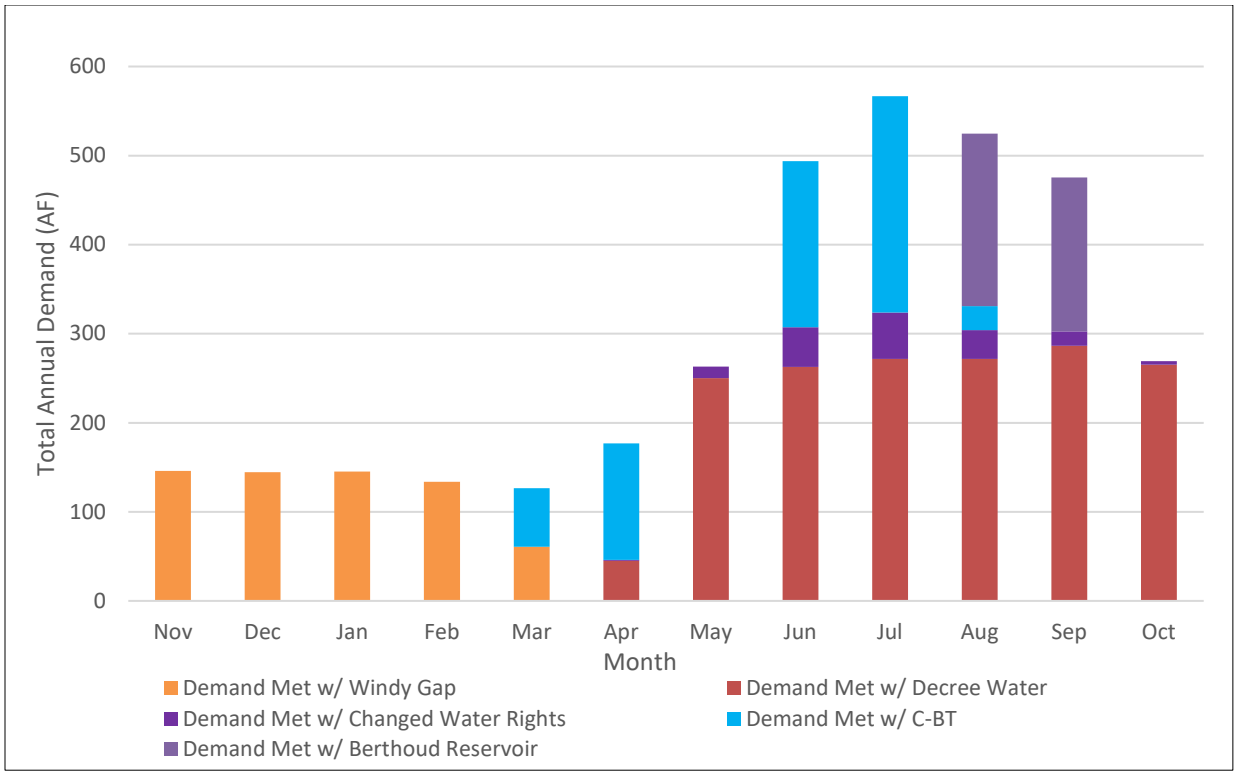


Figure 2. Berthoud Current "Base" Water Supply Yield (3,466 AF/yr Raw Water Demand)

Figure 3, below, provides a graphical representation of Scenarios 1, 2, and 3, and how much of Berthoud's treated water demand can ultimately be supported by each scenario. To create Figure 3, we assumed that the 5.9963% annual rate of growth will continue through 2033 and would apply to the Town's Actual Raw Water Demand. Berthoud's Unrealized Raw Water Demand was assumed to stay constant at 534.6 AF, the current estimated value.

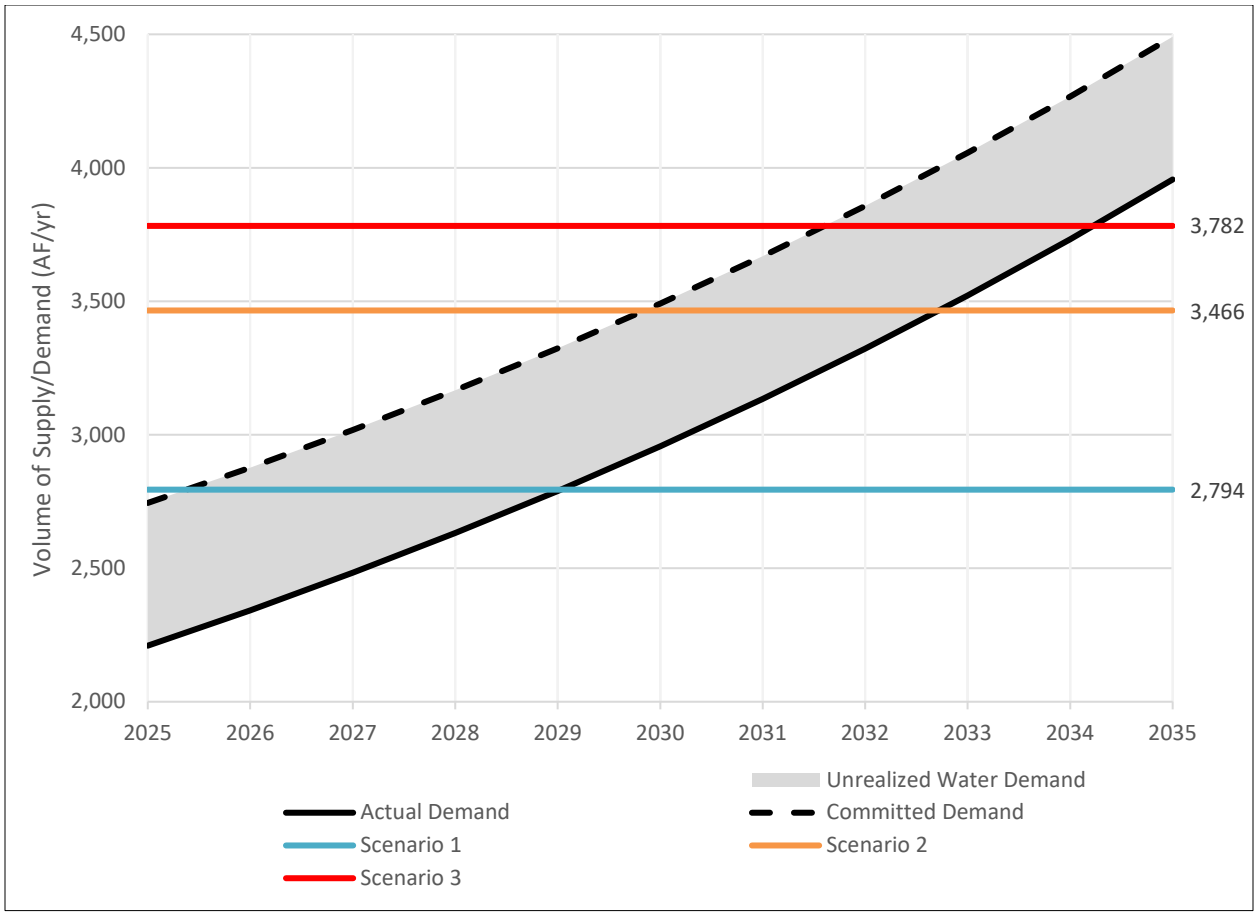


Figure 3. Berthoud Projected Raw Water Demands for 2025-2035.

Conclusions

- Under the conservative assumption that WG does not yield without firming storage, Berthoud's current raw water portfolio can sustain the current rate of annual growth through 2029.
- If WG provides an average yield, Berthoud's current raw water portfolio can sustain the current rate of annual growth through mid-2032.
- When or if Berthoud's WG Units can be firmed, the Town's current raw water portfolio can sustain the current rate of annual growth through at least 2034.

Note, these projections conservatively assume that Berthoud will not acquire additional water supplies, and Berthoud's Actual Raw Water Demand will continue to grow at the predicted rate. If Berthoud continues to acquire additional water supplies and/or the annual growth rate is updated in the future, the assumptions and demand estimates described in this memorandum will be updated accordingly.



Water Rights and Projects

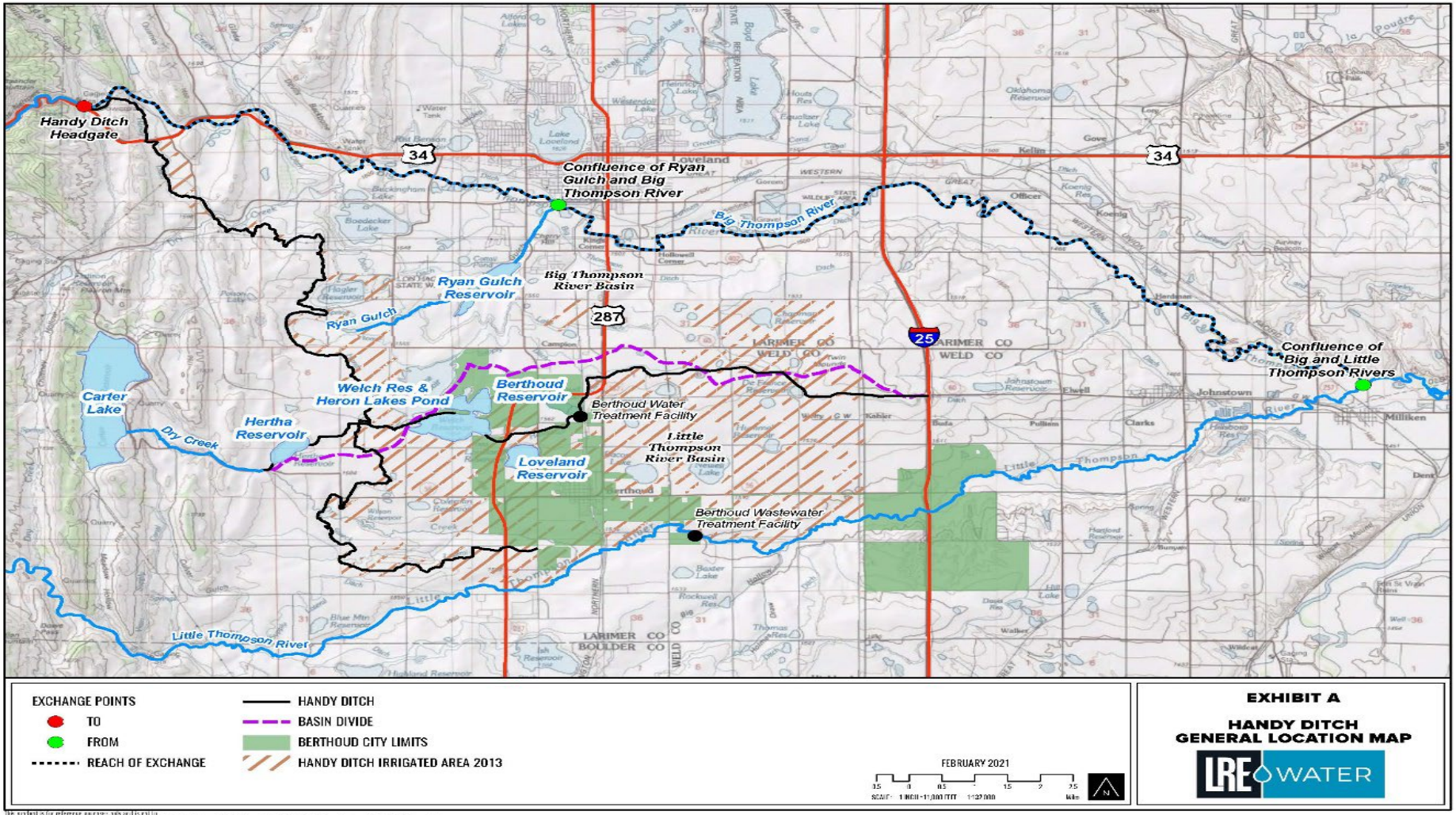
Overview and Update

June 9, 2026

LYONS GADDIS

ATTORNEYS & COUNSELORS

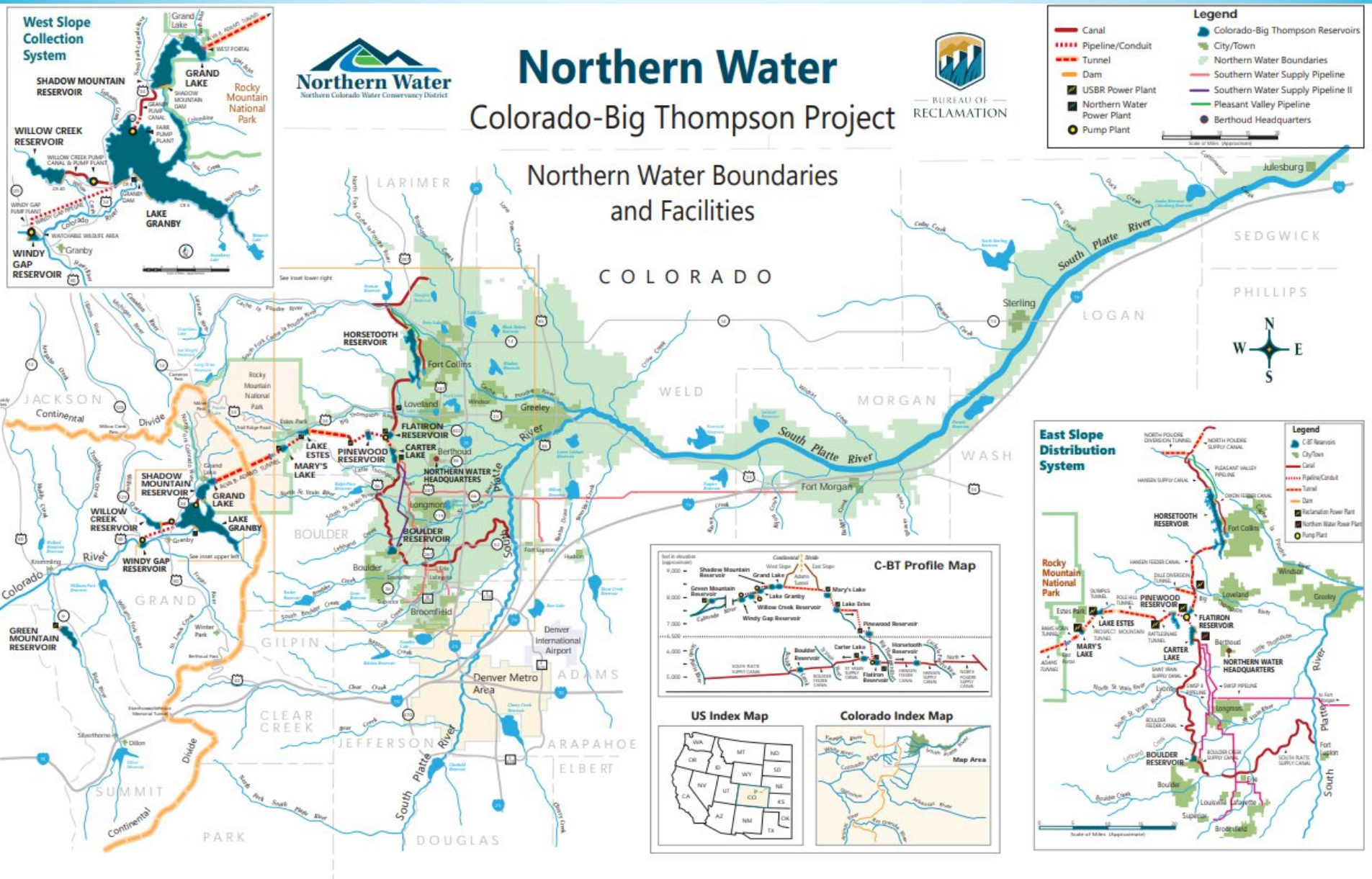
Native Water Rights



Water Supply Overview - Native Water Rights

- Berthoud "Decree" Water: 2,191 AF/yr
- Handy Ditch: 42.43 shares
- Ryan Gulch Reservoir: 34 shares
- Other Native Water Rights
  - Loveland Lake & Ditch Company
  - Welch Contract Rights
  - Home Supply Ditch and Reservoir Company
  - Osborne-Caywood Ditch
  - Boulder and Larimer County Irrigating and Manufacturing Ditch Co.
  - Rockwell Ditch




Northern Water
Northern Colorado Water Conservancy District
Northern Water
Colorado-Big Thompson Project
BUREAU OF RECLAMATION
Northern Water Boundaries and Facilities
Legend
Canal
Pipeline/Conduit
Tunnel
Dam
USBR Power Plant
Northern Water Power Plant
Pump Plant
Colorado-Big Thompson Reservoirs
City/Town
Northern Water Boundaries
Southern Water Supply Pipeline
Southern Water Supply Pipeline II
Pleasant Valley Pipeline
Berthoud Headquarters
West Slope Collection System
SHADOW MOUNTAIN RESERVOIR
GRAND LAKE
Rocky Mountain National Park
WILLOW CREEK RESERVOIR
LAKE GRANBY
WINDY GAP RESERVOIR
COLORADO
LARIMER
WELD
MORGAN
SEDGWICK
PHILLIPS
LOGAN
WASH
JACKSON
GRAND
BOULDER
GILPIN
CLEAR CREEK
JEFFERSON
ADAMS
ARAPAHOE
ELBERT
SUMMIT
PARK
DOUGLAS
HORSETOOTH RESERVOIR
Fort Collins
Loveland
Greeley
FLATIRON RESERVOIR
CARTER LAKE
Berthoud
LAKE ESTES
PINEWOOD RESERVOIR
MARY'S LAKE
NORTHERN WATER HEADQUARTERS
Longmont
BOULDER RESERVOIR
Boulder
Broomfield
GREEN MOUNTAIN RESERVOIR
Denver International Airport
Denver Metro Area
Julesburg
Sterling
Fort Morgan
South Platte River
Colorado River
Continental Divide
C-BT Profile Map
US Index Map
Colorado Index Map
East Slope Distribution System

Water Supply Overview– Northern Water

- Colorado Big Thompson Units (1,088 Units)
  - Yield: 0.6 acre feet/Unit = 652.8 acre feet/year total
- Windy Gap Units (10 Units)
  - Yield: approximately 100 acre feet/Unit (1,000 acre feet) once Units are firmed
- Northern Water is delivered via Carter Lake Pipeline





Water Supply Overview

- Potable Use
  - Berthoud Decree Water
  - Northern Water: CBT and Windy Gap Units
  - Handy Shares (once changed in water court)
  - RGRC Shares (return flows must be replaced)

- Nonpotable Irrigation Use
  - Handy & RGRC Shares (unchanged)
  - Loveland Lake & Ditch Company
  - Welch Contract Rights
  - Home Supply Ditch and Reservoir Company
  - Osborne-Caywood Ditch
  - Boulder and Larimer County Irrigating and Manufacturing Ditch Co.
  - Rockwell Ditch



Berthoud Water Resources Master Plan

- Spheros is preparing update of Berthoud's 2020 Water Resources Master Plan
- 2020 Master Plan Recommendations:
  - Develop reusable supplies (Windy Gap and changed Handy & RGRC)
    - Reservoir Storage
    - New Wells and Augmentation Plan
    - New Jr. Water Rights
  - Develop & Evaluate Non-Potable Irrigation Systems
    - Continue to acquire LLDC shares
  - Re-evaluate Water Rates



Water Rights and Projects - Update

- Master Plan Goal: Develop Reusable Supplies
- Project: Windy Gap Units Firming (development of water storage)
  - 22CW3206 storage sites
  - Dry Creek Reservoir
  - Chimney Hollow Reservoir



Water Rights and Projects - Update

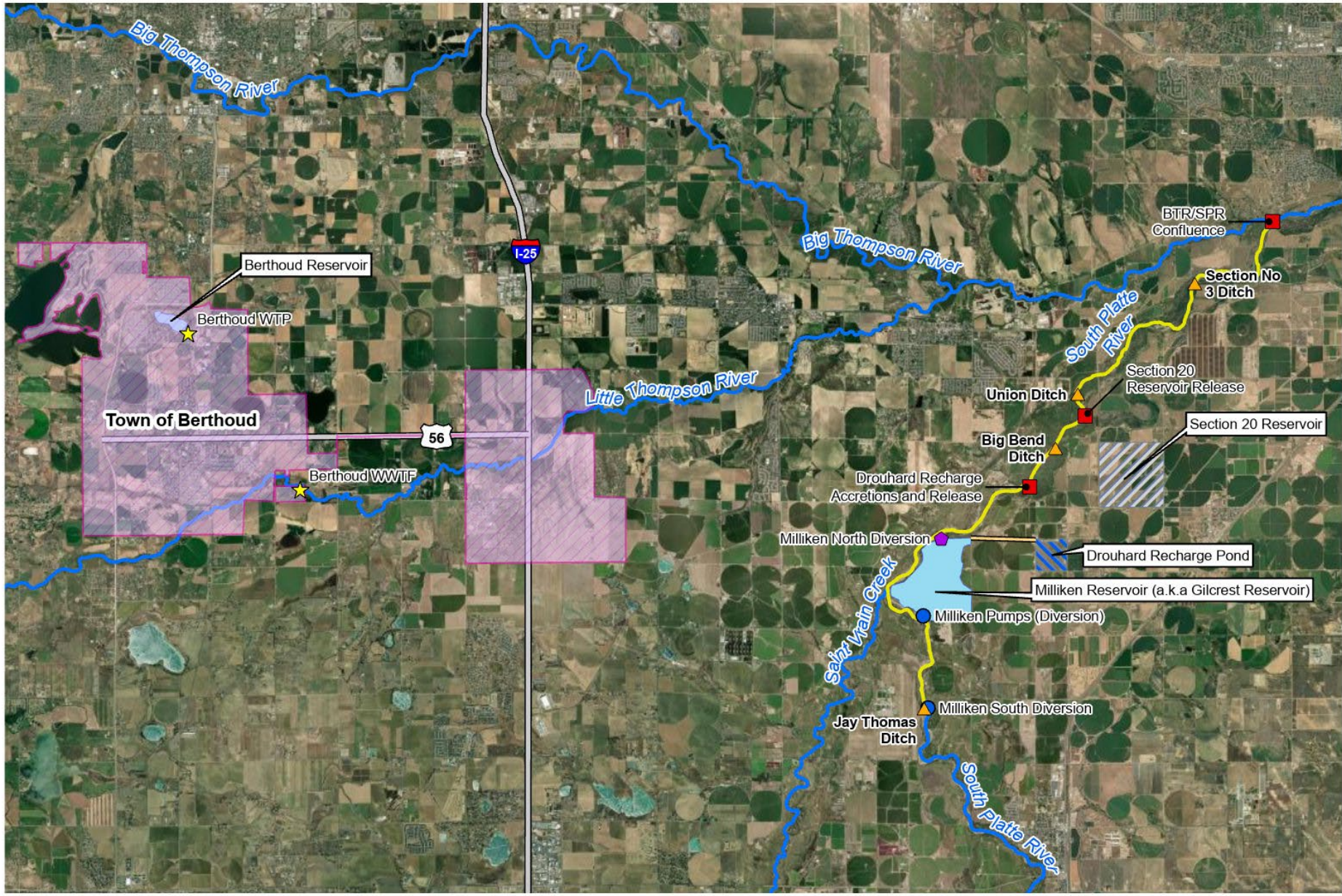
- Master Plan Goal: Develop Reusable Supplies
- Project: Changes of Native Water Rights to Municipal Use
  - Handy Ditch Shares
    - Water Court application filed in March 2026
    - Continuing Ditch Company Approval Process
  - Ryan Gulch Shares
    - Final decree entered July 2025
  - Lawn Lake – application to be filed soon.

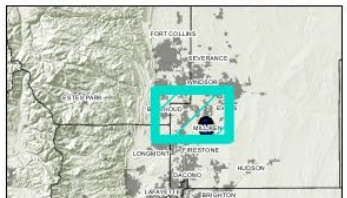


Water Rights and Projects - Update

- Master Plan Goal: Develop Reusable Supplies
- Project: South Platte Water Supply Project
  - New Water Rights: Case No. 22CW3206
    - Final Decree entered Feb. 2026
    - Reservoir storage for augmentation, municipal uses
    - Storage for Windy Gap water
    - Recharge facility for augmentation use
  - Ongoing planning meetings regarding raw water supply
  - Ongoing Engineering/Modeling







Legend

- Exchange To Point
- Exchange From Point
- Exchange To/From Point
- Claimed Exchange Reach
- Existing Diversion Structure
- Berthoud Service Area
- Drouhard Pipeline
- Reservoir
- Proposed Reservoir
- Drouhard Recharge Pond
- River or Creek
- Highway

1425TOB | APRIL 2025

0 1 2 3 4

EXHIBIT A
GENERAL LOCATION MAP
22CW3206

LRE WATER

Service Layer Credits: World Imagery: Earthstar Geographics
oduct is for reference purposes only and is not to
struct as a legal document or survey instrument.

Water Rights and Projects - Update

- Master Plan Goal: Develop & Evaluate Non-Potable Irrigation Systems
- Project: Nonpotable Water Master Plan – Completed in 2025
- Project: Loveland Lake as Nonpotable Irrigation Source
  - Carriage Agreement for Loveland Lake water – Completed in 2025
  - Agreement for delivery of Welch Contract water to Loveland Lake - ongoing
- Project: Ongoing evaluation of nonpotable irrigation systems for new and existing developments - ongoing



Water Rights and Projects - Update

- Master Plan Goal: Re-evaluate Water Rates
- Project: Water Dedication Policy – Periodic Evaluation
  - LRE Supply-Demand Snapshot
    - 2 X per year
  - Water Dedication Policy Evaluation
  - Cash-in-Lieu Price Evaluation



Water Dedication - Basics

Berthoud Town Code requires all new developments to either:

Dedicate Acceptable Water Rights

or

Pay Cash-in-Lieu Fee



Water Dedication Policy - General

Elements:

1. Option of Cash-In-Lieu vs. Water Dedication
2. Price of Cash in Lieu Payments
3. Timing of Cash-in-Lieu Payments/Water Dedication
4. Amount of Water Dedication/Cash-In-Lieu




Thank You!

Water Snapshot

June 2026

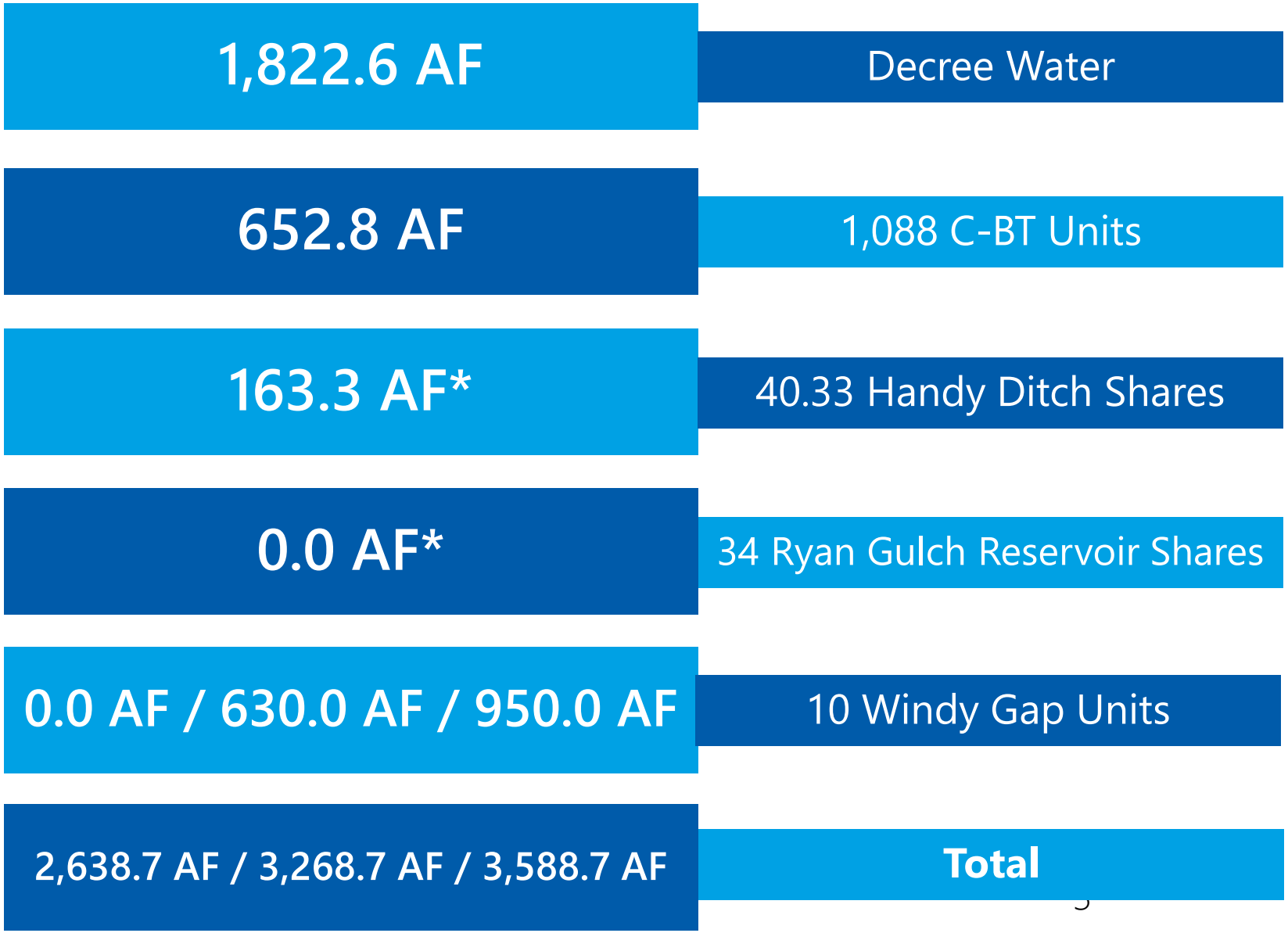


SPHEROS ENVIRONMENTAL

SNAPSHOT BACKGROUND

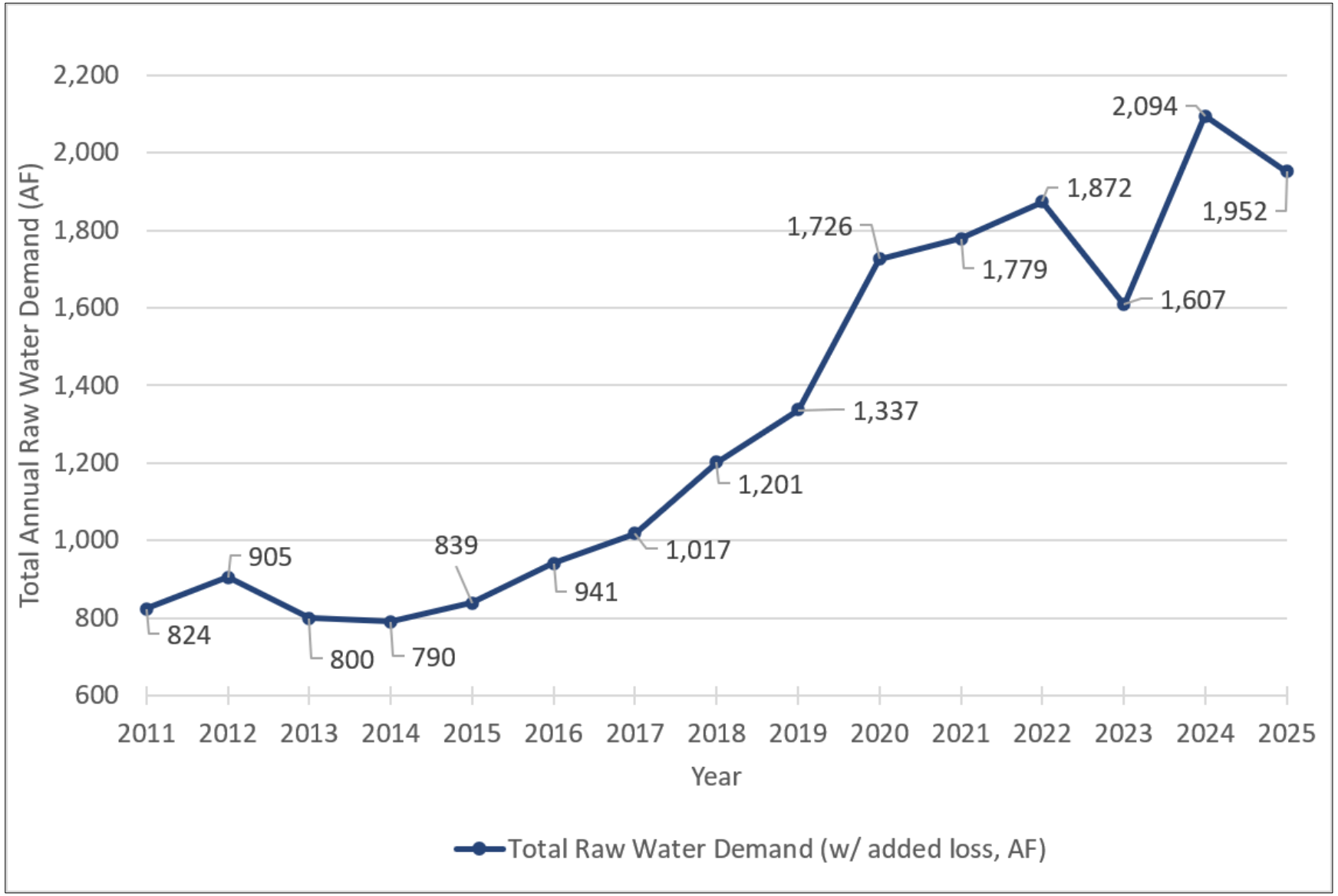
- Water for New Development
  - Water Dedication – Developer Provides Actual Water Rights
  - Cash-in-Lieu – Developer Pays for Berthoud's Water Rights
- What is the Treated Water Demand?
  - Current Demand
  - Committed Demand
  - Future Demand
- How Much Water Remains to Sell?
  - Modeled under Drought Conditions
  - Conservative Hydrologic and Consumption Assumptions

BERTHOUD WATER SUPPLIES



SPHEROS ENVIRONMENTAL

BERTHOUD WATER DEMANDS



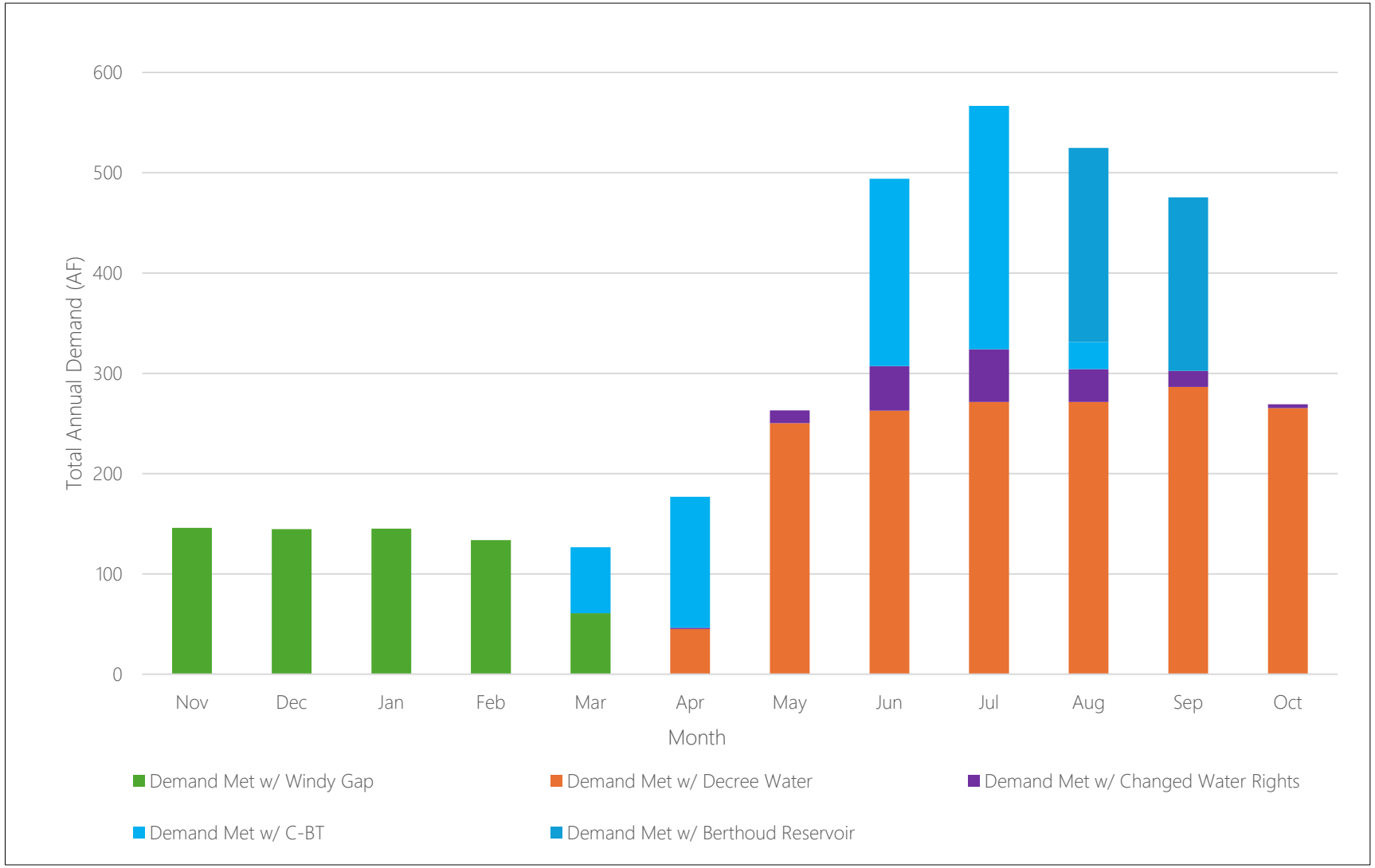
UNREALIZED WATER DEMAND

- Water commitments to developers are not reflected in the Town's current treated water demands ("Unrealized Water Demand").
- Unrealized Water Demand will be converted to Treated Water Demand over the coming years.
- Current Unrealized Water Demand is estimated to be approximately **535 AF** (down from 644 AF in 2014).

SNAPSHOT SCENARIOS

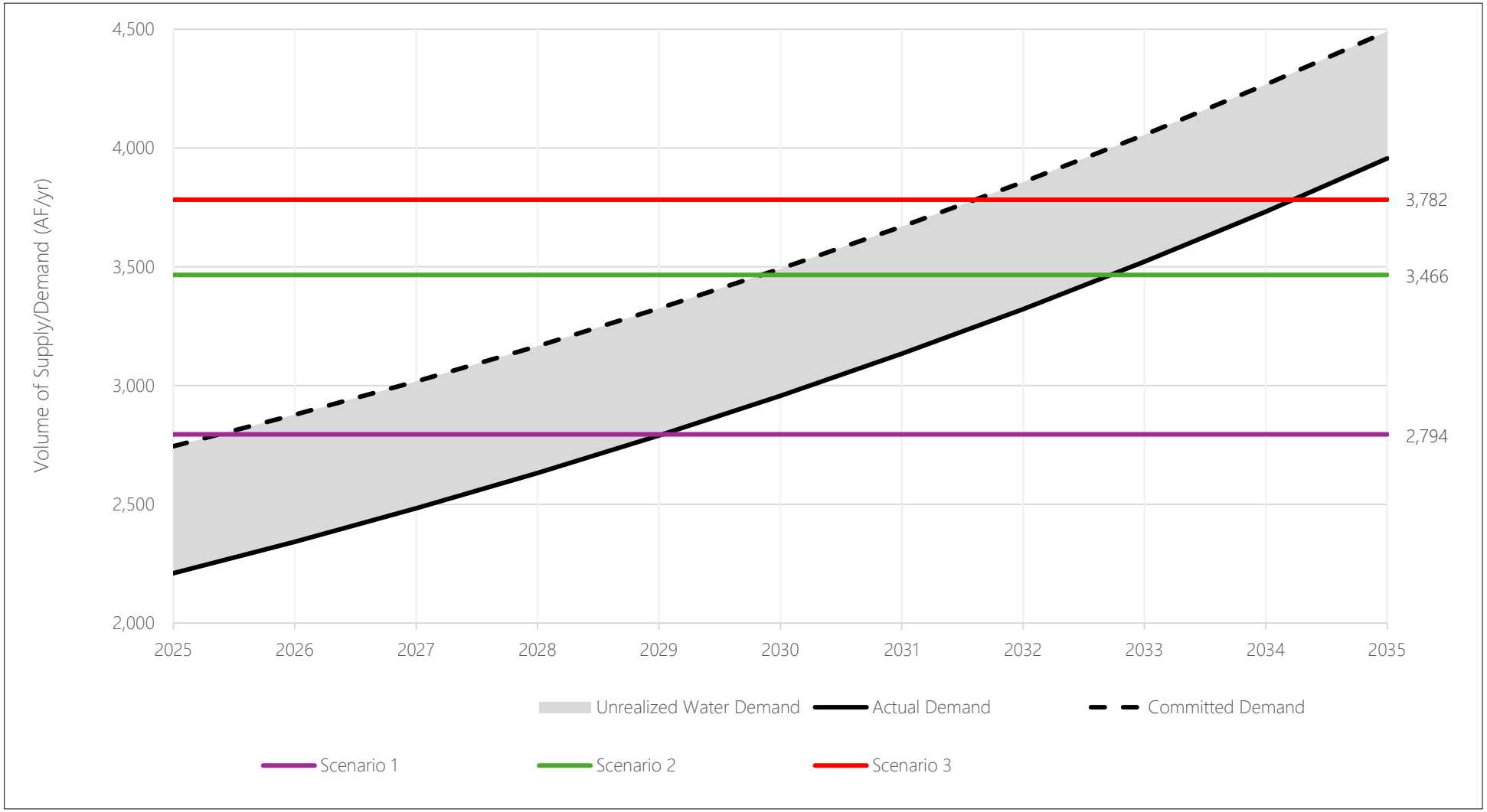
- April 2026
  - 8,868.2 Existing Actual & Unrealized SFEs
- Scenario 1 (No Windy Gap Yield)
  - 9,023 SFEs Served
- Scenario 2 (Average Windy Gap Yield)
  - 11,190 SFEs Served
- Scenario 3 (Firm Windy Gap Yield)
  - 12,213 SFEs Served

USE BY WATER RIGHT



SPHERES ENVIRONMENTAL

PROJECTED RAW WATER DEMANDS



SPHERES ENVIRONMENTAL

CONCLUSIONS

- Unrealized Demand has gone down because issuance of new building permits has slowed due to market conditions.
- When market improves, there is still water available.
- Case No. 22CW3206 – Milliken and Section 20 Reservoirs
- Windy Gap firming and reuse storage
- 6-month updates to the Snapshot will allow Berthoud to make informed decisions about cash-in-lieu policy.



BOARD OF TRUSTEES INFORMATION

Water Utilities

Meeting Date:	**June 9th, 2026**
Agenda Title/Subject:	**2026 Drought Response Plan**
Type of Item:	**Regular Item**
Purpose:	**Presentation on draft Drought Response Plan**
Presented by:	**Alex Tennant, Water Resources Administrator**

Attachments:

1. Drought Response Plan
2. Drought Response Plan Presentation

Background:
The purpose of the Drought Response Plan is to provide a structured framework for reducing water demand during periods of drought or water supply shortages. The Plan establishes measurable trigger points based on Berthoud's water supply conditions, defines a series of four action response levels with corresponding conservation actions and demand reduction targets, and outlines the authority and decision-making process for implementing, strengthening, or relaxing drought response measures. The goal is to protect the reliability of the Town's water supplies while ensuring clear, consistent, and timely actions during changing drought conditions.

Next Steps:
Formalize Drought Response Plan and bring back to Board of Trustees for final approval.

Fiscal Impact and Fund Source:
Staff prepared the document so no fiscal impact to the Town.

Community Touchstones:
The plan will protect water supply when faced with drought conditions to ensure health and safety for the Town’s residents.

Staff Recommendation:
Informational item only. No action needed.

TOWN OF BERTHOUD

Drought Response Plan

DRAFT

Prepared by: Town of Berthoud Water Utilities Department

807 Mountain Avenue | Berthoud, CO 80513

Adopted: [Insert Date] | Next Review: [Insert Date]

1 Declaration of Policy, Priorities, Purpose, and Objectives

1.1 Policy

The Town of Berthoud (the Town) hereby adopts the following regulations and restrictions on the delivery and consumption of water to conserve the available water supply, protect the integrity of water supply facilities, and preserve public health, welfare, and safety. This Plan minimizes the adverse impacts of water supply shortage or other emergency conditions. The Plan applies across all action levels, from a Water Shortage Watch through Level III High conditions.

1.2 Priorities Statement

Water shortages create risks to public health and safety including issues of water quality, quantity, sanitation, and hygiene. The Town establishes the following priority order for water use during any water shortage emergency:

1. Health and safety: residential interior uses, medical needs, sanitation, and firefighting.
2. Commercial, industrial, agricultural, and governmental: maintain jobs and economic base.
3. Existing high-value landscaping: trees and shrubs.
4. Existing lower-value, high-demand landscaping: sod and native grasses.
5. Construction water.
6. New landscaping.

1.3 Purpose and Objectives

This Plan provides guidance for managing water supplies to ensure public health, safety, and welfare of Town customers while meeting the following objectives:

- Working within the resources and guidelines of the Town's Water and Wastewater Master Plan (Tetra Tech, November 2023) and the Water Resources Master Plan (LRE Water, 2021).
- Determine water supply drought stages and trigger criteria.
- Provide clear authority to implement action plans and enforce restrictions.
- Establish flexibility and preparedness for Town Administrator and staff.
- Distinguish between long-term conservation and short-term emergency demand reduction.
- Identify methods to reduce demand and notify customers during a shortage.

Water uses regulated or prohibited under this Plan are non-essential. Continuation of such uses during a water shortage is deemed waste of water and subjects the offender to penalties as defined in the Action Summary Table and Enforcement section of this Plan.

1.4 Authorization

Upon approval from the Berthoud Board of Trustees - the Town Administrator, Water Utilities Director, or their designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. This authority includes initiation and termination of each shortage stage as described herein.

1.5 Application

The provisions of this Plan apply to all persons, customers, and property utilizing water provided by the Town. 'Person' and 'customer' include individuals, corporations, partnerships, associations, and all other legal entities.

1.6 Public Involvement

The Town will provide the public with information about this Plan on a regular basis, including conditions under which each stage is initiated or terminated and the response measures for each stage. Communication channels include:

- Town website updates (all stages)
- Social media posts (all stages)
- Bill inserts (starting at Level I – Low)
- Press releases to local media (starting at Level I – Low)
- Postcard mailings to all customers (starting at Level II – Medium)
- Direct notifications through AMI via email to high water users (starting at Level II – Medium)
- Direct mail detailing severity and fine schedule to each customer (starting at Level III – High)
- Door hangers (starting at Level III – High)
- Public service announcements – radio and digital (starting at Level III – High)

2 Definitions

For the purposes of this Plan, the following definitions apply:

Aesthetic Water Use: Water used for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

Average Yield: The amount of water attributable to one unit or one share of water averaged over the records of the water right.

Big Thompson River Priority No. 1: The Town's senior direct flow water right on the Big Thompson River, providing approximately 1,822.6 AF/year in a dry year.

Bulk Water: Any water delivered through a fire hydrant for uses other than firefighting.

C-BT (Colorado-Big Thompson): Water delivered through the Northern Colorado Water Conservancy District (Northern Water) C-BT Project. The Town holds 1,088 C-BT units providing approximately 652.8 AF/year in a dry year.

Customer: Any person, company, or organization using water supplied by the Town.

Even Numbered Address: Street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8, and locations without addresses.

Firm Yield: The lowest amount of water attributable to one unit or one share of water in the records of the water right.

Handy Ditch Company: A local ditch water right held by the Town (7.5 changed shares, approximately 15 AF/year dry year yield).

Landscape Irrigation Use: Water used for irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, parks, and rights-of-way.

Non-Essential Water Use: Water uses not essential for protection of public health, safety, and welfare, including:

- Irrigation of landscaped areas, parks, athletic fields, and golf courses, except as otherwise provided under this Plan
- Washing any motor vehicle, recreational vehicle, boat, trailer, airplane, or other vehicle
- Washing down sidewalks, walkways, driveways, parking lots, or other hard-surfaced areas except as needed for health and safety
- Washing down buildings or structures for purposes other than immediate fire protection
- Flushing gutters or permitting water to run or accumulate in any gutter or street
- Filling, refilling, or adding to any indoor or outdoor swimming pool or jacuzzi-type pool
- Use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life
- Failure to repair a controllable leak within a reasonable period after notice

- Use of water from hydrants for construction or any purpose other than firefighting

Odd Numbered Address: Street addresses, box numbers, or rural postal route numbers ending in 1, 3, 5, 7, or 9.

Potable Water Use: Treated water safe for drinking, bathing, heating, cooking, sanitation, or cleaning.

Water Conservation: Practices, techniques, and technologies that reduce water consumption, reduce loss or waste, improve efficiency, or increase recycling and reuse.

Water Shortage Condition: Any situation where water supplies are inadequate to meet water demands.

3 System Overview and Utility Profile

The Town of Berthoud provides potable water service to customers within its incorporated service area in Larimer County, Northern Colorado, along the Front Range. As of 2024 the Town population was approximately 13,648 and is experiencing rapid growth, with projections of up to 26,000 residents by 2043 for treatment plant planning purposes and a full build-out population of approximately 66,500. The climate is semi-arid and annual water supplies are highly variable; outdoor irrigation typically accounts for a significant portion of total water demand.

3.1 Water Sources

The Town's raw water is supplied from multiple sources to the Berthoud Water Treatment Plant (WTP):

- Big Thompson River Priority No. 1: Senior direct flow right available May-October; dry year yield approximately 1,822.6 acre-feet per year (AF/yr). Water is delivered to Carter Lake and conveyed via pipeline to Berthoud Reservoir and the WTP.
- Colorado-Big Thompson (C-BT) Project: The Town holds 1,088 C-BT units through Northern Water, providing approximately 652.8 AF/yr in a dry year. Annual yield depends on the quota (yield percentage) declared by Northern Water, typically in April.
- Handy Ditch Company: The Town holds 7.5 changed shares providing approximately 15 AF/yr dry year yield.
- Windy Gap: The Town holds 10 units; however, due to lack of storage infrastructure, this source currently provides 0 AF/yr of reliable yield. The Town is not a participant in the Windy Gap Firming Project at Chimney Hollow reservoir.

Total dry year yield from existing sources is approximately 3,278 AF/yr. Current average annual potable water demand is approximately 2,133 AF/yr (~1.65 MGD after accounting for a 14% loss factor), leaving a margin of approximately 452 AF/yr above current demand.

3.2 Water Treatment Plant

The Berthoud WTP uses conventional pretreatment (coagulation, flocculation, Lamella plate sedimentation), gravity granular media filtration, and free chlorine disinfection before high-service pumping to the distribution system. The Town also has the ability to purchase finished water from the Little Thompson Water District (LTWD), which operates the Carter Lake Filter Plant.

3.3 Storage

The Town operates two primary water storage facilities:

- Berthoud Reservoir (raw water): A terminal reservoir filled via the Carter Lake pipeline and Handy Ditch. This is a backup source to Carter Lake. Berthoud Reservoir water has higher hardness and greater susceptibility to algal growth, making Carter Lake and decree water the preferred sources. Reservoir level can be a drought trigger indicator, but if often fluctuates throughout the year.

4 Water Shortage Response

4.1 Declaring and Terminating Emergency Response Stages

A Water Shortage Watch, Level I, Level II, or Level III action level may be issued before or after reaching the listed trigger thresholds if conditions warrant. The Town shall consider compounding factors including soil moisture conditions, short- and long-term weather forecasts, water supply forecasts and water quality concerns when adjusting the response stage.

4.2 Authorization to Declare or Terminate Shortage Stages

The Town Administrator, Water Utilities Director, or their designee shall monitor water supply and demand conditions monthly, or as operational conditions require. The Water Utilities Director shall determine when conditions warrant initiation or termination of each stage of the Plan and make the official declaration of Action Level. The Town Board of Trustees shall be notified of water supply through bi-annual Water Snapshot presentations and authorize any Level I or higher declaration.

4.3 Establishing Water Shortage Stages, Initiation, and Termination Requirements

The triggering criteria below are based on projected yield from each water source, historical water demand patterns, Town storage levels, and the Town's ability to meet projected demands. Because the Town's water supply is primarily dependent on C-BT quota, and Big Thompson direct flow, triggers reflect all of these factors.

4.3.1 Action Level – Water Shortage Watch (Normal Operations)

This level represents normal operating conditions. Customers are expected to follow the Town's voluntary outdoor watering best practices. No additional rate changes or enforcement actions are required. The Town should monitor Northern Water C-BT quota forecasts and storage levels throughout the spring and summer.

4.3.2 Action Level I – Low: Minor Shortage Conditions

Goal: Achieve a 10% reduction in overall water use or average daily demand.

Initiation Triggers: Restrictions shall be implemented when one or more of the following occur:

- Northern Water declares a C-BT supplemental quota of 60% or less
- The expected Northern Water C-BT quota for the following year is 60% or less
- Berthoud Decree water availability is projected to be between 45% to 65% of usable capacity through October 31
- Expected demand exceeds expected supply by 10% or more

Termination Requirements: Level I may be rescinded by the Water Utilities Director when one or more conditions have ceased and/or Berthoud Decree water is projected to be above 50% of usable capacity through October 31. Upon termination of Level I, the Water Shortage Watch becomes operative.

4.3.3 Action Level II – Medium Water Shortage Conditions

Goal: Achieve a 15% reduction in overall water use or average daily demand.

Initiation Triggers: Restrictions shall be implemented when one or more of the following occur:

- Northern Water declares a C-BT supplemental quota of 60% or less
- The expected Northern Water C-BT quota for the following year is 60% or less
- Berthoud Decree water availability is projected to be between 30% to 45% of usable capacity through October 31
- Expected demand exceeds expected supply by 15% or more

Termination Requirements: Level II may be rescinded by the Water Utilities Director when one or more triggering conditions have ceased and Berthoud Decree water is projected above 45% of usable capacity through October 31. Upon termination of Level II, Level I becomes operative.

4.3.4 Action Level III – High Water Shortage Conditions

Goal: Achieve a 20% reduction in overall monthly water use or average daily demand.

Initiation Triggers: Restrictions shall be implemented when one or more of the following occur:

- Northern Water declares a C-BT supplemental quota of 50% or less
- The expected Northern Water C-BT quota for the following year is 50% or less
- Berthoud Decree water availability is projected to be less than 30% of useable capacity through October 31
- Expected demand exceeds expected supply by 20% or more

Termination Requirements: Level III may be rescinded by the Water Utilities Director when all triggering conditions have ceased and Berthoud Decree water availability is projected above 40% of usable capacity through October 31. Upon termination of Level III, Level II becomes operative.

4.4 Water Shortage Response Measures

The Town will implement customer requirements and administer fines to reduce overall water usage to meet the goal of the active stage. Response measures for each stage are detailed in the Action Summary Table at the end of this Plan. Requirements increase in restriction with each level, with particular regard to public health, safety, and welfare and the priorities identified in Section 1.2.

4.5 Public Notification

The Water Utilities Director or their designee shall notify the public through the following general channels:

- Town website updates (all stages)
- Social media posts (all stages)

- Bill inserts (starting at Level I – Low)
- Press releases to local media (starting at Level I – Low)
- Postcard mailings to all customers (starting at Level II – Medium)
- Direct notifications through AMI via email to high water users (starting at Level II – Medium)
- Direct mail detailing severity and fine schedule to each customer (starting at Level III – High)
- Door hangers (starting at Level III – High)
- Public service announcements – radio and digital (starting at Level III – High)

The Water Utilities Director shall also notify the following individuals and entities directly:

- Town Board of Trustees
- Town Administrator
- Little Thompson Water District (LTWD)
- Thompson School District R2-J
- Large commercial and agricultural water users
- Heron Lakes golf course and community management (non-potable irrigation user)

4.6 Procedures for Granting Variances

The Water Utilities Director, or their designee, may grant a temporary written variance for existing water uses otherwise prohibited under this Plan if failure to grant the variance would cause an emergency condition adversely affecting health, sanitation, or fire protection, and if one or both of the following conditions are met:

- Compliance with this Plan cannot be practically accomplished during the duration of the water shortage.
- Alternative methods can be implemented that achieve the same level of water use reduction.

Persons requesting a variance shall file a petition with the Town within 5 days of the Plan stage being invoked. Petitions shall include:

- Name and address of the petitioner.
- Purpose of the water use.
- Specific provision(s) from which relief is requested.
- Statement of how the provision adversely affects the petitioner.
- Description of relief requested and time period.
- Alternative water use restrictions or measures proposed.

- Other pertinent information.

Variances shall include a timetable for compliance and expire when the Plan is no longer in effect. No variance shall be retroactive or justify violations occurring prior to its issuance.

4.7 Enforcement

The Water Utilities Director, or their designee, may issue warnings, assess fines, install water flow restrictors, and/or discontinue water service for customers who fail to observe water use restrictions. Enforcement escalates with each action level. The Town is authorized to use the following steps to achieve customer compliance:

- Written warning (1st offense, all levels)
- Progressive monetary fines (see Action Summary Table)
- Installation of flow restrictor in the meter pit
- Termination of water service at the discretion of the Water Utilities Director

Customers may appeal enforcement actions to the Town Administrator within 10 days of receiving a notice of violation. The Town Administrator's decision shall be final.

5 Monitoring and Plan Review

5.1 Drought Monitoring

The Water Utilities Director or their designee shall monitor the following drought indicators on a regular basis during the irrigation season (April–October) and monthly during off-peak months:

- Northern Water C-BT quota declarations (announced annually in November and April)
- Berthoud Decree water availability (ongoing communication with River Commissioner)
- WTP production rates and capacity utilization (daily)
- U.S. Drought Monitor — weekly national/regional drought summary
- NRCS snowpack and runoff forecasts (November–June; critical in March–April)
- Colorado Water Availability Task Force updates
- Big Thompson River streamflow at key gages
- NOAA seasonal climate outlooks (temperature and precipitation)

5.2 Plan Review and Update

This Plan shall be reviewed and updated at minimum every five years, or sooner if significant changes to the Town's water supply system, service area, or applicable regulations occur. The next scheduled review is 2031.

The Water Utilities Director is responsible for initiating plan updates and collecting monitoring data for plan improvements. Lessons learned from any drought event or shortage response shall be documented and incorporated into the next plan update.

Action Summary Table

Town of Berthoud | Effective: [Date]

	Water Shortage Watch	Level I – Low	Level II – Medium	Level III – High
LANDSCAPE WATERING				
LANDSCAPE WATERING				
Watering Hours	Before 10am or after 6pm (mandatory)	Before 10am or after 6pm (mandatory)	Before 10am or after 6pm (mandatory)	Before 10am or after 6pm (mandatory)
Watering Days per Week	Max 3 days/week	Max 3 days/week Even: Mon, Wed, Sat Odd: Tue, Thu, Sun	Max 2 days/week Even: Wed & Sat Odd: Thu & Sun	NOT ALLOWED
Trees & Shrubs	Drip, hand w/ shut-off nozzle, deep root needle, or arbor bag only	Drip, hand w/ shut-off nozzle, deep root needle, or arbor bag only	Drip, hand w/ shut-off nozzle, deep root needle, or arbor bag only	Drip, hand w/ shut-off nozzle, deep root needle, or arbor bag only
Residential Gardens & Greenhouses	Sprinkler: 3 days/wk, before 10am or after 6pm. Hand/drip: anytime	Sprinkler: 3 days/wk, before 10am or after 6pm. Hand/drip: anytime	Sprinkler: 2 days/wk, before 10am or after 6pm. Hand/drip: anytime	Hand watering, deep root needle, or drip only
NON-LANDSCAPE WATER USE				
Vehicle Washing	Must use shut-off nozzle	Must use shut-off nozzle before 10am or after 6pm	Must use shut-off nozzle before 10am or after 6pm	NOT ALLOWED
Impervious Surface Washing	Use dry methods where possible	Use dry methods where possible	Not allowed except commercial power washing; use dry methods otherwise	Not allowed except commercial power washing; use dry methods otherwise
Construction / Bulk Water	Contractor provides water for projects >1M gallons; may lease from Town if available	Contractor provides water for projects >500,000 gallons	Contractor provides water for projects >250,000 gallons	Contractor provides water for all projects
Hydrant Flushing & Testing	Normal schedule plus critical situations	Normal schedule plus critical situations	Critical operations only	Critical operations only

	Water Shortage Watch	Level I – Low	Level II – Medium	Level III – High
Water Features / Fountains	Unrestricted	May fill on watering days before 10am or after 6pm	May fill on watering days before 10am or after 6pm	NOT ALLOWED
Swimming Pools / Jacuzzis	Unrestricted	Unrestricted	Unrestricted if filled before restrictions implemented; top-off allowed	No topping off. Cover pools to reduce evaporation.
Ponds	Customer provides water >1M gallons; may lease from Town	Customer provides water >500,000 gallons	Customer provides water >250,000 gallons	Customer provides all water
NEW LANDSCAPING				
New Lawns (seed or sod)	Not applicable	Town permit required June 1–Sep 15. Water any time, any day as defined in permit.	Town permit required June 1–Sep 15. Water any time, any day as defined in permit.	NOT ALLOWED
ENFORCEMENT				
Residential Fines	Not Applicable	1st: Written warning 2nd: $100 3rd: $200 4th: $400 If 4th fine fails: flow restrictor Last resort: service termination	1st: Written warning 2nd: $200 3rd: $400 4th: $800 If 4th fine fails: $1,500 + flow restrictor Last resort: service termination	1st: Written warning 2nd: $400 3rd: $800 4th: $1,200 If 4th fine fails: $2,000 + flow restrictor Last resort: service termination

Adopted by the Town of Berthoud Board of Trustees

_____ Date: _____

Mayor, Town of Berthoud

_____ Date: _____

Town Administrator

_____ Date: _____

Director of Water Utilities

Drought Response Plan

Board of Trustees Presentation

Prepared by: Water Utilities Department | **Status:** DRAFT

PLAN OVERVIEW & POLICY

Purpose

Conserve water supply, protect facilities, and preserve **public health, safety, and welfare** across all action levels — from a Water Shortage Watch through Level III High conditions.

Authority

Upon Board of Trustees approval, the Town Administrator or Water Utilities Director is authorized to declare and terminate shortage stages and implement restrictions.

Application

Applies to all persons and customers — individuals, corporations, partnerships, and all legal entities — using Town-provided water.

Water Supply Profile

2,638 AF/yr
Total Dry Year Yield
from all sources

2,212 AF/yr
Annual Expected Demand
~1.65 MGD

~426 AF/yr
Supply Margin
above expected demand

13,648
Service Population
residents (2024)

Sources: Big Thompson Priority No. 1 · C-BT Project · Handy Ditch

DROUGHT TRIGGERS BY LEVEL

WATCH	LEVEL I – LOW	LEVEL II – MEDIUM	LEVEL III – HIGH
Voluntary Best Practices	10% Reduction Goal	15% Reduction Goal	20% Reduction Goal
C-BT Supplemental Quota Trigger			
—	≤ 60% declared or forecast	≤ 60% declared or forecast	≤ 50% declared or forecast
Berthoud Decree Water Availability			
—	45% – 65% of usable capacity	30% – 45% of usable capacity	< 30% of usable capacity
Expected Demand Exceeds Supply			
—	By 10% or more	By 15% or more	By 20% or more

Termination: Any level may be rescinded by the Water Utilities Director when triggering conditions cease. Upon termination, the next lower stage becomes operative. The Board of Trustees is notified bi-annually via Water Snapshot presentations and must authorize any Level I+ declaration.

WATER USE RESTRICTIONS BY STAGE

Restriction Area	Watch	Level I	Level II	Level III
Outdoor Watering Days	Max 3 days/wk	3 days/wk (assigned)	2 days/wk (assigned)	**NOT ALLOWED**
Watering Hours	Before 10am or after 6pm	Before 10am or after 6pm	Before 10am or after 6pm	Before 10am or after 6pm
Trees & Shrubs	Drip/hand w/ shut-off	Drip/hand w/ shut-off	Drip/hand w/ shut-off	Drip/hand w/ shut-off only
Vehicle Washing	Shut-off nozzle required	Shut-off nozzle; restricted hours	Shut-off nozzle; restricted hours	**NOT ALLOWED**
Water Features / Fountains	Unrestricted	Watering days only	Watering days only	**NOT ALLOWED**
Swimming Pools	Unrestricted	Unrestricted	Top-off allowed	No top-off; cover pools
New Lawns (Jun 1–Sep 15)	No restriction	Town permit required	Town permit required	**NOT ALLOWED**

All stages require: watering hours before 10am or after 6pm. Impervious surface washing: dry methods preferred; power washing commercial use only at Level I and II.

FINES, ENFORCEMENT & VARIANCES

Residential Fine Schedule

Level I	Level II	Level III
1st: Written Warning	1st: Written Warning	1st: Written Warning
2nd: $100	2nd: $200	2nd: $400
3rd: $200	3rd: $400	3rd: $800
4th: $400	4th: $800	4th: $1,200
Flow restrictor if 4th fine fails	$1,500 + flow restrictor after 4th	$2,000 + flow restrictor after 4th

Last Resort: Service Termination at discretion of Water Utilities Director

Appeals: Customers may appeal enforcement actions to the Town Administrator within 10 days of a notice of violation. The Town Administrator's decision shall be final.

Variance Process

1. File petition with Town within 5 days of stage invocation
2. Include: name, address, purpose of use, and specific provision(s) at issue
3. Describe relief requested, time period, and alternative measures
4. Director reviews: grants only if health/sanitation emergency or compliance is impractical
5. Approved variances include a compliance timetable and expire with the Plan

No variance shall be retroactive or excuse prior violations.

MONITORING, REVIEW & NEXT STEPS

Ongoing Drought Monitoring Indicators

- Northern Water C-BT quota declarations (November & April)
- Berthoud Decree water availability (River Commissioner)
- WTP production rates and capacity utilization (daily)
- U.S. Drought Monitor — weekly national/regional summary
- NRCS snowpack & runoff forecasts (Nov–Jun)
- Big Thompson River streamflow at key gages
- NOAA seasonal climate outlooks (temp & precipitation)

Plan Review

Review Cycle: Every 5 years (or sooner if supply system or regulations change)

Next Scheduled Review: 2031

Requested Board Actions

- Review and provide feedback on DRAFT plan
- Authorize final adoption (adoption date TBD)
- Note: Board notified bi-annually via Water Snapshot; must authorize any Level I+ declaration
- Direct staff on any policy adjustments before final adoption

Board of Trustees Information

Community Development Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Intersection Model Presentation**
Type of Item:	**Presentation**
Purpose:	
Presented by:	**Luke Seeber**

Attachments:

1. Berthoud Travel Model_Town Board_20260609
2. 01 Fehr and Peers_Model Development Report_04302026_withAppendices

Background:

As the Town grows, staff continuously reviews the immediate and long-term impact of growth to services such as recreation, roads, intersections, water, sewer and stormwater.

In anticipation of growth in the 1st Street corridor and as a directed outcome of the 2021 Comprehensive Plan update, the Planning Commission, along with the Town Trustees, created the Innovation District in April 2023. The vision for developing this Master Plan was to establish goals for guiding growth, development and design for the corridor including architecture, design, scale, form, character, intensity of development, connectivity, and focusing on multi-modal design.

A large component of the Innovation District plan is traffic management. To better understand traffic planning for this area, the Town enlisted the assistance of Fehr & Peers in 2024 to develop a scope of work to understand the current traffic impact reports from pending/past development as well as projections from CDOT and the North Front Range Metropolitan Planning Organization (NFRMPO) specifically for this District. After review of the initial findings, staff determined a Town-wide intersection management plan was needed. With this understanding, the Town extended the contract with Fehr & Peers on September 9, 2025 to create a Town-wide traffic model that could be used to inform Town Staff on existing intersection levels of service and allow for updates to study effects of development-driven or Town-funded infrastructure improvements.

Update/Next Steps:

The model will be utilized to assist with development review and transportation improvement planning through periodic updates as conditions change and improvements are installed.

Fiscal Impact and Fund Source:

There is no negative impact to the Town by providing this information. Project deliverables have been met on-time and under budget.

Community Touchstones:
The three touchstones of resiliency, sustainability, and community identity are central to this action plan item. A town-wide transportation model informed by current and future conditions provides a tool for the Town to proactively plan for growth, strengthen transportation resiliency, support sustainable multimodal connectivity, and guide transportation corridor improvements that reflect and reinforce the community's character and sense of place.

Recommended Action(s):
This report is informational only. No action is required.



Townwide Traffic Model
June 9, 2026







Agenda

1. Introduction and Purpose
2. Model Area and Data
3. Existing and Future Traffic
4. Updates

Why did Berthoud Develop its own Model

Holistic Traffic View

View of systemwide traffic operations

Not project-by-project impacts

Evaluation Tool

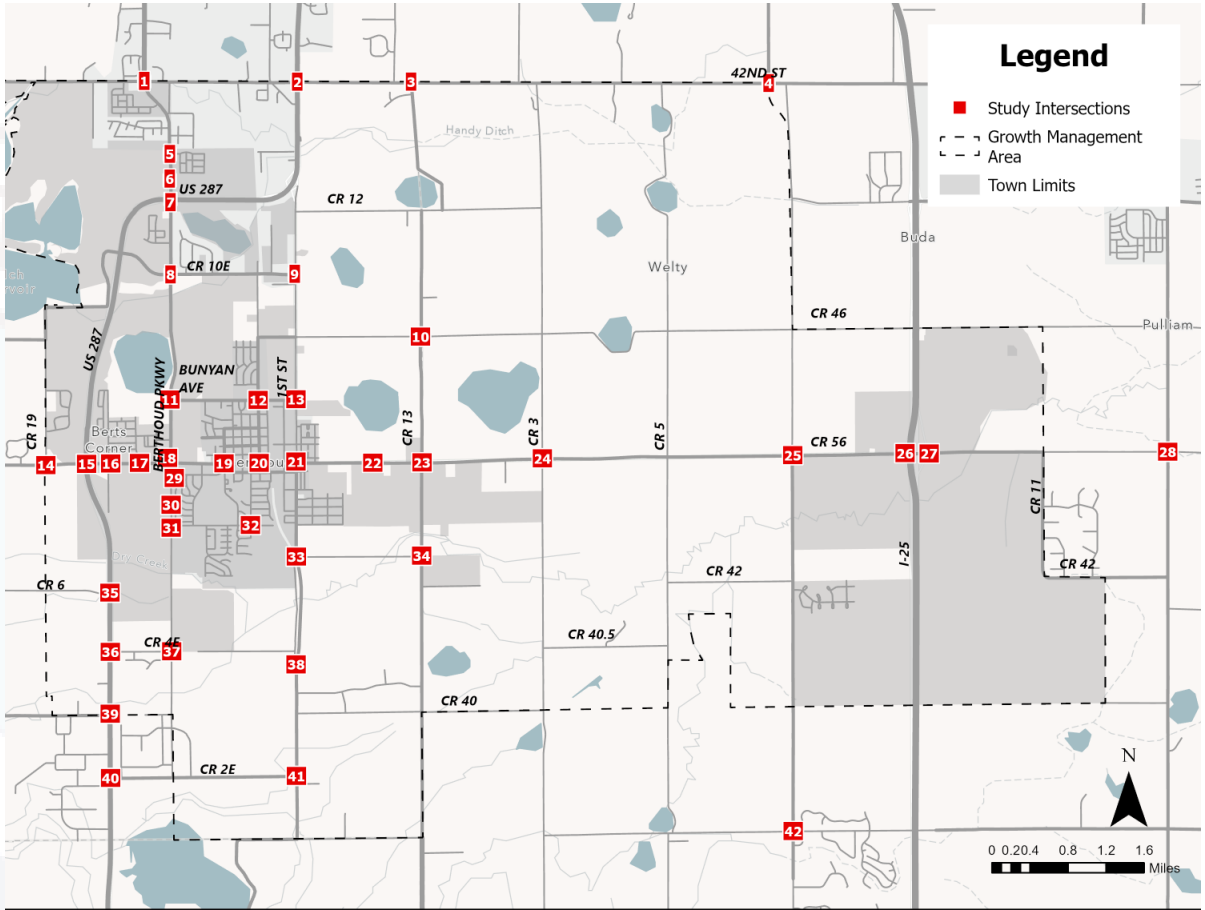
Evaluate future roadway or intersection upgrades impact on intersection operations

Trips from proposed developments to evaluate intersections

Development Review

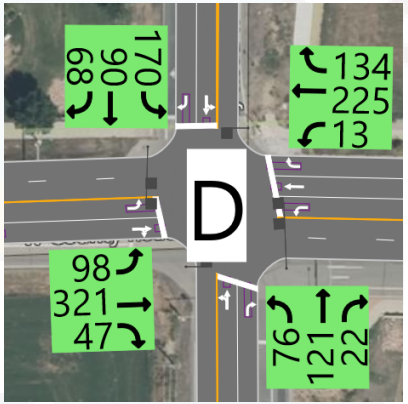
Town model can be updated with approved developments

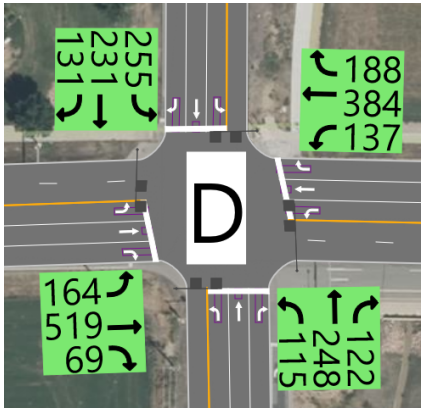
Study Area


Legend
Study Intersections
Growth Management Area
Town Limits
42ND ST
US 287
CR 12
CR 10E
Handy Ditch
Welty
Buda
CR 46
Pullman
US 287
BERTHOUD PKWY
BUNYAN AVE
1ST ST
CR 19
Berts Corner
CR 13
CR 3
CR 5
CR 56
CR 11
I-25
CR 42
CR 6
CR 45
CR 40.5
CR 40
CR 2E
N
0 0.20.4 0.8 1.2 1.6
Miles

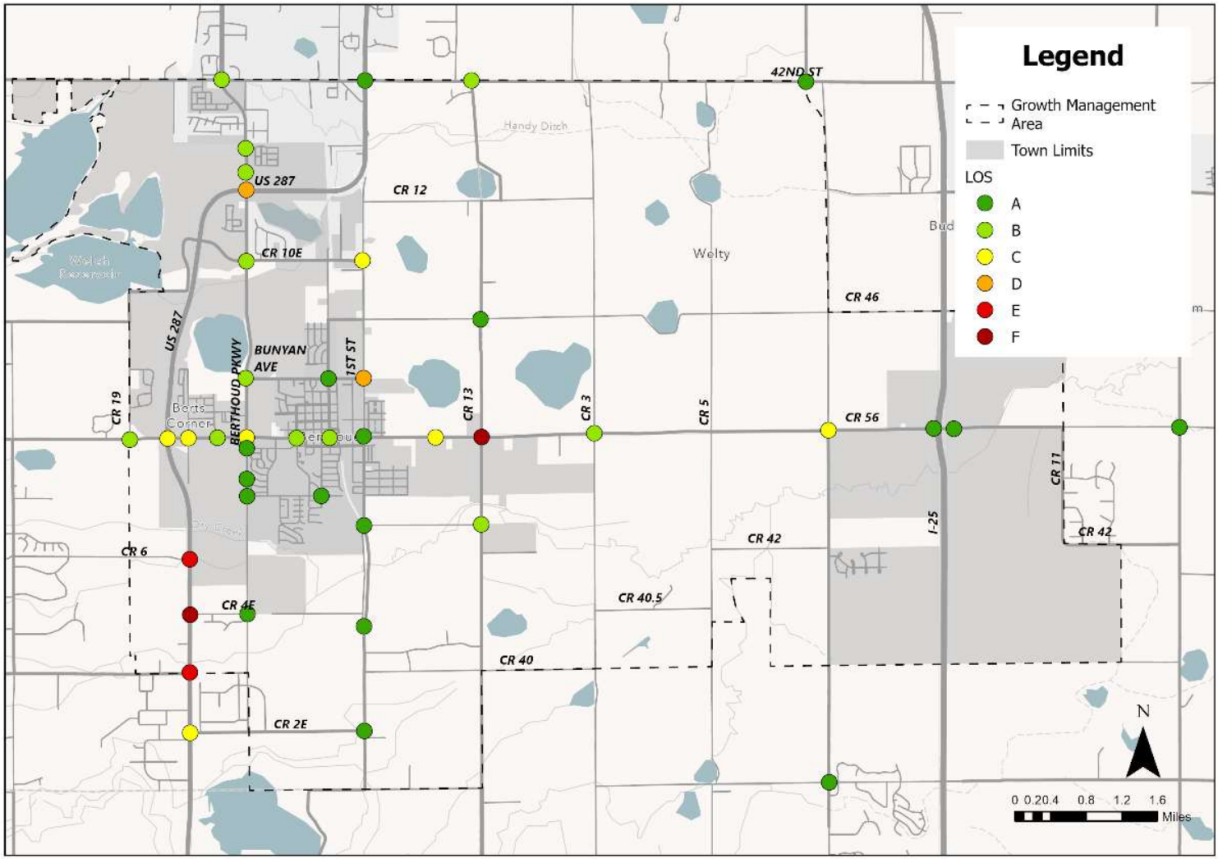
Traffic Model Information

- Cubic Synchro 12
- Built with multiple scenarios pre-modeled
- Future infrastructure improvements added (signals, stop control, general purpose lane and turn lane additions)



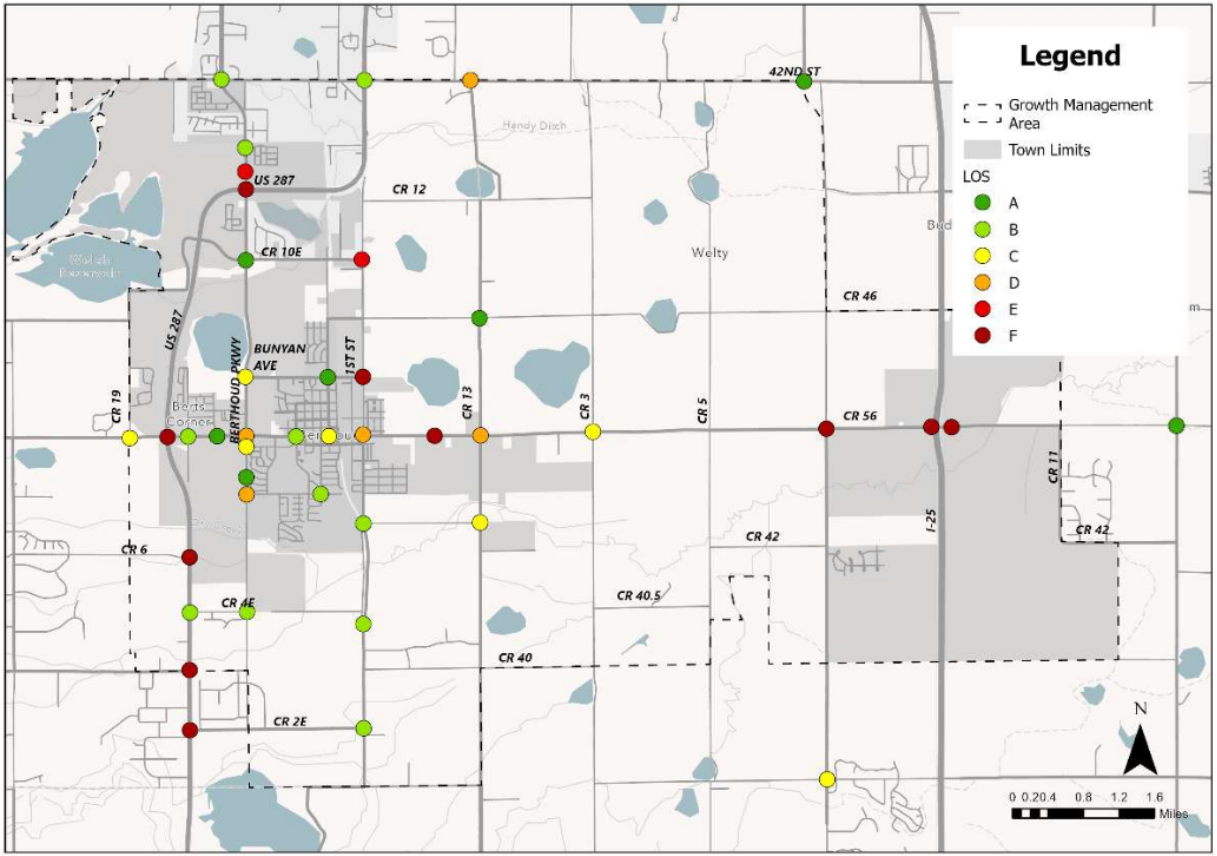


Existing PM Peak Traffic LOS



Level of Service	Signalized Average Total Delay (s/veh)	Unsignalized Average Total Delay (s/veh)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

2045 PM Peak LOS with Improvements



Level of Service	Signalized Average Total Delay (s/veh)	Unsignalized Average Total Delay (s/veh)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Next Steps for Model

Ongoing Usage

Comparing existing conditions to future volumes with and without infrastructure improvements

Future Applications

Infrastructure Decisions

Development Review

Master Plan Updates

Additional Scenario Analyses

Any Questions?







Fehr & Peers

Berthoud Travel Model Development

Final Report

Prepared for:
Town of Berthoud

Submitted on:
April 30, 2026

Table of Contents

Introduction **4**
Project Background 4
Study Area 4
Analysis Scenarios 6
Existing Conditions **7**
Traffic Volumes 7
Existing Intersection Controls 9
Intersection Level of Service Analysis 11
2045 Future Build Conditions **16**
Background Growth 16
Project Volumes 19
Future Intersection Controls 21
Future Lane Configurations 21
2045 Total Traffic Volumes 25
Intersection Level of Service Analysis 27
Key Findings **33**
Existing Conditions Summary 33
2045 Future with No Improvements Summary 33
2045 Future Conditions with Improvements Summary 33

Appendices

Appendix A. Divider Page
Appendix B. Divider Page
Appendix C. Divider Page
Appendix D. Divider Page

List of Figures

Figure 1. Map of Analysis Intersections 5
Figure 2. Existing Traffic Volumes 10
Figure 3. Map of Existing AM and PM Peak LOS 15
Figure 4. 2045 Total Traffic Volumes 18
Figure 5. 2045 Total Traffic Volumes 20
Figure 6. 2045 Total Traffic Volumes 26
Figure 7. Map of Future AM Peak LOS without Improvements vs. with Improvements 31
Figure 8. Map of Future AM Peak LOS without Improvements vs. with Improvements 32

List of Tables

Table 1. Intersection TMC Source and Collection Date 7
Table 2. Level of Service Descriptions 11
Table 3. Existing AM Peak and PM Peak LOS 13
Table 4. Comparison of Background Growth Applied over Traffic Impact Studies 16
Table 5. Average Annual Growth of Corridors within the Town of Berthoud and GMA. 17
Table 6. Applied Project Volumes 19
Table 7. Existing vs. Recommended Future Intersection Controls & Lane Configurations 22
Table 8. Future AM Peak and PM Peak LOS 28

Introduction

The Berthoud Town-wide Model development project developed a comprehensive traffic model to provide a holistic view of systemwide traffic operations within the Town of Berthoud. Rather than evaluating transportation impacts on a project-by-project basis through individual Traffic Impact Studies (TIS), the model assesses overall network performance and intersection operations across the system.

The model serves multiple functions including a traffic evaluation of future intersection improvements and evaluation of traffic resulting from future development. Individual intersections can be tested with alternative scenarios to understand the operational implications of specific intersection modifications. As a development review resource, the model can be provided to developers as a baseline tool for traffic studies with new trip generation added. This will result in more consistent assumptions and methodology across developments. As new development is approved, the Town's master model can be updated to reflect changing conditions and support ongoing planning efforts.

Project Background

The Town of Berthoud identified the need for a comprehensive, Town-wide evaluation tool to assess system-wide transportation effects, support communication with Town leadership, and guide informed infrastructure investment decisions. This report documents an early model development exploratory effort (Phase 1) and the Synchro model development assumptions process (Phase II) that builds upon the Phase I assessment by refining, expanding, and operationalizing the Town's traffic model to support systemwide planning, development review, and long-term decision-making.

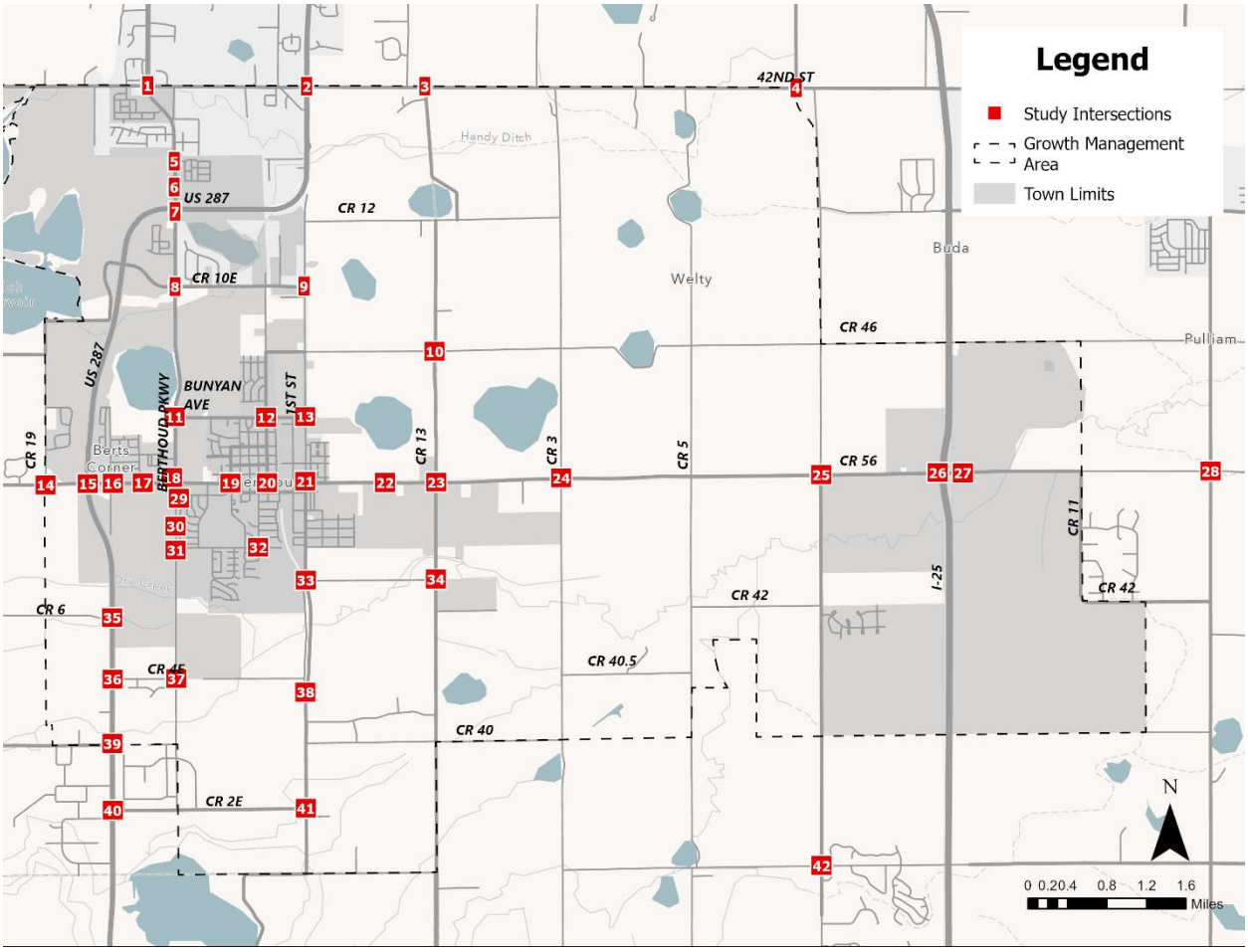
Study Area

The study area includes 42 intersections located within the Town of Berthoud and the surrounding Growth Management Area (GMA), as illustrated in **Figure 1**. The selected intersections represent key nodes along the Town's major arterial and collector roadway network and were identified based on their functional classification, traffic volumes, and importance to overall system operations.

The network generally follows the primary east–west and north–south corridors that provide regional connectivity and local circulation. Major arterial intersections along corridors such as US-287 and SH 56 are included due to their role in carrying regional traffic through and around the community. In addition, principal and minor collector intersections throughout the Town and within developing areas of the GMA are incorporated to capture local traffic distribution patterns and planned growth areas to ensure that both existing conditions and long-term growth impacts are evaluated within a comprehensive, systemwide framework.

Together, the 42 intersections provide a representative cross-section of the Town's transportation network, supporting analysis of current operations, future traffic growth, and potential roadway or intersection improvements.

Figure 1. Map of Analysis Intersections



Source: Fehr and Peers.

Analysis Scenarios

This study establishes a framework to evaluate the potential transportation impacts of future site development on the surrounding roadway network and study area intersections. Operational analyses were conducted to assess both existing conditions and long-term future conditions under projected growth and planned improvements.

The following scenarios were developed and evaluated:

1. Existing Conditions (Baseline)
   This scenario reflects current traffic volumes, roadway geometry, and traffic control conditions and serves as the baseline for comparison with future conditions.
   - Typical Weekday AM Peak Hour (7 AM-9 AM)
   - Typical Weekday PM Peak Hour (4 PM -6 PM)
2. 2045 Future Build Conditions (with and without Planned Improvements)
   The Future Build scenario incorporates projected background traffic growth, traffic associated with anticipated site and area development, and planned roadway and intersection improvements expected to be in place by 2045. This scenario evaluates long-term operational performance and identifies potential capacity or operational deficiencies under full buildout conditions.
   - Typical Weekday AM Peak Hour (7 AM-9 AM)
   - Typical Weekday PM Peak Hour (4 PM -6 PM)

Existing Conditions

The existing conditions analysis assesses the performance of study intersections during peak travel periods under current traffic volumes and geometric configurations, establishing a baseline for subsequent future condition evaluations.

Traffic Volumes

Traffic volume data for the existing study intersections were compiled from three primary sources:

- New Field Data Collection: Turning movement counts (TMCs) were collected on Wednesday, October 22, 2025, during the typical weekday AM (7 AM – 9 AM) and PM (4 PM – 6 PM) peak periods at 10 intersections identified as high priority.
- Big Data Source (Replica[1]): Turning movement counts for seven intersections identified as low- to medium-priority were developed using Replica data to supplement available field information.
- Previous TIS: For the remaining 25 intersections, turning movement counts were obtained from recently completed Traffic Impact Studies conducted within the study area.

These combined data sources provided comprehensive peak-hour traffic volumes for all 42 study intersections and established the basis for existing conditions analysis and model calibration.

Table 1. Intersection TMC Source and Collection Date

ID	Intersection Name	TMC Source	TMC Collection Date
1	Berthoud Pkwy & LCR 14	Heron Lakes	6/1/2022
2	US 287 & CO 60	Replica	2025
3	CO 60 & CO Line Rd	Replica	2025
4	CO 60 & WCR 7	Replica	2025
5	Berthoud Pkwy & Wagon Bend Rd	Heron Lakes	6/1/2022
6	Berthoud Pkwy & Grand Market Ave	Ridgeview Data Collection	10/22/2025
7	US 287 & Berthoud Pkwy	Heron Lakes	6/1/2022
8	Berthoud Pkwy & LCR 10E	Ridgeview Data Collection	10/22/2025
9	1ST ST & LCR 10E	Ridgeview Data Collection	10/22/2025
10	CO Line Rd & WCR 46	Replica	2025
11	Berthoud Pkwy & Bunyan ST	Ridgeview Data Collection	10/22/2025
12	4TH ST & Bunyan ST	Ridgeview Data Collection	10/22/2025
13	1ST ST & Bunyan ST	Ridgeview Data Collection	10/22/2025
14	CO 56 & LCR 19	Revere	12/20/2024

[1] Replica is a transportation data platform that uses anonymized mobile device location data and other data sources to generate modeled estimates of travel patterns, including origin-destination flows, trip characteristics, and intersection turning movements.

ID	Intersection Name	TMC Source	TMC Collection Date
15	US 287 & CO 56	Legacy Park	1/3/2023
16	CO 56 & Meadowlark Dr	Legacy Park	1/3/2023
17	CO 56 & Gate Way Park Blvd	Legacy Park	1/3/2023
18	CO 56 & Berthoud Pkwy	Legacy Park	1/3/2023
19	CO 56 & 8TH ST	Ridgeview Data Collection	10/22/2025
20	CO 56 & 4TH ST	Ridgeview Data Collection	10/22/2025
21	CO 56 & 1st St	River Trails	1/20/2025
22	CO 56 & Dorothy Dr	Farmstead	11/4/2024
23	CO 56 & County Line Rd	Farmstead	11/4/2024
24	CO 56 & WCR 3	Replica	2025
25	CO 56 & WCR 7	Ridgeview Data Collection	10/22/2025
26	I-25 Southbound & WCR 44	Turion	4/8/2021
27	I-25 Northbound & WCR 44	Turion	4/8/2021
28	WCR 13 & WCR 44	Turion	4/8/2021
29	Berthoud Pkwy & Welch Ave	Legacy Park	1/3/2023
30	Berthoud Pkwy & Arapahoe Ave	Legacy Park	1/3/2023
31	Berthoud Pkwy & Spartan Ave	Legacy Park	1/3/2023
32	5TH ST & Spartan AVE	Ridgeview Data Collection	10/22/2025
33	LCR 15 & LCR 6C	River Trails	1/20/2025
34	County Line Rd & LCR 6C	River Trails	1/20/2025
35	US 287 & LCR 6	Replica	2025
36	US 287 & LCR 4E	River Trails	1/20/2025
37	Berthoud Pkwy & LCR 4E	River Trails	1/3/2023
38	LCR 15 & LCR 15A	River Trails	1/20/2025
39	US 287 & LCR 4	Replica	2025
40	US 287 & LCR 2E	River Trails	1/20/2025
41	LCR 15 & LCR 2E	River Trails	1/20/2025
42	WCR 38 & WCR 7	Turion	4/8/2021

Existing Intersection Controls

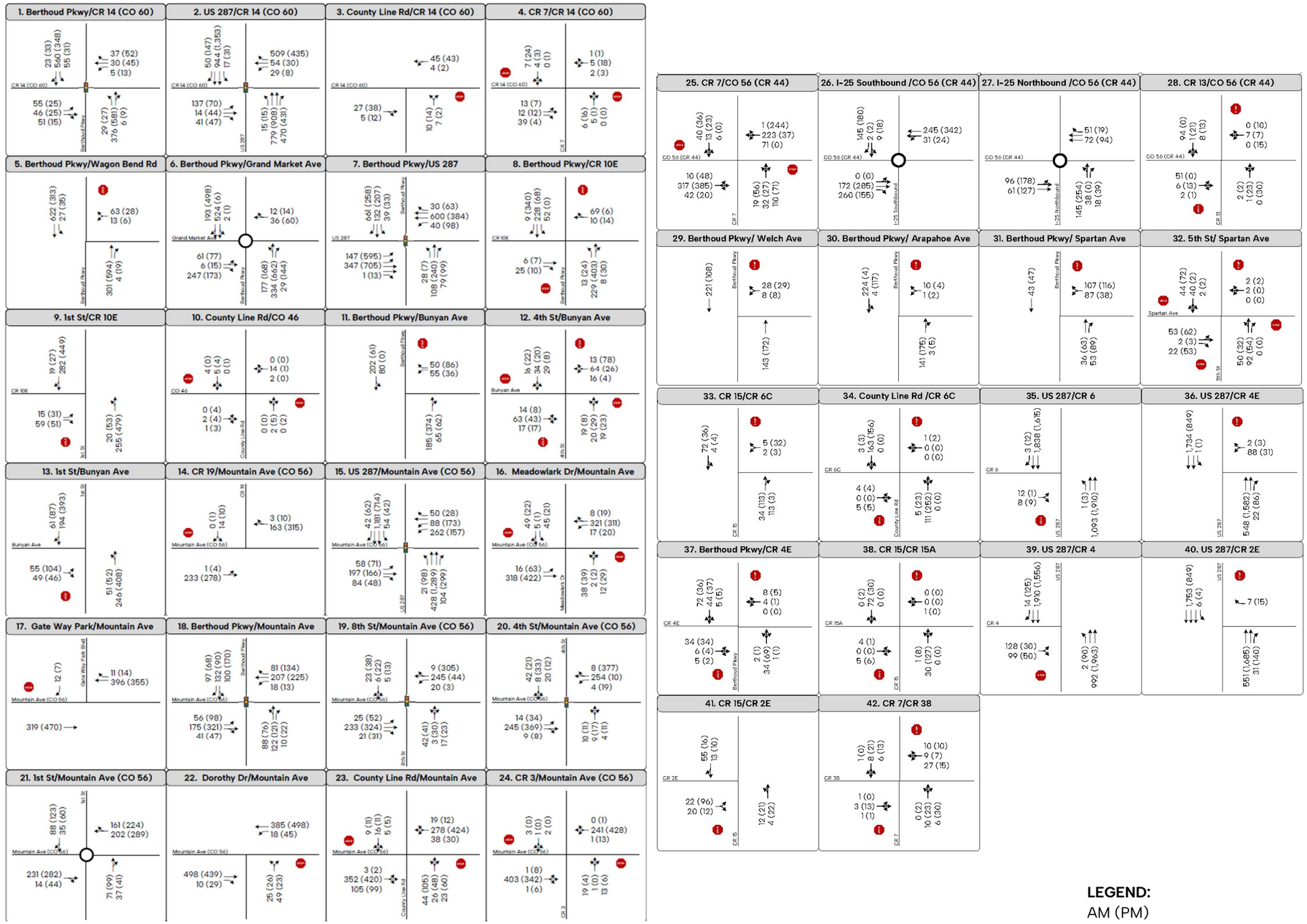
Intersection control types for the existing study intersections were identified primarily through review of Google Street View imagery, cross-referenced with information documented in previous Traffic Impact Studies (TIS), and verified by Town staff.

Of the 42 study intersections (**Figure 2**):

- Seven intersections are signalized. Five signals are maintained by the Colorado Department of Transportation (CDOT), one by the City of Loveland, and one by Lumen8. Signal timing parameters were obtained from the respective maintaining agencies.
- Four intersections operate as roundabouts.
- Two intersections operate under all-way stop control (AWSC).
- One intersection operates as a right-in/right-out (RIRO) configuration under two-way stop control (TWSC).
- The remaining 28 intersections operate under two-way stop control (TWSC).

This inventory of intersection control types was used to develop and calibrate the operational analysis model.

Figure 2. Existing Peak Hour Traffic Volumes



Source: Fehr and Peers.

Intersection Level of Service Analysis

Intersection operations at the study intersections were evaluated using Synchro software in accordance with methodologies outlined in the Highway Capacity Manual (HCM). Synchro applies HCM procedures to estimate intersection performance based on traffic volumes, geometry, and traffic control type.

Level of Service (LOS) is a qualitative measure used to describe the operational performance of an intersection or roadway segment. LOS is quantified based on average control delay per vehicle and is reported on a scale from A to F, where LOS A represents the best operating conditions with minimal delay and LOS F represents the poorest operating conditions with excessive delay and congestion.

Table 2 summarizes the LOS criteria, including the corresponding average control delay thresholds for both signalized and unsignalized intersections. For signalized intersections, LOS is reported for the overall intersection and reflects the weighted average delay of all approaches. For unsignalized intersections, LOS is based on the average delay per vehicle for the worst-performing movement, consistent with HCM standards.

Table 2. Level of Service Descriptions

LOS	Description	Average Delay (seconds/vehicle)	
		Signalized Intersections[1]	Unsignalized Intersections[2]
A	Free Flow/Insignificant Delay Extremely favorable progression. Individual users are virtually unaffected by others in the traffic stream.	< 10.0	< 10.0
B	Stable Operations/Minimum Delays Good progression. The presence of other users in the traffic stream becomes noticeable.	> 10.0 to 20.0	> 10.0 to 15.0
C	Stable Operations/Acceptable Delays Fair progression. The operation of individual users is affected by interactions with others in the traffic stream.	> 20.0 to 35.0	> 15.0 to 25.0
D	Approaching Unstable Flows/Tolerable Delays Marginal progression. Operating conditions are noticeably more constrained.	> 35.0 to 55.0	> 25.0 to 35.0
E	Unstable Operations/Significant Delays Can Occur Poor progression. Operating conditions are at or near capacity.	> 55.0 to 80.0	> 35.0 to 50.0
F	Forced, Unpredictable Flows/Excessive Delays Unacceptable progression with forced or breakdown of operating conditions.	> 80.0	> 50.0

[1] Overall intersection LOS and average delay (seconds/vehicle) for all approaches. Roundabout intersection operations are measured under these conditions as well.
[2] Worst movement LOS and delay (seconds/vehicle) only.

Source: Fehr & Peers descriptions, based on the HCM.

Under existing conditions, most of the 42 study intersections operate at acceptable levels of service (LOS A–C) during both the AM and PM peak periods, indicating generally good traffic operations across the network. The majority of intersections experience average delays below 20 seconds per vehicle, with many operating at LOS A or B, particularly along local roadways and roundabout-controlled intersections such as the I-25 ramp terminals and several intersections along LCR 15 and County Line Road.

A few intersections along major regional corridors experience higher delays due to higher traffic volumes. Notable locations include:

- US-287 & Berthoud Parkway – LOS C in the AM peak and LOS D in the PM peak
- US-287 & CO-56 – LOS D in the AM peak and LOS C in the PM peak
- CO-56 & County Line Road – LOS C in the AM peak and LOS F in the PM peak due to high delay on the northbound approach

Several minor-street stop-controlled intersections along US-287 also experience delays for side-street movements due to heavy mainline traffic, including:

- US-287 & LCR 6 – LOS F (AM) and LOS E (PM)
- US-287 & LCR 4E – LOS D (AM) and LOS F (PM)
- US-287 & LCR 4 – LOS F (AM) and LOS E (PM)

Overall, while most intersections operate efficiently under existing traffic conditions, localized operational issues occur primarily at two-way stop-controlled intersections along major corridors, where minor-street traffic experiences higher delays when entering or crossing high-volume roadways.

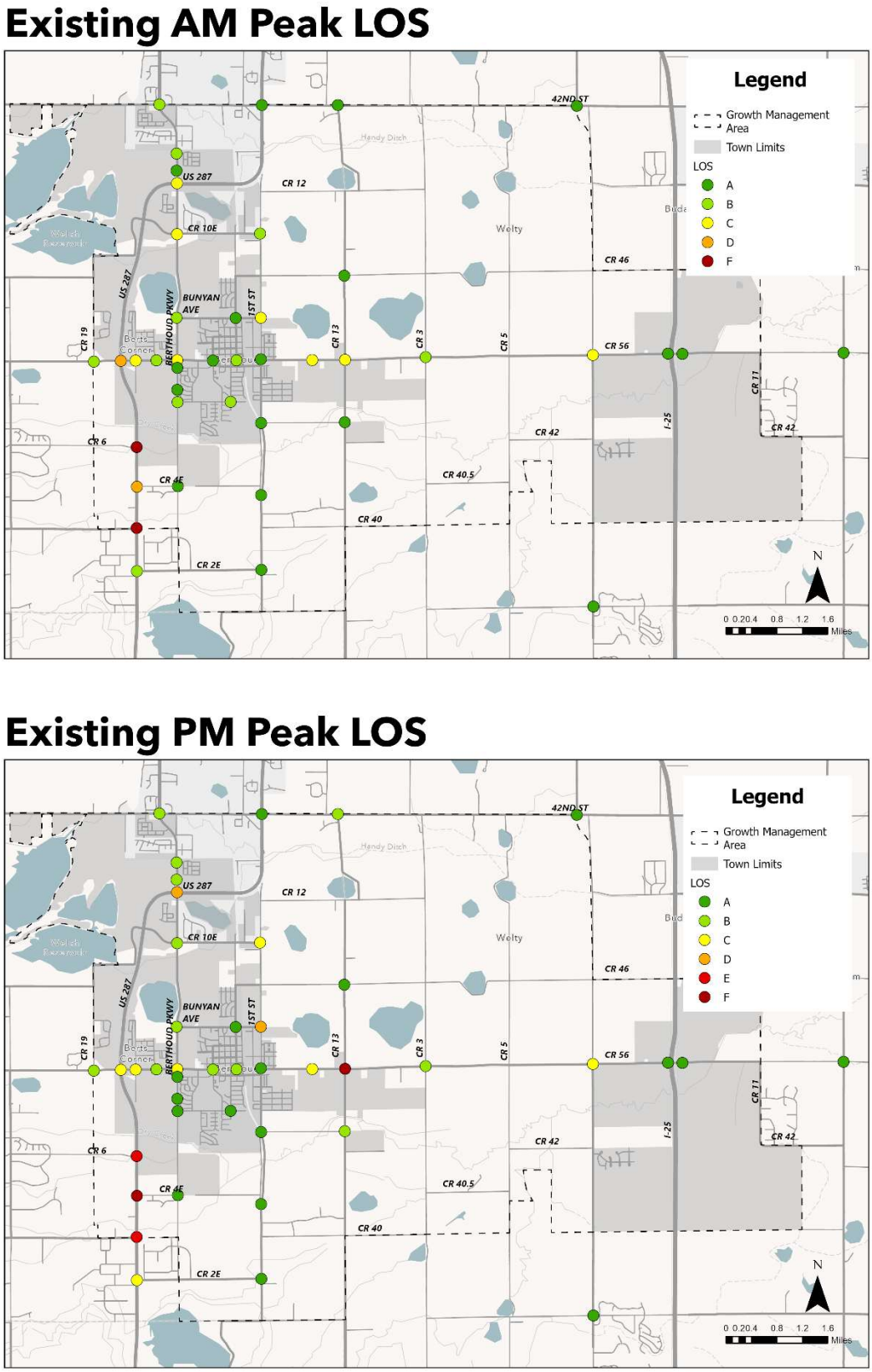
Table 3. Existing AM Peak and PM Peak LOS

#	Intersection	AM Peak			PM Peak		
		Existing	Delay	Worst Movement	Existing	Delay	Worst Movement
1	Berthoud Pkwy & LCR 14	B	11.9		B	11.2	
2	US 287 & CO 60	B	14.1		B	12.9	
3	CO 60 & CO Line Rd	A	8.8	NB	A	9	NB
4	CO 60 & WCR 7	A	9.2	NB	A	9.1	NB
5	Berthoud Pkwy & Wagon Bend Rd	B	11.8	WB	B	13.7	WB
6	Berthoud Pkwy & Grand Market Ave	A	5.6		B	10.3	
7	US 287 & Berthoud Pkwy	C	22.3		D	50.9	
8	Berthoud Pkwy & LCR 10E	C	15	WB	B	14	WB
9	1ST ST & LCR 10E	B	11	EB	C	17.5	EB
10	CO Line Rd & WCR 46	A	9.2	NB	A	9.1	SB
11	Berthoud Pkwy & Bunyan ST	B	12.5	WB	B	12.5	WB
12	4TH ST & Bunyan ST	A	8.5		A	7.5	
13	1ST ST & Bunyan ST	C	15.8	EB	D	28.8	EB
14	CO 56 & LCR 19	B	11.4	SB	B	13.1	SB
15	US 287 & CO 56	D	41.2		C	29.1	
16	CO 56 & Meadowlark Dr	C	18.6	NB	C	22.4	NB
17	CO 56 & Gate Way Park Blvd	B	10.9	SB	B	10.5	SB
18	CO 56 & Berthoud Pkwy	C	28.7		C	31.8	
19	CO 56 & 8TH ST	A	8.8		B	10.9	
20	CO 56 & 4TH ST	A	7.7		A	9.2	
21	CO 56 & 1st St	A	6.1		A	8.4	
22	CO 56 & Dorothy Dr	C	16.3	NB	C	19	NB
23	CO 56 & County Line Rd	C	22.6	NB	F	99.8	NB
24	CO 56 & WCR 3	B	14.4	NB	B	14	NB
25	CO 56 & WCR 7	C	17.9	NB	C	19.2	NB
26	I-25 Southbound & WCR 44	A	2.6		A	3.5	
27	I-25 Northbound & WCR 44	A	4		A	4.9	
28	WCR 13 & WCR 44	A	9.8	WB	A	9.7	EB
29	Berthoud Pkwy & Welch Ave	A	9.8	WB	A	9.9	WB
30	Berthoud Pkwy & Arapahoe Ave	A	9.3	WB	B	10.2	WB
31	Berthoud Pkwy & Spartan Ave	B	12.8	WB	A	10	WB

#	Intersection	AM Peak			PM Peak		
		Existing	Delay	Worst Movement	Existing	Delay	Worst Movement
32	5TH ST & Spartan AVE	B	10.2		A	8.3	
33	LCR 15 & LCR 6C	A	9	WB	A	9.1	WB
34	County Line Rd & LCR 6C	A	9.9	EB	B	10.8	EB
35	US 287 & LCR 6	F	243.7	EB	E	45.3	EB
36	US 287 & LCR 4E	D	30.8	WB	F	51.4	WB
37	Berthoud Pkwy & LCR 4E	A	9.7	EB	A	9.7	EB
38	LCR 15 & LCR 15A	A	9.2	WB	A	8.7	EB
39	US 287 & LCR 4	F	559.5	EB	E	45.5	EB
40	US 287 & LCR 2E	B	10.2	WB	C	18.9	WB
41	LCR 15 & LCR 2E	A	8.9	EB	A	9.5	EB
42	WCR 38 & WCR 7	A	9	EB	A	9.7	EB

Source: Fehr and Peers.

Figure 3. Map of Existing AM and PM Peak LOS



Source: Fehr and Peers.

2045 Future Build Conditions

The future conditions scenario for this project incorporates information from previous TIS and input from Town staff, particularly where conflicting roadway and intersection geometric improvement recommendations exist for a single location. This coordinated approach establishes the basis for determining background traffic growth rates along major and local corridors, incorporating traffic from planned or approved developments, and defining future intersection control types and lane configurations at the study intersections identified in the Introduction.

Background Growth

Upon review of recent Traffic Impact Studies (TIS), Fehr & Peers identified varying background traffic growth factors applied across different studies, as summarized in **Table 4**. The applied growth factors ranged from growth factors of 1.1 to 1.5. These variations reflect that each TIS typically applies growth assumptions specific to the roadway corridors and development conditions surrounding the individual project site. As a result, the growth factors vary based on localized development expectations and corridor characteristics.

Table 4. Comparison of Background Growth Applied over Traffic Impact Studies

TIS	Existing Conditions	Long Range Future Condition	20-Year Growth Factor	Notes
Heron Lakes	March 2022	2042	1.5	across all US-287 intersections
Revere	August 2022	2042	1.1	across all intersections
Westside Crossing	October 2019	2040	1.1 - 1.4	1.44 (US-287); 1.13 (SH-56)
Legacy Park (formerly Ludlow Farm)	October 2019	2042	1.1	across all intersections
River Trails	March 2024	2042	1.4 - 1.5	1.5 (CO-56); 1.4 (Locals)
Farmstead	March 2024	2045	1.3	
Turion	January 2021	2040		
Trails at Creekview	November 2018	2040	1.5 – 1.8	2.3% Annual Rate (US-287); 4% Annual Rate (Locals)

Source: Fehr and Peers, based on previous TIS.

To establish a consistent and corridor-specific approach, Fehr & Peers referenced the forecasted annual growth rates we documented in the Phase I deliverable[2] based on growth shown in the North Front Range MPO Travel Demand Model. Because projected growth varies by corridor based on regional travel patterns and development trends, six growth categories were defined as shown in **Table 5.**

These growth factors differ from those applied in individual TIS because the corridor definitions in this study encompass the entire Town of Berthoud roadway network as well as the GMA. In contrast, TIS analyses typically apply growth rates to smaller, isolated roadway segments immediately surrounding a specific development site. By applying corridor-level growth factors across the broader network, this study provides a more consistent representation of long-term background growth throughout the Town.

For local roadways, traffic volumes vary widely across corridors. To avoid overstating growth on low-volume roads, the applied growth factors were limited to local corridors with 2022 traffic volumes greater than or equal to 2,900 vehicles per day, which represents the average traffic volume across all local corridors included in the model. This approach prevents misleadingly high growth projections that can occur when small increases in traffic are applied to corridors with very low existing volumes. For example, on a low-volume roadway, the addition of only a few hundred vehicles may appear as a disproportionately large percentage increase, even though the operational impact on the roadway network would be minimal.

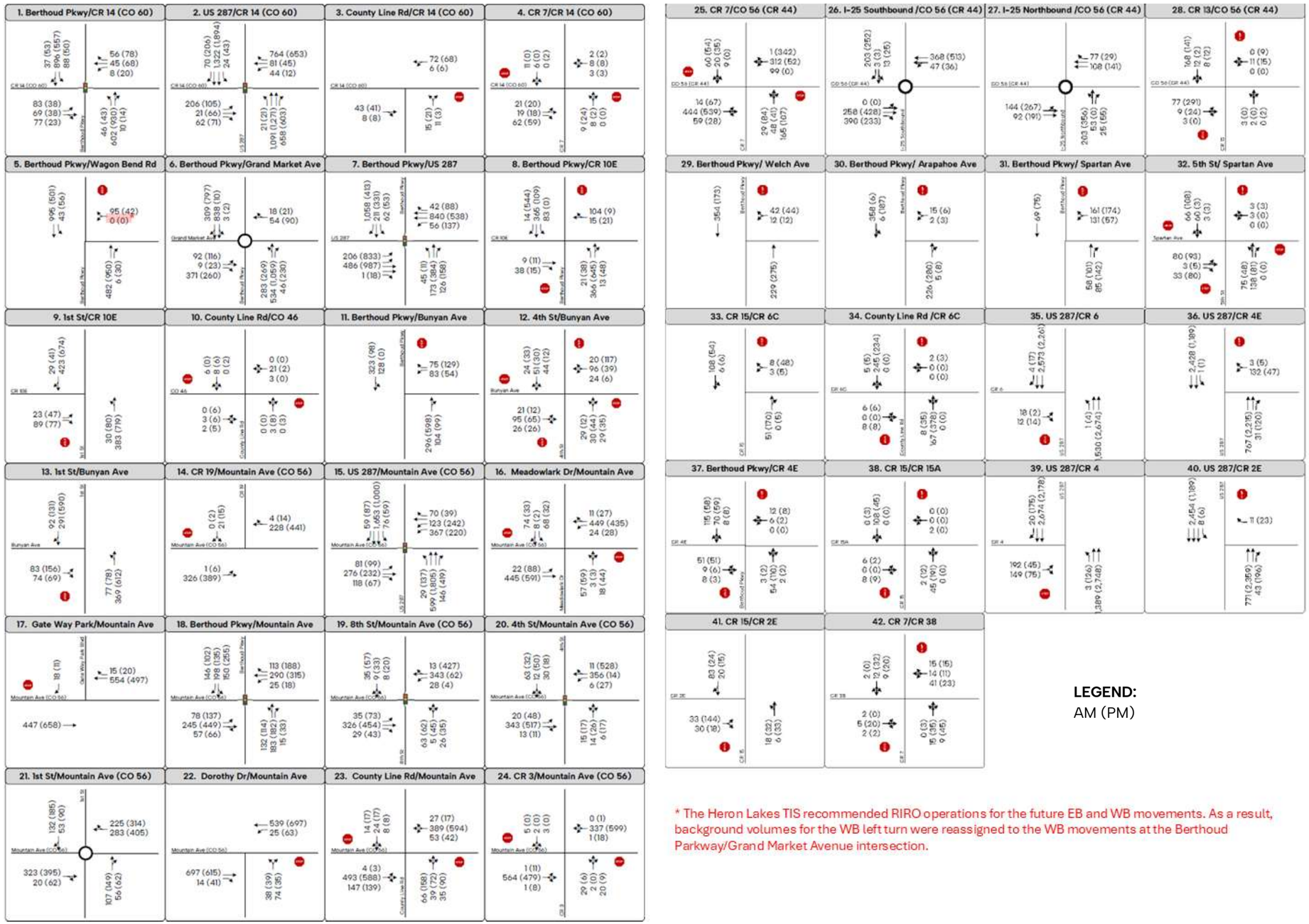
Table 5. Average Annual Growth of Corridors within the Town of Berthoud and GMA.

Corridor	Average ADT	Average Annual Growth	21-Year Growth Factor	Notes
US-287	20,878	1.9%	1.4	
I-25 RAMP	29,292	1.7%	1.4	
CO-56	9,248	1.8%	1.4	
CO-60	8,272	2.9%	1.6	
CR-17	6,439	3.0%	1.6	
Local Roads	2,931	2.3%	1.5	1st St, County Line Rd, CR-14, CR-15, CR-19, CR-44

Source: Fehr and Peers.

[2] See Appendix A.

Figure 4. 2045 Background Peak Hour Traffic Volumes



* The Heron Lakes TIS recommended RIRO operations for the future EB and WB movements. As a result, background volumes for the WB left turn were reassigned to the WB movements at the Berthoud Parkway/Grand Market Avenue intersection.

Source: Fehr and Peers

Project Volumes

Project-generated traffic volumes were compiled from the respective TIS, with adjustments made at locations where recent TMCs were collected at intersections serving developments that are partially built.

Based on information provided by the Town, three developments are currently under construction or partially completed:

Table 6. Applied Project Volumes

TIS	Built Progress	Applied Project Volumes
Heron Lakes	50%	50% at two intersections with 2025 TMCs 100% at other intersections with 2022 TMCs
Revere	0%	100%
Westside Crossing	Residential: 100% Commercial: 0%	100% (No 2025 TMCs at study intersections)
Legacy Park (formerly Ludlow Farm)	0%	100%
River Trails	0%	100%
Farmstead	33%	100% (No 2025 TMCs at study intersections)
Turion	0%	100%
Trails at Creekview	0%	100%

Source: Fehr and Peers, based on previous TIS.

To avoid double-counting traffic that is already reflected in recently collected field data, project volumes from the TIS were adjusted to 50% at two intersections (**Figure 5**) where updated TMCs were obtained:

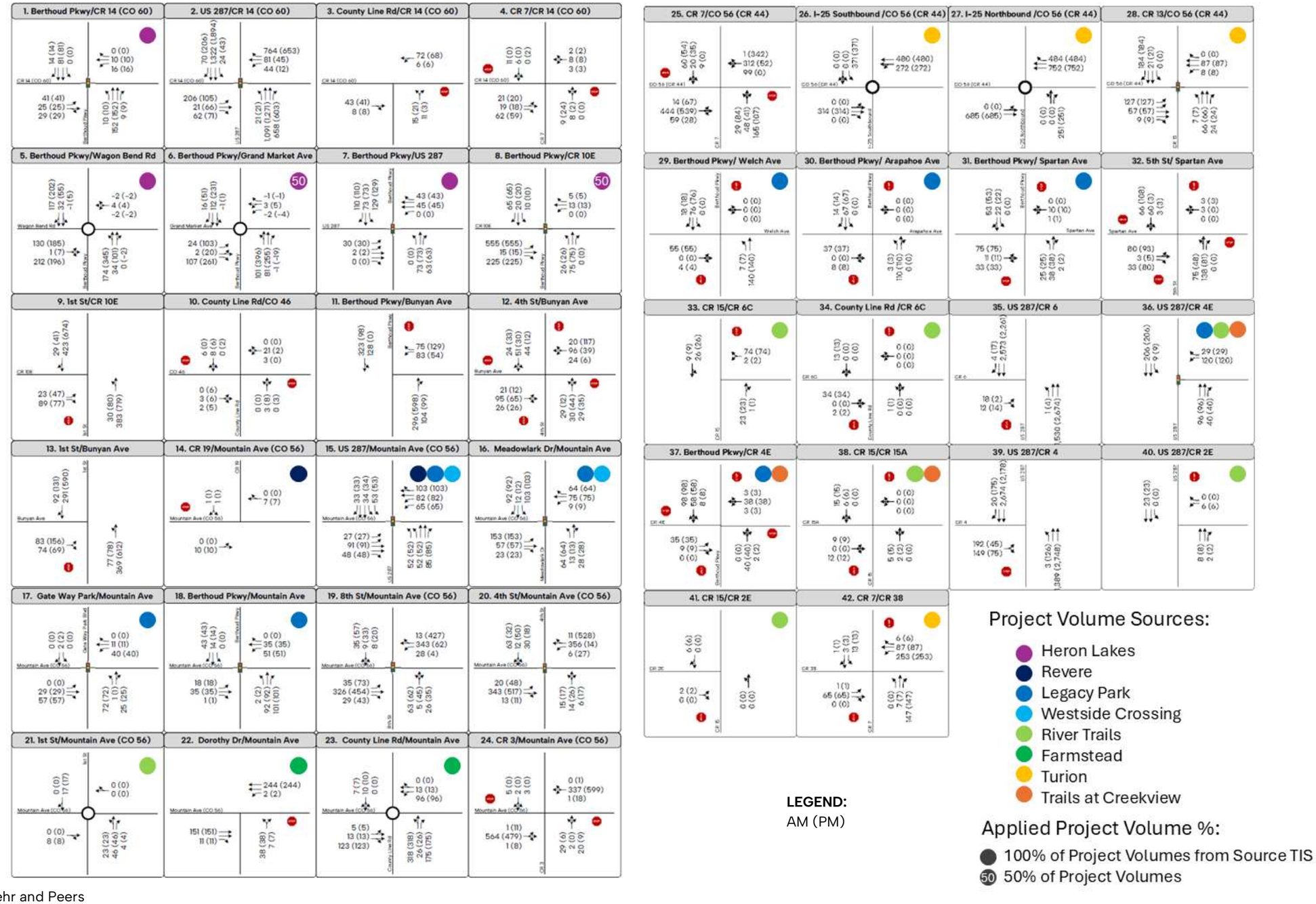
- Intersection #6: Berthoud Parkway & Grand Market Avenue
- Intersection #8: Berthoud Parkway & LCR 10E.

At these locations, it was assumed that the existing traffic counts captured the trips associated with the built portions of the developments; therefore, only the remaining unbuilt portions were added to the future condition volumes.

For other intersections influenced by ongoing developments where no recent TMCs were collected, project traffic volumes were incorporated at 100% buildout. This approach is appropriate because the analysis at those locations relies on previously collected TMCs from the original TIS, which were conducted prior to the construction of the developments and therefore do not reflect any built project traffic.

No project-generated volumes were added at 15 intersections that were newly proposed as part of this study and were not included in previous Traffic Impact Studies.

Figure 5. 2045 Project Peak Hour Traffic Volumes



Source: Fehr and Peers

Future Intersection Controls

Based on a review of recommendations documented in the previous TIS, seven study intersections include proposed control or operational improvements under future conditions (**Table 7**). The recommended improvements are summarized below:

- Berthoud Parkway & LCR 10E: Convert from TWSC to signalized control.
- Berthoud Parkway & Wagon Bend Rd: Convert from TWSC to RIRO.
- CO-56 & Meadowlark Drive: Convert from TWSC to signalized control.
- CO-56 & Gateway Park Boulevard: Convert from RIRO to signalized control.
- CO-56 & County Line Road: Convert from TWSC to a roundabout.
- WCR 14 & WCR 44: Convert from TWSC to signalized control.
- US-287 & LCR 4E: Convert from TWSC to signalized control.
- Berthoud Parkway & LCR 4E: Convert from TWSC to AWSC.

These recommended improvements were incorporated into the Future Build scenario to evaluate anticipated operational performance under long-term growth conditions.

Future Lane Configurations

Future lane configurations for the study intersections were developed based on recommendations documented in previous TIS and additional review conducted as part of this study. In total, 21 study intersections include changes to the existing lane configurations under the 2045 Future Build scenario (**Table 7**).

The recommended configurations from the TIS generally include the addition of turn lanes to accommodate projected traffic growth and improve intersection operations. Fehr & Peers reviewed these recommendations and incorporated them into the model network. In several cases, Fehr & Peers made minor refinements to the recommended configurations to improve operations in the analysis. These refinements primarily involved adding storage length for newly proposed turn lanes to ensure adequate queue accommodation for the projected traffic volumes.

Along the CO-56 corridor, multiple TIS documents recommended varying numbers of future through lanes at several intersections. Because these studies were developed independently and focused on localized development impacts, the resulting recommendations differed across segments of the corridor. Based on coordination with Town staff, the current planning direction for CO-56 does not include additional through lanes beyond those currently planned. Therefore, the future lane configurations used in this study maintain the existing number of through lanes along CO-56, while incorporating turn lane improvements where appropriate.

The resulting lane configurations represent a consolidated and consistent set of assumptions for the 2045 analysis, integrating recommendations from multiple development studies while aligning with current Town planning guidance. These configurations were used in the Synchro model to evaluate intersection operations under future conditions.

Table 7. Existing vs. Recommended Future Intersection Controls & Lane Configurations

ID	Intersection Name	Existing Intersection Control	Future Intersection Control	Existing Lane Configuration				Future Lane Configuration				Fehr & Peers Modification
				NB	SB	EB	WB	NB	SB	EB	WB	
1	Berthoud Pkwy & LCR 14	Signal	Signal									Storage lane added to NBR, SBR
2	US 287 & CO 60	Signal	Signal									
3	CO 60 & CO Line Rd	TWSC	TWSC									
4	CO 60 & WCR 7	TWSC	TWSC									
5	Berthoud Pkwy & Wagon Bend Rd	TWSC	Roundabout									
6	Berthoud Pkwy & Grand Market Ave	Roundabout	Roundabout									"Storage lane added to EBL, WBL, WBR, NBR, SBR.
7	US 287 & Berthoud Pkwy	Signal	Signal									Storage lane is removed from SBL"
8	Berthoud Pkwy & LCR 10E	TWSC	Signal									
9	1ST ST & LCR 10E	TWSC	TWSC									Storage lane added to NBR, EBR, WBR
10	CO Line Rd & WCR 46	TWSC	TWSC									
11	Berthoud Pkwy & Bunyan ST	TWSC	TWSC									
12	4TH ST & Bunyan ST	AWSC	AWSC									
13	1ST ST & Bunyan ST	TWSC	TWSC									
14	CO 56 & LCR 19	TWSC	TWSC									

ID	Intersection Name	Existing Intersection Control	Future Intersection Control	Existing Lane Configuration				Future Lane Configuration				Fehr & Peers Modification
				NB	SB	EB	WB	NB	SB	EB	WB	
15	US 287 & CO 56	Signal	Signal									
16	CO 56 & Meadowlark Dr	TWSC	Signal									
17	CO 56 & Gate Way Park Blvd	RIRO	Signal									Storage lane added to NBL, EBR, WBR, SBR
18	CO 56 & Berthoud Pkwy	Signal	Signal									Storage lane added to NBL, SBL, EBL, EBR, WBL
19	CO 56 & 8TH ST	Signal	Signal									Storage lane added to NBR, SBL, EBR
20	CO 56 & 4TH ST	Signal	Signal									Adjust lanes
21	CO 56 & 1st St	Roundabout	Roundabout									
22	CO 56 & Dorothy Dr	TWSC	TWSC									Storage lane added to NBL
23	CO 56 & County Line Rd	TWSC	Roundabout									
24	CO 56 & WCR 3	TWSC	TWSC									Storage lane added to NBL, EBL, WBL
25	CO 56 & WCR 7	TWSC	TWSC									
26	I-25 Southbound & WCR 44	Roundabout	Roundabout									
27	I-25 Northbound & WCR 44	Roundabout	Roundabout									
28	WCR 13 & WCR 44	TWSC	Signal									

ID	Intersection Name	Existing Intersection Control	Future Intersection Control	Existing Lane Configuration				Future Lane Configuration				Fehr & Peers Modification
				NB	SB	EB	WB	NB	SB	EB	WB	
29	Berthoud Pkwy & Welch Ave	TWSC	TWSC									Storage lane added to NBL, NBR, SBL, SBR, EBL, EBR, WBL, WBR
30	Berthoud Pkwy & Arapahoe Ave	TWSC	TWSC									Storage lane added to NBL, SBL, SBR
31	Berthoud Pkwy & Spartan Ave	TWSC	TWSC									Storage lane added to NBL, SBL, SBR
32	5TH ST & Spartan AVE	AWSC	AWSC									Storage lane added to SBL
33	LCR 15 & LCR 6C	TWSC	TWSC									
34	County Line Rd & LCR 6C	TWSC	TWSC									
35	US 287 & LCR 6	TWSC	TWSC									
36	US 287 & LCR 4E	TWSC	Signal									
37	Berthoud Pkwy & LCR 4E	TWSC	AWSC									Storage lane added to WBR
38	LCR 15 & LCR 15A	TWSC	TWSC									Storage lane added to EBL
39	US 287 & LCR 4	TWSC	TWSC									
40	US 287 & LCR 2E	TWSC	TWSC									
41	LCR 15 & LCR 2E	TWSC	TWSC									Storage lane added to WBR
42	WCR 38 & WCR 7	TWSC	TWSC									

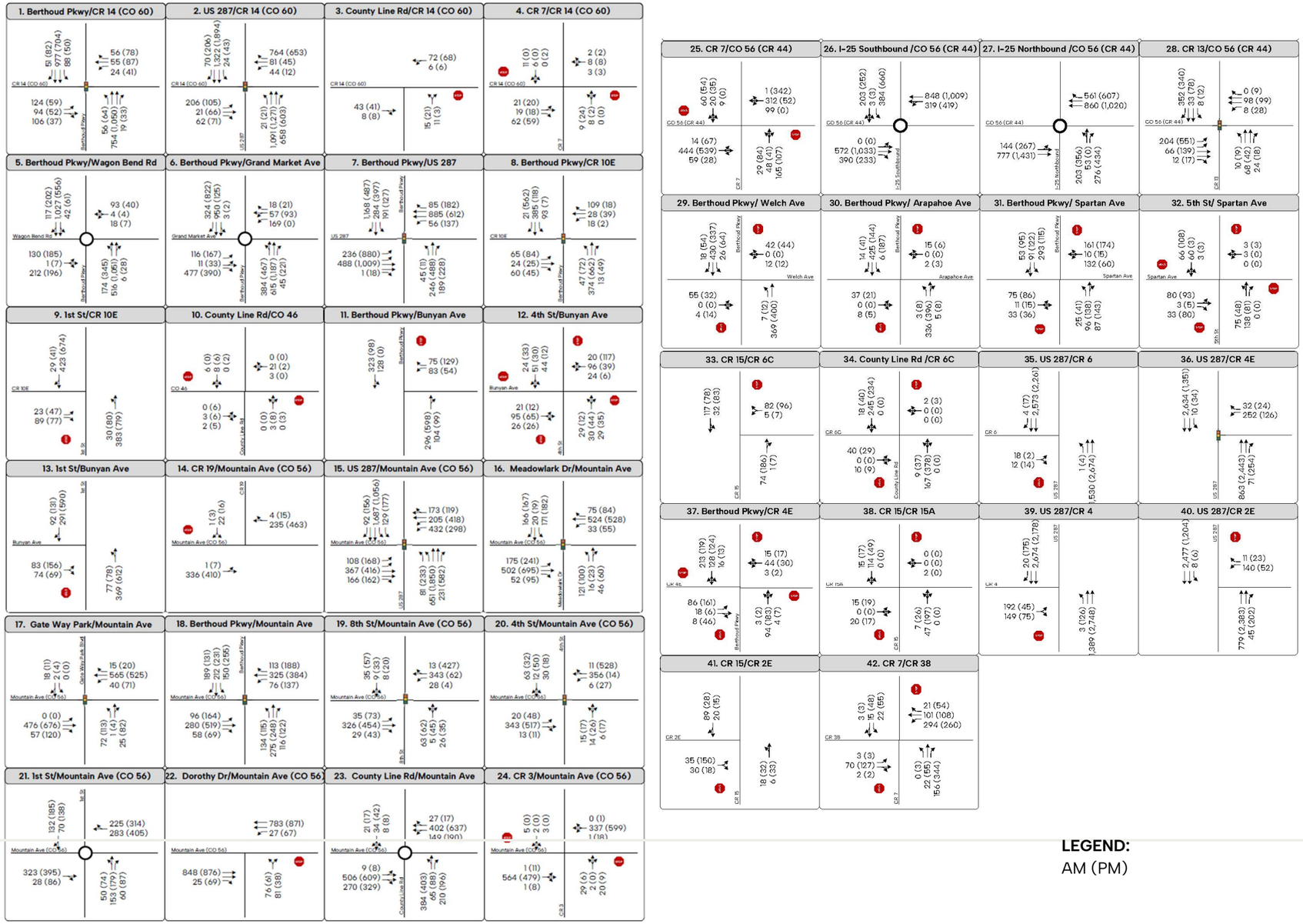
Source: Fehr and Peers.

2045 Total Traffic Volumes

The 2045 total traffic volumes at the study intersections were developed by combining background traffic growth with project-generated traffic from planned and approved developments in the Town of Berthoud. Background growth factors were first applied to the existing volumes based on the corridor-specific rates described in the previous section. Project traffic volumes from previous TIS were then added, with adjustments made to account for partially built developments and locations where recent turning movement counts were collected to avoid double-counting.

The resulting volumes represent the total projected traffic conditions in 2045 and were used as the basis for the Future Build operational analysis.

Figure 6. 2045 Total Peak Hour Traffic Volumes



Source: Fehr and Peer

LEGEND:
AM (PM)

Intersection Level of Service Analysis

Future intersection operations were evaluated for the 2045 Future Build scenario during both the AM and PM peak hours. To illustrate the potential operational effects of planned improvements, two sets of LOS results were documented for each intersection.

- **Future Conditions – No Improvements**: The first set of LOS results reflects future traffic volumes operating under existing intersection controls and lane configurations. This scenario provides a baseline assessment of how the transportation network would perform if no infrastructure upgrades were implemented, allowing potential operational deficiencies to be identified under projected future demand.
- **Future Conditions – With Improvements**: The second set of LOS results reflects conditions with recommended improvements incorporated into the analysis. These improvements include intersection control changes and lane configuration modifications identified in previous Traffic Impact Studies (TIS), along with refinements to ensure consistent modeling assumptions across the study network. These refinements primarily include adjustments to turn lane configurations and storage lengths, as described in the previous section.

Future intersection operations were evaluated in comparison to existing conditions during both the AM and PM peak periods. Overall, the results indicate that while many intersections operate acceptably under existing conditions, several locations are projected to experience significant operational degradation under future traffic volumes if no improvements are implemented. Incorporating the recommended improvements substantially improves intersection performance at many key locations and helps accommodate projected growth in traffic demand across the study network.

Table 8. Future AM Peak and PM Peak LOS

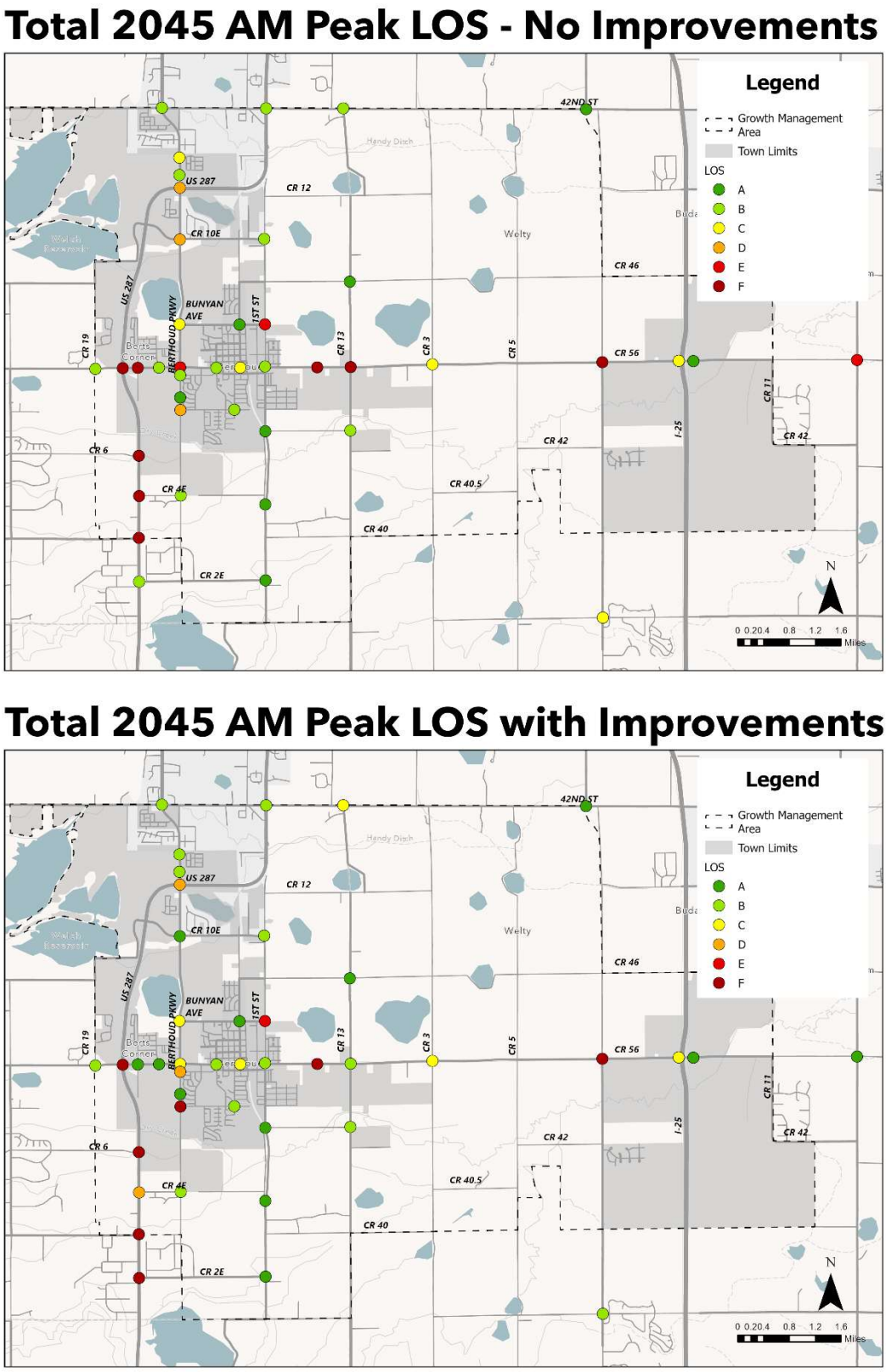
Node	Intersection	AM Peak								PM Peak							
		Existing	Delay	Worst Movement	2045 NO Improvement	Delay	Worst Movement	2045 With Improvements	Delay	Worst Movement	Existing	Delay	Worst Movement	2045 NO Improvement	Delay	Worst Movement	2045 With Improvements	Delay	Worst Movement
1	Berthoud Pkwy & LCR 14	B	11.9		B	18.9		B	11.3		B	11.2		C	20.5		B	10.6	
2	US 287 & CO 60	B	14.1		C	20.2		C	22.2		B	12.9		C	22.5		C	25.9	
3	CO 60 & CO Line Rd	A	8.8	NB	A	9.1	NB	A	9.1	NB	A	9	NB	A	9.3	NB	A	9.3	NB
4	CO 60 & WCR 7	A	9.2	NB	A	9.4	NB	A	9.4	NB	A	9.1	NB	A	9.2	NB	A	9.2	NB
5	Berthoud Pkwy & Wagon Bend Rd	B	11.8	WB	C	21.4	WB	B	11.8		B	13.7	WB	D	27.8	WB	B	13.3	
6	Berthoud Pkwy & Grand Market Ave	A	5.6		B	14.1		B	11.1		B	10.3		F	126.7		F	67	
7	US 287 & Berthoud Pkwy	C	22.3		D	49.3		D	40.3		D	50.9		F	163.4		F	85.1	
8	Berthoud Pkwy & LCR 10E	C	15	WB	D	29.6	WB	A	6		B	14	WB	D	26.4	WB	A	7.2	
9	1ST ST & LCR 10E	B	11	EB	B	13.5	EB	B	13.5	EB	C	17.5	EB	F	52.8	EB	E	43.3	EB
10	CO Line Rd & WCR 46	A	9.2	NB	A	9.2	NB	A	9.2	NB	A	9.1	SB	A	9.1	SB	A	9.1	SB
11	Berthoud Pkwy & Bunyan ST	B	12.5	WB	C	20.4	WB	C	20.4	WB	B	12.5	WB	C	18.6	WB	C	16.6	WB
12	4TH ST & Bunyan ST	A	8.5		A	10		A	10		A	7.5		A	8.1		A	9	
13	1ST ST & Bunyan ST	C	15.8	EB	E	42.8	EB	E	42.8	EB	D	28.8	EB	F	356.6	EB	F	1301.8	EB
14	CO 56 & LCR 19	B	11.4	SB	B	13.3	SB	B	13.3	SB	B	13.1	SB	C	17.8	SB	C	17.8	SB
15	US 287 & CO 56	D	41.2		F	163.7		F	103.1		C	29.1		F	181.8		F	100.8	
16	CO 56 & Meadowlark Dr	C	18.6	NB	F	1779.8	NB	A	9.1		C	22.4	NB	F	7120.1	SB	B	12	
17	CO 56 & Gate Way Park Blvd	B	10.9	SB	B	12.6	SB	A	6.7		B	10.5	SB	B	12.1	SB	A	7.5	

Node	Intersection	AM Peak								PM Peak							
		Existing	Delay	Worst Movement	2045 NO Improvement	Delay	Worst Movement	2045 With Improvements	Delay	Worst Movement	Existing	Delay	Worst Movement	2045 NO Improvement	Delay	Worst Movement	2045 With Improvements	Delay	Worst Movement
18	CO 56 & Berthoud Pkwy	C	28.7		E	57.6		C	33.3		C	31.8		F	105.3		D	41.5	
19	CO 56 & 8TH ST	A	8.8		B	11.6		B	12.6		B	10.9		B	13.1		B	16.5	
20	CO 56 & 4TH ST	A	7.7		B	10.3		B	10.2		A	9.2		B	11		B	12.8	
21	CO 56 & 1st St	A	6.1		B	10.1		B	10.1		A	8.4		D	26		D	26	
22	CO 56 & Dorothy Dr	C	16.3	NB	F	241.4	NB	F	72	NB	C	19	NB	F	305.5	NB	F	98.2	NB
23	CO 56 & County Line Rd	C	22.6	NB	F	5080.7	NB	B	11		F	99.8	NB	F	10815.7	NB	D	32.2	
24	CO 56 & WCR 3	B	14.4	NB	C	20.7	NB	C	20.7	NB	B	14	NB	C	19.8	NB	C	19.8	NB
25	CO 56 & WCR 7	C	17.9	NB	F	67.1	NB	F	67.1	NB	C	19.2	NB	F	81.4	NB	F	93.3	NB
26	I-25 Southbound & WCR 44	A	2.6		C	19.6		C	19.6		A	3.5		F	161		F	161	
27	I-25 Northbound & WCR 44	A	4		A	9.8		A	9.8		A	4.9		F	119.2		F	119.2	
28	WCR 13 & WCR 44	A	9.8	WB	E	27.5	EB	A	6.8		A	9.7	EB	F	433.5	EB	A	8.4	
29	Berthoud Pkwy & Welch Ave	A	9.8	WB	B	13.1	WB	D	26.7	EB	A	9.9	WB	B	13.6	WB	C	22.6	EB
30	Berthoud Pkwy & Arapahoe Ave	A	9.3	WB	B	11.2	WB	C	19.2	EB	B	10.2	WB	B	14.6	WB	D	25.1	EB
31	Berthoud Pkwy & Spartan Ave	B	12.8	WB	D	35	WB	F	128.2	WB	A	10	WB	B	12.8	WB	D	29.7	EB
32	5TH ST & Spartan AVE	B	10.2		B	14.1		B	14.1		A	8.3		A	9.1		B	11	
33	LCR 15 & LCR 6C	A	9	WB	A	9.2	WB	A	9.2	WB	A	9.1	WB	B	10.2	WB	B	10.2	WB
34	County Line Rd & LCR 6C	A	9.9	EB	B	12.6	EB	B	12.6	EB	B	10.8	EB	C	16.5	EB	C	16.5	EB

Node	Intersection	AM Peak								PM Peak							
		Existing	Delay	Worst Movement	2045 NO Improvement	Delay	Worst Movement	2045 With Improvements	Delay	Worst Movement	Existing	Delay	Worst Movement	2045 NO Improvement	Delay	Worst Movement	2045 With Improvements	Delay	Worst Movement
35	US 287 & LCR 6	F	243.7	EB	F	3100.6	EB	F	3100.6	EB	E	45.3	EB	F	549	EB	F	549	EB
36	US 287 & LCR 4E	D	30.8	WB	F	699.2	WB	D	36.4		F	51.4	WB	F	1805	WB	B	10.3	
37	Berthoud Pkwy & LCR 4E	A	9.7	EB	B	14.7	EB	B	10.2		A	9.7	EB	C	17.4	EB	B	10.5	
38	LCR 15 & LCR 15A	A	9.2	WB	A	9.8	WB	A	9.8	WB	A	8.7	EB	B	10.1	EB	B	10.1	EB
39	US 287 & LCR 4	F	559.5	EB	F	3757.1	EB	F	3757.1	EB	E	45.5	EB	F	274.1	EB	F	1274.1	EB
40	US 287 & LCR 2E	B	10.2	WB	B	11.6	WB	F	168	WB	C	18.9	WB	E	33.1	WB	F	526.9	WB
41	LCR 15 & LCR 2E	A	8.9	EB	A	9.2	EB	A	9.2	EB	A	9.5	EB	B	10.4	EB	B	10.4	EB
42	WCR 38 & WCR 7	A	9	EB	C	20.8	WB	B	12.6	WB	A	9.7	EB	F	168.6	WB	C	24.8	WB

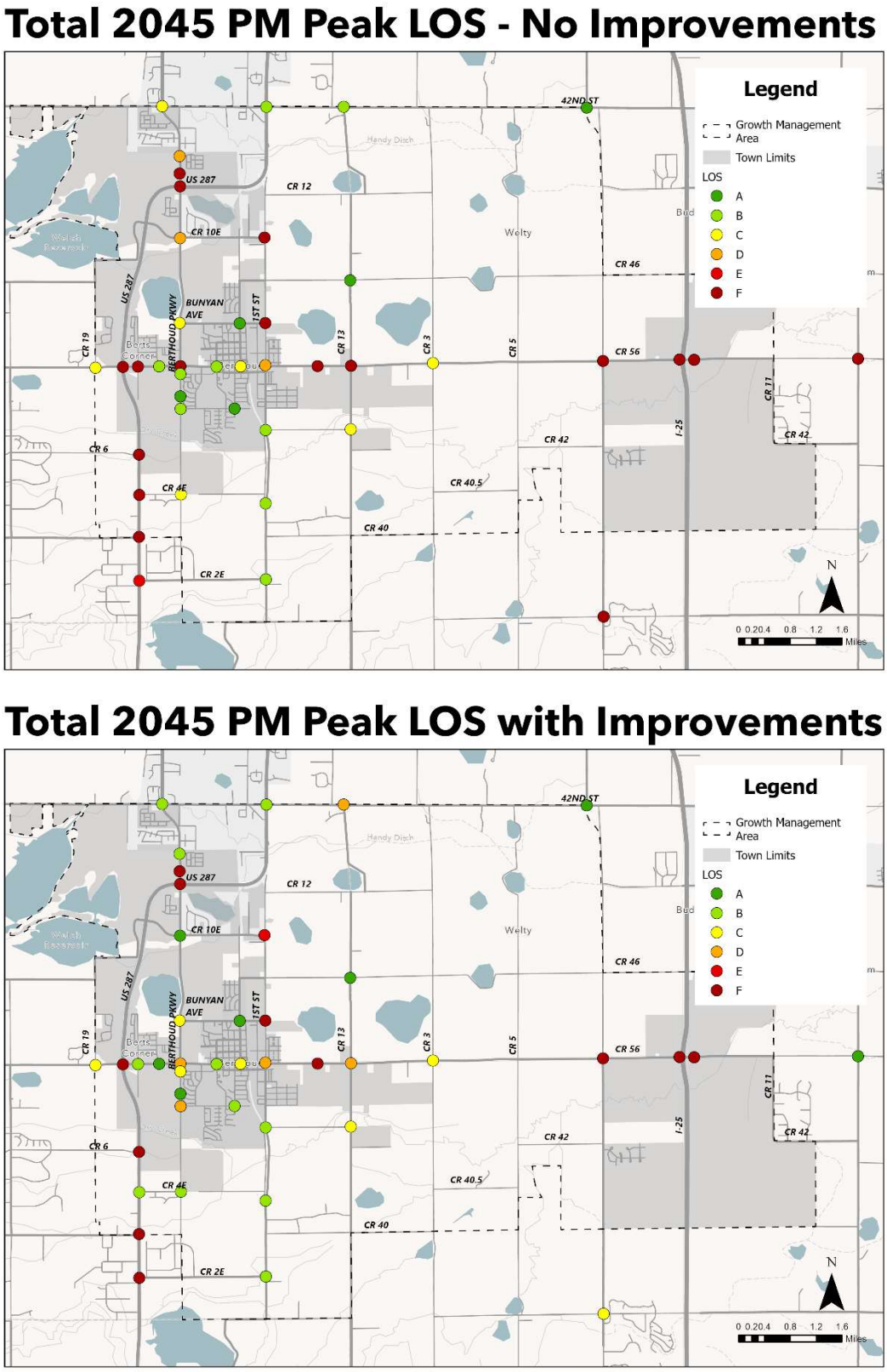
Source: Fehr and Peers.

Figure 7. Map of Future AM Peak LOS without Improvements vs. with Improvements



Source: Fehr and Peers.

Figure 8. Map of Future AM Peak LOS without Improvements vs. with Improvements



Source: Fehr and Peers.

Key Findings

Intersection operations were evaluated for existing conditions, 2045 Future Conditions without improvements, and 2045 Future Conditions with recommended improvements during both the AM and PM peak periods. Overall, the results indicate that while many intersections operate acceptably under existing conditions, several locations are projected to experience significant operational degradation under future traffic volumes if no improvements are implemented. Incorporating the recommended improvements substantially improves intersection performance at many key locations.

Existing Conditions Summary

Under existing conditions, most study intersections operate at LOS A–C during both the AM and PM peak periods, indicating generally acceptable operations across the network. A few intersections along major corridors, particularly US-287 and CO-56, experience moderate delays with LOS C or D, reflecting higher traffic volumes on these regional routes. Several minor-street stop-controlled intersections along US-287 already exhibit higher delays for the side-street movements, although the overall intersections remain operationally manageable.

2045 Future with No Improvements Summary

When future traffic growth and development traffic are applied without any intersection improvements, operational performance declines at several locations. Multiple intersections are projected to operate at LOS E or F, particularly during the PM peak period. The most significant congestion is forecast at intersections along US-287 and CO-56, including:

- US-287 & Berthoud Parkway
- US-287 & CO-56
- CO-56 & Meadowlark Drive
- CO-56 & County Line Road
- US-287 & LCR 4E
- US-287 & LCR 6
- US-287 & LCR 4

These intersections show substantial increases in delay, particularly for minor-street movements at two-way stop-controlled intersections. Several locations along the CO-56 corridor also experience worsening operations as development traffic increases along the east–west corridor.

2045 Future Conditions with Improvements Summary

When the intersection control changes and lane configuration improvements recommended in the TIS and refined in this study are incorporated, intersection performance improves notably at many key locations. Improvements such as signalization, roundabout conversions, and additional turn lanes significantly reduce delays and improve traffic flow at several intersections.

For example:

- Berthoud Parkway & LCR 10E improves from LOS D to LOS A with signal control in both AM and PM.
- CO-56 & Meadowlark Drive improves from LOS F without improvements to LOS A (AM) and LOS B (PM) with signalization.
- CO-56 & County Line Road improves from LOS F to LOS B (AM) and LOS D (PM) with a roundabout.
- WCR 13 & WCR 44 improve from LOS E (AM) and LOS F (PM) to LOS A with signalization.

While several intersections still experience higher delays under future conditions due to increased traffic demand, the recommended improvements substantially mitigate many of the most severe operational deficiencies.

Appendix A. Divider Page

Phase I Memo

Fehr & Peers

Memo

Date: May 22, 2025

To: Town of Berthoud

From: Nick VanderKwaak, Maggie Ostwald, and Lindsay Gips; Fehr & Peers

Subject: Town of Berthoud Travel Model: Method of Modeling Recommendation

---

Introduction

In recent years, the Town of Berthoud has experienced significant growth, prompting the need for a more comprehensive understanding of traffic impacts across the community. As new and overlapping developments are introduced, the Town recognizes the importance of evaluating these impacts holistically to support informed data-driven planning and decision making. A town-wide travel model will allow Town leadership to comprehensively assess the cumulative impacts of development on the roadway network and make informed decisions.

This memorandum documents existing data relevant to traffic modeling and investigates best practices for developing a town-wide travel model. The two modeling approaches explored include travel demand modeling utilizing the North Front Range Metropolitan Planning Organization (NFRMPO) Travel Demand Model as a base model, and traffic simulation modeling, using Synchro.

NFRMPO Travel Demand Model Assessment

The NFRMPO Travel demand Model (TDM) provides a regional forecast of land use and traffic volumes and includes current and future horizon years with varying land use growth and roadway improvement assumptions. To validate and evaluate how well the model forecasts vehicle volumes on the roads in Berthoud, the demographic inputs and traffic volumes from three scenarios (2019, 2022, and 2040) were evaluated. By comparing the housing and employment model inputs for the existing model scenario with existing observed and reported demographics as well as the resulting traffic forecast, it can be determined how well the model is forecasting existing travel in Berthoud. For future year horizons, comparing assumptions on land use changes in the model with growth defined in the Berthoud Comprehensive Plan can help with resulting forecasted traffic. To validate how well the TDM forecasts town-wide travel in Berthoud, inputs and outputs from the NFRMPO TDM were compared to existing field collected data and Berthoud's comprehensive plan.

For all horizon years, the TDM uses Traffic Analysis Zones (TAZs) as the geographic unit of analysis for demographic data as shown in **Figure 1.**

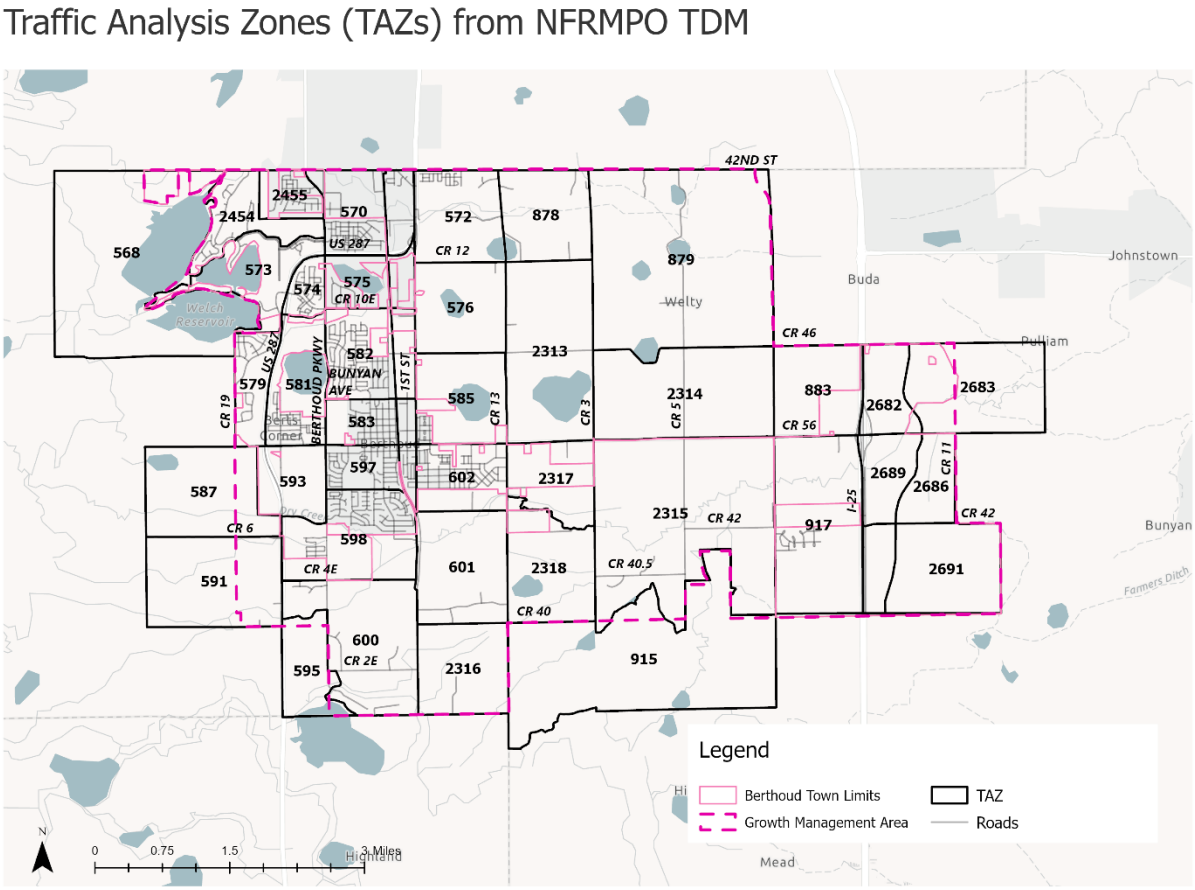


Figure 1: Traffic Analysis Zones from NFRMPO TDM

Existing Year (2022) Model Validation

To validate how well the TDM calculates traffic on Berthoud roads, model inputs and outputs were compared with existing measured land use and traffic data. For the purposes of defining existing conditions, the following assumptions were used:

- 2022 horizon year model used to assume existing conditions
- Available field collected traffic counts from 2023 used to reflect current observed traffic counts
- 2020 decennial Census block data used to define existing population and households
- 2022 employment data used to define existing employment calculations

Housing and Jobs Comparison

For the TAZs in Berthoud, the housing and employment data inputs used by the NFRMPO TDM were compared with the 2020 Census and 2022 Longitudinal Employer-Household Dynamics (LEHD) data.

DATA PREPARATION METHODS

1. Collected the 2020 Decennial Census Block Shapefile data from the Census website for Weld and Larimer counties. Population and Household counts were included in the Shapefile.
2. Collected 2022 LEHD data from the Census OnTheMap tool. Captured work area data for all workers at the Census Block level in the study area, then exported the Shapefile.
3. Extracted the Traffic Analysis Zone (TAZ) Geographies Shapefile from the TDM model.
4. In GIS, clipped the TAZ layer to the study area boundary (Berthoud Growth Management Area [GMA]). TAZs bisected by the GMA boundaries were included in the study area.
5. Collected 2019 TAZ demographic characteristics from the TDM into an Excel spreadsheet and summarized them by TAZ.
6. Compared the Census Block geography with the TAZ geography by overlaying the Census Block Shapefile with the TAZ Shapefile. **Figure 2** shows the overlay.

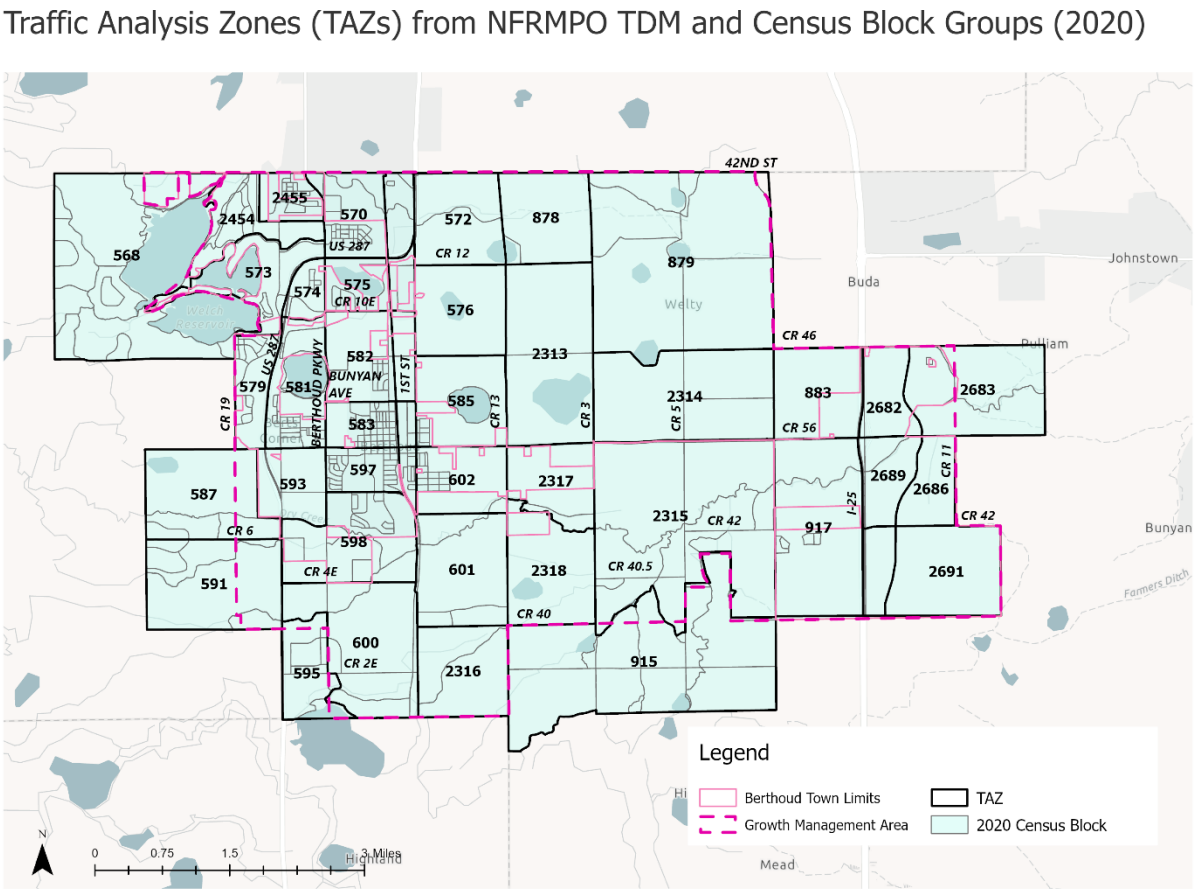


Figure 2: Census Blocks and Traffic Analysis Zones from NFRMPO TDM

Comparing the Census Block geography with the TAZs confirmed that the Census Blocks are completely contained at their boundaries within the TAZs. The only exception is Block 1034, which spans four TAZs: 2686, 2689, 2690, and 2691. However, both the Census Block and TAZ datasets show no population or households within the defined area, which alleviates any potential data discrepancies.

POPULATION AND HOUSEHOLD COMPARISON

Existing (2019) Population and Household inputs from the TDM were compared with existing 2020 Census population and household data. The methodology of data comparison is as follows:

1. Converted the 2020 Census Block Shapefile into a point data layer to join to the TAZ layer.
2. Joined the point data layer to the TAZ layer; summed the 2019 total population field and 2019 total households field so that the join would sum the attributes for the Census Blocks corresponding to each TAZ.
3. Exported the table data (Census data summed by TAZ) into Excel to compare to the TDM data. Calculated the percent difference and raw value difference between the datasets using the formula (Census Data – TAZ Data) / Census Data.
4. Re-imported the data into GIS for visualization.

Figure 3 shows the comparison of Census and TAZ population count data. The map shows the discrepancies between data sources as the percent difference between Census and TAZ counts. For discrepancies greater than 10% within each TAZ, the value of the difference between data points is shown. Some of these percentage discrepancies can be accounted for due to low population counts, for which a small value discrepancy would appear exaggerated by the percentage difference. However, a few of these areas show both significant percentage and value discrepancies.

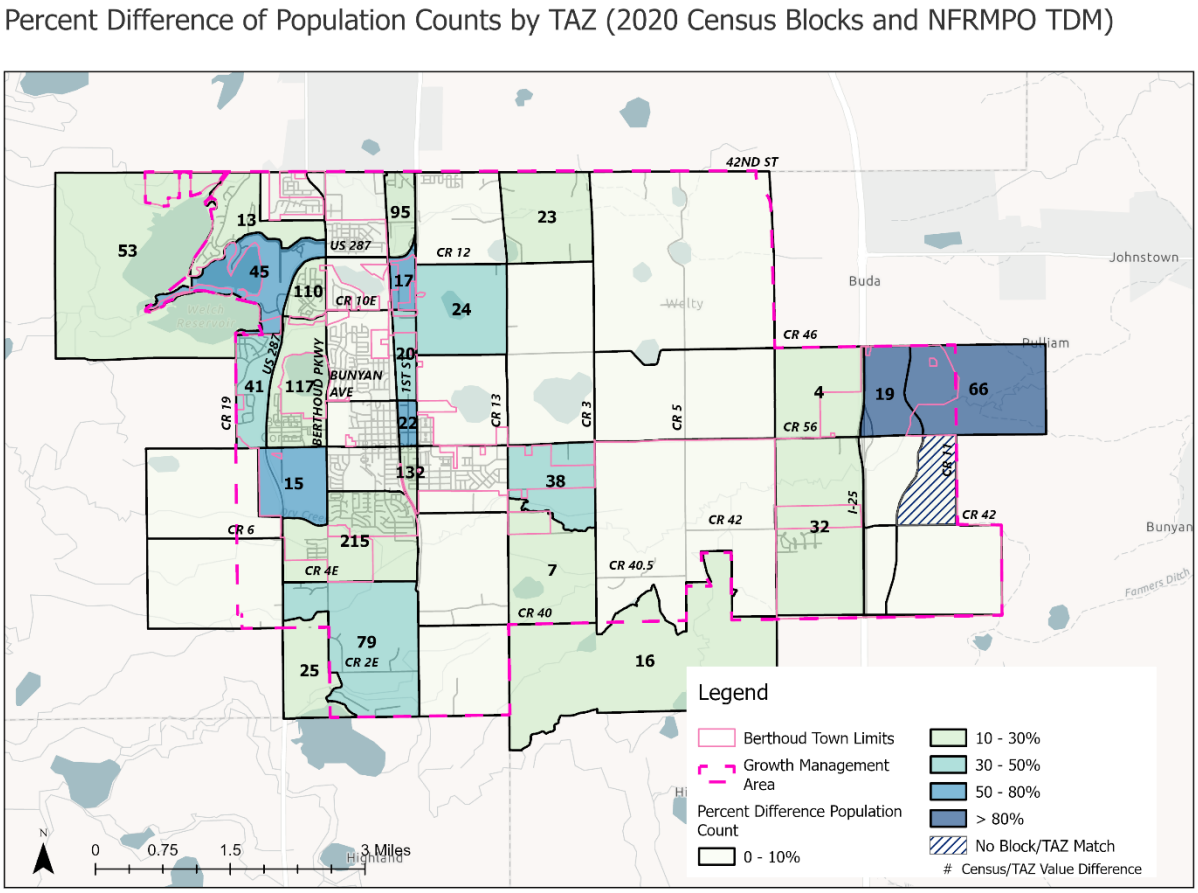


Figure 3: Percent Difference of Population Counts by TAZ

Figure 4 shows the comparison of Census and TAZ household count data. As with the population counts map, this map shows the discrepancies between data sources as the percent difference between Census and TAZ counts. For discrepancies greater than 10% within each TAZ, the value of the difference between data points is shown. The data is highly accurate across data sources with a few outliers. Only one outlier with a greater than 10% difference has a considerable count discrepancy (135).

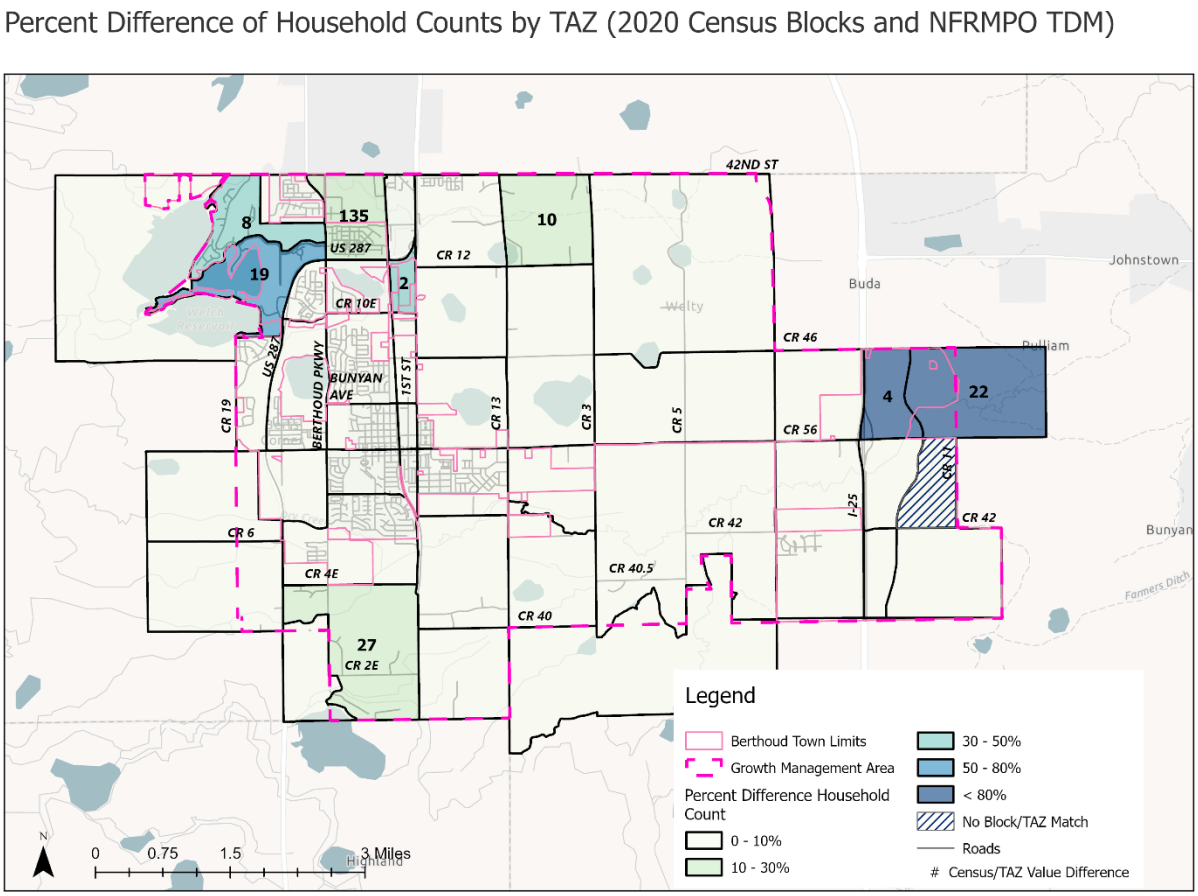


Figure 4: Percent Difference of Household Counts by TAZ

JOBS COMPARISON

2022 LEHD primary workplace data was compared to the 2019 TAZ jobs data. The methodology of data comparison is as follows:

1. Joined the LEHD point Shapefile to the TAZ layer; summed the total population field and total households field so that the join would sum the attributes for the blocks corresponding to each TAZ.
2. Exported the table data (LEHD data summed by TAZ) into Excel to compare to the TDM data. Calculated the percent difference and raw value difference between the datasets using the formulas *(LEHD Data – TAZ Data) / LEHD Data* and *LEHD Data – TAZ Data* respectively.
3. Re-imported the data into GIS for visualization.

Figure 5 shows the comparison of LEHD and TAZ job count data. The joined layer revealed that there was no LEHD job data for six different TAZs: 572, 883, 2686, 2689, 2690, and 2691. However, the TAZ dataset shows 1 job in one TAZ, 4 jobs in one TAZ, and 0 jobs in the remaining four TAZs, so data discrepancies are minimal.

There are discrepancies between datasets for reported jobs at the Census Block level (both percentage and value), with the most notable TAZ level difference of 841 jobs; the LEHD dataset reports 7 jobs in the TAZ while the TDM reports 848. There are only a few small employers located within this zone, so this difference shows increased trip generation in the model from what would be calculated using other employment data.

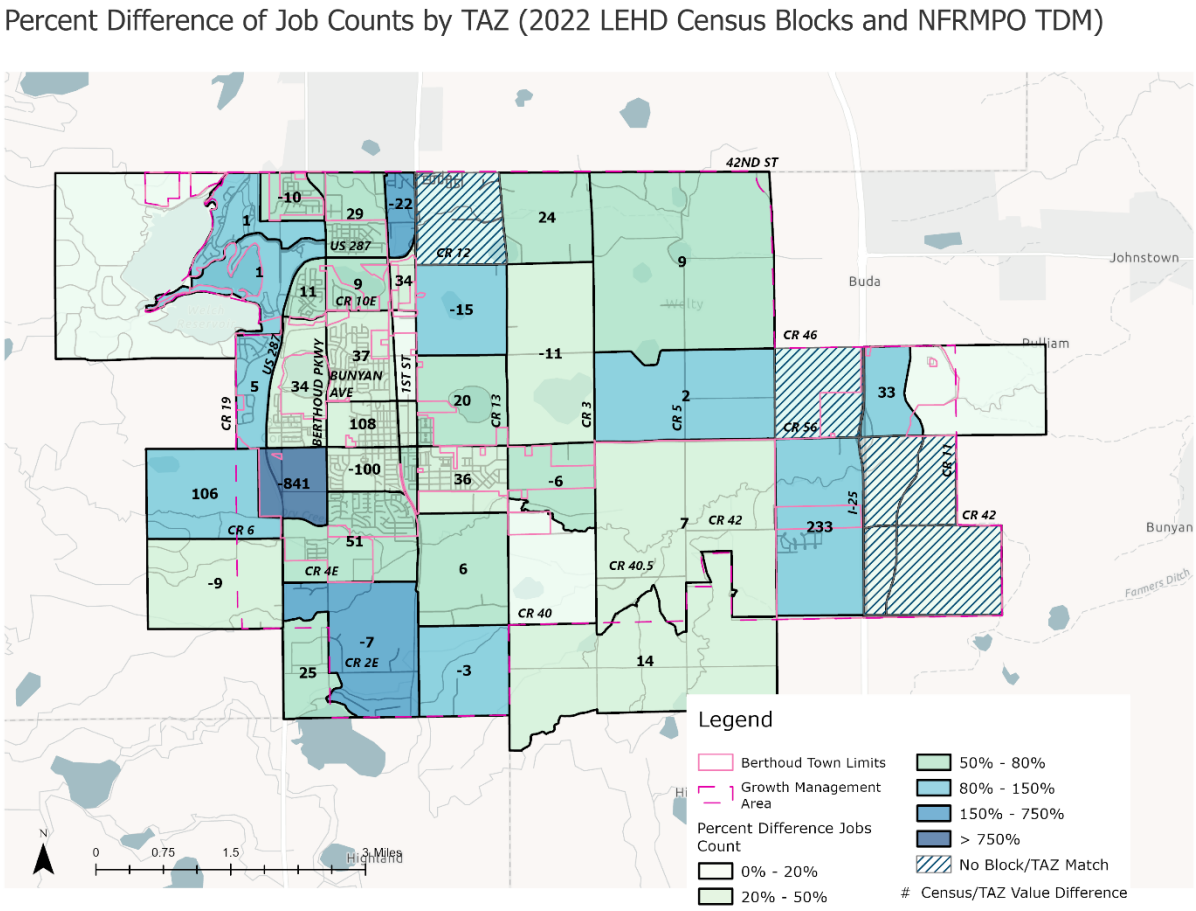


Figure 5: Percent Difference of Job Counts by TAZ

Daily Traffic Comparison

To validate the NFRMPO TDM traffic assignment, daily traffic volume data forecasted by the 2022 NFRMPO travel demand model was compared to known daily traffic volumes as compiled by CDOT in 2023 and shown in **Figure 6**. The daily traffic volumes from the 2022 unexpanded NFRMPO travel demand model are shown in **Figure 7**. A map showing the difference in daily volumes is shown in **Figure 8**, and Table 1 includes all of the values reflected in this comparison analysis.

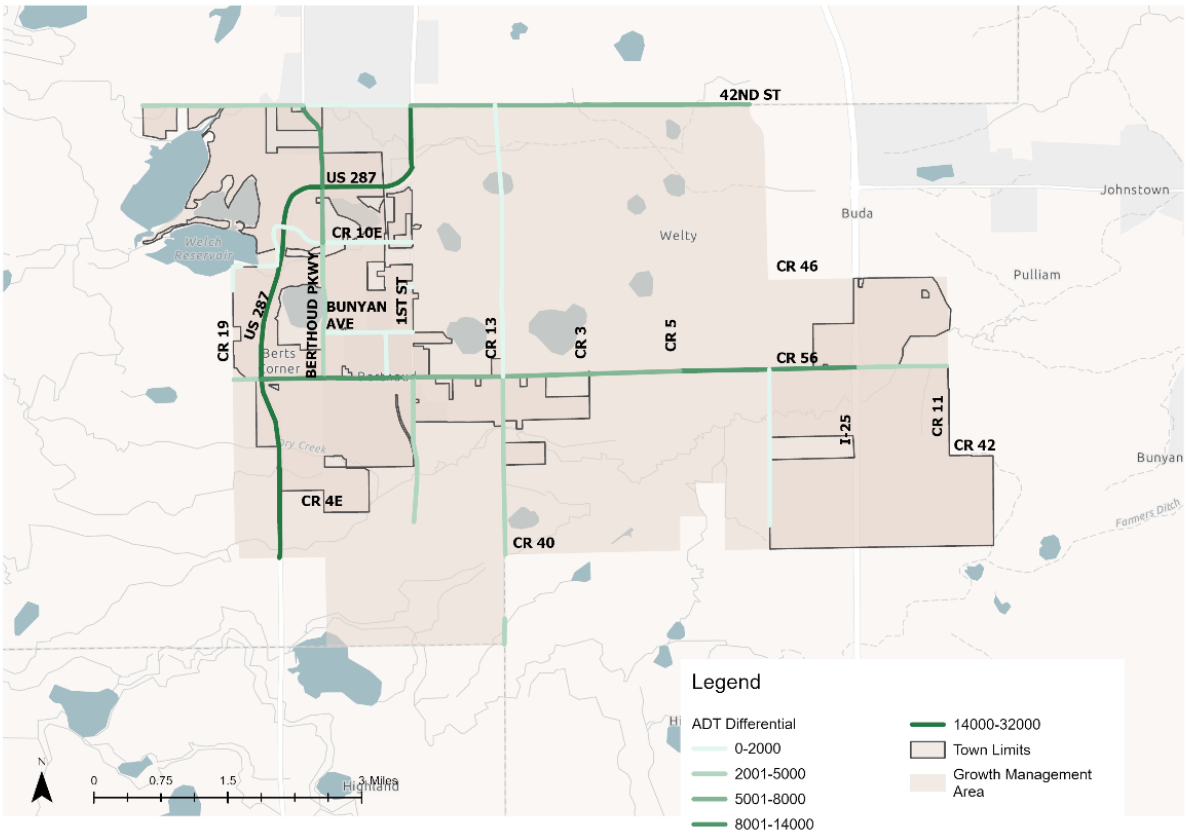


Figure 6: 2023 Daily Traffic (CDOT)

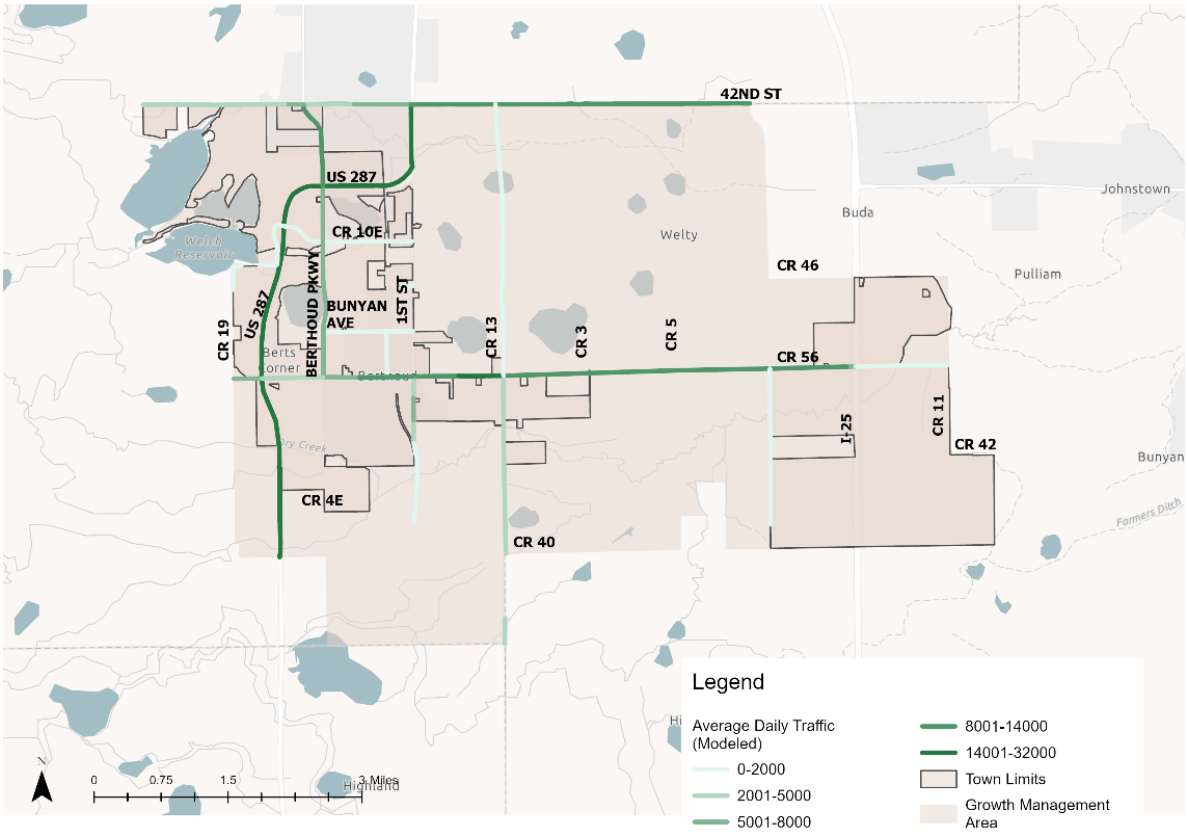


Figure 7: 2022 Modeled Traffic Volumes

In the map shown in Figure 8, a red line or negative number indicates that the 2023 observed traffic count is higher than the 2022 model volumes, and a green line or positive number indicates that the 2023 observed daily traffic count is lower. Out of 37 miles of roads studied, 19 miles of road have a difference of less than 2,000 ADT and 18 miles of roads have a more significant discrepancy.

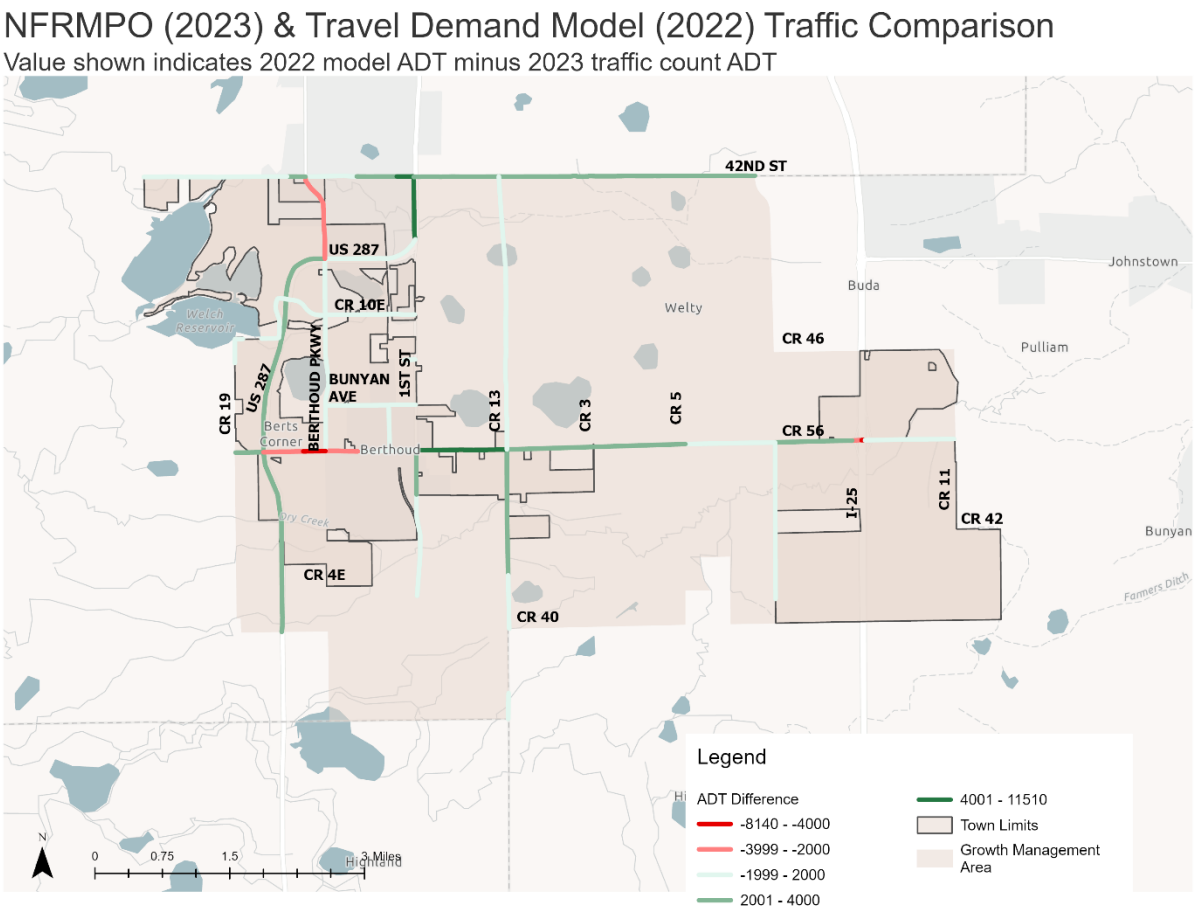


Figure 8: Daily Traffic Volume Comparison

Figure 9 shows the same differential comparison by percentage. Typically, it is acceptable to have a higher percentage difference on lower volume roads than higher volume roads. The average % difference of the various volumes of observed daily traffic counts are as follows:

- 0–5,000 vehicles per day, 42 locations had an average % difference of 24%
- 5,001–10,000 vehicles per day, 26 locations had an average % difference of 20%
- 10,000–25,000 vehicles per day, 17 locations had an average % difference of 9%

To determine the overall variance between observed daily traffic and modeled daily traffic in Berthoud, the coefficient of determination, R2, was calculated which can be interpreted as the variance between the two values. The observed traffic volumes and modeled traffic volumes are not dependent upon each other, but this calculation assesses the linear relationship between the two values. The calculated R2 for observed and modeled daily traffic volumes in Berthoud is 0.86 which means the two values are well correlated with each other. To visualize this, the values were plotted on a scatterplot, shown in Figure 10, to show the amount of error in the modeled volumes versus observed volumes.

A detailed listing of the observed AADT, modeled daily volume, differences, and percent differences are shown in Table 1.

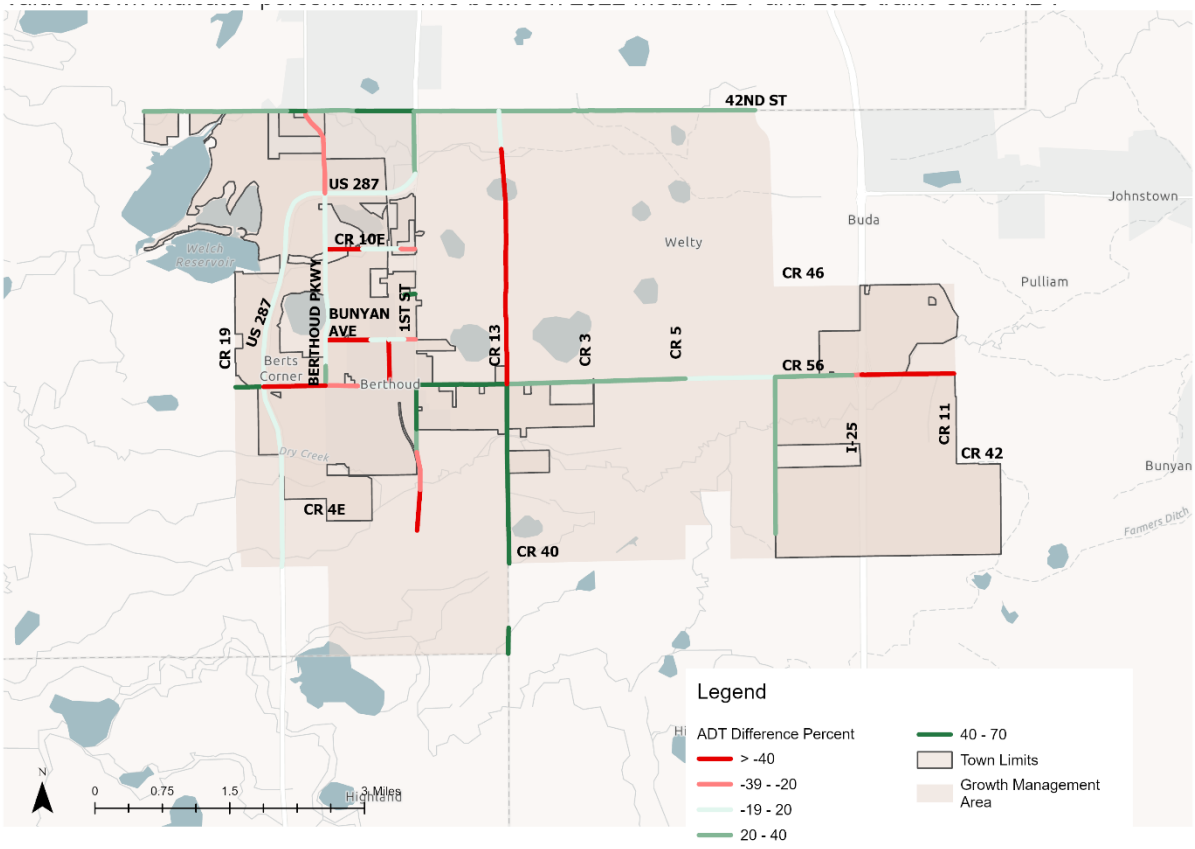


Figure 9: Observed versus model daily traffic % difference

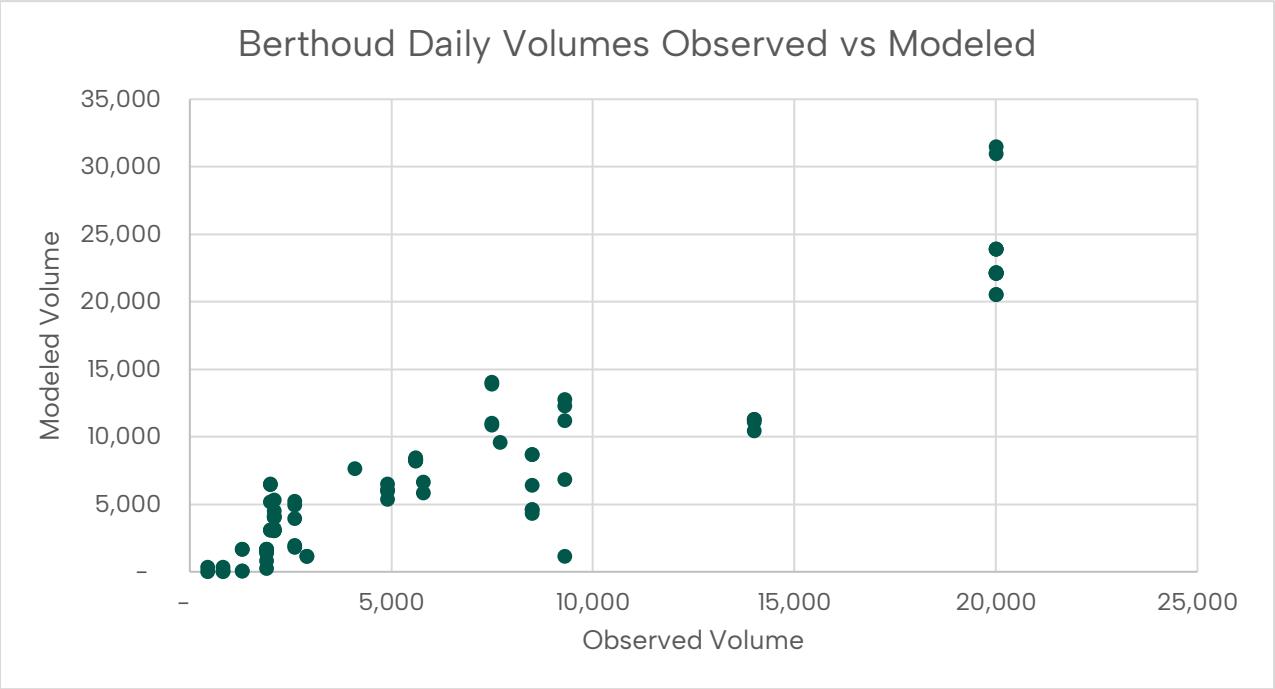


Figure 10: Berthoud Daily Volumes Observed vs Modeled

Table 1: Comparison of Observed and Modeled Daily Volumes

County / Local Road Name	Length (Miles)	Observed 2023 AADT (CDOT)	Observed AADT Range	NFRMPO Model (2022) Daily Volume	Modeled – Observed	% Difference
County Rd 1 / County Line Rd	0.7	2,100	0–5,000	4,520	2,420	115%
County Rd 1 / County Line Rd	0.7	2,100	0–5,000	4,160	2,060	98%
County Rd 1 / County Line Rd	0.5	2,100	0–5,000	4,050	1,950	93%
County Rd 1 / County Line Rd	0.4	450	0–5,000	380	(70)	-16%
County Rd 1 / County Line Rd	1	820	0–5,000	100	(720)	-88%
County Rd 1 / County Line Rd	0.1	820	0–5,000	340	(480)	-59%
County Rd 1 / County Line Rd	0.6	450	0–5,000	10	(440)	-98%
County Rd 1 / County Line Rd	0.6	2,100	0–5,000	4,060	1,960	93%
County Rd 1 / County Line Rd	0.9	820	0–5,000	10	(810)	-99%
County Rd 10E	0.4	1,900	0–5,000	820	(1,080)	-57%
County Rd 10E	0.4	1,900	0–5,000	1,690	(210)	-11%
County Rd 10E	0.2	1,900	0–5,000	1,570	(330)	-17%
County Rd 14 / 42nd St	0.2	2,000	0–5,000	6,460	4,460	223%
County Rd 14 / 42nd St	0.4	5,600	5,001–10,000	8,360	2,760	49%
County Rd 14 / 42nd St	0.4	2,000	0–5,000	3,100	1,100	55%
County Rd 14 /42nd St	0.2	5,600	5,001–10,000	8,450	2,850	51%
County Rd 14 / 42nd St	0.1	2,000	0–5,000	3,100	1,100	55%
County Rd 14 / 42nd St	0.2	2,100	0–5,000	5,350	3,250	155%
County Rd 14 / 42nd St	0.5	2,100	0–5,000	3,070	970	46%
County Rd 14 / 42nd St	0.5	2,100	0–5,000	3,070	970	46%
County Rd 14 / 42nd St	0.4	5,600	5,001–10,000	8,310	2,710	48%
County Rd 14 / 42nd St	0.5	2,100	0–5,000	3,200	1,100	52%
County Rd 14 / 42nd St	0.3	2,100	0–5,000	3,130	1,030	49%
County Rd 14 / 42nd St	0.5	2,000	0–5,000	5,180	3,180	159%
County Rd 14 / 42nd St	0	2,000	0–5,000	6,520	4,520	226%
County Rd 15 / 4th St	0.2	1,300	0–5,000	70	(1,230)	-95%
County Rd 15 / 4th St	0.3	1,300	0–5,000	70	(1,230)	-95%
County Rd 15 / 1st St	0.2	2,600	0–5,000	4,950	2,350	90%
County Rd 15 / 1st St	0.5	2,600	0–5,000	1,840	(760)	-29%
County Rd 15 / 1st St	0.3	2,600	0–5,000	3,950	1,350	52%
County Rd 15 / 1st St	0.3	2,600	0–5,000	5,250	2,650	102%
County Rd 15 / 1st St	0.4	2,600	0–5,000	1,990	(610)	-23%

County / Local Road Name	Length (Miles)	Observed 2023 AADT (CDOT)	Observed AADT Range	NFRMPO Model (2022) Daily Volume	Modeled – Observed	% Difference
County Rd 17 / Taft Ave	0.4	14,000	10,001–25,000	10,460	(3,540)	-25%
County Rd 17 / Taft Ave	0.3	4,900	0–5,000	5,990	1,090	22%
County Rd 17 / Taft Ave	0.3	4,900	0–5,000	6,100	1,200	24%
County Rd 17 / Taft Ave	0.2	4,900	0–5,000	6,520	1,620	33%
County Rd 17 / Taft Ave	0.3	14,000	10,001–25,000	11,110	(2,890)	-21%
County Rd 17 / Taft Ave	0.8	4,900	0–5,000	5,380	480	10%
County Rd 17 / Taft Ave	0.3	5,800	5,001–10,000	6,650	850	15%
County Rd 17 / Taft Ave	0.1	14,000	10,001–25,000	11,290	(2,710)	-19%
County Rd 17 / Taft Ave	0.1	14,000	10,001–25,000	11,310	(2,690)	-19%
County Rd 17 / Taft Ave	0.3	5,800	5,001–10,000	5,840	40	1%
County Rd 8E / Bunyan Ave	0.1	1,900	0–5,000	1,400	(500)	-26%
County Rd 8E / Bunyan Ave	0.5	1,900	0–5,000	260	(1,640)	-86%
County Rd 8E / Bunyan Ave	0.2	1,900	0–5,000	1,690	(210)	-11%
County Rd 8E / Bunyan Ave	0.2	1,900	0–5,000	1,700	(200)	-11%
SH-56	0.4	9,300	5,001–10,000	12,760	3,460	37%
SH-56	0.5	7,500	5,001–10,000	13,910	6,410	85%
SH-56	1	7,500	5,001–10,000	10,870	3,370	45%
SH-56	0.5	9,300	5,001–10,000	12,300	3,000	32%
SH-56	0.5	7,500	5,001–10,000	14,070	6,570	88%
SH-56	1	9,300	5,001–10,000	11,200	1,900	20%
SH-56	1	7,500	5,001–10,000	11,050	3,550	47%
SH-56	0.3	8,500	5,001–10,000	4,630	(3,870)	-46%
SH-56	0.3	4,100	0–5,000	7,680	3,580	87%
SH-56	0.3	8,500	5,001–10,000	4,320	(4,180)	-49%
SH-56	0.2	8,500	5,001–10,000	4,630	(3,870)	-46%
SH-56 / Mountain Ave	0.4	8,500	5,001–10,000	8,710	210	2%
SH-56 / Mountain Ave	0.2	8,500	5,001–10,000	8,700	200	2%
SH-56 / Mountain Ave	0.4	8,500	5,001–10,000	6,420	(2,080)	-24%
SH-60 / 42nd St	1	5,600	5,001–10,000	8,230	2,630	47%
SH-60 / 42nd St	0.9	5,600	5,001–10,000	8,310	2,710	48%
SH-60 / 42nd St	0.4	5,600	5,001–10,000	8,310	2,710	48%
SH-60 / 42nd St	0.2	5,600	5,001–10,000	8,240	2,640	47%
SH-60 / 42nd St	0.5	5,600	5,001–10,000	8,270	2,670	48%

County / Local Road Name	Length (Miles)	Observed 2023 AADT (CDOT)	Observed AADT Range	NFRMPO Model (2022) Daily Volume	Modeled – Observed	% Difference
SH-56 / Mountain Ave	0.1	7,700	5,001–10,000	9,600	1,900	25%
US-287 / Lincoln Ave	0.6	20,000	10,001–25,000	31,510	11,510	58%
US-287	0.4	20,000	10,001–25,000	22,190	2,190	11%
US-287	0.3	20,000	10,001–25,000	22,190	2,190	11%
US-287	0.1	20,000	10,001–25,000	22,190	2,190	11%
US-287	0.1	20,000	10,001–25,000	30,970	10,970	55%
US-287	0.2	20,000	10,001–25,000	22,130	2,130	11%
US-287	0.2	20,000	10,001–25,000	22,190	2,190	11%
US-287 / US-287 Bypass	0.4	20,000	10,001–25,000	20,570	570	3%
US-287 / US-287 Bypass	0.7	20,000	10,001–25,000	20,570	570	3%
US-287 / US-287 Bypass	1	20,000	10,001–25,000	23,940	3,940	20%
US-287 / US-287 Bypass	0.8	20,000	10,001–25,000	23,940	3,940	20%
US-287 / US-287 Bypass	0.8	20,000	10,001–25,000	22,130	2,130	11%
US-287 / US-287 Bypass	0.7	20,000	10,001–25,000	23,940	3,940	20%
WCR-44	0.1	9,300	5,001–10,000	6,850	(2,450)	-26%
WCR-44	0	9,300	5,001–10,000	1,160	(8,140)	-88%
WCR-44	0.1	2,900	0–5,000	1,160	(1,740)	-60%
WCR-44	0.9	2,900	0–5,000	1,160	(1,740)	-60%
WCR-7	0.5	1,300	0–5,000	1,710	410	32%
WCR-7	1.2	1,300	0–5,000	1,710	410	32%

Future Model Scenario Assessment

Based on the 2022 TDM validating well with existing daily traffic counts, an exercise was conducted to determine how aligned future land use assumptions are in the TDM versus what is planned in the Berthoud Future Lane Use Map (FLUM) published in Berthoud's 2021 Comprehensive Plan. The FLUM was compared with the 2040 NFRMPO travel demand model results, and the annual traffic growth forecasted by the model horizon years was calculated. Determining if land use forecast assumptions in the model are consistent with Berthoud's planned growth help to assess whether the future traffic volumes forecast by the model reflect expected development patterns. The methodology of comparing the data was as follows:

1. Pulled the demographic data assumptions (population, households, jobs) from the TAZ for 2026 and 2040 into an Excel spreadsheet.
2. Added the FLUM Shapefile into ArcGIS and visualized based on future land use.
3. Overlaid the TAZ layer with the FLUM layer.
4. Joined the demographic data assumptions to the TAZ layer and labeled the TAZs by 2040 population, household, and job counts.
5. Compared the demographic, household, and job projections to future land uses by TAZ.
6. Spot-checked using Google Maps aerial imagery to further support whether assumptions seem accurate.
7. Once verified, compared the traffic volume data Shapefile to the FLUM.

Figure 10 shows the labeled TAZs overlaying the FLUM from the Berthoud 2021 Comprehensive Plan. Refer to **Table 1** for both 2019 and 2040 demographic growth from the TDM by TAZ.

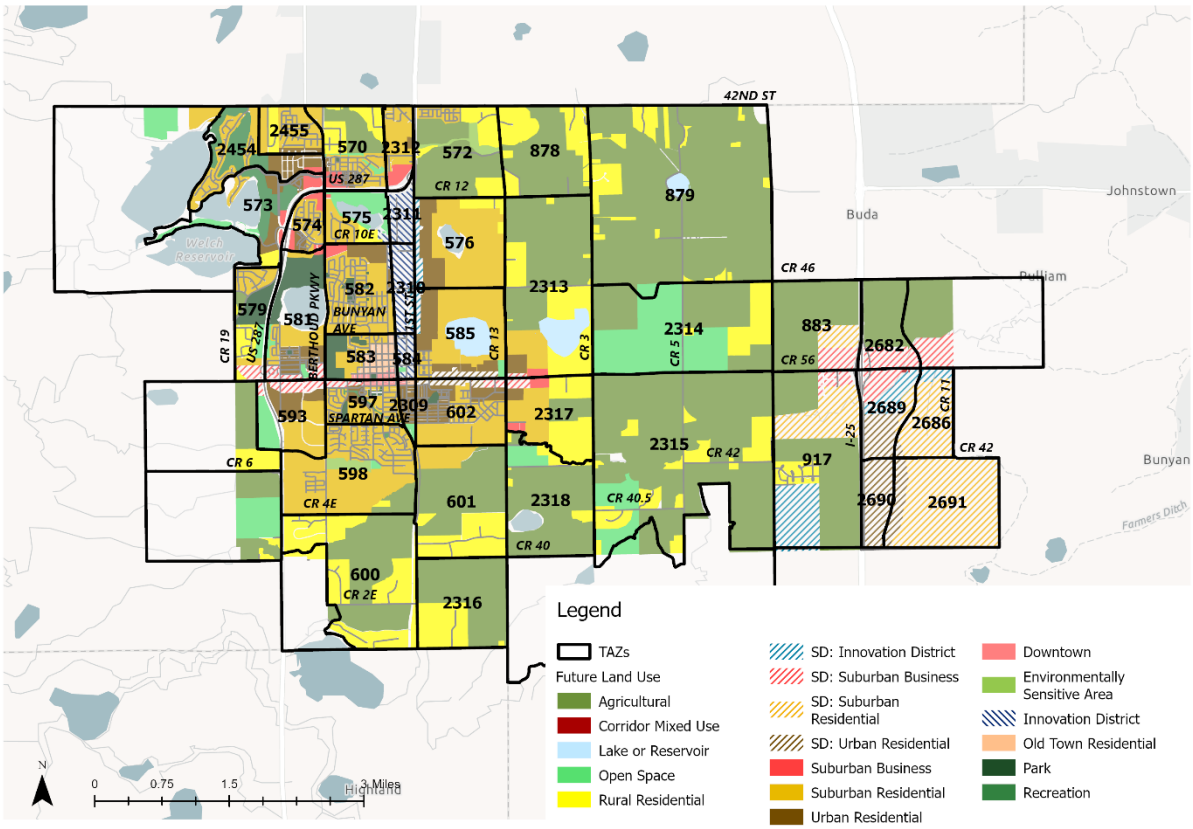


Figure 11: Future Land Use (2021 Comprehensive Plan) and TAZs (NFRMPO TDM)

Table 2. Demographic Changes by TAZ from NFRMPO TDM

TAZ	2019 Population	2040 Population	Population Percent Growth	2019 Households	2040 Households	Household Percent Growth	2019 Jobs	2040 Jobs	Jobs Percent Growth
570	1,278	2,720	113%	473	1,084	129%	25	32	28%
572	94	529	463%	30	202	573%	4	4	0%
573	16	147	819%	6	64	967%	0	229	-
574	515	1,274	147%	207	537	159%	3	46	1,433%
575	294	309	5%	104	116	12%	5	38	660%
576	37	1,234	3,235%	15	508	3,287%	28	58	107%
579	74	404	446%	23	155	574%	0	19	-
581	860	1,259	46%	328	501	53%	41	123	200%
582	690	2,373	244%	298	999	235%	67	115	72%
583	1,155	1167	1%	458	472	3%	308	296	-4%
584	17	19	12%	5	6	20%	281	256	-9%
585	405	849	110%	149	331	122%	15	58	287%
593	10	2,995	29,850%	3	1,137	37,800%	848	41	-95%
597	1,364	1,758	29%	537	687	28%	558	560	0%
598	1,525	4,829	217%	554	1,851	234%	13	17	31%
600	153	179	17%	64	74	16%	8	19	138%
601	104	149	43%	42	58	38%	3	3	0%
602	705	1650	134%	269	658	145%	68	144	112%
878	113	142	26%	43	50	16%	19	18	-5%
879	137	156	14%	47	54	15%	7	17	143%
883	26	176	577%	9	68	656%	1	42	4,100%
917	178	225	26%	61	85	39%	3	69	2,200%
2309	620	641	3%	258	270	5%	73	121	66%
2310	24	162	575%	13	71	446%	259	289	12%
2311	8	84	950%	4	36	800%	39	258	562%
2312	417	462	11%	164	181	10%	25	45	80%
2313	140	641	358%	52	247	375%	62	0	-100%
2314	48	59	23%	19	22	16%	0	0	0%
2315	151	219	45%	57	81	42%	7	22	214%

TAZ	2019 Population	2040 Population	Population Percent Growth	2019 Households	2040 Households	Household Percent Growth	2019 Jobs	2040 Jobs	Jobs Percent Growth
2316	69	101	46%	31	40	29%	5	8	60%
2317	64	316	394%	25	135	440%	15	50	233%
2318	27	43	59%	11	14	27%	10	10	0%
2454	86	2,345	2,627%	33	958	2,803%	0	7	-
2455	1,080	1,566	45%	404	624	54%	28	36	29%
2549	0	328	0%	0	128	0%	8	39	388%
2682	0	16	0%	0	7	0%	0	0	0%
2686	0	553	0%	0	227	0%	0	32	-
2689	0	9	0%	0	3	0%	0	12	-
2690	0	2	0%	0	1	0%	0	0	0%
2691	0	1,030	0%	0	384	0%	0	11	-
Total	**12484**	**33120**	**165%**	**4796**	**13126**	**174%**	**2836**	**3144**	**11%**

The 2021 Comprehensive Plan describes the future land use character districts in general terms of density and intensity, character development, and scale, without providing concrete numbers. Therefore, the team relied on population, household, and job projections within each TAZ, as well as cross-TAZ estimate comparisons, to determine if the projections appropriately matched the future land uses. For example, higher population counts are expected in Suburban Residential Areas than in Rural Residential areas, and even higher population counts are expected in Urban Residential areas; and few to no population counts are expected in areas that are exclusively characterized as Agricultural or Business.

It was determined that the vast majority of demographic estimates match the FLUM. However, a few projections do not match future land uses in their respective TAZs. The largest discrepancies are in the eastern portion of Berthoud where heavier development is up-and-coming:

- TAZ 2682 – zoned for Suburban Business in the south portion, but projecting 0 jobs by 2040.
- TAZ 2689 – zoned for Suburban Business, Innovation District, Urban Residential, and Suburban Residential, but only projecting 9 residents, 3 households, and 12 jobs by 2040.
- TAZ 2690 – zoned for Urban Residential, but only projecting 2 residents, 1 household, and 0 jobs by 2040.

Additionally, there are 0 jobs included in TAZ 2313 in 2040, and this is not consistent with the zoned Suburban Business in the southwest corner. Job estimates for TAZ 2317 and TAZ 593, which also have areas of Suburban Business zoning, may also be undercounted.

Overall, the demographic assumptions included in the TDM are consistent with future land use in Berthoud. However, underreporting in the TAZs in the eastern portion of Berthoud should be

considered when reviewing the future traffic analysis outputs. Updating these projections in the model will more accurately reflect forecasted travel demand.

Figure 11 shows forecatsed average daily traffic volumes in 2040 based on the NFRMPO travel demand model. The volumes reported by the model are reflective of the changes in the demographic inputs used by the model. Additionally, Table 3 shows the forecasted average daily traffic volumes on Berthoud's road over the next 25 years.

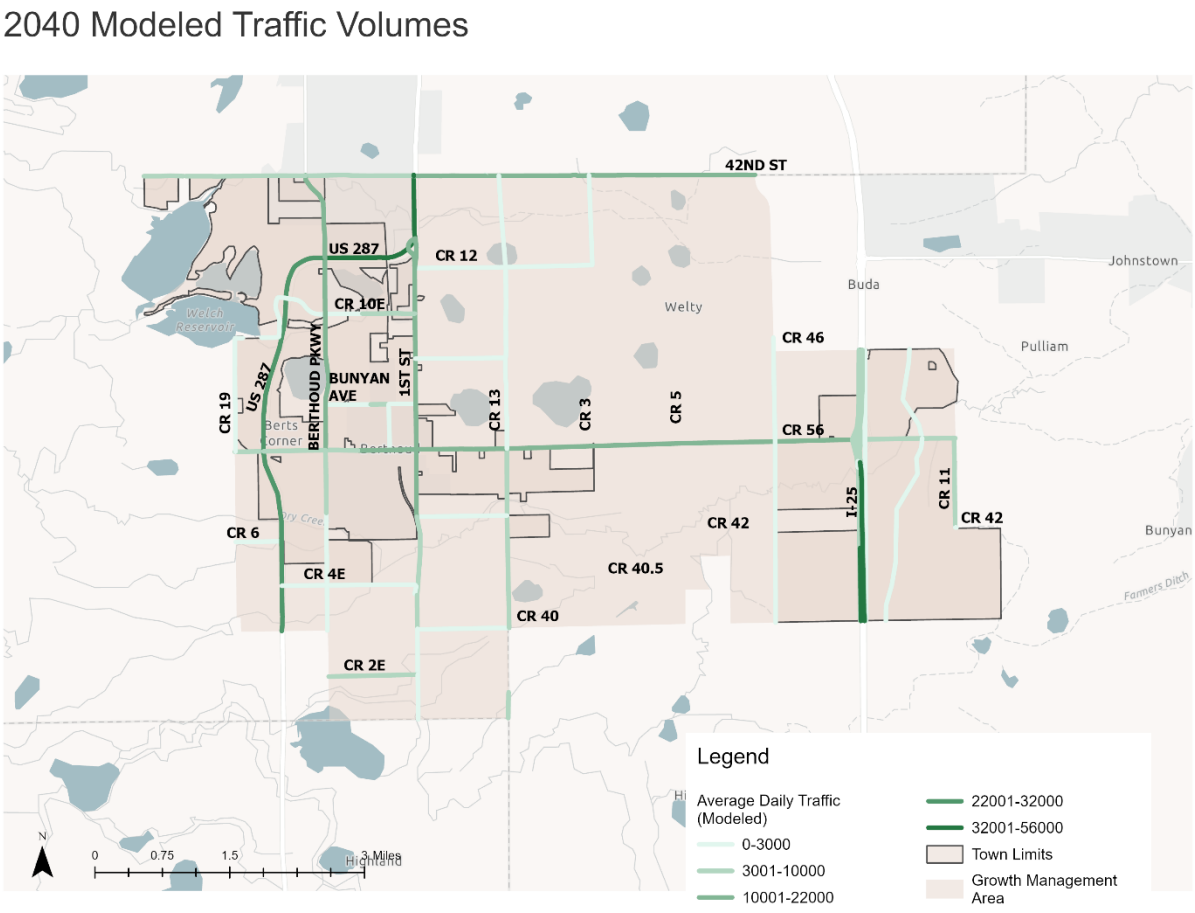


Figure 12: 2040 Travel Demand Model Traffic Volumes

Table 3: 2022-2050 Forecasted Traffic Volumes

County / Local Road Name	Length (Miles)	NFRMPO Model Daily Volumes					Forecasted Annual Traffic Growth 2023-2050
		2022	2026	2030	2040	2050	
1st St	0.3	8,510	9,900	10,680	12,330	13,520	1.7%
1st St	0.5	9,630	11,140	11,790	14,270	15,700	1.8%
1st St	0.4	11,460	13,610	14,560	19,960	23,220	2.6%
1st St	0.5	10,090	11,370	12,070	15,940	18,640	2.2%
1st St	0.1	11,650	13,920	14,580	21,440	24,730	2.7%
1st St	0.2	5,680	6,880	7,240	10,630	12,360	2.8%
1st St	0.2	5,960	7,040	7,320	10,810	12,370	2.6%
1st St	0.3	8,120	9,720	10,660	12,200	13,440	1.8%
County Rd 1 / County Line Rd	0.7	4,520	5,110	5,250	6,350	7,980	2.1%
County Rd 1 / County Line Rd	0.7	4,160	4,500	4,610	5,350	6,460	1.6%
County Rd 1 / County Line Rd	0.5	4,050	4,470	4,700	5,210	6,060	1.4%
County Rd 1 / County Line Rd	0.4	380	390	350	540	820	2.8%
County Rd 1 / County Line Rd	1	100	40	100	1,150	2,870	12.7%
County Rd 1 / County Line Rd	0.1	340	60	80	930	1,170	4.5%
County Rd 1 / County Line Rd	0.6	10	40	70	120	410	14.2%
County Rd 1 / County Line Rd	0.6	4,060	4,390	4,530	5,170	6,170	1.5%
County Rd 1 / County Line Rd	0.9	10	40	70	120	410	14.2%
County Rd 10	0.5	240	10	30	1,460	2,830	9.2%
County Rd 10	0.5	240	10	30	1,460	2,830	9.2%
County Rd 10E	0.4	820	1,260	1,300	2,680	4,030	5.9%
County Rd 10E	0.4	1,690	2,770	2,900	5,100	6,910	5.2%
County Rd 10E	0.2	1,570	2,580	2,600	4,930	6,690	5.3%
County Rd 11	0.9	30	40	20	110	290	8.4%
County Rd 13	0.7	240	330	380	2,130	2,470	8.7%
County Rd 14 / 42nd St	0.2	6,460	7,460	6,980	9,760	11,240	2.0%
County Rd 14 / 42nd St	0.4	8,360	10,700	11,380	14,060	18,290	2.8%
County Rd 14 / 42nd St	0.4	3,100	3,250	3,250	3,200	3,760	0.7%

County / Local Road Name	Length (Miles)	NFRMPO Model Daily Volumes					Forecasted Annual Traffic Growth 2023-2050
		2022	2026	2030	2040	2050	
County Rd 14 /42nd St	0.2	8,450	10,820	11,660	15,800	19,200	3.0%
County Rd 14 / 42nd St	0.1	3,100	3,250	3,250	3,330	3,910	0.8%
County Rd 14 / 42nd St	0.2	5,350	6,340	6,960	8,310	10,500	2.4%
County Rd 14 / 42nd St	0.5	3,070	3,310	3,190	4,350	4,580	1.4%
County Rd 14 / 42nd St	0.5	3,070	3,310	3,190	3,660	4,190	1.1%
County Rd 14 / 42nd St	0.4	8,310	10,660	11,340	14,200	18,300	2.9%
County Rd 14 / 42nd St	0.5	3,200	3,930	4,210	5,720	7,710	3.2%
County Rd 14 / 42nd St	0.3	3,130	3,380	3,250	4,560	5,300	1.9%
County Rd 14 / 42nd St	0.5	5,180	6,090	6,520	7,700	8,530	1.8%
County Rd 14 / 42nd St	0	6,520	7,550	7,010	9,650	10,770	1.8%
County Rd 15 / 4th St	0.2	70	180	240	380	600	8.0%
County Rd 15 / 4th St	0.3	70	180	240	380	600	8.0%
County Rd 15 / 1st St	0.2	4,950	7,690	8,920	12,400	14,410	3.9%
County Rd 15 / 1st St	0.5	1,510	1,770	2,160	2,920	3,720	3.3%
County Rd 15 / 1st St	0.5	1,840	2,210	2,650	3,440	4,360	3.1%
County Rd 15 / 1st St	0.4	1,840	2,210	2,650	3,440	4,360	3.1%
County Rd 15 / 1st St	0.3	3,950	6,350	7,380	10,580	12,240	4.1%
County Rd 15 / Garfield Ave	0.5	1,620	1,800	490	2,430	2,780	1.9%
County Rd 15 / 1st St	0.3	5,250	8,160	9,540	13,080	15,320	3.9%
County Rd 15 / 1st St	0.4	1,990	2,350	2,790	3,620	4,700	3.1%
County Rd 15	0.5	1,240	1,400	1,530	2,480	3,260	3.5%
County Rd 17 / Taft Ave	0.4	11,300	12,770	15,220	16,950	20,490	2.1%
County Rd 17 / Taft Ave	0.4	10,460	11,310	13,080	14,660	16,790	1.7%
County Rd 17 / Taft Ave	0.3	5,990	6,740	7,980	12,300	14,380	3.2%
County Rd 17 / Taft Ave	0.3	6,100	6,840	8,230	12,590	14,670	3.2%
County Rd 17 / Taft Ave	0.3	5,250	1,750	2,650	8,530	11,430	2.8%
County Rd 17 / Taft Ave	0.4	1,170	910	1,060	2,400	3,460	3.9%

County / Local Road Name	Length (Miles)	NFRMPO Model Daily Volumes					Forecasted Annual Traffic Growth 2023-2050
		2022	2026	2030	2040	2050	
County Rd 17 / Taft Ave	0.2	6,520	6,660	8,260	12,590	14,860	3.0%
County Rd 17 / Taft Ave	0.3	11,110	12,080	13,560	15,400	17,550	1.6%
County Rd 17 / Taft Ave	0.4	2,320	2,460	3,560	4,860	5,980	3.4%
County Rd 17 / Taft Ave	0.4	1,170	910	1,060	2,400	3,460	3.9%
County Rd 17 / Taft Ave	0.8	5,380	5,870	7,040	10,980	12,860	3.2%
County Rd 17 / Taft Ave	0.3	6,650	8,210	9,760	14,540	17,380	3.5%
County Rd 17 / Taft Ave	0.5	1,160	890	1,040	2,360	3,410	3.9%
County Rd 17 / Taft Ave	0.1	11,290	13,570	15,940	19,090	20,320	2.1%
County Rd 17 / Taft Ave	0.1	11,310	13,940	16,310	19,650	21,060	2.2%
County Rd 17 / Taft Ave	0.3	5,840	6,750	8,090	12,330	14,960	3.4%
County Rd 19	0.5	210	500	640	1,140	1,360	6.9%
County Rd 2E	0.5	2,730	3,140	3,630	5,370	6,890	3.4%
County Rd 2E	0.5	2,740	3,160	3,640	5,420	6,970	3.4%
County Rd 4	0.4	190	290	310	610	1,100	6.5%
County Rd 4	0.6	190	290	310	610	1,090	6.4%
County Rd 4E	0.5	10	20	20	50	90	8.2%
County Rd 6	0.8	60	70	60	90	630	8.8%
County Rd 6c	0.4	600	940	1,000	1,470	2,240	4.8%
County Rd 8E / Bunyan Ave	0.1	1,400	1,860	1,720	2,550	2,990	2.7%
County Rd 8E / Bunyan Ave	0.5	260	290	280	590	790	4.0%
County Rd 8E / Bunyan Ave	0.2	1,690	2,210	2,220	3,110	3,680	2.8%
County Rd 8E / Bunyan Ave	0.2	1,700	2,150	2,160	2,940	3,550	2.7%
I-25	1	41,110	45,740	47,080	51,650	56,200	1.1%
I-25	0.4	38,410	42,620	43,930	47,670	51,420	1.0%
I-25	0.4	38,000	42,160	43,200	47,660	50,960	1.1%
I-25	0.1	41,740	46,800	47,590	55,680	60,660	1.3%
I-25	0.8	42,380	47,640	48,680	55,620	61,200	1.3%

County / Local Road Name	Length (Miles)	NFRMPO Model Daily Volumes					Forecasted Annual Traffic Growth 2023-2050
		2022	2026	2030	2040	2050	
I-25	0.8	41,740	46,800	47,590	55,680	60,660	1.3%
I-25	0.1	42,380	47,640	48,680	55,620	61,200	1.3%
I-25	1.5	41,110	45,740	47,080	51,650	56,200	1.1%
I-25	2.5	40,760	45,290	46,460	51,580	55,360	1.1%
I-25 Express Lane	1.3			1,260	4,700	7,280	-
I-25 Express Lane	2.4			1,610	5,050	7,700	-
I-25 Express Lane	1.3			1,660	4,710	7,690	-
I-25 Express Lane	2.4			2,020	5,160	8,160	-
I-25 Express Lane / Connector 40	0.1			350	350	420	-
I-25 Express Lane / Connector 40	0.1			360	450	470	-
I-25 Ramp	0.3	2,710	3,130	3,500	4,340	5,200	2.4%
I-25 Ramp	0.2	3,970	5,030	4,760	7,960	9,780	3.3%
I-25 Ramp	0.2	3,730	4,650	4,390	8,020	9,700	3.5%
I-25 Ramp	0.3	2,760	3,130	3,620	4,370	4,860	2.0%
SH-56	0.4	12,760	14,500	14,270	21,840	26,550	2.7%
SH-56	0.5	13,910	15,490	16,500	20,240	21,760	1.6%
SH-56	1	10,870	12,640	13,480	18,680	22,660	2.7%
SH-56	0.5	12,300	13,960	13,620	20,600	24,950	2.6%
SH-56	0.5	14,070	15,690	16,630	20,750	22,560	1.7%
SH-56	1	11,200	12,820	13,590	19,490	23,540	2.7%
SH-56	1	11,050	12,650	13,460	19,240	23,130	2.7%
SH-56	0.3	4,630	4,980	5,390	5,780	6,570	1.3%
SH-56	0.5	7,470	7,090	7,120	8,370	9,210	0.8%
SH-56	0.3	7,680	7,550	7,730	9,430	10,450	1.1%
SH-56	0.3	4,320	4,560	5,090	5,240	5,890	1.1%
SH-56	0.2	4,630	4,980	5,390	5,780	6,570	1.3%
SH-56 / Mountain Ave	0.4	8,710	8,750	9,830	10,640	12,760	1.4%

County / Local Road Name	Length (Miles)	NFRMPO Model Daily Volumes					Forecasted Annual Traffic Growth 2023-2050
		2022	2026	2030	2040	2050	
SH-56 / Mountain Ave	0.2	8,700	8,810	9,890	10,810	12,890	1.4%
SH-56 / Mountain Ave	0.4	6,420	6,800	7,590	9,260	10,610	1.8%
SH-60 / 42nd St	1	8,230	10,590	11,440	15,370	18,380	2.9%
SH-60 / 42nd St	0.9	8,310	10,690	11,520	15,460	18,530	2.9%
SH-60 / 42nd St	0.4	8,310	10,660	11,480	15,520	18,660	2.9%
SH-60 / 42nd St	0.2	8,240	10,590	11,440	15,450	18,480	2.9%
SH-60 / 42nd St	0.5	8,270	10,610	11,460	15,470	18,600	2.9%
SH-56 / Mountain Ave	0.1	9,600	9,940	10,580	11,910	14,100	1.4%
US-287 / Lincoln Ave	0.6	31,510	36,970	39,130	52,900	59,160	2.3%
US-287 / Lincoln Ave	0.3	29,150	33,610	35,960	47,250	53,040	2.2%
US-287	0.4	22,190	25,100	26,340	29,800	32,500	1.4%
US-287	0.3	22,190	25,120	26,360	29,840	32,550	1.4%
US-287	0.1	22,190	25,100	26,340	29,800	32,500	1.4%
US-287	0.1	30,970	36,480	38,500	52,810	59,410	2.4%
US-287	0.2	22,130	25,030	26,280	29,710	32,930	1.4%
US-287	0.2	22,190	25,120	26,360	29,840	32,550	1.4%
US-287 / US-287 Bypass	0.4	20,570	23,350	24,580	32,770	35,850	2.0%
US-287 / US-287 Bypass	0.7	20,570	23,350	24,580	32,770	35,850	2.0%
US-287 / US-287 Bypass	1	23,940	26,130	27,100	31,510	35,100	1.4%
US-287 / US-287 Bypass	0.8	23,940	26,130	27,100	31,510	35,100	1.4%
US-287 / US-287 Bypass	0.8	22,130	25,030	26,280	29,710	32,930	1.4%
US-287 / US-287 Bypass	0.7	23,940	26,130	27,100	31,510	35,100	1.4%
US-287 Ramp	0.1	5,680	6,880	7,240	10,630	12,360	2.8%
US-287 Ramp	0.1	5,680	6,880	7,240	10,630	12,360	2.8%
US-287 Ramp	0.2	5,960	7,040	7,320	10,810	12,370	2.6%
WCR-11	1	310	1,290	1,620	5,060	5,690	11.0%
WCR-3	1	50			380	600	9.3%

County / Local Road Name	Length (Miles)	NFRMPO Model Daily Volumes					Forecasted Annual Traffic Growth 2023-2050
		2022	2026	2030	2040	2050	
WCR-42	1	290	560	490	1,860	2,520	8.0%
WCR-44	0.1	6,850	8,550	8,920	15,560	18,970	3.7%
WCR-44	0	1,160	2,840	3,900	9,140	11,330	8.5%
WCR-44	0.1	1,160	2,840	3,900	9,140	11,330	8.5%
WCR-44	0.7	850	1,470	2,250	3,850	5,360	6.8%
WCR-44	0.9	1,160	2,760	3,870	8,900	11,040	8.4%
WCR-7	1.3	1,590	1,560	400	1,560	1,760	0.4%
WCR-7	1	70	120	70	290	550	7.6%
WCR-7	1	70	160	100	410	840	9.3%
WCR-7	0.5	1,710	1,670	470	1,710	2,100	0.7%
WCR-7	1.2	1,710	1,670	470	1,710	2,100	0.7%

Traffic Simulation Modeling

Another Town-wide modeling strategy that is being considered is building a Townwide Synchro model that can provide detailed intersection level assessments of existing traffic operations and impact of planned future development. To understand what level of modeling has been conducted in Berthoud as part of development applications, this exercise included an assessment of existing traffic counts and review of recent Traffic Impact Studies conducted as part of recent development applications.

Review of Existing Traffic Studies

The six Traffic Impact Studies (TIS) conducted between 2021 and 2024 in the Berthoud Growth Management Area are shown in **Table 2.** They were reviewed to better understand what traffic modeling has been conducted and what traffic volumes have been collected. Peak period Turning Movement Counts (TMCs) and Average Daily Traffic (ADT) were assembled from the six traffic impact studies. The locations of these counts are shown in Figure 5. Counts from 2020 were excluded due to variability during the Covid pandemic. No traffic counts have been documented thus far in 2025.

Table 4. Traffic Impact Studies Reviewed

Development Name	Year	Developer	Traffic Analyst	Daily Trip Generation
Turion	2021	Front Range Investment Holdings	LSC	90,615
Revere	2022	The Landhuis Company	Rollins	5,074
Ludlow Farm (Legacy Park)	2022	Ludlow Farms LLC	Rollins	18,836
Heron Lakes	2022	Heron Lakes Investments	Delich	19,134
River Trails	2024	River Trails LLC	Rollins	2,856
Farmstead	2024	Post Modern Development	Delich	18,938

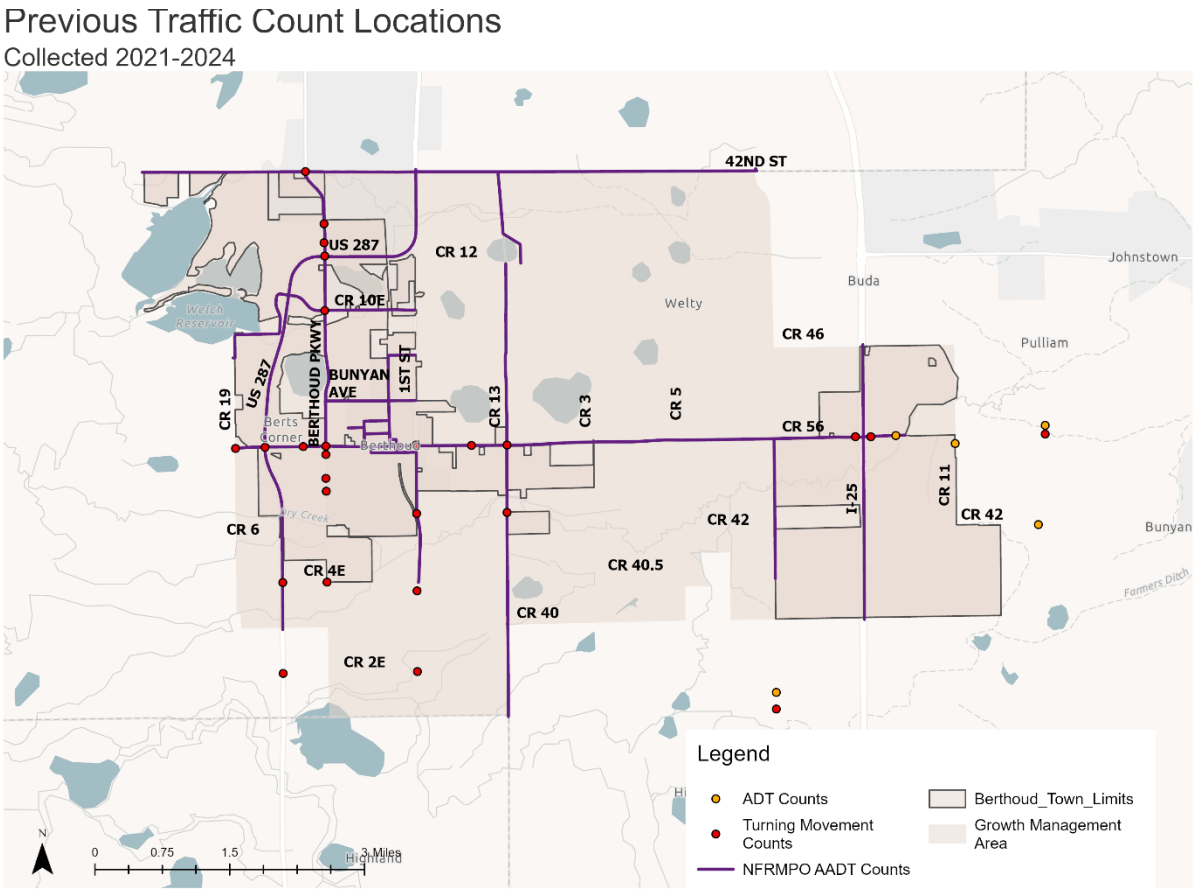


Figure 13: Traffic Count Locations from Previous Traffic Impact Studies

The traffic impact studies combine existing volume, background volume growth, and new trips generated by the development to evaluate the impact on roadway and intersection analysis. These assumptions could be integrated into a town-wide Synchro model as new developments are proposed and constructed. The traffic impact studies that have been completed recently in Berthoud have not included other planned developments in their forecasts consistently, so a Town-wide Synchro model could improve the accuracy of these assessments and could improve the comprehensive understanding of impacts throughout Berthoud.

Assessment of Traffic Count Data

To complete a Synchro model for the Town, existing count data could be integrated but new traffic counts would also be needed. Several relatively major roads do not have sufficient recent turning movement counts documented, including County Road 14, 1st Street north of Mountain Avenue, Weld County Road 7, and collectors in the downtown area. Additional turning movement counts during peak morning and evening hours would be needed at approximately ten key intersections. Further verification from Town leadership would be helpful in establishing key intersections, and the exact locations can be determined during the next phase of the Town wide modeling assessment.

Summary and Recommendations

Based on this assessment, the next step is to review with Town staff and determine which method is desired to advance a Town wide model. A useful step will be to revisit the goals of developing a model to make sure the modeling approach can answer the questions being asked. Two options are being considered as a strategy to advance a Town-wide model:

Option A: Develop a town-wide Travel Demand Model

- Within this option, the Town could choose to update population and employment land use assumptions in the model to develop more refined existing and future scenarios that can more accurately forecast traffic on Berthoud's roads.
- In coordination with NFRMPO, specific scenarios could be developed that more accurately forecast traffic volumes on the roads in Berthoud
- This option will not produce detailed intersection statistics but would allow for an understanding of how traffic is forecast to grow within the Town.

Option B: Develop a town-wide Synchro network

- This option would provide an analysis of identified intersections within the Town of Berthoud. Through an exercise of integrating existing counts and collecting new ones, the full network could be setup in the Town.
- A Town Synchro network could be shared with developers to update as part of their development applications. They could update and integrate into their development applications.

Either option would provide valuable insight for the town. Both options would require regular maintenance and upkeep based on changing development patterns and changing roadway volumes. The models would require significant training for internal use.

After further coordination with Town staff, a direction will be selected. Fehr & Peers will create a scope amendment to advance the preferred option.

Appendix B. Divider Page

Turning Movement Counts – Ridgeview Data Collection

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

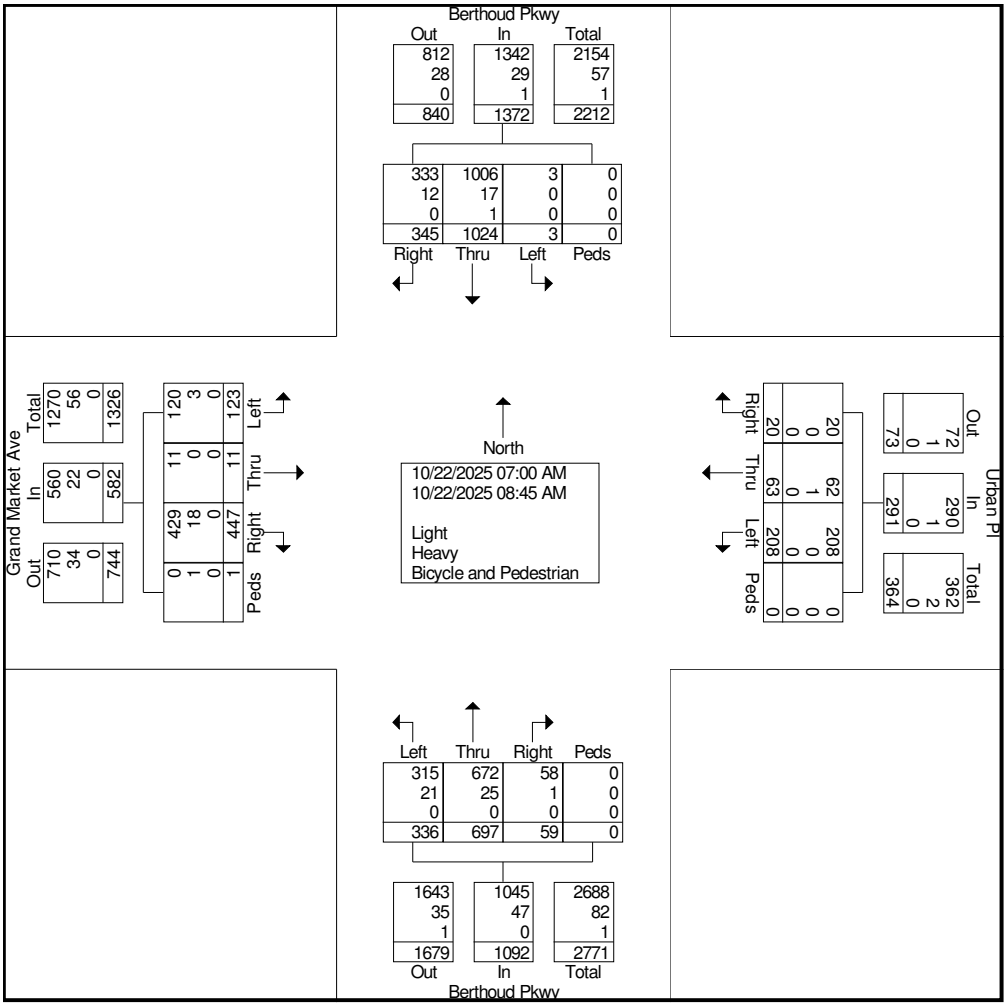
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Grand Market Ave Eastbound					Urban Pl Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	14	1	48	0	63	36	5	1	0	42	32	68	3	0	103	0	147	37	0	184	392
07:15 AM	13	3	44	0	60	24	11	2	0	37	40	92	8	0	140	0	151	42	0	193	430
07:30 AM	17	1	75	0	93	39	12	4	0	55	45	76	7	0	128	1	132	49	0	182	458
07:45 AM	14	0	55	1	70	31	9	2	0	42	50	71	4	0	125	0	126	56	0	182	419
Total	58	5	222	1	286	130	37	9	0	176	167	307	22	0	496	1	556	184	0	741	1699
08:00 AM	17	2	73	0	92	20	4	4	0	28	42	95	10	0	147	1	115	46	0	162	429
08:15 AM	7	1	50	0	58	25	8	1	0	34	40	93	9	0	142	0	121	37	0	158	392
08:30 AM	19	2	51	0	72	15	10	4	0	29	53	104	10	0	167	0	131	41	0	172	440
08:45 AM	22	1	51	0	74	18	4	2	0	24	34	98	8	0	140	1	101	37	0	139	377
Total	65	6	225	0	296	78	26	11	0	115	169	390	37	0	596	2	468	161	0	631	1638
Grand Total	123	11	447	1	582	208	63	20	0	291	336	697	59	0	1092	3	1024	345	0	1372	3337
Apprch %	21.1	1.9	76.8	0.2		71.5	21.6	6.9	0		30.8	63.8	5.4	0		0.2	74.6	25.1	0		
Total %	3.7	0.3	13.4	0	17.4	6.2	1.9	0.6	0	8.7	10.1	20.9	1.8	0	32.7	0.1	30.7	10.3	0	41.1	
Light	120	11	429	0	560	208	62	20	0	290	315	672	58	0	1045	3	1006	333	0	1342	3237
% Light	97.6	100	96	0	96.2	100	98.4	100	0	99.7	93.8	96.4	98.3	0	95.7	100	98.2	96.5	0	97.8	97
Heavy	3	0	18	1	22	0	1	0	0	1	21	25	1	0	47	0	17	12	0	29	99
% Heavy	2.4	0	4	100	3.8	0	1.6	0	0	0.3	6.2	3.6	1.7	0	4.3	0	1.7	3.5	0	2.1	3
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

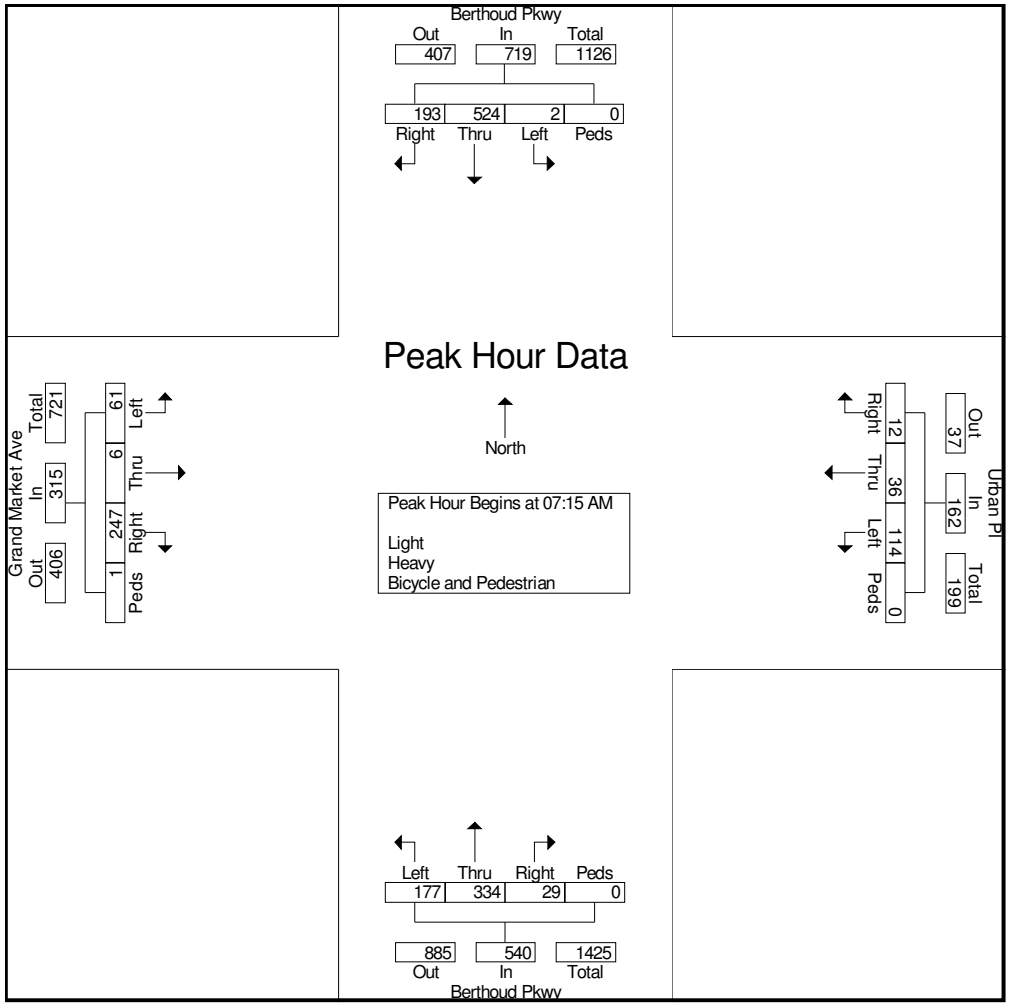


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Grand Market Ave Eastbound					Urban Pl Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	13	**3**	44	0	60	24	11	2	0	37	40	92	8	0	140	0	**151**	42	0	**193**	430
07:30 AM	**17**	1	**75**	0	**93**	**39**	**12**	**4**	0	**55**	45	76	7	0	128	**1**	132	49	0	182	**458**
07:45 AM	14	0	55	**1**	70	31	9	2	0	42	**50**	71	4	0	125	0	126	**56**	0	182	419
08:00 AM	17	2	73	0	92	20	4	4	0	28	42	**95**	**10**	0	**147**	1	115	46	0	162	429
Total Volume	61	6	247	1	315	114	36	12	0	162	177	334	29	0	540	2	524	193	0	719	1736
% App. Total	19.4	1.9	78.4	0.3		70.4	22.2	7.4	0		32.8	61.9	5.4	0		0.3	72.9	26.8	0		
PHF	.897	.500	.823	.250	.847	.731	.750	.750	.000	.736	.885	.879	.725	.000	.918	.500	.868	.862	.000	.931	.948



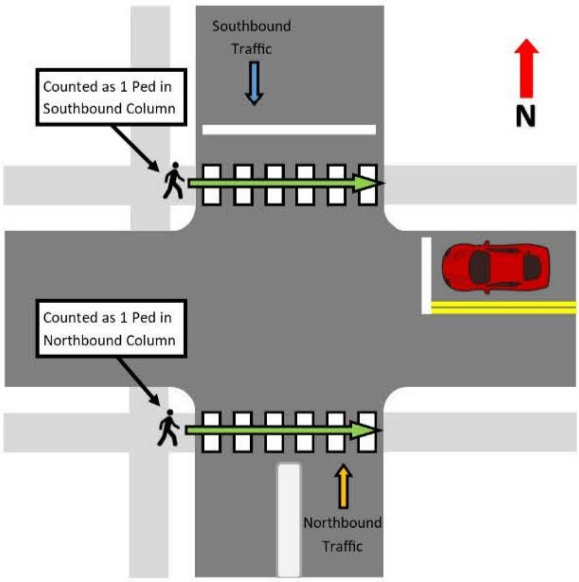
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

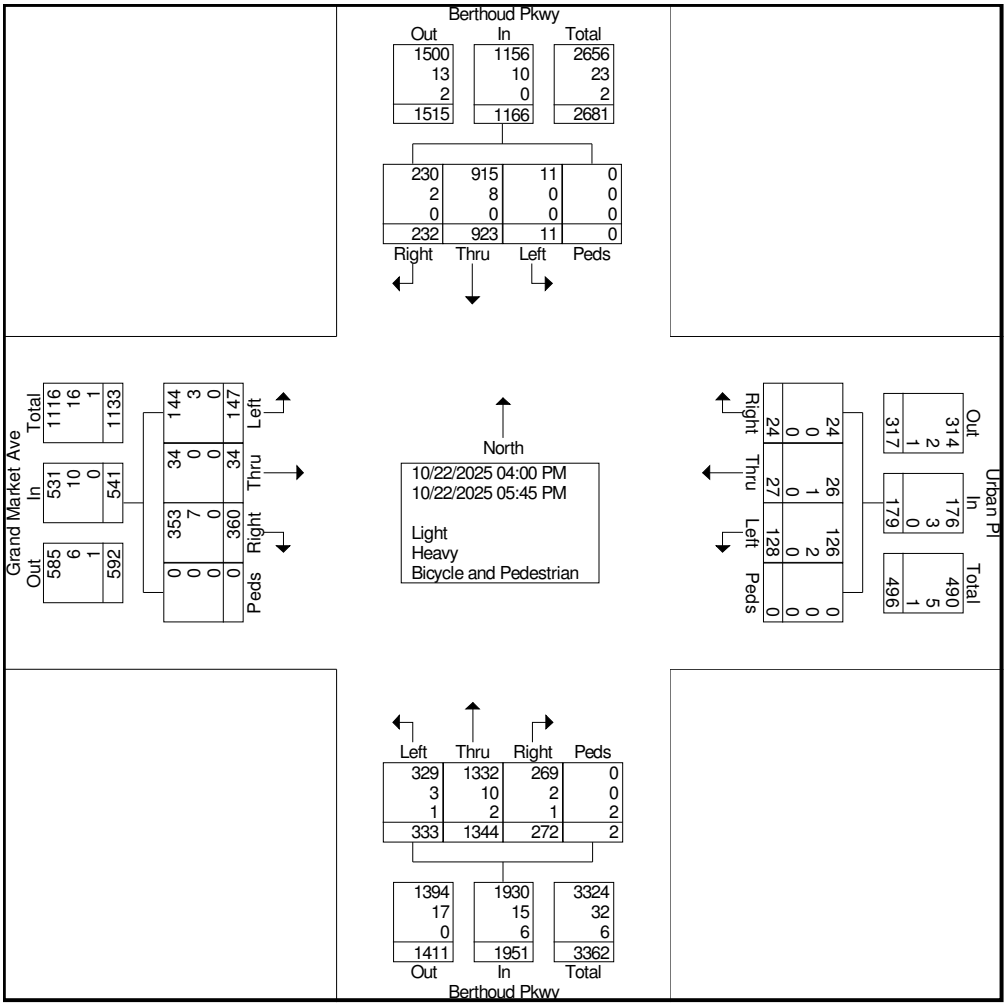
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Grand Market Ave Eastbound					Urban Pl Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	15	3	46	0	64	14	4	3	0	21	34	171	22	0	227	1	103	27	0	131	443
04:15 PM	16	3	45	0	64	20	1	1	0	22	38	165	40	1	244	0	122	25	0	147	477
04:30 PM	22	3	38	0	63	18	4	4	0	26	43	169	35	0	247	1	115	30	0	146	482
04:45 PM	11	3	44	0	58	13	2	3	0	18	43	145	35	0	223	1	119	29	0	149	448
Total	64	12	173	0	249	65	11	11	0	87	158	650	132	1	941	3	459	111	0	573	1850
05:00 PM	21	4	49	0	74	14	2	3	0	19	42	177	40	0	259	2	152	28	0	182	534
05:15 PM	23	5	42	0	70	15	6	0	0	21	41	171	34	1	247	2	112	25	0	139	477
05:30 PM	19	10	43	0	72	13	6	4	0	23	54	196	41	0	291	4	97	38	0	139	525
05:45 PM	20	3	53	0	76	21	2	6	0	29	38	150	25	0	213	0	103	30	0	133	451
Total	83	22	187	0	292	63	16	13	0	92	175	694	140	1	1010	8	464	121	0	593	1987
Grand Total	147	34	360	0	541	128	27	24	0	179	333	1344	272	2	1951	11	923	232	0	1166	3837
Apprch %	27.2	6.3	66.5	0		71.5	15.1	13.4	0		17.1	68.9	13.9	0.1		0.9	79.2	19.9	0		
Total %	3.8	0.9	9.4	0	14.1	3.3	0.7	0.6	0	4.7	8.7	35	7.1	0.1	50.8	0.3	24.1	6	0	30.4	
Light	144	34	353	0	531	126	26	24	0	176	329	1332	269	0	1930	11	915	230	0	1156	3793
% Light	98	100	98.1	0	98.2	98.4	96.3	100	0	98.3	98.8	99.1	98.9	0	98.9	100	99.1	99.1	0	99.1	98.9
Heavy	3	0	7	0	10	2	1	0	0	3	3	10	2	0	15	0	8	2	0	10	38
% Heavy	2	0	1.9	0	1.8	1.6	3.7	0	0	1.7	0.9	0.7	0.7	0	0.8	0	0.9	0.9	0	0.9	1
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	1	2	1	2	6	0	0	0	0	0	6
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0.3	0.1	0.4	100	0.3	0	0	0	0	0	0.2

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

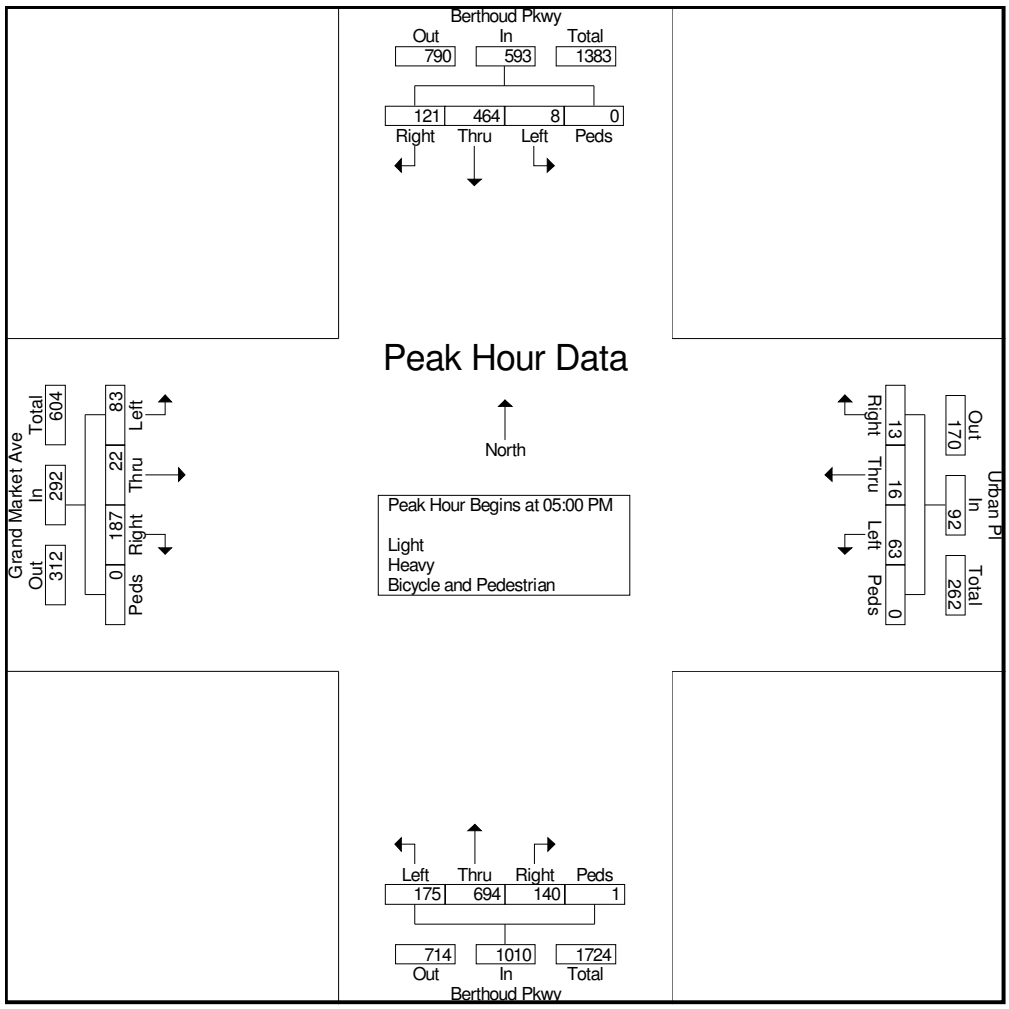


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Grand Market Ave Eastbound					Urban Pl Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	21	4	49	0	74	14	2	3	0	19	42	177	40	0	259	2	**152**	28	0	**182**	**534**
05:15 PM	**23**	5	42	0	70	15	**6**	0	0	21	41	171	34	**1**	247	2	112	25	0	139	477
05:30 PM	19	**10**	43	0	72	13	6	4	0	23	**54**	**196**	**41**	0	**291**	**4**	97	**38**	0	139	525
05:45 PM	20	3	**53**	0	**76**	**21**	2	**6**	0	**29**	38	150	25	0	213	0	103	30	0	133	451
Total Volume	83	22	187	0	292	63	16	13	0	92	175	694	140	1	1010	8	464	121	0	593	1987
% App. Total	28.4	7.5	64	0		68.5	17.4	14.1	0		17.3	68.7	13.9	0.1		1.3	78.2	20.4	0		
PHF	.902	.550	.882	.000	.961	.750	.667	.542	.000	.793	.810	.885	.854	.250	.868	.500	.763	.796	.000	.815	.930



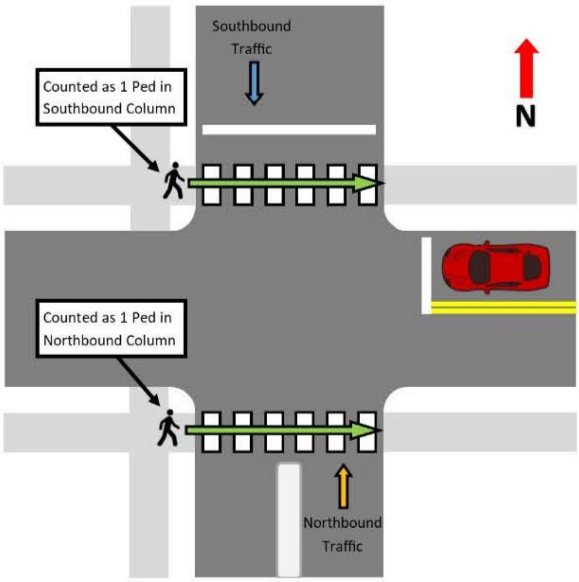
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Grand Market Ave

File Name : 4 Berthoud Pkwy and Grand Market Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

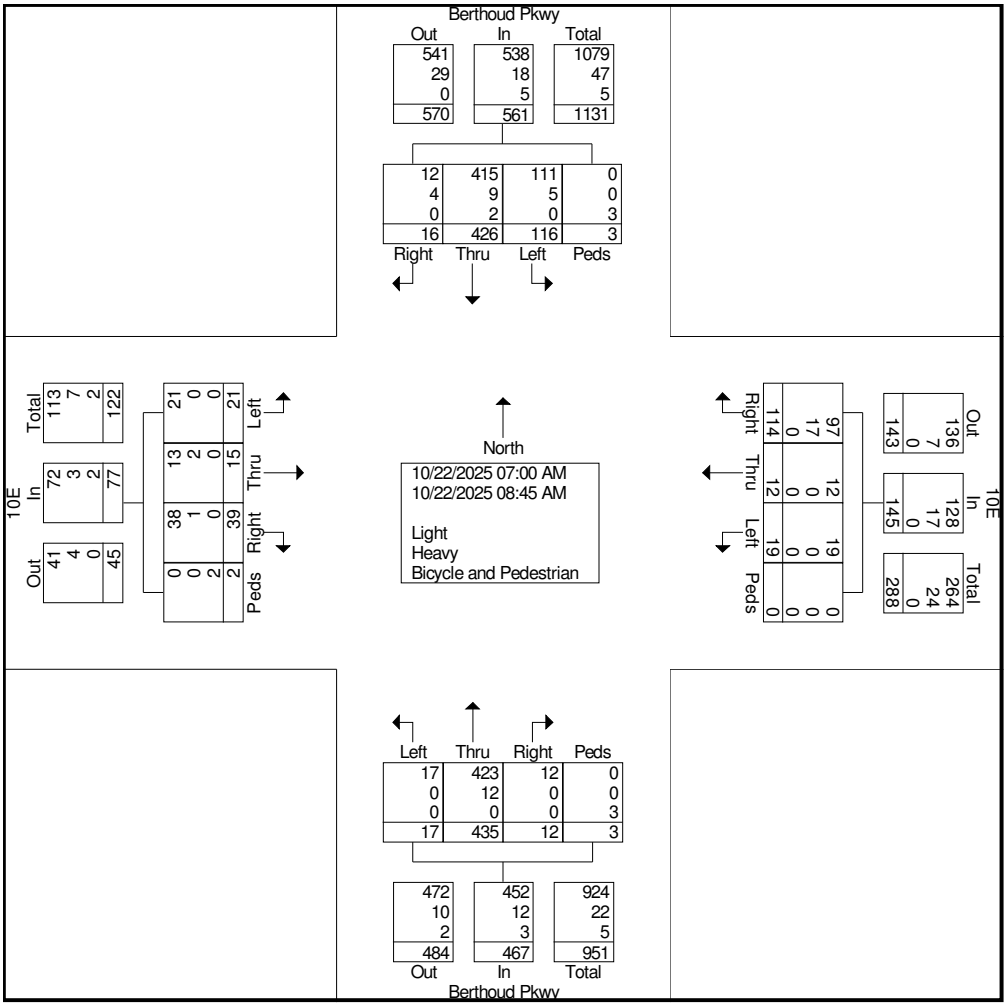
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	10E Eastbound					10E Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	2	2	0	7	1	0	5	0	6	0	48	2	1	51	14	40	3	1	58	122
07:15 AM	4	2	7	0	13	3	0	18	0	21	1	55	0	0	56	15	49	0	0	64	154
07:30 AM	5	5	1	1	12	2	1	11	0	14	1	51	0	2	54	19	44	0	0	63	143
07:45 AM	3	0	4	0	7	1	1	11	0	13	2	52	2	0	56	16	65	4	0	85	161
Total	15	9	14	1	39	7	2	45	0	54	4	206	4	3	217	64	198	7	1	270	580
08:00 AM	4	2	0	0	6	3	3	14	0	20	2	65	3	0	70	14	60	4	0	78	174
08:15 AM	2	1	5	0	8	2	2	12	0	16	1	51	0	0	52	14	54	1	0	69	145
08:30 AM	0	1	10	1	12	4	1	15	0	20	3	62	1	0	66	9	60	3	0	72	170
08:45 AM	0	2	10	0	12	3	4	28	0	35	7	51	4	0	62	15	54	1	2	72	181
Total	6	6	25	1	38	12	10	69	0	91	13	229	8	0	250	52	228	9	2	291	670
Grand Total	21	15	39	2	77	19	12	114	0	145	17	435	12	3	467	116	426	16	3	561	1250
Apprch %	27.3	19.5	50.6	2.6		13.1	8.3	78.6	0		3.6	93.1	2.6	0.6		20.7	75.9	2.9	0.5		
Total %	1.7	1.2	3.1	0.2	6.2	1.5	1	9.1	0	11.6	1.4	34.8	1	0.2	37.4	9.3	34.1	1.3	0.2	44.9	
Light	21	13	38	0	72	19	12	97	0	128	17	423	12	0	452	111	415	12	0	538	1190
% Light	100	86.7	97.4	0	93.5	100	100	85.1	0	88.3	100	97.2	100	0	96.8	95.7	97.4	75	0	95.9	95.2
Heavy	0	2	1	0	3	0	0	17	0	17	0	12	0	0	12	5	9	4	0	18	50
% Heavy	0	13.3	2.6	0	3.9	0	0	14.9	0	11.7	0	2.8	0	0	2.6	4.3	2.1	25	0	3.2	4
Bicycle and Pedestrian	0	0	0	2	2	0	0	0	0	0	0	0	0	3	3	0	2	0	3	5	10
% Bicycle and Pedestrian	0	0	0	100	2.6	0	0	0	0	0	0	0	0	100	0.6	0	0.5	0	100	0.9	0.8

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

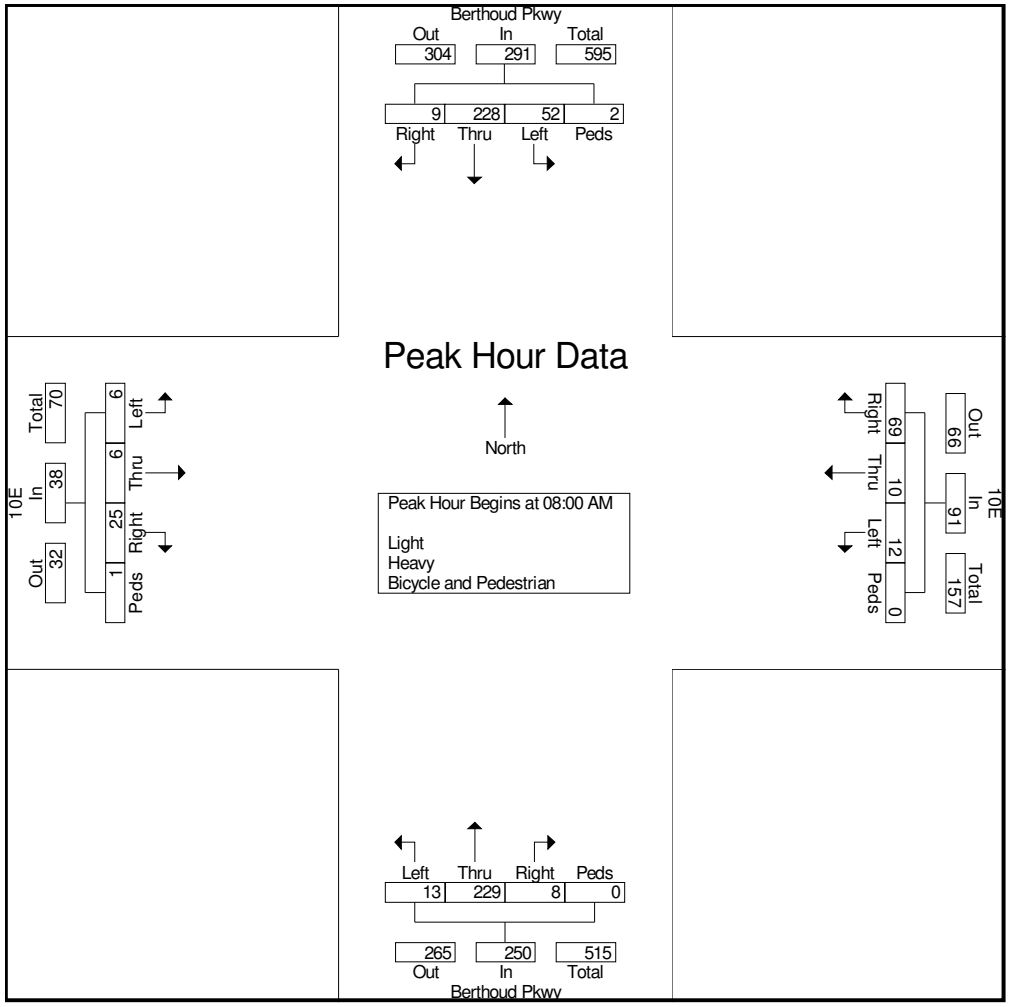


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	10E Eastbound					10E Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	**4**	**2**	0	0	6	3	3	14	0	20	2	**65**	3	0	**70**	14	**60**	**4**	0	**78**	174
08:15 AM	2	1	5	0	8	2	2	12	0	16	1	51	0	0	52	14	54	1	0	69	145
08:30 AM	0	1	**10**	**1**	**12**	**4**	1	15	0	20	3	62	1	0	66	9	60	3	0	72	170
08:45 AM	0	2	10	0	12	3	**4**	**28**	0	**35**	**7**	51	**4**	0	62	**15**	54	1	**2**	72	**181**
Total Volume	6	6	25	1	38	12	10	69	0	91	13	229	8	0	250	52	228	9	2	291	670
% App. Total	15.8	15.8	65.8	2.6		13.2	11	75.8	0		5.2	91.6	3.2	0		17.9	78.4	3.1	0.7		
PHF	.375	.750	.625	.250	.792	.750	.625	.616	.000	.650	.464	.881	.500	.000	.893	.867	.950	.563	.250	.933	.925



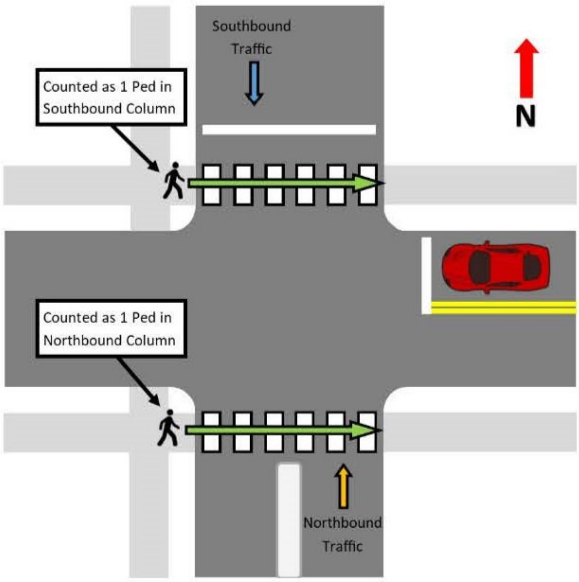
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

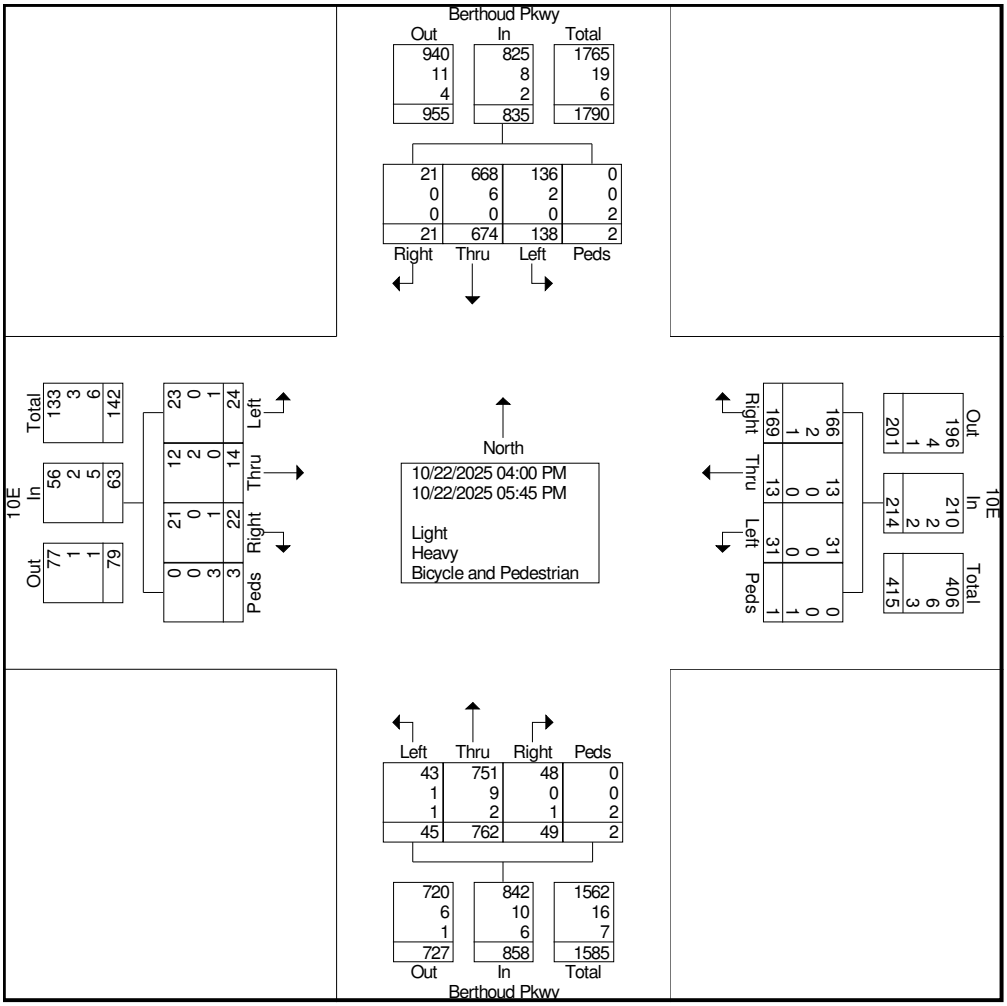
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	10E Eastbound					10E Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	1	3	4	0	8	3	4	20	1	28	8	109	5	0	122	16	70	3	0	89	247
04:15 PM	5	2	3	1	11	4	1	24	0	29	4	99	2	1	106	13	94	1	0	108	254
04:30 PM	1	0	3	1	5	5	2	23	0	30	5	91	6	1	103	21	69	5	0	95	233
04:45 PM	2	3	2	0	7	5	0	23	0	28	8	80	5	0	93	14	89	1	0	104	232
Total	9	8	12	2	31	17	7	90	1	115	25	379	18	2	424	64	322	10	0	396	966
05:00 PM	6	2	3	0	11	5	2	21	0	28	9	113	12	0	134	17	85	4	0	106	279
05:15 PM	3	2	2	1	8	2	2	19	0	23	4	99	8	0	111	24	89	5	1	119	261
05:30 PM	4	0	3	0	7	2	2	20	0	24	4	111	5	0	120	13	77	1	0	91	242
05:45 PM	2	2	2	0	6	5	0	19	0	24	3	60	6	0	69	20	101	1	1	123	222
Total	15	6	10	1	32	14	6	79	0	99	20	383	31	0	434	74	352	11	2	439	1004
Grand Total	24	14	22	3	63	31	13	169	1	214	45	762	49	2	858	138	674	21	2	835	1970
Apprch %	38.1	22.2	34.9	4.8		14.5	6.1	79	0.5		5.2	88.8	5.7	0.2		16.5	80.7	2.5	0.2		
Total %	1.2	0.7	1.1	0.2	3.2	1.6	0.7	8.6	0.1	10.9	2.3	38.7	2.5	0.1	43.6	7	34.2	1.1	0.1	42.4	
Light	23	12	21	0	56	31	13	166	0	210	43	751	48	0	842	136	668	21	0	825	1933
% Light	95.8	85.7	95.5	0	88.9	100	100	98.2	0	98.1	95.6	98.6	98	0	98.1	98.6	99.1	100	0	98.8	98.1
Heavy	0	2	0	0	2	0	0	2	0	2	1	9	0	0	10	2	6	0	0	8	22
% Heavy	0	14.3	0	0	3.2	0	0	1.2	0	0.9	2.2	1.2	0	0	1.2	1.4	0.9	0	0	1	1.1
Bicycle and Pedestrian	1	0	1	3	5	0	0	1	1	2	1	2	1	2	6	0	0	0	2	2	15
% Bicycle and Pedestrian	4.2	0	4.5	100	7.9	0	0	0.6	100	0.9	2.2	0.3	2	100	0.7	0	0	0	100	0.2	0.8

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

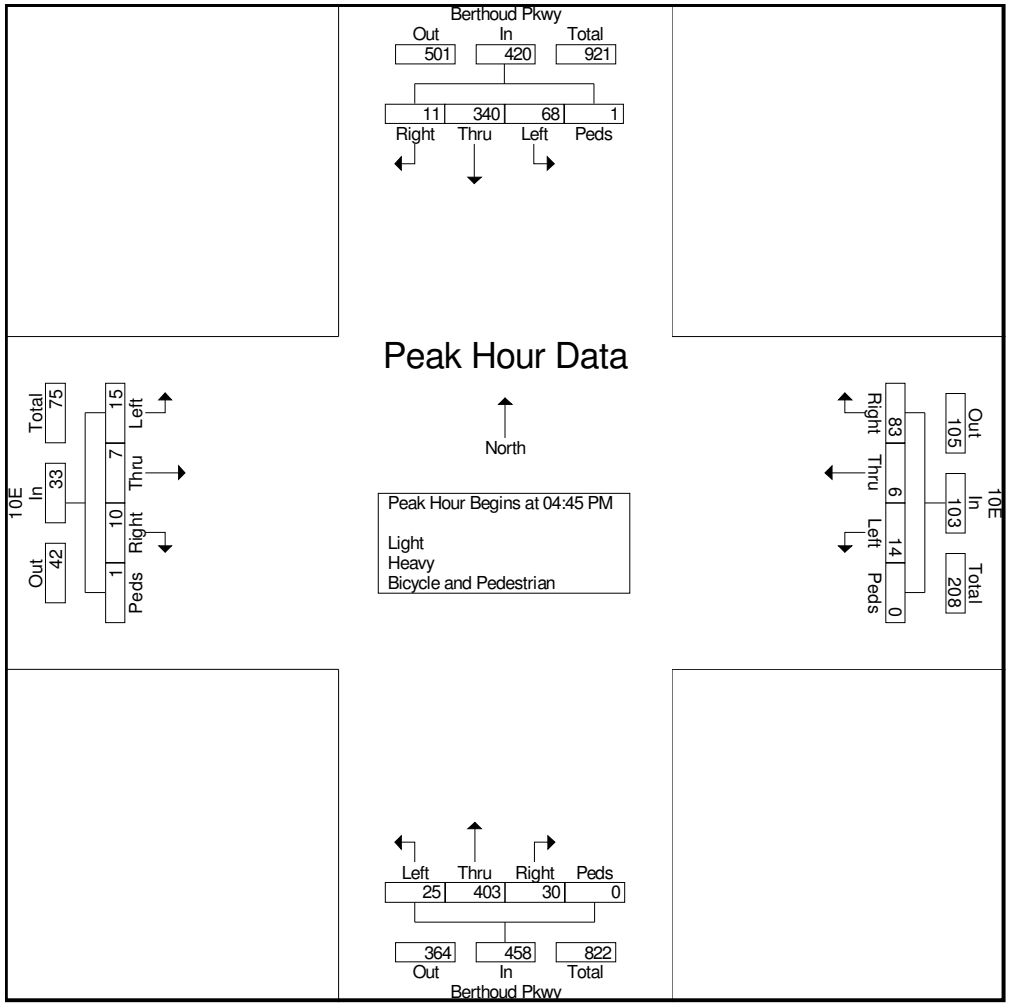


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	10E Eastbound					10E Westbound					Berthoud Pkwy Northbound					Berthoud Pkwy Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	**3**	2	0	7	**5**	0	**23**	0	**28**	8	80	5	0	93	14	**89**	1	0	104	232
05:00 PM	**6**	2	**3**	0	**11**	5	**2**	21	0	28	**9**	**113**	**12**	0	**134**	17	85	4	0	106	**279**
05:15 PM	3	2	2	**1**	8	2	2	19	0	23	4	99	8	0	111	**24**	89	**5**	**1**	**119**	261
05:30 PM	4	0	3	0	7	2	2	20	0	24	4	111	5	0	120	13	77	1	0	91	242
Total Volume	15	7	10	1	33	14	6	83	0	103	25	403	30	0	458	68	340	11	1	420	1014
% App. Total	45.5	21.2	30.3	3		13.6	5.8	80.6	0		5.5	88	6.6	0		16.2	81	2.6	0.2		
PHF	.625	.583	.833	.250	.750	.700	.750	.902	.000	.920	.694	.892	.625	.000	.854	.708	.955	.550	.250	.882	.909



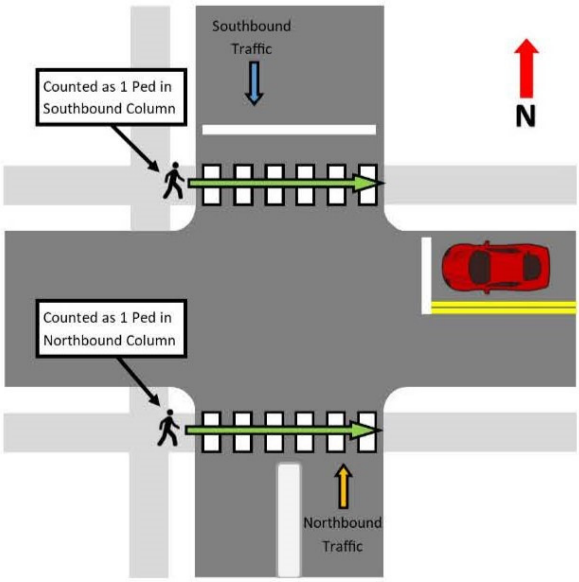
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and CR 10E

File Name : 3 Berthoud Pkwy and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

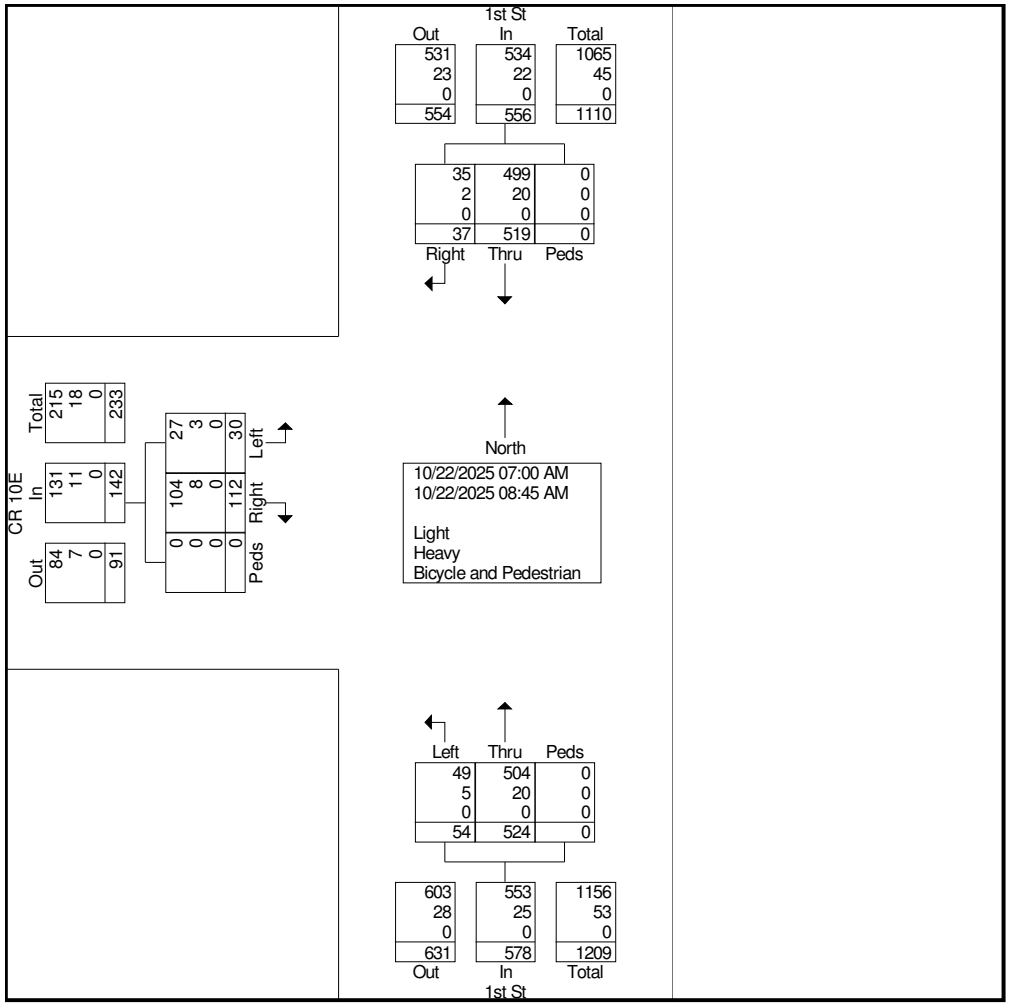
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CR 10E Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	4	15	0	19	7	52	0	59	63	2	0	65	143
07:15 AM	3	15	0	18	8	56	0	64	81	6	0	87	169
07:30 AM	4	20	0	24	2	78	0	80	56	7	0	63	167
07:45 AM	4	9	0	13	3	69	0	72	82	4	0	86	171
Total	15	59	0	74	20	255	0	275	282	19	0	301	650
08:00 AM	3	13	0	16	6	53	0	59	62	5	0	67	142
08:15 AM	3	11	0	14	4	79	0	83	43	6	0	49	146
08:30 AM	4	11	0	15	10	55	0	65	63	4	0	67	147
08:45 AM	5	18	0	23	14	82	0	96	69	3	0	72	191
Total	15	53	0	68	34	269	0	303	237	18	0	255	626
Grand Total	30	112	0	142	54	524	0	578	519	37	0	556	1276
Apprch %	21.1	78.9	0		9.3	90.7	0		93.3	6.7	0		
Total %	2.4	8.8	0	11.1	4.2	41.1	0	45.3	40.7	2.9	0	43.6	
Light	27	104	0	131	49	504	0	553	499	35	0	534	1218
% Light	90	92.9	0	92.3	90.7	96.2	0	95.7	96.1	94.6	0	96	95.5
Heavy	3	8	0	11	5	20	0	25	20	2	0	22	58
% Heavy	10	7.1	0	7.7	9.3	3.8	0	4.3	3.9	5.4	0	4	4.5
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

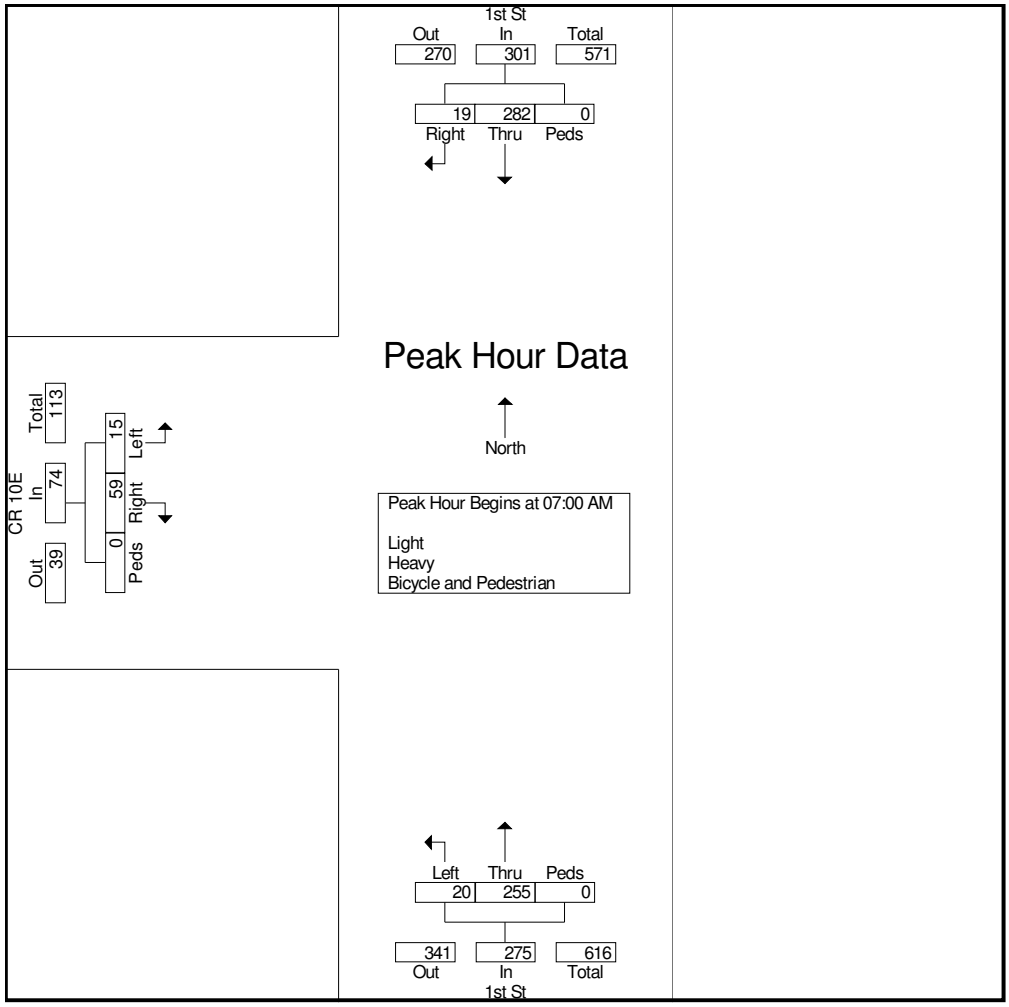


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	CR 10E Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	**4**	15	0	19	7	52	0	59	63	2	0	65	143
07:15 AM	3	15	0	18	**8**	56	0	64	81	6	0	**87**	169
07:30 AM	4	**20**	0	**24**	2	**78**	0	**80**	56	**7**	0	63	167
07:45 AM	4	9	0	13	3	69	0	72	**82**	4	0	86	**171**
Total Volume	15	59	0	74	20	255	0	275	282	19	0	301	650
% App. Total	20.3	79.7	0		7.3	92.7	0		93.7	6.3	0		
PHF	.938	.738	.000	.771	.625	.817	.000	.859	.860	.679	.000	.865	.950



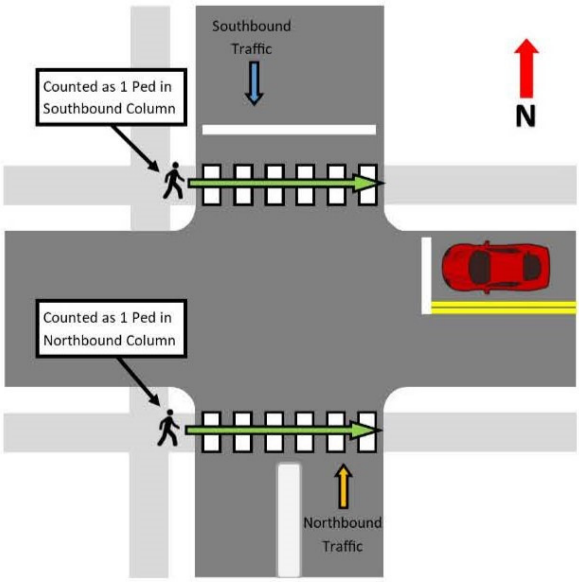
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

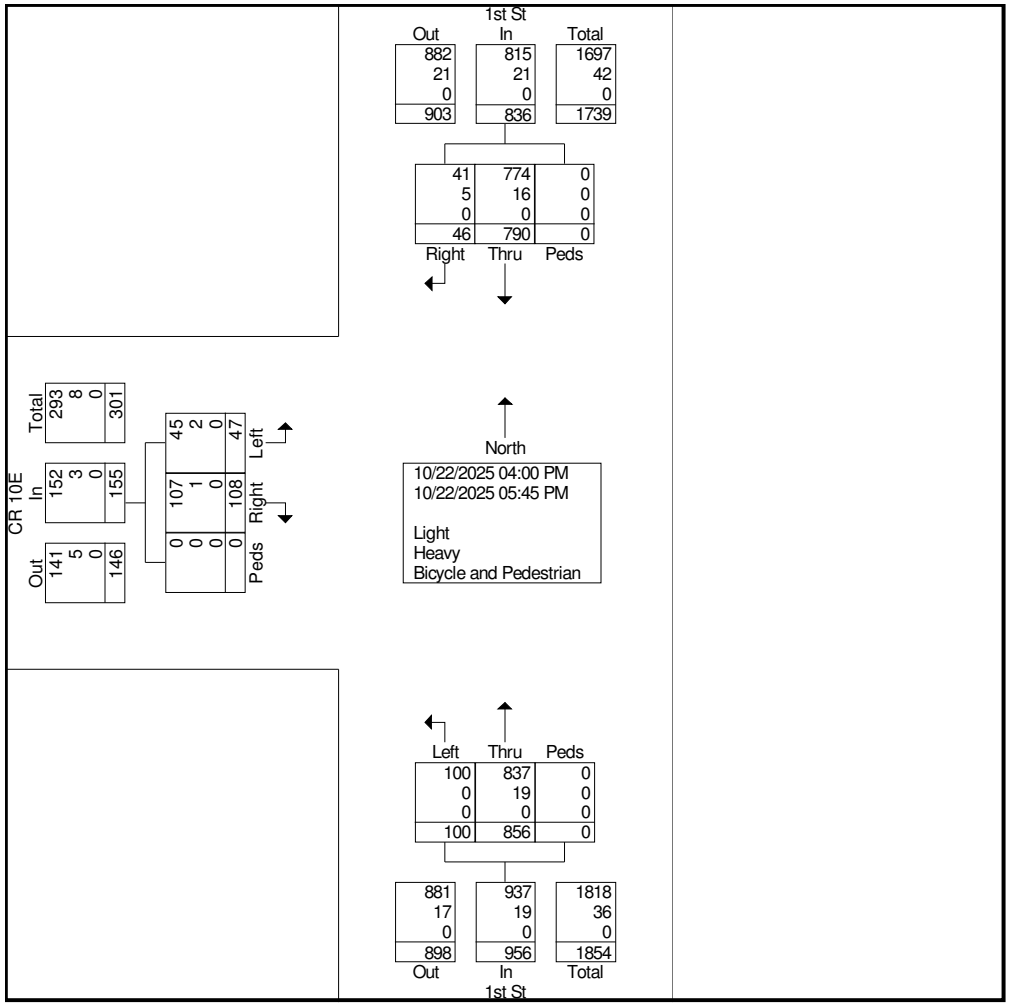
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CR 10E Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	11	16	0	27	8	117	0	125	115	6	0	121	273
04:15 PM	10	8	0	18	18	118	0	136	123	6	0	129	283
04:30 PM	7	12	0	19	15	140	0	155	119	5	0	124	298
04:45 PM	3	15	0	18	12	104	0	116	92	10	0	102	236
Total	31	51	0	82	53	479	0	532	449	27	0	476	1090
05:00 PM	6	16	0	22	13	123	0	136	100	4	0	104	262
05:15 PM	3	13	0	16	14	100	0	114	101	3	0	104	234
05:30 PM	4	12	0	16	12	76	0	88	72	9	0	81	185
05:45 PM	3	16	0	19	8	78	0	86	68	3	0	71	176
Total	16	57	0	73	47	377	0	424	341	19	0	360	857
Grand Total	47	108	0	155	100	856	0	956	790	46	0	836	1947
Apprch %	30.3	69.7	0		10.5	89.5	0		94.5	5.5	0		
Total %	2.4	5.5	0	8	5.1	44	0	49.1	40.6	2.4	0	42.9	
Light	45	107	0	152	100	837	0	937	774	41	0	815	1904
% Light	95.7	99.1	0	98.1	100	97.8	0	98	98	89.1	0	97.5	97.8
Heavy	2	1	0	3	0	19	0	19	16	5	0	21	43
% Heavy	4.3	0.9	0	1.9	0	2.2	0	2	2	10.9	0	2.5	2.2
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

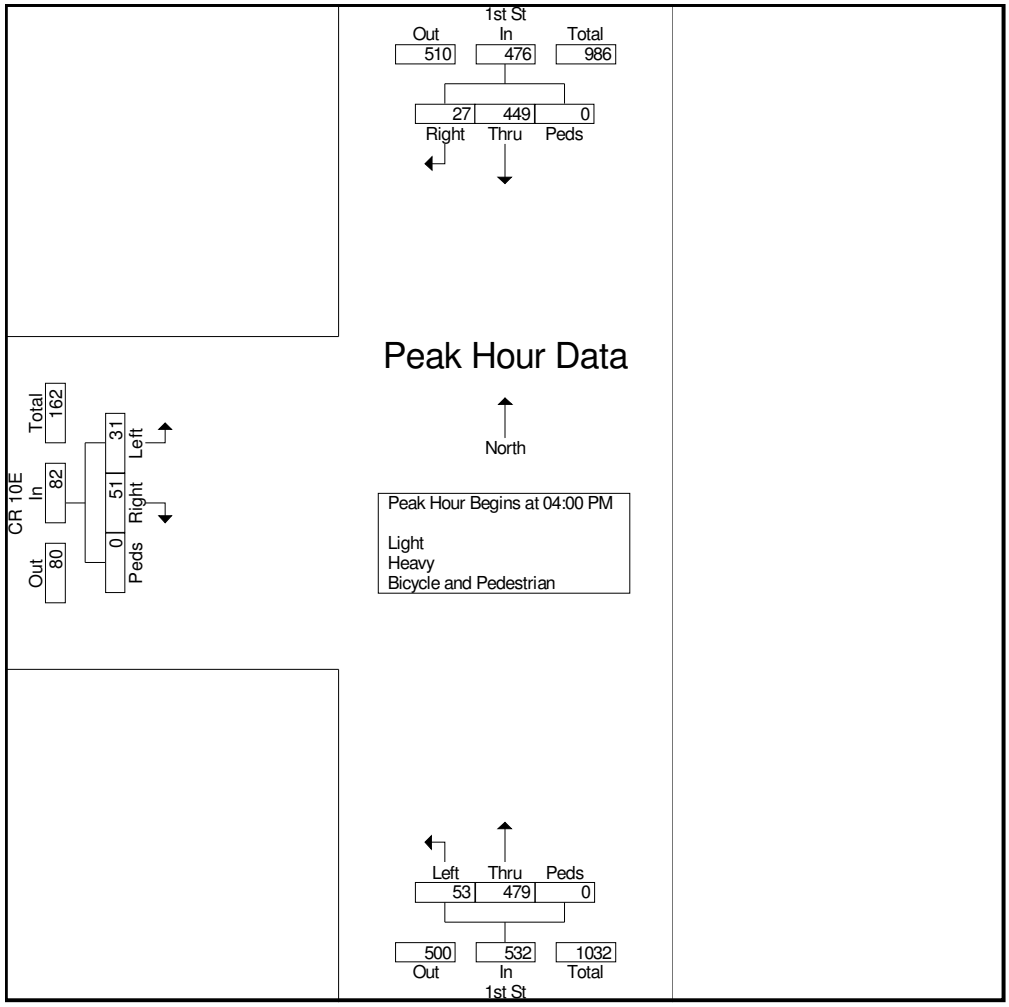


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	CR 10E Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**11**	**16**	0	**27**	8	117	0	125	115	6	0	121	273
04:15 PM	10	8	0	18	**18**	118	0	136	**123**	6	0	**129**	283
04:30 PM	7	12	0	19	15	**140**	0	**155**	119	5	0	124	**298**
04:45 PM	3	15	0	18	12	104	0	116	92	**10**	0	102	236
Total Volume	31	51	0	82	53	479	0	532	449	27	0	476	1090
% App. Total	37.8	62.2	0		10	90	0		94.3	5.7	0		
PHF	.705	.797	.000	.759	.736	.855	.000	.858	.913	.675	.000	.922	.914



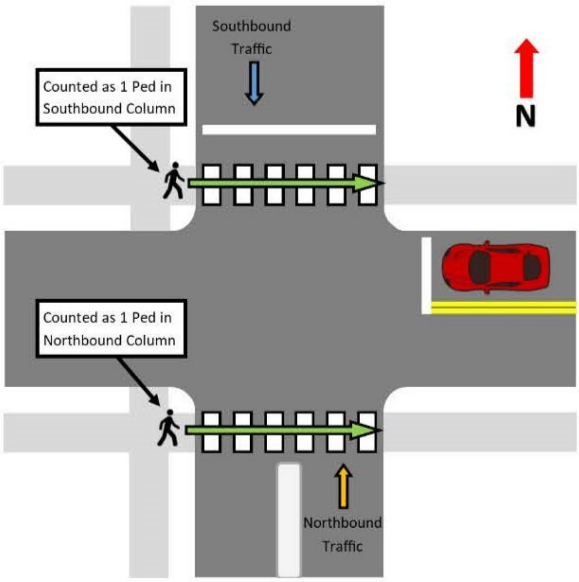
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and CR 10E

File Name : 6 1st St and CR 10E PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

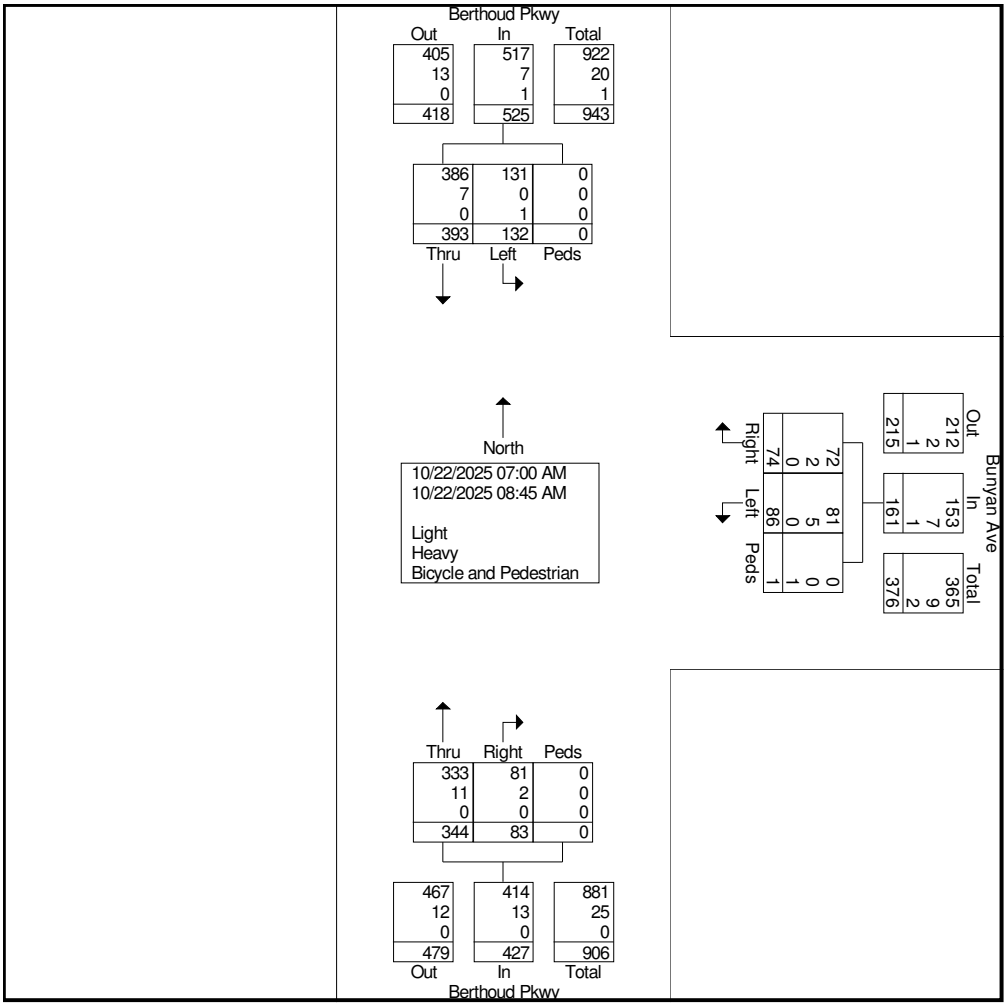
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Bunyan Ave Westbound				Berthoud Pkwy Northbound				Berthoud Pkwy Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	7	8	0	15	43	8	0	51	9	42	0	51	117
07:15 AM	7	3	0	10	42	6	0	48	16	48	0	64	122
07:30 AM	9	5	0	14	36	0	0	36	12	51	0	63	113
07:45 AM	8	8	0	16	38	4	0	42	15	50	0	65	123
Total	31	24	0	55	159	18	0	177	52	191	0	243	475
08:00 AM	10	14	0	24	55	4	0	59	17	47	0	64	147
08:15 AM	10	7	0	17	46	7	0	53	16	57	0	73	143
08:30 AM	17	12	1	30	45	29	0	74	24	52	0	76	180
08:45 AM	18	17	0	35	39	25	0	64	23	46	0	69	168
Total	55	50	1	106	185	65	0	250	80	202	0	282	638
Grand Total	86	74	1	161	344	83	0	427	132	393	0	525	1113
Apprch %	53.4	46	0.6		80.6	19.4	0		25.1	74.9	0		
Total %	7.7	6.6	0.1	14.5	30.9	7.5	0	38.4	11.9	35.3	0	47.2	
Light	81	72	0	153	333	81	0	414	131	386	0	517	1084
% Light	94.2	97.3	0	95	96.8	97.6	0	97	99.2	98.2	0	98.5	97.4
Heavy	5	2	0	7	11	2	0	13	0	7	0	7	27
% Heavy	5.8	2.7	0	4.3	3.2	2.4	0	3	0	1.8	0	1.3	2.4
Bicycle and Pedestrian	0	0	1	1	0	0	0	0	1	0	0	1	2
% Bicycle and Pedestrian	0	0	100	0.6	0	0	0	0	0.8	0	0	0.2	0.2

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

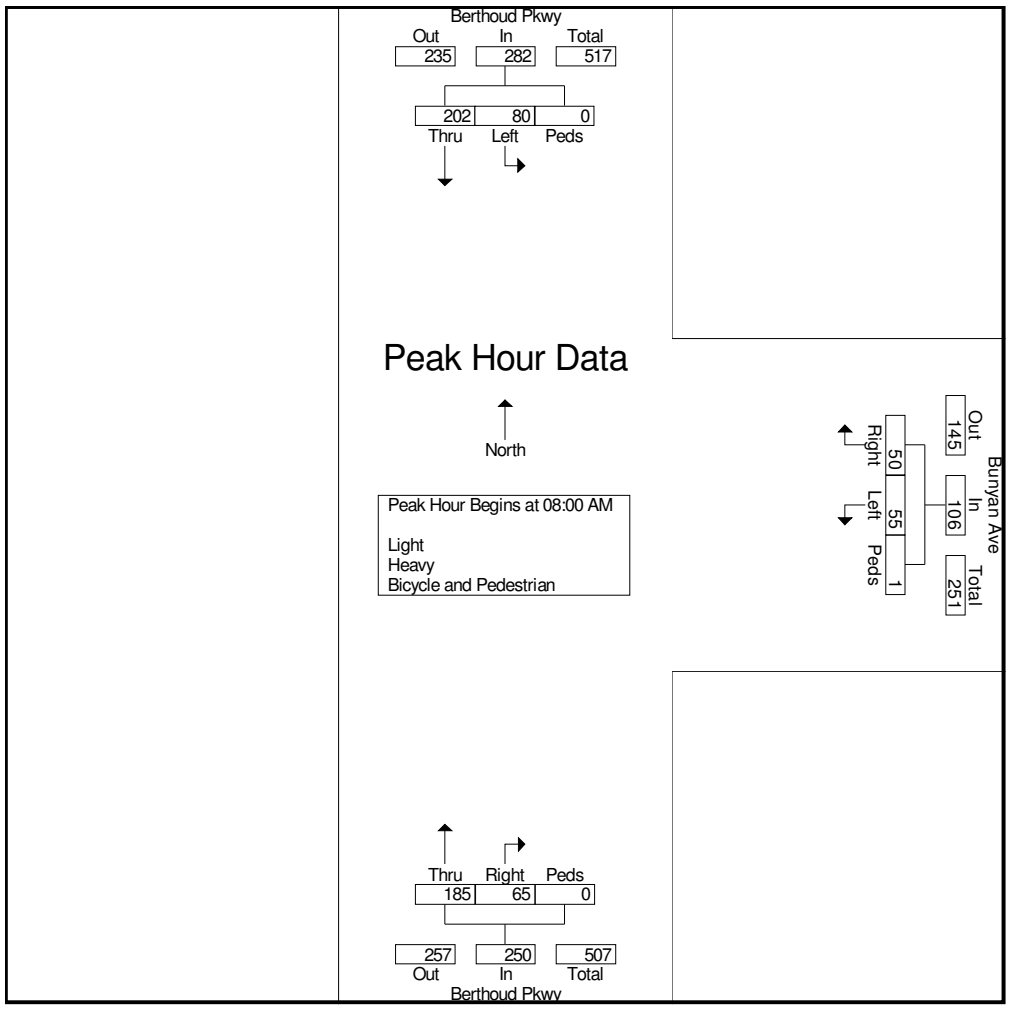


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Bunyan Ave Westbound				Berthoud Pkwy Northbound				Berthoud Pkwy Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	10	14	0	24	**55**	4	0	59	17	47	0	64	147
08:15 AM	10	7	0	17	46	7	0	53	16	**57**	0	73	143
08:30 AM	17	12	**1**	30	45	**29**	0	**74**	**24**	52	0	**76**	**180**
08:45 AM	**18**	**17**	0	**35**	39	25	0	64	23	46	0	69	168
Total Volume	55	50	1	106	185	65	0	250	80	202	0	282	638
% App. Total	51.9	47.2	0.9		74	26	0		28.4	71.6	0		
PHF	.764	.735	.250	.757	.841	.560	.000	.845	.833	.886	.000	.928	.886



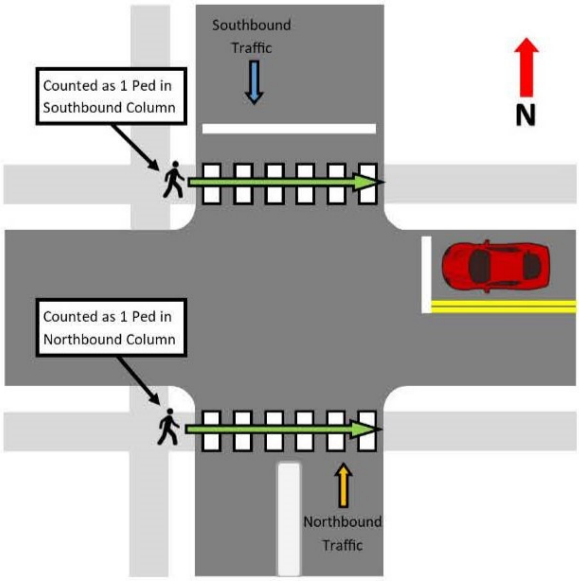
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

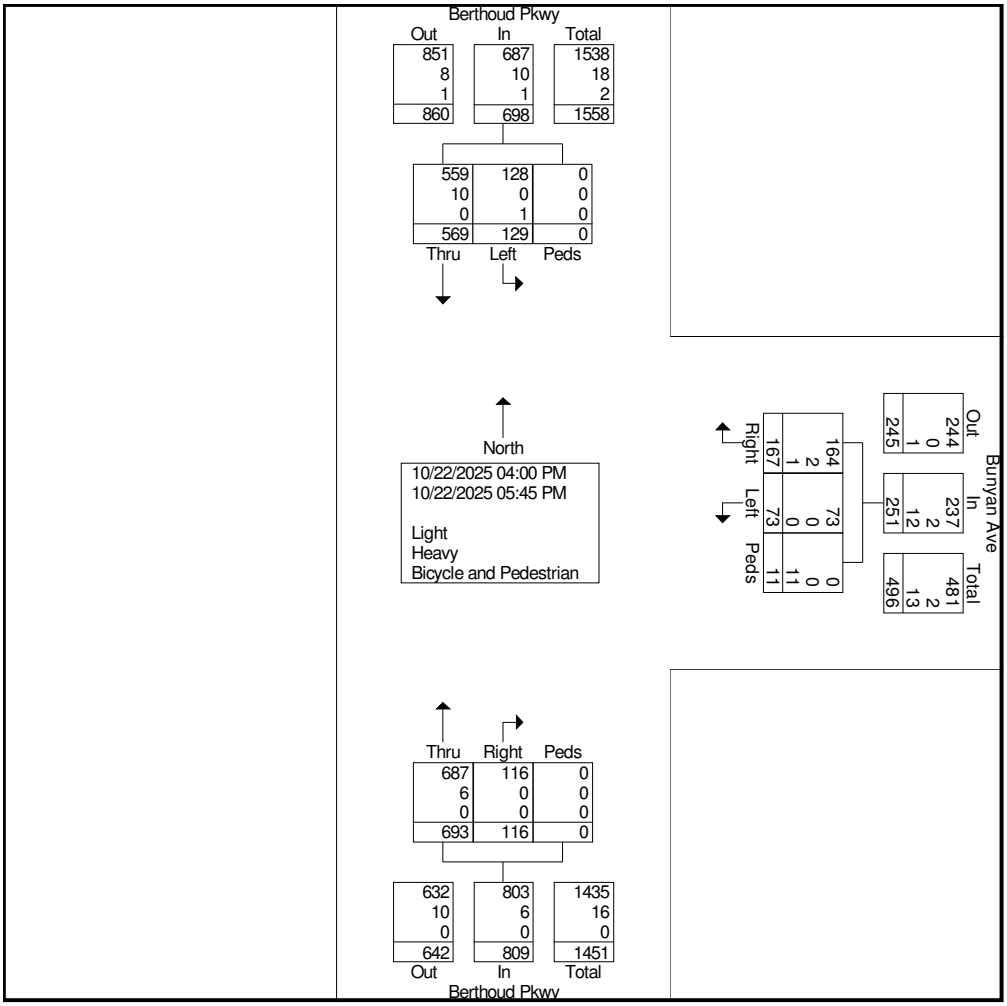
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Bunyan Ave Westbound				Berthoud Pkwy Northbound				Berthoud Pkwy Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
04:00 PM	13	22	0	35	107	17	0	124	26	62	0	88	247
04:15 PM	11	23	3	37	84	15	0	99	14	74	0	88	224
04:30 PM	8	21	2	31	74	9	0	83	13	59	0	72	186
04:45 PM	10	13	3	26	78	16	0	94	13	78	0	91	211
Total	42	79	8	129	343	57	0	400	66	273	0	339	868
05:00 PM	17	28	0	45	106	15	0	121	24	73	0	97	263
05:15 PM	4	23	1	28	97	21	0	118	15	79	0	94	240
05:30 PM	5	22	1	28	93	10	0	103	9	62	0	71	202
05:45 PM	5	15	1	21	54	13	0	67	15	82	0	97	185
Total	31	88	3	122	350	59	0	409	63	296	0	359	890
Grand Total	73	167	11	251	693	116	0	809	129	569	0	698	1758
Apprch %	29.1	66.5	4.4		85.7	14.3	0		18.5	81.5	0		
Total %	4.2	9.5	0.6	14.3	39.4	6.6	0	46	7.3	32.4	0	39.7	
Light	73	164	0	237	687	116	0	803	128	559	0	687	1727
% Light	100	98.2	0	94.4	99.1	100	0	99.3	99.2	98.2	0	98.4	98.2
Heavy	0	2	0	2	6	0	0	6	0	10	0	10	18
% Heavy	0	1.2	0	0.8	0.9	0	0	0.7	0	1.8	0	1.4	1
Bicycle and Pedestrian	0	1	11	12	0	0	0	0	1	0	0	1	13
% Bicycle and Pedestrian	0	0.6	100	4.8	0	0	0	0	0.8	0	0	0.1	0.7

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

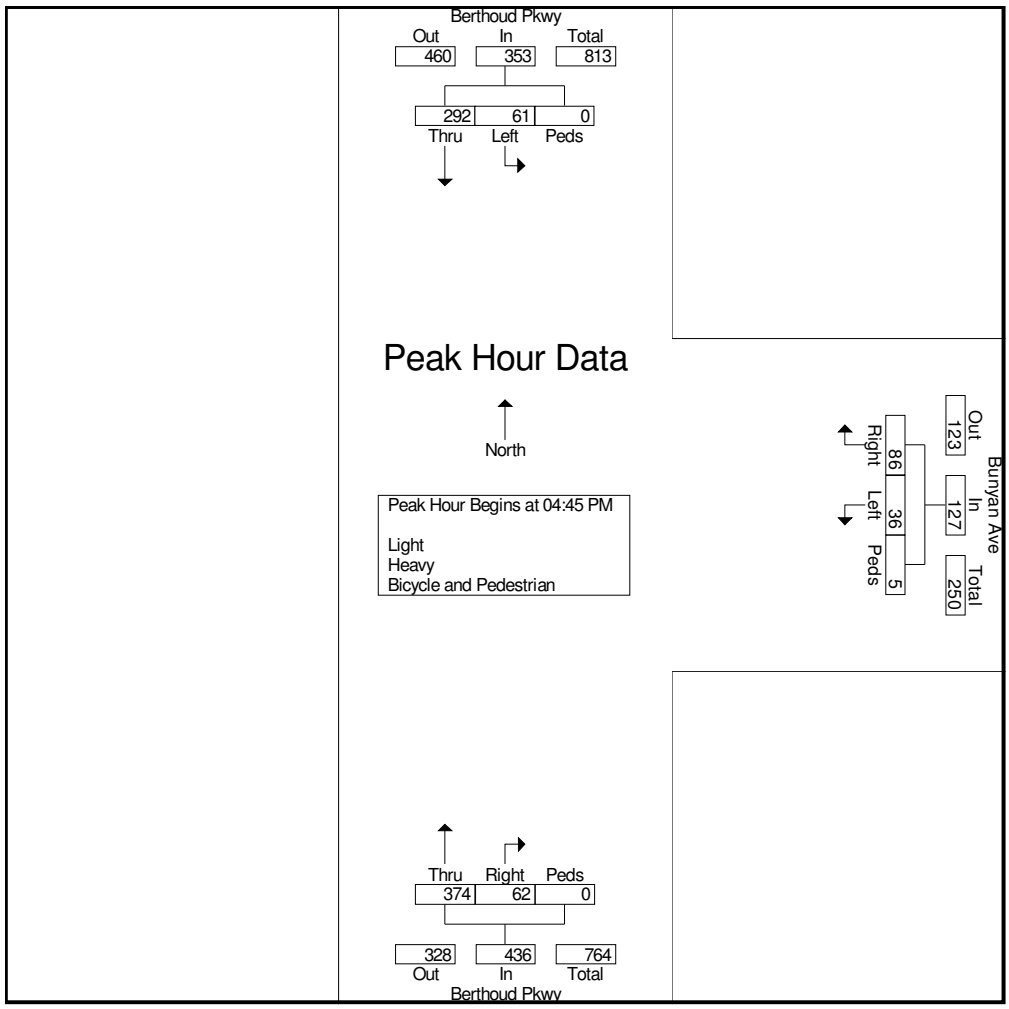


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Bunyan Ave Westbound				Berthoud Pkwy Northbound				Berthoud Pkwy Southbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	10	13	**3**	26	78	16	0	94	13	78	0	91	211
05:00 PM	**17**	**28**	0	**45**	**106**	15	0	**121**	**24**	73	0	**97**	**263**
05:15 PM	4	23	1	28	97	**21**	0	118	15	**79**	0	94	240
05:30 PM	5	22	1	28	93	10	0	103	9	62	0	71	202
Total Volume	36	86	5	127	374	62	0	436	61	292	0	353	916
% App. Total	28.3	67.7	3.9		85.8	14.2	0		17.3	82.7	0		
PHF	.529	.768	.417	.706	.882	.738	.000	.901	.635	.924	.000	.910	.871



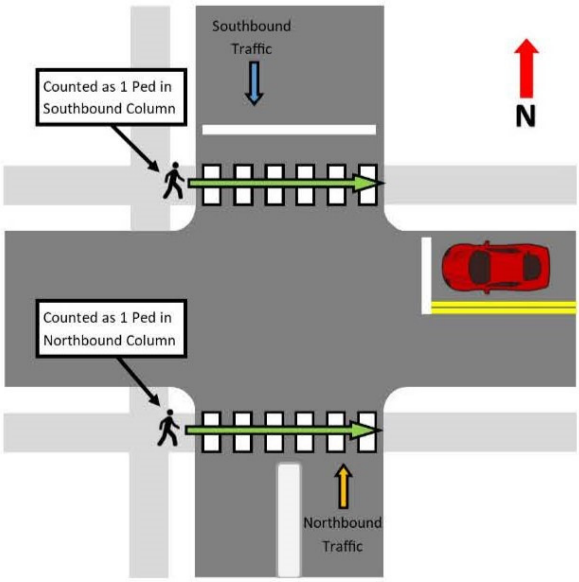
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
Berthoud Pkwy and Bunyan Ave

File Name : 7 Berthoud Pkwy and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

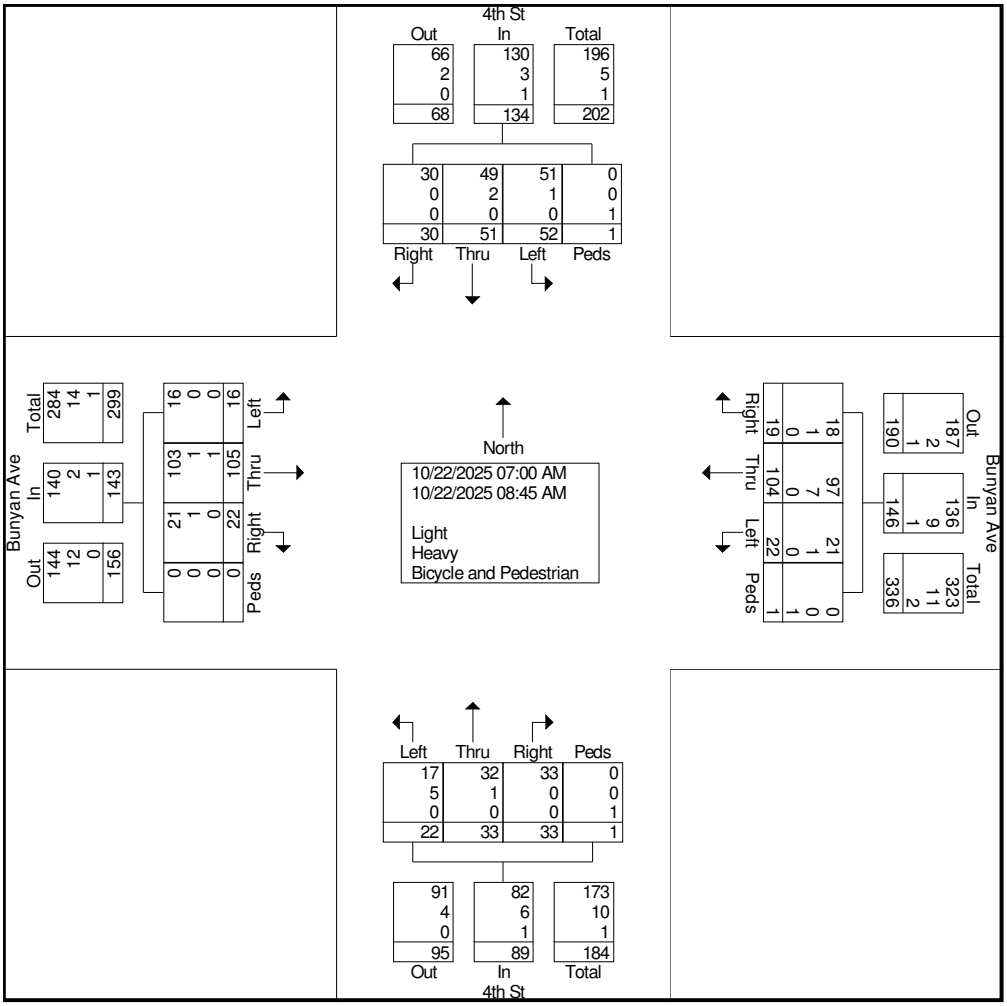
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Bunyan Ave Eastbound					Bunyan Ave Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	14	1	0	16	0	7	2	0	9	2	2	3	1	8	4	4	4	0	12	45
07:15 AM	0	14	3	0	17	1	14	0	1	16	0	1	1	0	2	5	4	3	0	12	47
07:30 AM	0	6	1	0	7	2	10	0	0	12	0	4	3	0	7	10	2	3	0	15	41
07:45 AM	1	8	0	0	9	3	9	4	0	16	1	6	7	0	14	4	7	4	0	15	54
Total	2	42	5	0	49	6	40	6	1	53	3	13	14	1	31	23	17	14	0	54	187
08:00 AM	3	9	1	0	13	2	10	1	0	13	3	4	4	0	11	8	7	3	1	19	56
08:15 AM	1	14	1	0	16	5	13	2	0	20	3	3	5	0	11	5	5	3	0	13	60
08:30 AM	1	22	3	0	26	3	20	3	0	26	8	8	3	0	19	5	8	3	0	16	87
08:45 AM	9	18	12	0	39	6	21	7	0	34	5	5	7	0	17	11	14	7	0	32	122
Total	14	63	17	0	94	16	64	13	0	93	19	20	19	0	58	29	34	16	1	80	325
Grand Total	16	105	22	0	143	22	104	19	1	146	22	33	33	1	89	52	51	30	1	134	512
Apprch %	11.2	73.4	15.4	0		15.1	71.2	13	0.7		24.7	37.1	37.1	1.1		38.8	38.1	22.4	0.7		
Total %	3.1	20.5	4.3	0	27.9	4.3	20.3	3.7	0.2	28.5	4.3	6.4	6.4	0.2	17.4	10.2	10	5.9	0.2	26.2	
Light	16	103	21	0	140	21	97	18	0	136	17	32	33	0	82	51	49	30	0	130	488
% Light	100	98.1	95.5	0	97.9	95.5	93.3	94.7	0	93.2	77.3	97	100	0	92.1	98.1	96.1	100	0	97	95.3
Heavy	0	1	1	0	2	1	7	1	0	9	5	1	0	0	6	1	2	0	0	3	20
% Heavy	0	1	4.5	0	1.4	4.5	6.7	5.3	0	6.2	22.7	3	0	0	6.7	1.9	3.9	0	0	2.2	3.9
Bicycle and Pedestrian	0	1	0	0	1	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	4
% Bicycle and Pedestrian	0	1	0	0	0.7	0	0	0	100	0.7	0	0	0	100	1.1	0	0	0	100	0.7	0.8

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

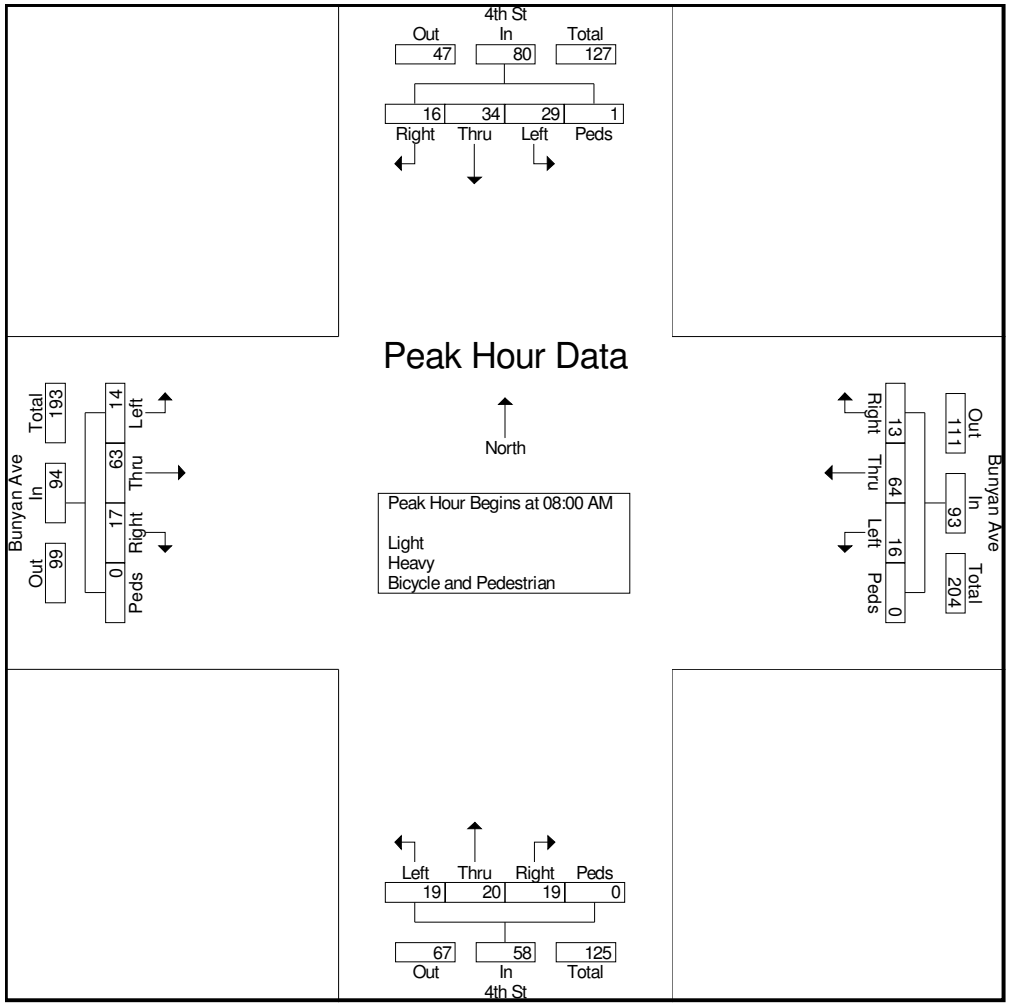


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025

	Bunyan Ave Eastbound					Bunyan Ave Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	3	9	1	0	13	2	10	1	0	13	3	4	4	0	11	8	7	3	**1**	19	56
08:15 AM	1	14	1	0	16	5	13	2	0	20	3	3	5	0	11	5	5	3	0	13	60
08:30 AM	1	**22**	3	0	26	3	20	3	0	26	**8**	**8**	3	0	**19**	5	8	3	0	16	87
08:45 AM	**9**	18	**12**	0	**39**	**6**	**21**	**7**	0	**34**	5	5	**7**	0	17	**11**	**14**	**7**	0	**32**	**122**
Total Volume	14	63	17	0	94	16	64	13	0	93	19	20	19	0	58	29	34	16	1	80	325
% App. Total	14.9	67	18.1	0		17.2	68.8	14	0		32.8	34.5	32.8	0		36.2	42.5	20	1.2		
PHF	.389	.716	.354	.000	.603	.667	.762	.464	.000	.684	.594	.625	.679	.000	.763	.659	.607	.571	.250	.625	.666



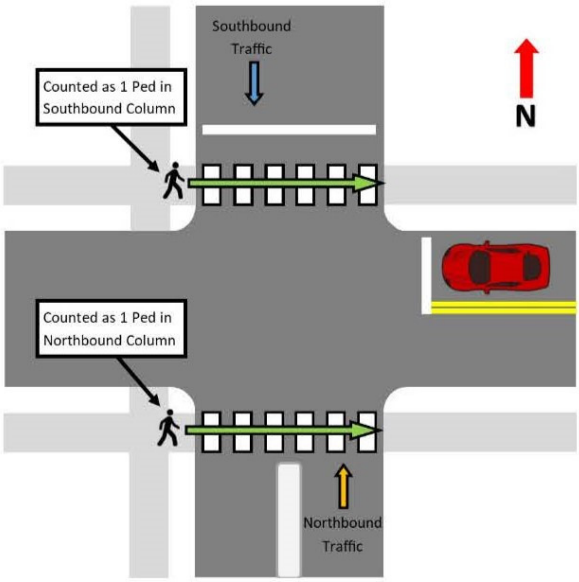
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

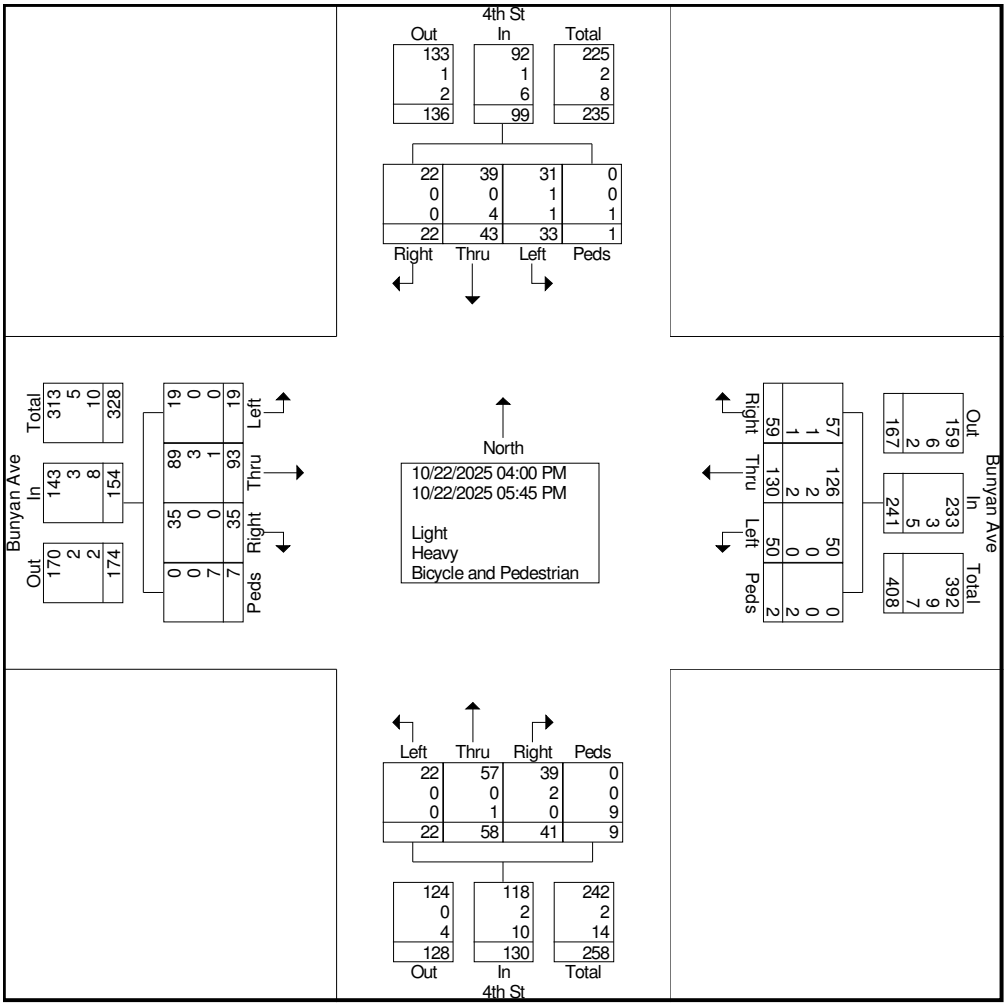
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Bunyan Ave Eastbound					Bunyan Ave Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	3	5	7	0	15	5	13	13	1	32	2	11	8	0	21	7	7	7	0	21	89
04:15 PM	2	21	4	0	27	7	19	6	0	32	1	8	10	0	19	4	5	3	0	12	90
04:30 PM	3	9	4	0	16	7	22	7	0	36	3	4	2	0	9	5	4	2	0	11	72
04:45 PM	0	8	2	4	14	7	26	9	1	43	2	7	3	8	20	5	9	1	0	15	92
Total	8	43	17	4	72	26	80	35	2	143	8	30	23	8	69	21	25	13	0	59	343
05:00 PM	3	13	3	1	20	5	20	10	0	35	5	7	5	1	18	2	3	1	0	6	79
05:15 PM	1	14	5	2	22	10	12	6	0	28	4	5	3	0	12	2	5	4	0	11	73
05:30 PM	6	12	5	0	23	3	8	3	0	14	3	10	4	0	17	4	6	2	0	12	66
05:45 PM	1	11	5	0	17	6	10	5	0	21	2	6	6	0	14	4	4	2	1	11	63
Total	11	50	18	3	82	24	50	24	0	98	14	28	18	1	61	12	18	9	1	40	281
Grand Total	19	93	35	7	154	50	130	59	2	241	22	58	41	9	130	33	43	22	1	99	624
Apprch %	12.3	60.4	22.7	4.5		20.7	53.9	24.5	0.8		16.9	44.6	31.5	6.9		33.3	43.4	22.2	1		
Total %	3	14.9	5.6	1.1	24.7	8	20.8	9.5	0.3	38.6	3.5	9.3	6.6	1.4	20.8	5.3	6.9	3.5	0.2	15.9	
Light	19	89	35	0	143	50	126	57	0	233	22	57	39	0	118	31	39	22	0	92	586
% Light	100	95.7	100	0	92.9	100	96.9	96.6	0	96.7	100	98.3	95.1	0	90.8	93.9	90.7	100	0	92.9	93.9
Heavy	0	3	0	0	3	0	2	1	0	3	0	0	2	0	2	1	0	0	0	1	9
% Heavy	0	3.2	0	0	1.9	0	1.5	1.7	0	1.2	0	0	4.9	0	1.5	3	0	0	0	1	1.4
Bicycle and Pedestrian	0	1	0	7	8	0	2	1	2	5	0	1	0	9	10	1	4	0	1	6	29
% Bicycle and Pedestrian	0	1.1	0	100	5.2	0	1.5	1.7	100	2.1	0	1.7	0	100	7.7	3	9.3	0	100	6.1	4.6

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

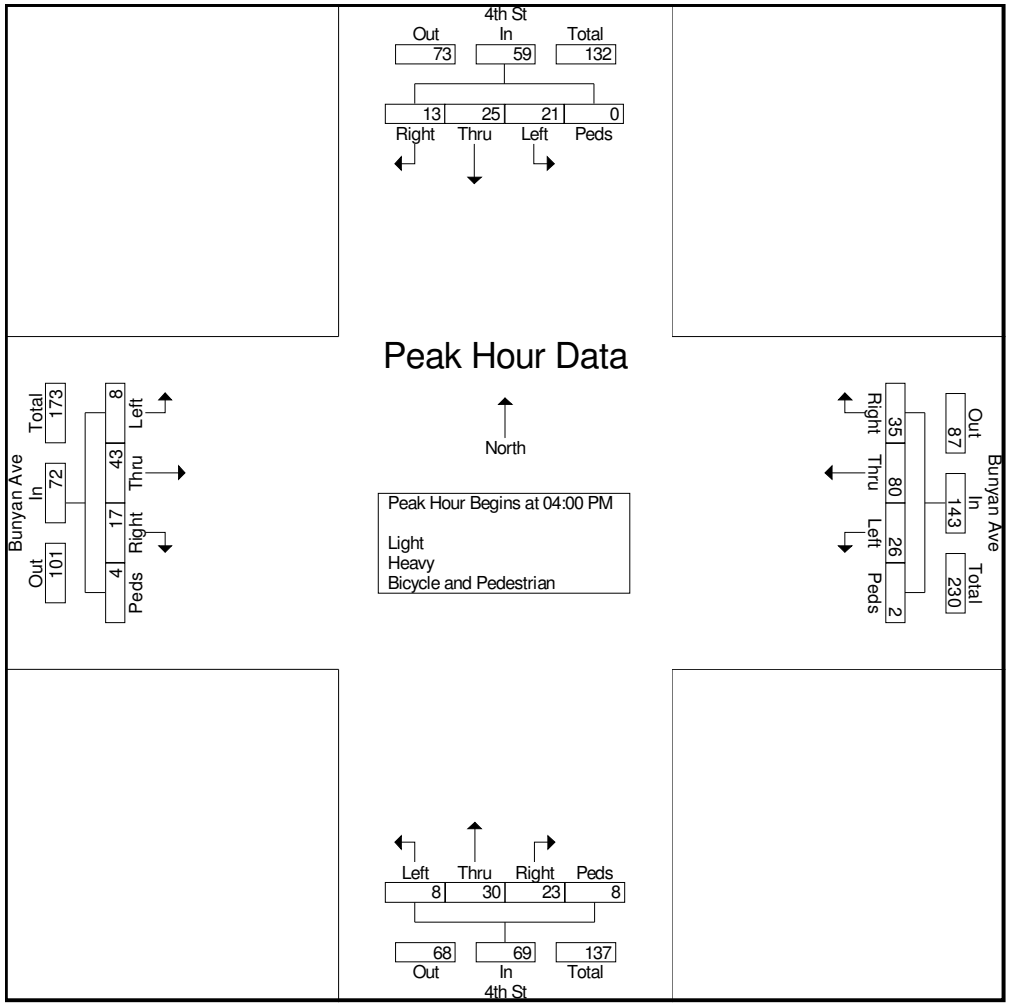


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025

	Bunyan Ave Eastbound					Bunyan Ave Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**3**	5	**7**	0	15	5	13	**13**	**1**	32	2	**11**	8	0	**21**	**7**	7	**7**	0	**21**	89
04:15 PM	2	**21**	4	0	**27**	**7**	19	6	0	32	1	8	**10**	0	19	4	5	3	0	12	90
04:30 PM	3	9	4	0	16	7	22	7	0	36	**3**	4	2	0	9	5	4	2	0	11	72
04:45 PM	0	8	2	**4**	14	7	**26**	9	1	**43**	2	7	3	**8**	20	5	**9**	1	0	15	**92**
Total Volume	8	43	17	4	72	26	80	35	2	143	8	30	23	8	69	21	25	13	0	59	343
% App. Total	11.1	59.7	23.6	5.6		18.2	55.9	24.5	1.4		11.6	43.5	33.3	11.6		35.6	42.4	22	0		
PHF	.667	.512	.607	.250	.667	.929	.769	.673	.500	.831	.667	.682	.575	.250	.821	.750	.694	.464	.000	.702	.932



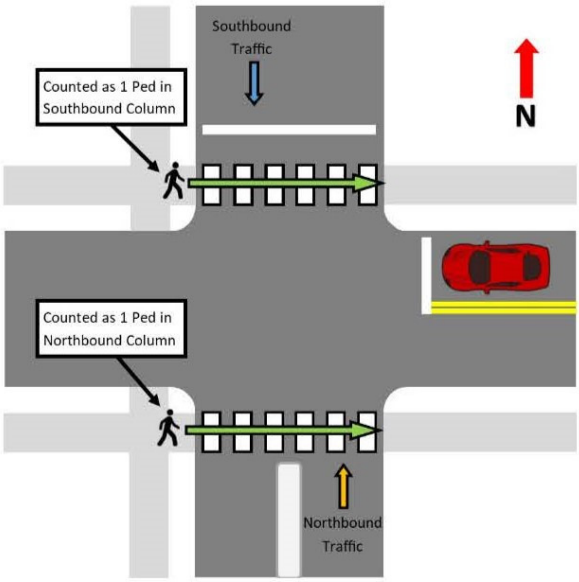
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
4th St and Bunyan Ave

File Name : 8 4th St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

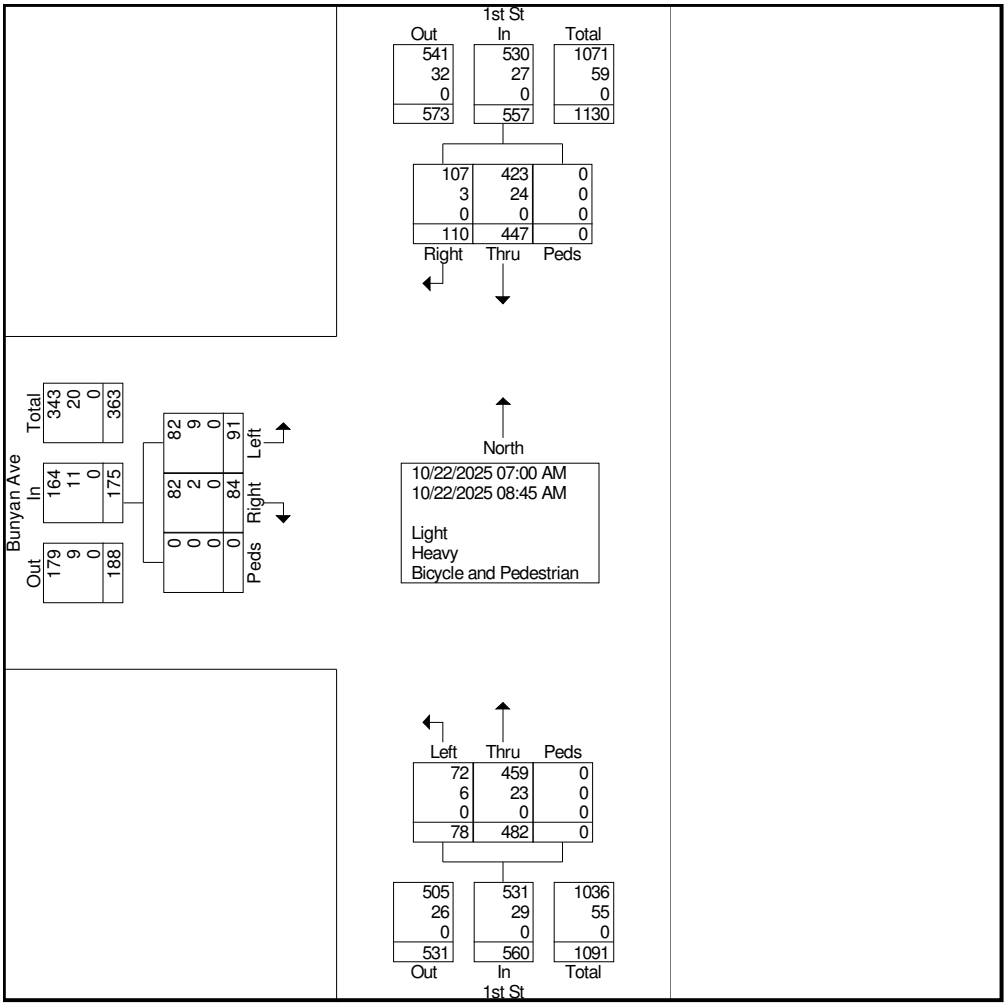
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Bunyan Ave Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	9	8	0	17	6	43	0	49	54	9	0	63	129
07:15 AM	8	12	0	20	9	60	0	69	71	16	0	87	176
07:30 AM	9	11	0	20	5	68	0	73	59	14	0	73	166
07:45 AM	10	4	0	14	7	65	0	72	69	10	0	79	165
Total	36	35	0	71	27	236	0	263	253	49	0	302	636
08:00 AM	8	7	0	15	6	48	0	54	51	13	0	64	133
08:15 AM	10	15	0	25	9	64	0	73	40	12	0	52	150
08:30 AM	16	7	0	23	15	54	0	69	48	19	0	67	159
08:45 AM	21	20	0	41	21	80	0	101	55	17	0	72	214
Total	55	49	0	104	51	246	0	297	194	61	0	255	656
Grand Total	91	84	0	175	78	482	0	560	447	110	0	557	1292
Apprch %	52	48	0		13.9	86.1	0		80.3	19.7	0		
Total %	7	6.5	0	13.5	6	37.3	0	43.3	34.6	8.5	0	43.1	
Light	82	82	0	164	72	459	0	531	423	107	0	530	1225
% Light	90.1	97.6	0	93.7	92.3	95.2	0	94.8	94.6	97.3	0	95.2	94.8
Heavy	9	2	0	11	6	23	0	29	24	3	0	27	67
% Heavy	9.9	2.4	0	6.3	7.7	4.8	0	5.2	5.4	2.7	0	4.8	5.2
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

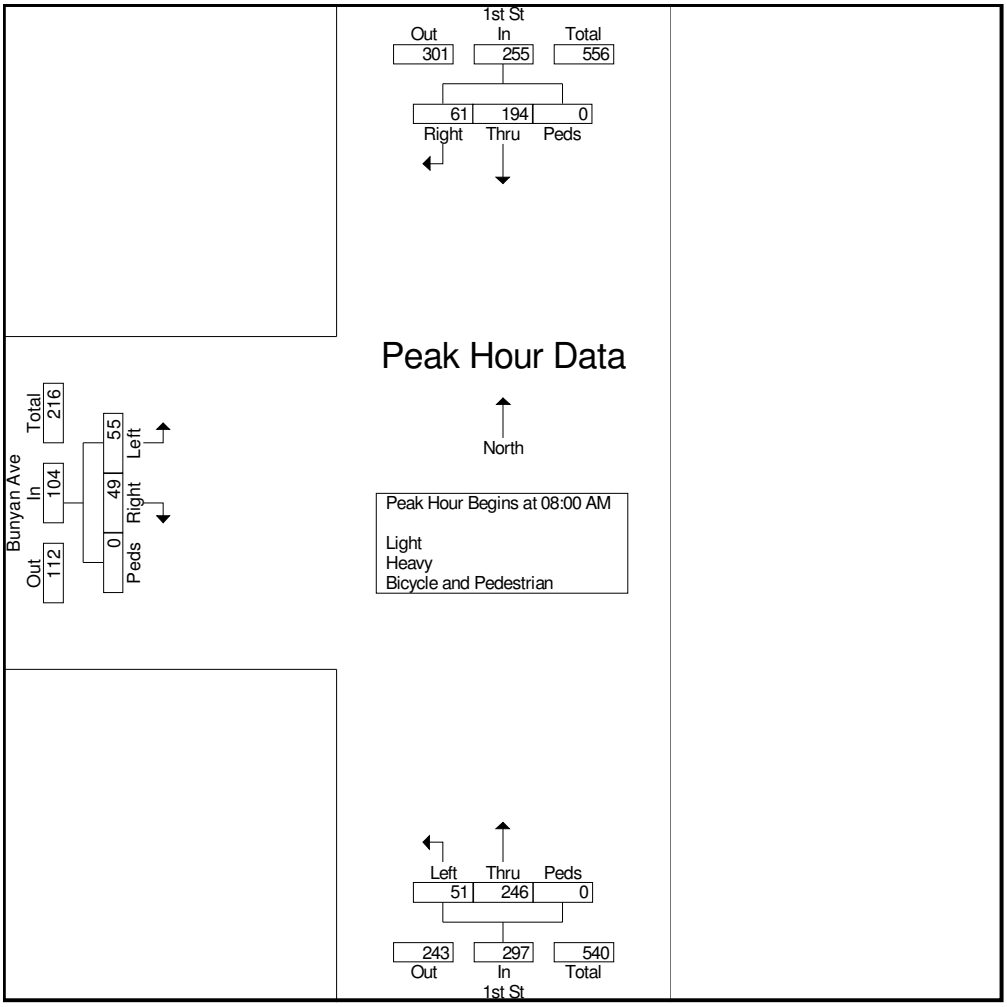


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Bunyan Ave Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	8	7	0	15	6	48	0	54	51	13	0	64	133
08:15 AM	10	15	0	25	9	64	0	73	40	12	0	52	150
08:30 AM	16	7	0	23	15	54	0	69	48	**19**	0	67	159
08:45 AM	**21**	**20**	0	**41**	**21**	**80**	0	**101**	**55**	17	0	**72**	**214**
Total Volume	55	49	0	104	51	246	0	297	194	61	0	255	656
% App. Total	52.9	47.1	0		17.2	82.8	0		76.1	23.9	0		
PHF	.655	.613	.000	.634	.607	.769	.000	.735	.882	.803	.000	.885	.766



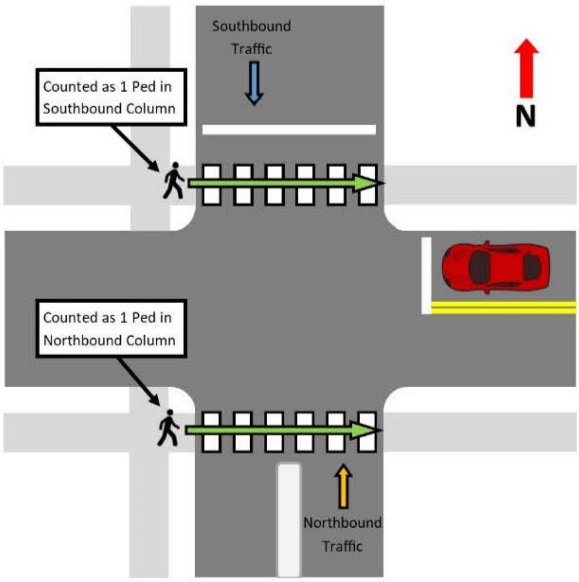
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

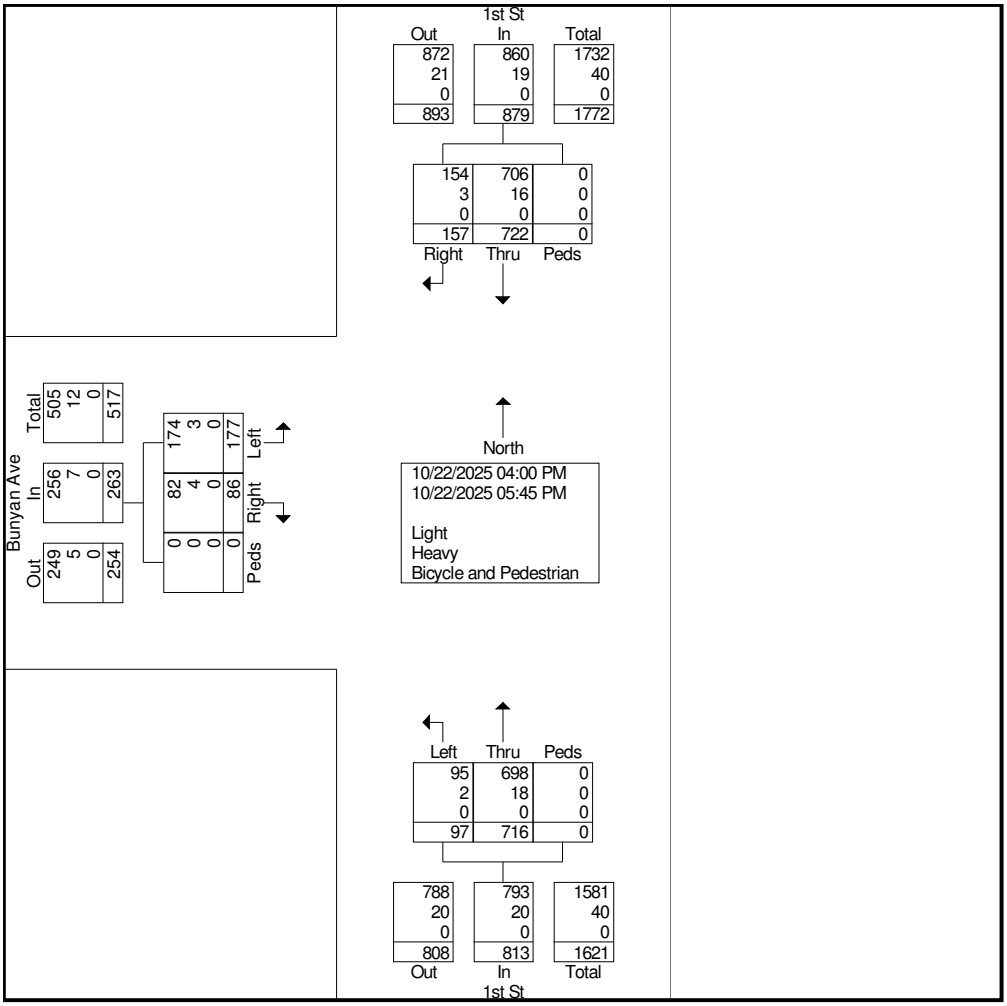
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Bunyan Ave Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	19	9	0	28	15	94	0	109	99	28	0	127	264
04:15 PM	39	12	0	51	14	97	0	111	103	21	0	124	286
04:30 PM	30	9	0	39	14	99	0	113	112	22	0	134	286
04:45 PM	13	12	0	25	16	101	0	117	88	21	0	109	251
Total	101	42	0	143	59	391	0	450	402	92	0	494	1087
05:00 PM	22	13	0	35	8	111	0	119	90	23	0	113	267
05:15 PM	21	5	0	26	15	83	0	98	89	16	0	105	229
05:30 PM	12	12	0	24	4	73	0	77	79	9	0	88	189
05:45 PM	21	14	0	35	11	58	0	69	62	17	0	79	183
Total	76	44	0	120	38	325	0	363	320	65	0	385	868
Grand Total	177	86	0	263	97	716	0	813	722	157	0	879	1955
Apprch %	67.3	32.7	0		11.9	88.1	0		82.1	17.9	0		
Total %	9.1	4.4	0	13.5	5	36.6	0	41.6	36.9	8	0	45	
Light	174	82	0	256	95	698	0	793	706	154	0	860	1909
% Light	98.3	95.3	0	97.3	97.9	97.5	0	97.5	97.8	98.1	0	97.8	97.6
Heavy	3	4	0	7	2	18	0	20	16	3	0	19	46
% Heavy	1.7	4.7	0	2.7	2.1	2.5	0	2.5	2.2	1.9	0	2.2	2.4
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

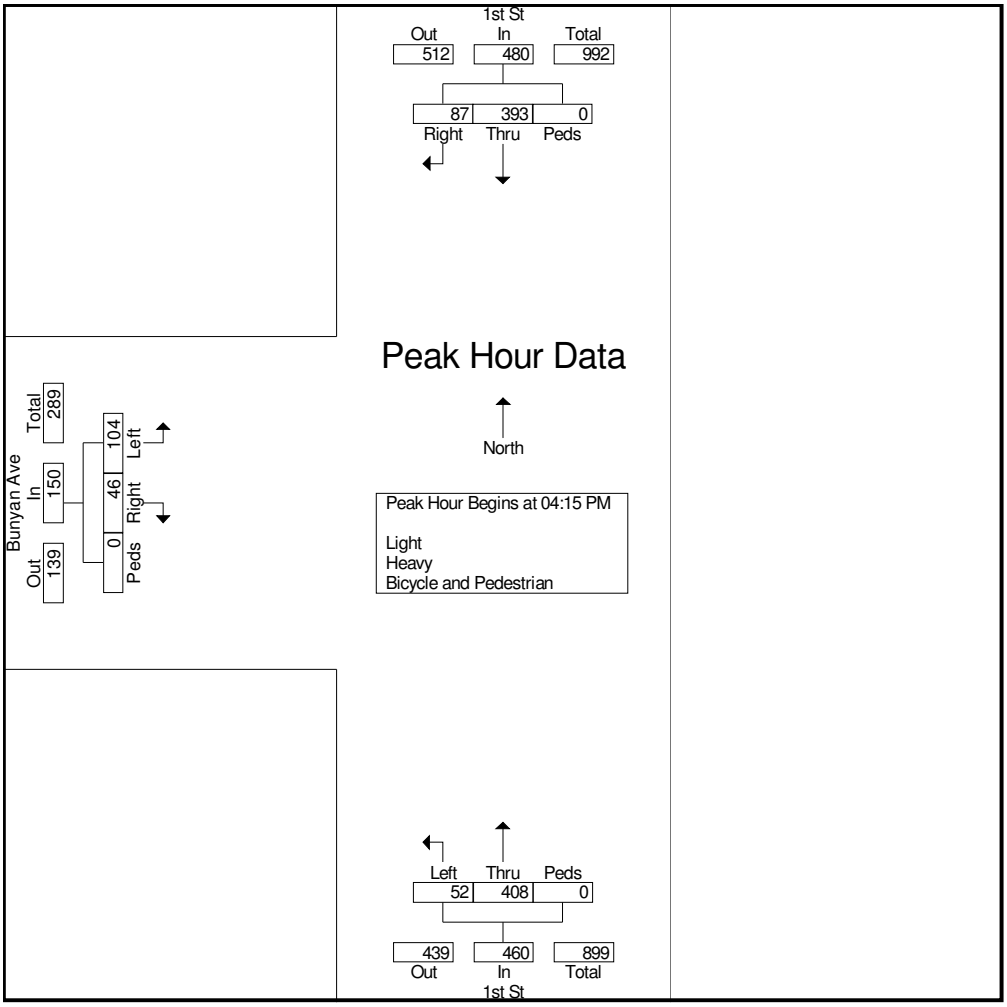


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Bunyan Ave Eastbound				1st St Northbound				1st St Southbound				
Start Time	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	**39**	12	0	**51**	14	97	0	111	103	21	0	124	**286**
04:30 PM	30	9	0	39	14	99	0	113	**112**	22	0	**134**	286
04:45 PM	13	12	0	25	**16**	101	0	117	88	21	0	109	251
05:00 PM	22	**13**	0	35	8	**111**	0	**119**	90	**23**	0	113	267
Total Volume	104	46	0	150	52	408	0	460	393	87	0	480	1090
% App. Total	69.3	30.7	0		11.3	88.7	0		81.9	18.1	0		
PHF	.667	.885	.000	.735	.813	.919	.000	.966	.877	.946	.000	.896	.953



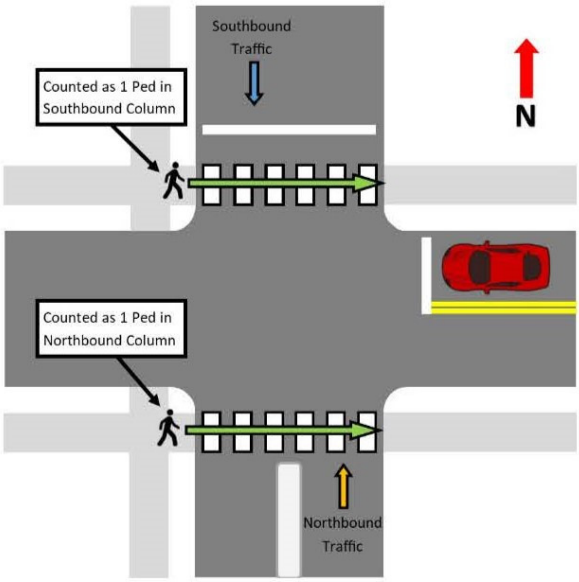
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
1st St and Bunyan Ave

File Name : 9 1st St and Bunyan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

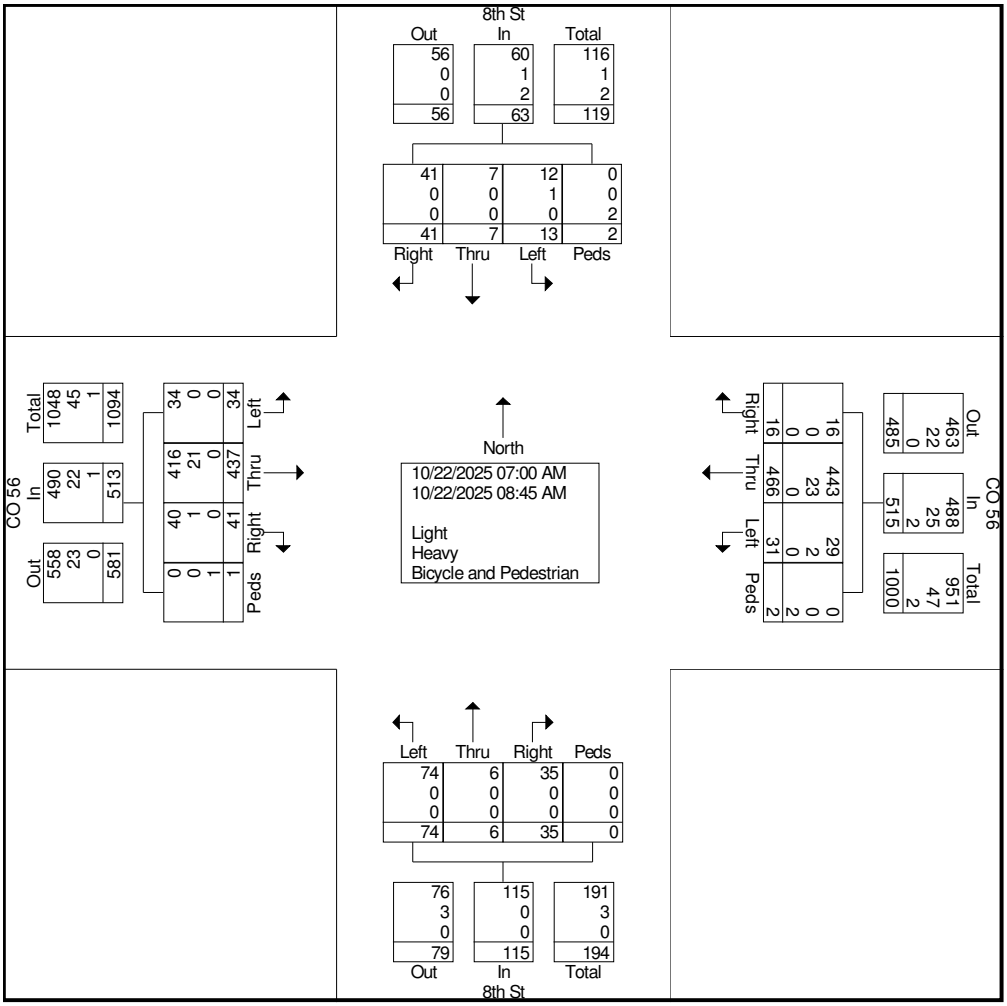
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CO 56 Eastbound					CO 56 Westbound					8th St Northbound					8th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	42	5	0	50	3	40	1	0	44	12	1	5	0	18	0	0	6	0	6	118
07:15 AM	1	52	5	0	58	1	54	1	0	56	8	0	4	0	12	4	0	2	0	6	132
07:30 AM	2	44	4	0	50	1	63	3	0	67	6	1	4	0	11	2	0	3	0	5	133
07:45 AM	3	66	6	0	75	6	64	2	0	72	6	1	5	0	12	2	1	7	1	11	170
Total	9	204	20	0	233	11	221	7	0	239	32	3	18	0	53	8	1	18	1	28	553
08:00 AM	5	57	5	0	67	2	65	3	0	70	8	2	4	0	14	0	3	7	0	10	161
08:15 AM	7	53	5	0	65	4	60	4	1	69	7	0	2	0	9	2	2	9	0	13	156
08:30 AM	8	56	4	0	68	7	48	1	1	57	14	1	4	0	19	1	1	4	1	7	151
08:45 AM	5	67	7	1	80	7	72	1	0	80	13	0	7	0	20	2	0	3	0	5	185
Total	25	233	21	1	280	20	245	9	2	276	42	3	17	0	62	5	6	23	1	35	653
Grand Total	34	437	41	1	513	31	466	16	2	515	74	6	35	0	115	13	7	41	2	63	1206
Apprch %	6.6	85.2	8	0.2		6	90.5	3.1	0.4		64.3	5.2	30.4	0		20.6	11.1	65.1	3.2		
Total %	2.8	36.2	3.4	0.1	42.5	2.6	38.6	1.3	0.2	42.7	6.1	0.5	2.9	0	9.5	1.1	0.6	3.4	0.2	5.2	
Light	34	416	40	0	490	29	443	16	0	488	74	6	35	0	115	12	7	41	0	60	1153
% Light	100	95.2	97.6	0	95.5	93.5	95.1	100	0	94.8	100	100	100	0	100	92.3	100	100	0	95.2	95.6
Heavy	0	21	1	0	22	2	23	0	0	25	0	0	0	0	0	1	0	0	0	1	48
% Heavy	0	4.8	2.4	0	4.3	6.5	4.9	0	0	4.9	0	0	0	0	0	7.7	0	0	0	1.6	4
Bicycle and Pedestrian	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2	5
% Bicycle and Pedestrian	0	0	0	100	0.2	0	0	0	100	0.4	0	0	0	0	0	0	0	0	100	3.2	0.4

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

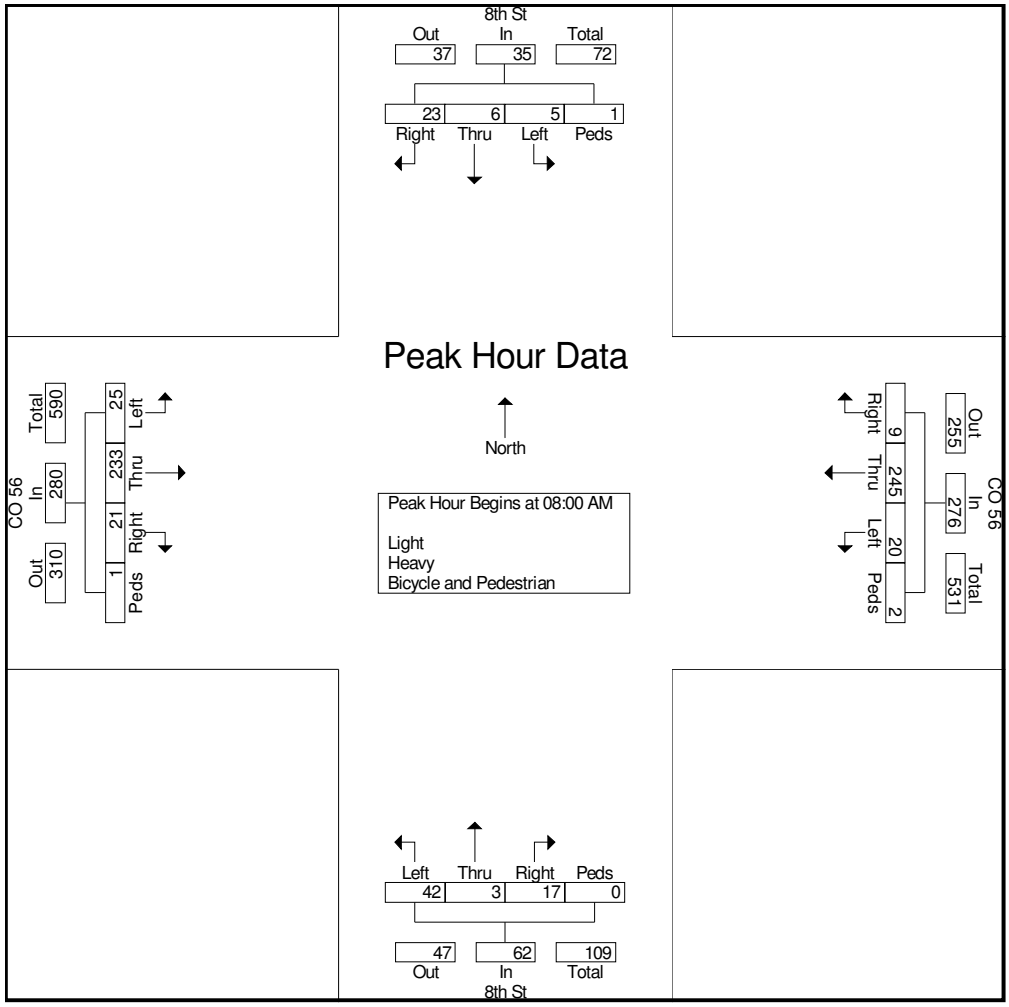


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	CO 56 Eastbound					CO 56 Westbound					8th St Northbound					8th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	5	57	5	0	67	2	65	3	0	70	8	**2**	4	0	14	0	**3**	7	0	10	161
08:15 AM	7	53	5	0	65	4	60	**4**	**1**	69	7	0	2	0	9	**2**	2	**9**	0	**13**	156
08:30 AM	**8**	56	4	0	68	**7**	48	1	1	57	**14**	1	4	0	19	1	1	4	**1**	7	151
08:45 AM	5	**67**	**7**	**1**	**80**	7	**72**	1	0	**80**	13	0	**7**	0	**20**	2	0	3	0	5	**185**
Total Volume	25	233	21	1	280	20	245	9	2	276	42	3	17	0	62	5	6	23	1	35	653
% App. Total	8.9	83.2	7.5	0.4		7.2	88.8	3.3	0.7		67.7	4.8	27.4	0		14.3	17.1	65.7	2.9		
PHF	.781	.869	.750	.250	.875	.714	.851	.563	.500	.863	.750	.375	.607	.000	.775	.625	.500	.639	.250	.673	.882



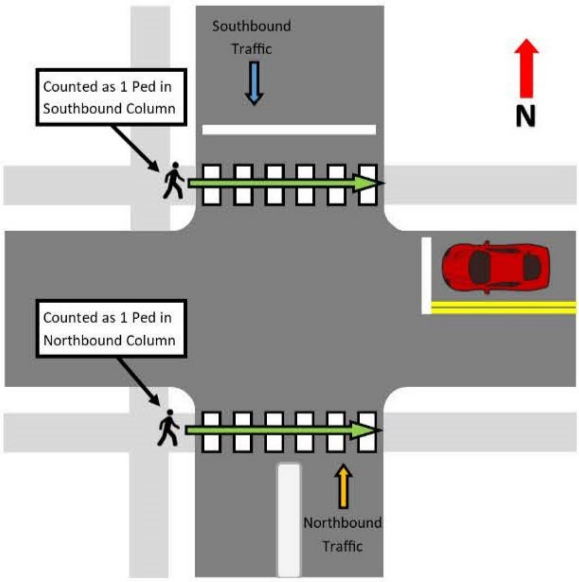
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

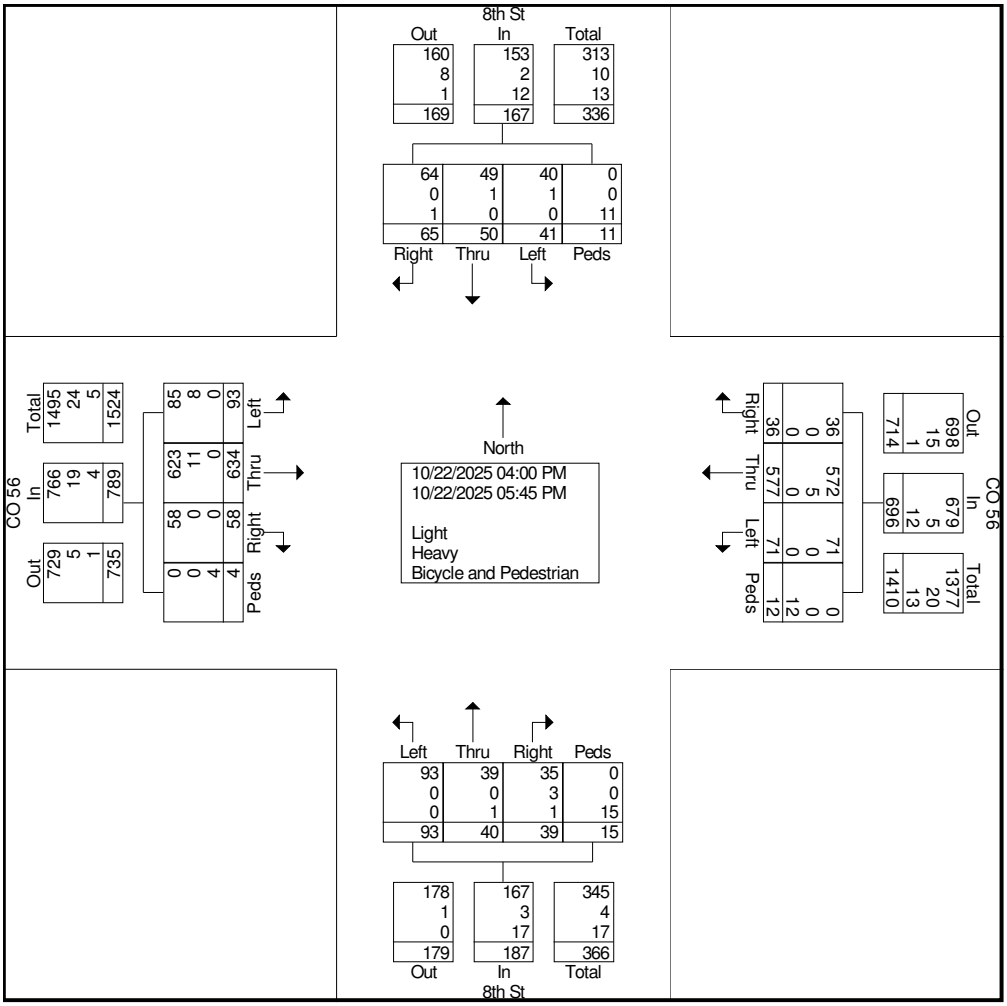
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CO 56 Eastbound					CO 56 Westbound					8th St Northbound					8th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	31	85	12	2	130	15	63	11	3	92	9	15	5	2	31	5	15	23	4	47	300
04:15 PM	8	90	5	1	104	8	77	1	3	89	9	4	6	5	24	10	15	8	0	33	250
04:30 PM	8	65	5	0	78	7	79	7	1	94	12	5	5	3	25	3	7	5	0	15	212
04:45 PM	5	84	9	0	98	14	86	4	2	106	11	6	7	3	27	4	1	2	0	7	238
Total	52	324	31	3	410	44	305	23	9	381	41	30	23	13	107	22	38	38	4	102	1000
05:00 PM	10	94	4	0	108	4	78	2	1	85	15	4	3	0	22	4	6	7	2	19	234
05:15 PM	14	64	8	0	86	6	72	9	1	88	15	3	3	1	22	7	1	6	0	14	210
05:30 PM	9	91	6	0	106	10	69	0	1	80	18	2	5	0	25	4	4	9	3	20	231
05:45 PM	8	61	9	1	79	7	53	2	0	62	4	1	5	1	11	4	1	5	2	12	164
Total	41	310	27	1	379	27	272	13	3	315	52	10	16	2	80	19	12	27	7	65	839
Grand Total	93	634	58	4	789	71	577	36	12	696	93	40	39	15	187	41	50	65	11	167	1839
Apprch %	11.8	80.4	7.4	0.5		10.2	82.9	5.2	1.7		49.7	21.4	20.9	8		24.6	29.9	38.9	6.6		
Total %	5.1	34.5	3.2	0.2	42.9	3.9	31.4	2	0.7	37.8	5.1	2.2	2.1	0.8	10.2	2.2	2.7	3.5	0.6	9.1	
Light	85	623	58	0	766	71	572	36	0	679	93	39	35	0	167	40	49	64	0	153	1765
% Light	91.4	98.3	100	0	97.1	100	99.1	100	0	97.6	100	97.5	89.7	0	89.3	97.6	98	98.5	0	91.6	96
Heavy	8	11	0	0	19	0	5	0	0	5	0	0	3	0	3	1	1	0	0	2	29
% Heavy	8.6	1.7	0	0	2.4	0	0.9	0	0	0.7	0	0	7.7	0	1.6	2.4	2	0	0	1.2	1.6
Bicycle and Pedestrian	0	0	0	4	4	0	0	0	12	12	0	1	1	15	17	0	0	1	11	12	45
% Bicycle and Pedestrian	0	0	0	100	0.5	0	0	0	100	1.7	0	2.5	2.6	100	9.1	0	0	1.5	100	7.2	2.4

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

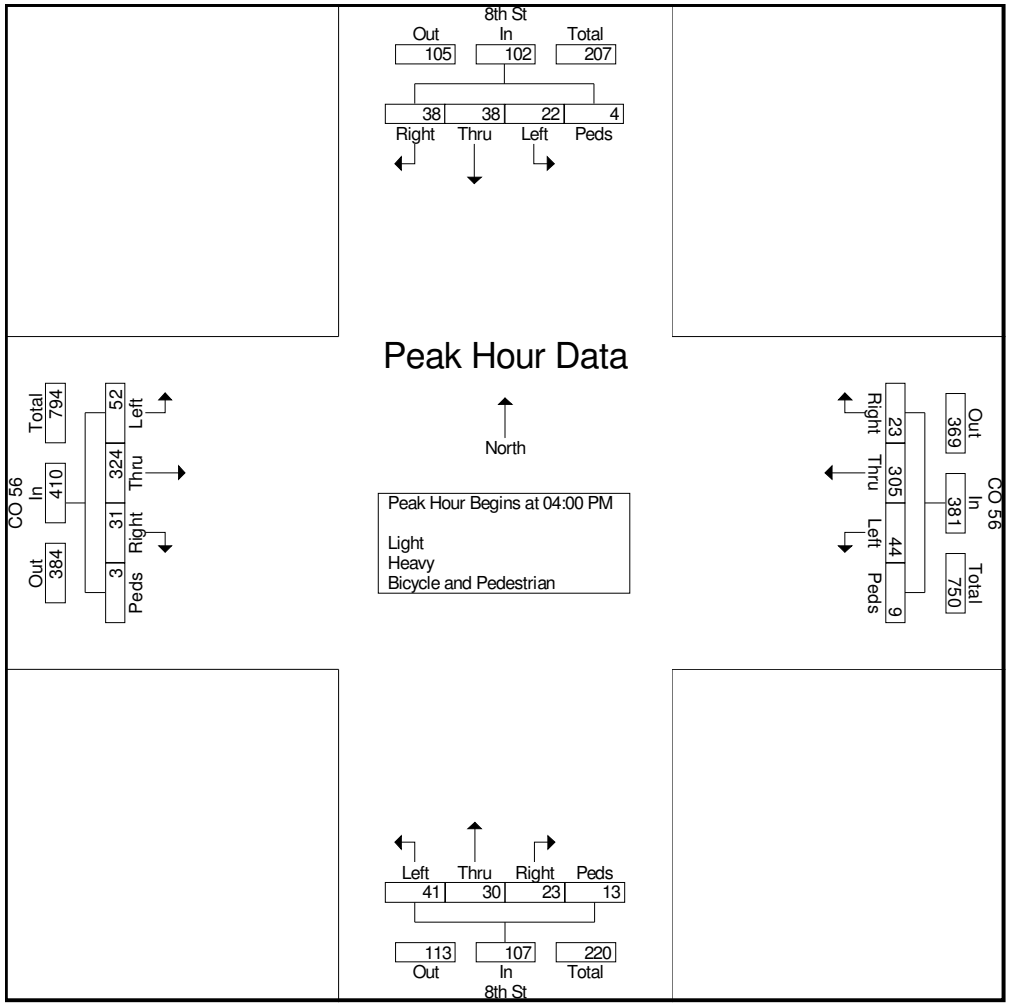


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	CO 56 Eastbound					CO 56 Westbound					8th St Northbound					8th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**31**	85	**12**	**2**	**130**	**15**	63	**11**	**3**	92	9	**15**	5	2	**31**	5	**15**	**23**	**4**	**47**	**300**
04:15 PM	8	**90**	5	1	104	8	77	1	3	89	9	4	6	**5**	24	**10**	15	8	0	33	250
04:30 PM	8	65	5	0	78	7	79	7	1	94	**12**	5	5	3	25	3	7	5	0	15	212
04:45 PM	5	84	9	0	98	14	**86**	4	2	**106**	11	6	**7**	3	27	4	1	2	0	7	238
Total Volume	52	324	31	3	410	44	305	23	9	381	41	30	23	13	107	22	38	38	4	102	1000
% App. Total	12.7	79	7.6	0.7		11.5	80.1	6	2.4		38.3	28	21.5	12.1		21.6	37.3	37.3	3.9		
PHF	.419	.900	.646	.375	.788	.733	.887	.523	.750	.899	.854	.500	.821	.650	.863	.550	.633	.413	.250	.543	.833



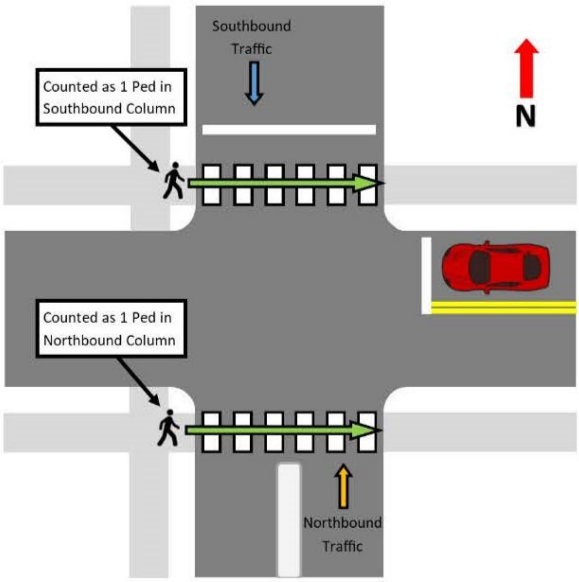
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 8th St

File Name : 10 CO 56 and 8th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

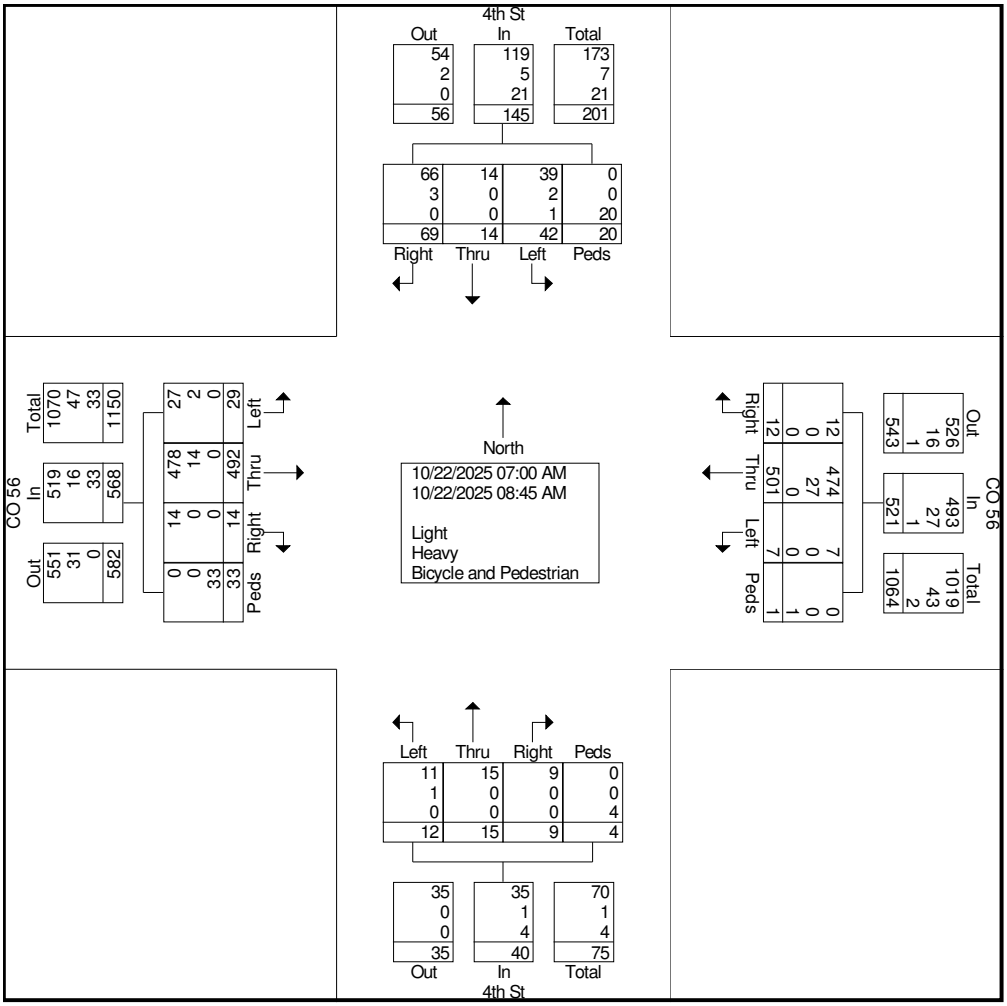
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CO 56 Eastbound					CO 56 Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	2	57	3	5	67	0	49	2	0	51	0	2	1	1	4	9	0	3	0	12	134
07:15 AM	2	56	1	5	64	1	59	0	1	61	1	0	1	1	3	6	2	8	2	18	146
07:30 AM	5	61	0	2	68	1	68	2	0	71	0	1	0	1	2	2	3	9	1	15	156
07:45 AM	6	73	1	3	83	1	71	0	0	72	1	3	3	0	7	4	1	7	5	17	179
Total	15	247	5	15	282	3	247	4	1	255	2	6	5	3	16	21	6	27	8	62	615
08:00 AM	4	58	2	6	70	0	68	3	0	71	3	2	2	0	7	4	2	10	7	23	171
08:15 AM	1	61	1	3	66	2	63	3	0	68	5	0	0	0	5	6	0	3	5	14	153
08:30 AM	8	49	1	1	59	1	63	1	0	65	1	2	1	1	5	3	4	5	0	12	141
08:45 AM	1	77	5	8	91	1	60	1	0	62	1	5	1	0	7	8	2	24	0	34	194
Total	14	245	9	18	286	4	254	8	0	266	10	9	4	1	24	21	8	42	12	83	659
Grand Total	29	492	14	33	568	7	501	12	1	521	12	15	9	4	40	42	14	69	20	145	1274
Apprch %	5.1	86.6	2.5	5.8		1.3	96.2	2.3	0.2		30	37.5	22.5	10		29	9.7	47.6	13.8		
Total %	2.3	38.6	1.1	2.6	44.6	0.5	39.3	0.9	0.1	40.9	0.9	1.2	0.7	0.3	3.1	3.3	1.1	5.4	1.6	11.4	
Light	27	478	14	0	519	7	474	12	0	493	11	15	9	0	35	39	14	66	0	119	1166
% Light	93.1	97.2	100	0	91.4	100	94.6	100	0	94.6	91.7	100	100	0	87.5	92.9	100	95.7	0	82.1	91.5
Heavy	2	14	0	0	16	0	27	0	0	27	1	0	0	0	1	2	0	3	0	5	49
% Heavy	6.9	2.8	0	0	2.8	0	5.4	0	0	5.2	8.3	0	0	0	2.5	4.8	0	4.3	0	3.4	3.8
Bicycle and Pedestrian	0	0	0	33	33	0	0	0	1	1	0	0	0	4	4	1	0	0	20	21	59
% Bicycle and Pedestrian	0	0	0	100	5.8	0	0	0	100	0.2	0	0	0	100	10	2.4	0	0	100	14.5	4.6

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

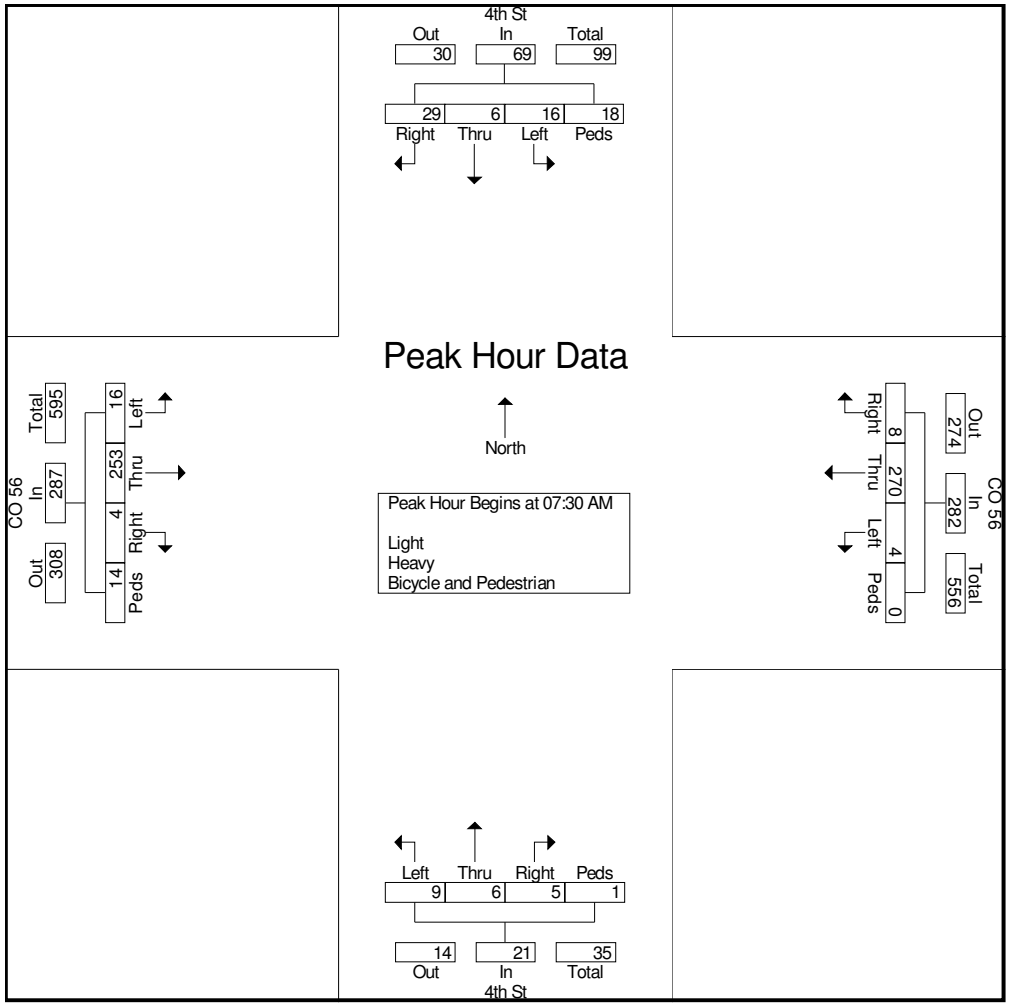


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	CO 56 Eastbound					CO 56 Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	5	61	0	2	68	1	68	2	0	71	0	1	0	**1**	2	2	**3**	9	1	15	156
07:45 AM	**6**	**73**	1	3	**83**	1	**71**	0	0	**72**	1	**3**	**3**	0	**7**	4	1	7	5	17	**179**
08:00 AM	4	58	**2**	**6**	70	0	68	**3**	0	71	3	2	2	0	7	4	2	**10**	**7**	**23**	171
08:15 AM	1	61	1	3	66	**2**	63	3	0	68	**5**	0	0	0	5	**6**	0	3	5	14	153
Total Volume	16	253	4	14	287	4	270	8	0	282	9	6	5	1	21	16	6	29	18	69	659
% App. Total	5.6	88.2	1.4	4.9		1.4	95.7	2.8	0		42.9	28.6	23.8	4.8		23.2	8.7	42	26.1		
PHF	.667	.866	.500	.583	.864	.500	.951	.667	.000	.979	.450	.500	.417	.250	.750	.667	.500	.725	.643	.750	.920



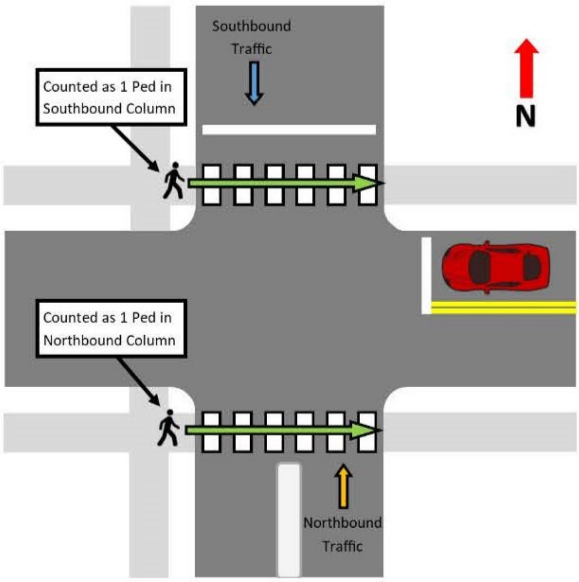
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

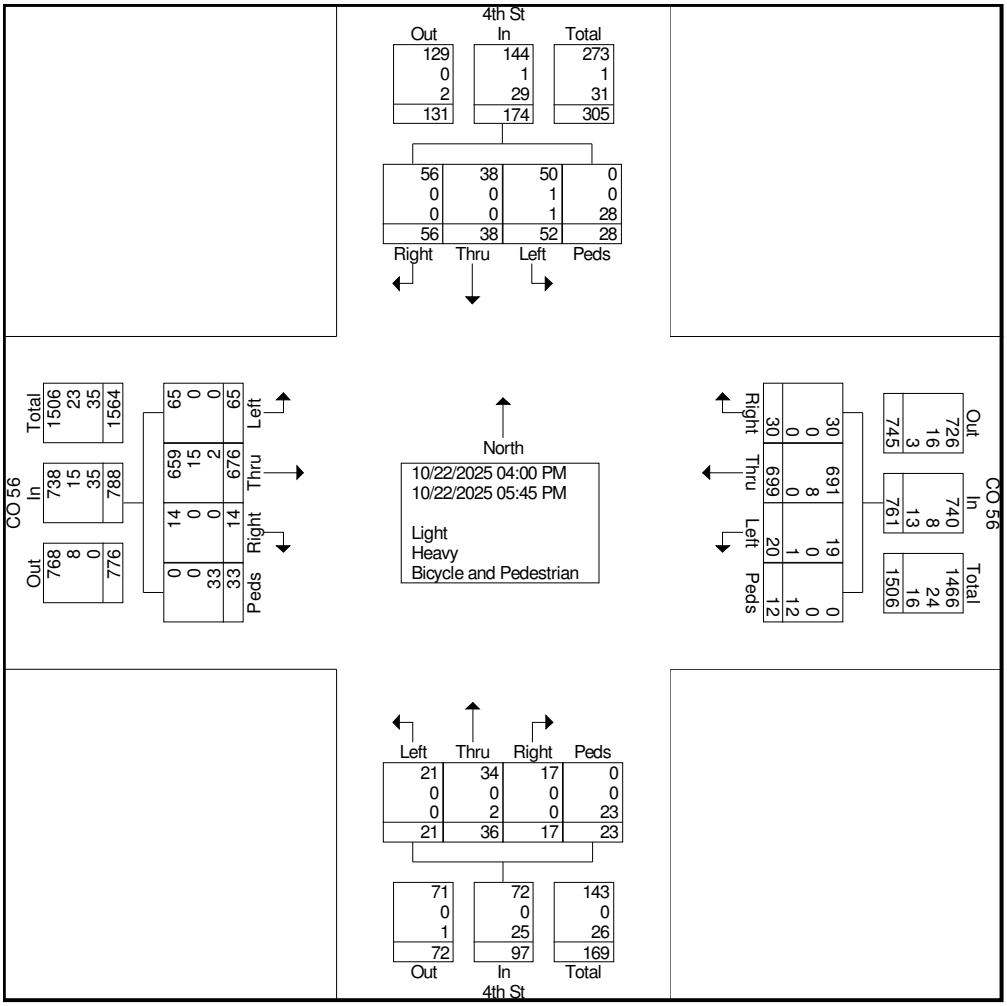
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CO 56 Eastbound					CO 56 Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	10	93	0	6	109	4	94	4	0	102	1	4	2	3	10	19	10	3	2	34	255
04:15 PM	8	115	5	3	131	3	86	0	0	89	4	4	6	3	17	11	7	3	3	24	261
04:30 PM	8	78	1	4	91	2	96	1	5	104	3	3	1	3	10	2	1	8	9	20	225
04:45 PM	8	85	2	6	101	2	101	4	2	109	3	7	2	3	15	2	3	7	5	17	242
Total	34	371	8	19	432	11	377	9	7	404	11	18	11	12	52	34	21	21	19	95	983
05:00 PM	5	97	3	5	110	4	90	3	2	99	3	4	3	1	11	7	4	7	2	20	240
05:15 PM	4	68	0	3	75	2	91	6	1	100	2	5	1	4	12	5	6	9	4	24	211
05:30 PM	10	81	3	3	97	2	82	4	1	89	1	2	0	1	4	4	6	12	1	23	213
05:45 PM	12	59	0	3	74	1	59	8	1	69	4	7	2	5	18	2	1	7	2	12	173
Total	31	305	6	14	356	9	322	21	5	357	10	18	6	11	45	18	17	35	9	79	837
Grand Total	65	676	14	33	788	20	699	30	12	761	21	36	17	23	97	52	38	56	28	174	1820
Apprch %	8.2	85.8	1.8	4.2		2.6	91.9	3.9	1.6		21.6	37.1	17.5	23.7		29.9	21.8	32.2	16.1		
Total %	3.6	37.1	0.8	1.8	43.3	1.1	38.4	1.6	0.7	41.8	1.2	2	0.9	1.3	5.3	2.9	2.1	3.1	1.5	9.6	
Light	65	659	14	0	738	19	691	30	0	740	21	34	17	0	72	50	38	56	0	144	1694
% Light	100	97.5	100	0	93.7	95	98.9	100	0	97.2	100	94.4	100	0	74.2	96.2	100	100	0	82.8	93.1
Heavy	0	15	0	0	15	0	8	0	0	8	0	0	0	0	0	1	0	0	0	1	24
% Heavy	0	2.2	0	0	1.9	0	1.1	0	0	1.1	0	0	0	0	0	1.9	0	0	0	0.6	1.3
Bicycle and Pedestrian	0	2	0	33	35	1	0	0	12	13	0	2	0	23	25	1	0	0	28	29	102
% Bicycle and Pedestrian	0	0.3	0	100	4.4	5	0	0	100	1.7	0	5.6	0	100	25.8	1.9	0	0	100	16.7	5.6

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

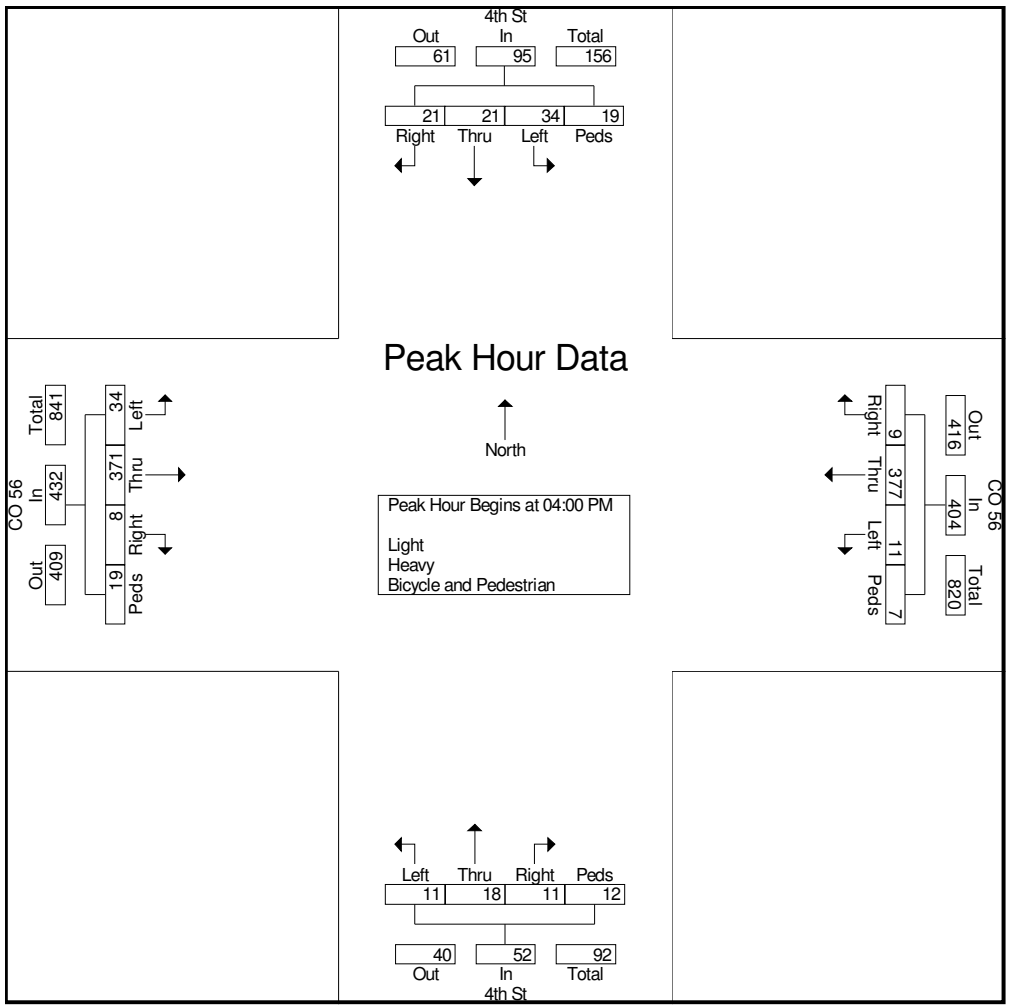


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	CO 56 Eastbound					CO 56 Westbound					4th St Northbound					4th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**10**	93	0	**6**	109	**4**	94	**4**	0	102	1	4	2	**3**	10	**19**	**10**	3	2	**34**	255
04:15 PM	8	**115**	**5**	3	**131**	3	86	0	0	89	**4**	4	**6**	3	**17**	11	7	3	3	24	**261**
04:30 PM	8	78	1	4	91	2	96	1	**5**	104	3	3	1	3	10	2	1	**8**	**9**	20	225
04:45 PM	8	85	2	6	101	2	**101**	4	2	**109**	3	**7**	2	3	15	2	3	7	5	17	242
Total Volume	34	371	8	19	432	11	377	9	7	404	11	18	11	12	52	34	21	21	19	95	983
% App. Total	7.9	85.9	1.9	4.4		2.7	93.3	2.2	1.7		21.2	34.6	21.2	23.1		35.8	22.1	22.1	20		
PHF	.850	.807	.400	.792	.824	.688	.933	.563	.350	.927	.688	.643	.458	1.00	.765	.447	.525	.656	.528	.699	.942



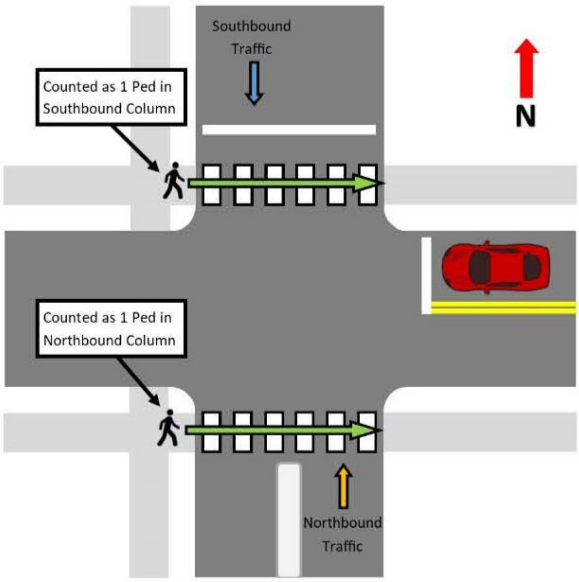
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and 4th St

File Name : 11 CO 56 and 4th St PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

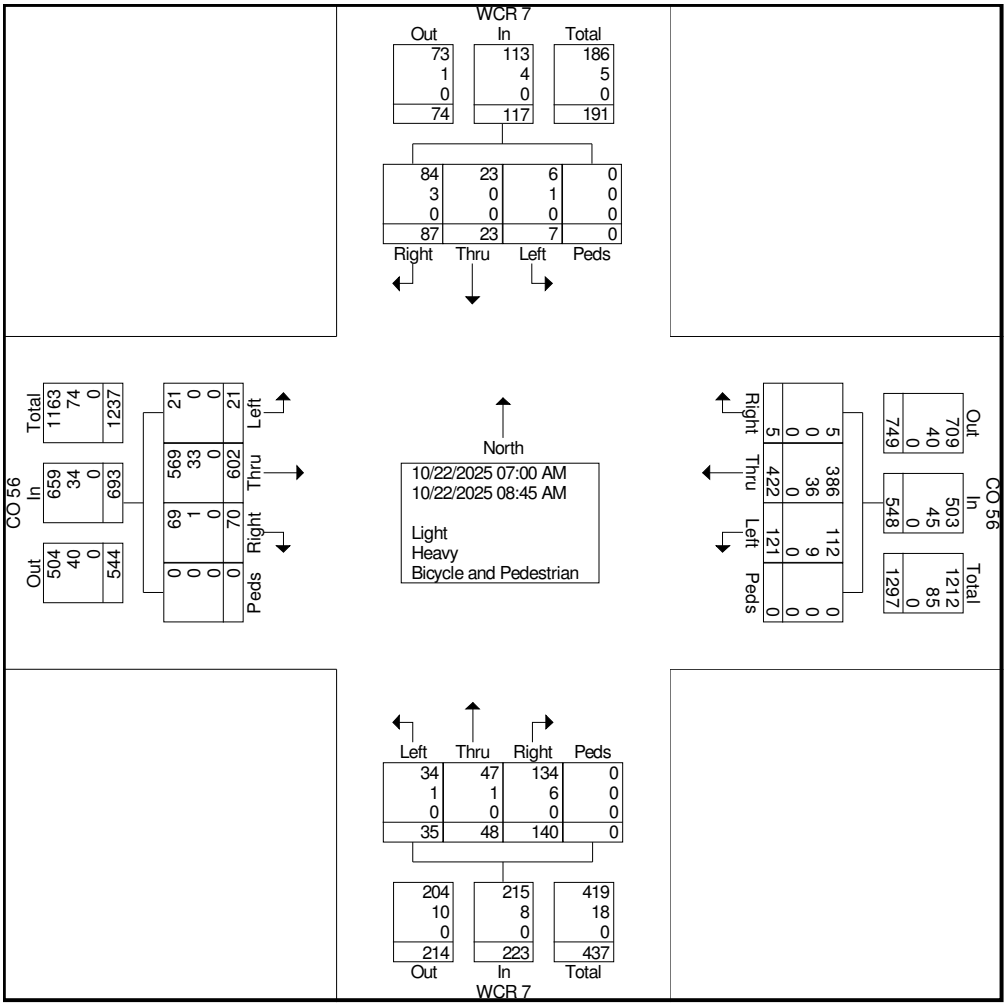
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CO 56 Eastbound					CO 56 Westbound					WCR 7 Northbound					WCR 7 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	77	3	0	83	6	46	1	0	53	4	5	5	0	14	0	3	10	0	13	163
07:15 AM	2	94	5	0	101	10	47	1	0	58	2	5	6	0	13	1	2	18	0	21	193
07:30 AM	2	92	11	0	105	11	53	0	0	64	2	2	9	0	13	4	3	14	0	21	203
07:45 AM	4	91	11	0	106	19	53	0	0	72	5	3	13	0	21	2	3	8	0	13	212
Total	11	354	30	0	395	46	199	2	0	247	13	15	33	0	61	7	11	50	0	68	771
08:00 AM	2	72	10	0	84	23	63	1	0	87	5	13	40	0	58	0	5	8	0	13	242
08:15 AM	2	62	10	0	74	18	54	0	0	72	7	14	48	0	69	0	2	10	0	12	227
08:30 AM	2	60	11	0	73	20	52	0	0	72	8	2	14	0	24	0	1	14	0	15	184
08:45 AM	4	54	9	0	67	14	54	2	0	70	2	4	5	0	11	0	4	5	0	9	157
Total	10	248	40	0	298	75	223	3	0	301	22	33	107	0	162	0	12	37	0	49	810
Grand Total	21	602	70	0	693	121	422	5	0	548	35	48	140	0	223	7	23	87	0	117	1581
Apprch %	3	86.9	10.1	0		22.1	77	0.9	0		15.7	21.5	62.8	0		6	19.7	74.4	0		
Total %	1.3	38.1	4.4	0	43.8	7.7	26.7	0.3	0	34.7	2.2	3	8.9	0	14.1	0.4	1.5	5.5	0	7.4	
Light	21	569	69	0	659	112	386	5	0	503	34	47	134	0	215	6	23	84	0	113	1490
% Light	100	94.5	98.6	0	95.1	92.6	91.5	100	0	91.8	97.1	97.9	95.7	0	96.4	85.7	100	96.6	0	96.6	94.2
Heavy	0	33	1	0	34	9	36	0	0	45	1	1	6	0	8	1	0	3	0	4	91
% Heavy	0	5.5	1.4	0	4.9	7.4	8.5	0	0	8.2	2.9	2.1	4.3	0	3.6	14.3	0	3.4	0	3.4	5.8
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

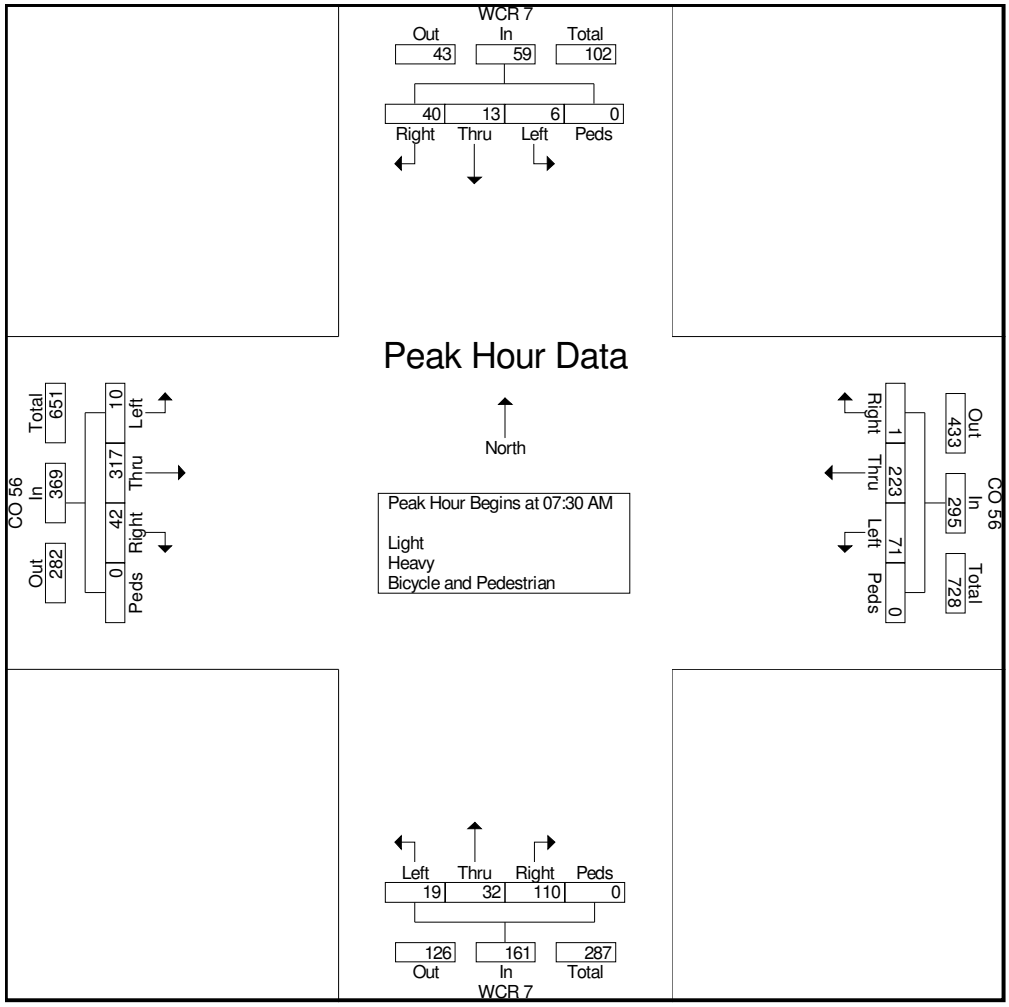


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	CO 56 Eastbound					CO 56 Westbound					WCR 7 Northbound					WCR 7 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	**92**	**11**	0	105	11	53	0	0	64	2	2	9	0	13	**4**	3	**14**	0	**21**	203
07:45 AM	**4**	91	11	0	**106**	19	53	0	0	72	5	3	13	0	21	2	3	8	0	13	212
08:00 AM	2	72	10	0	84	**23**	**63**	**1**	0	**87**	5	13	40	0	58	0	**5**	8	0	13	**242**
08:15 AM	2	62	10	0	74	18	54	0	0	72	**7**	**14**	**48**	0	**69**	0	2	10	0	12	227
Total Volume	10	317	42	0	369	71	223	1	0	295	19	32	110	0	161	6	13	40	0	59	884
% App. Total	2.7	85.9	11.4	0		24.1	75.6	0.3	0		11.8	19.9	68.3	0		10.2	22	67.8	0		
PHF	.625	.861	.955	.000	.870	.772	.885	.250	.000	.848	.679	.571	.573	.000	.583	.375	.650	.714	.000	.702	.913



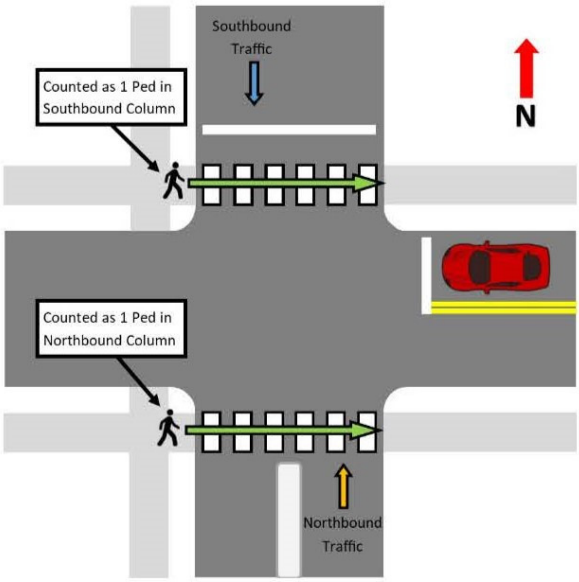
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

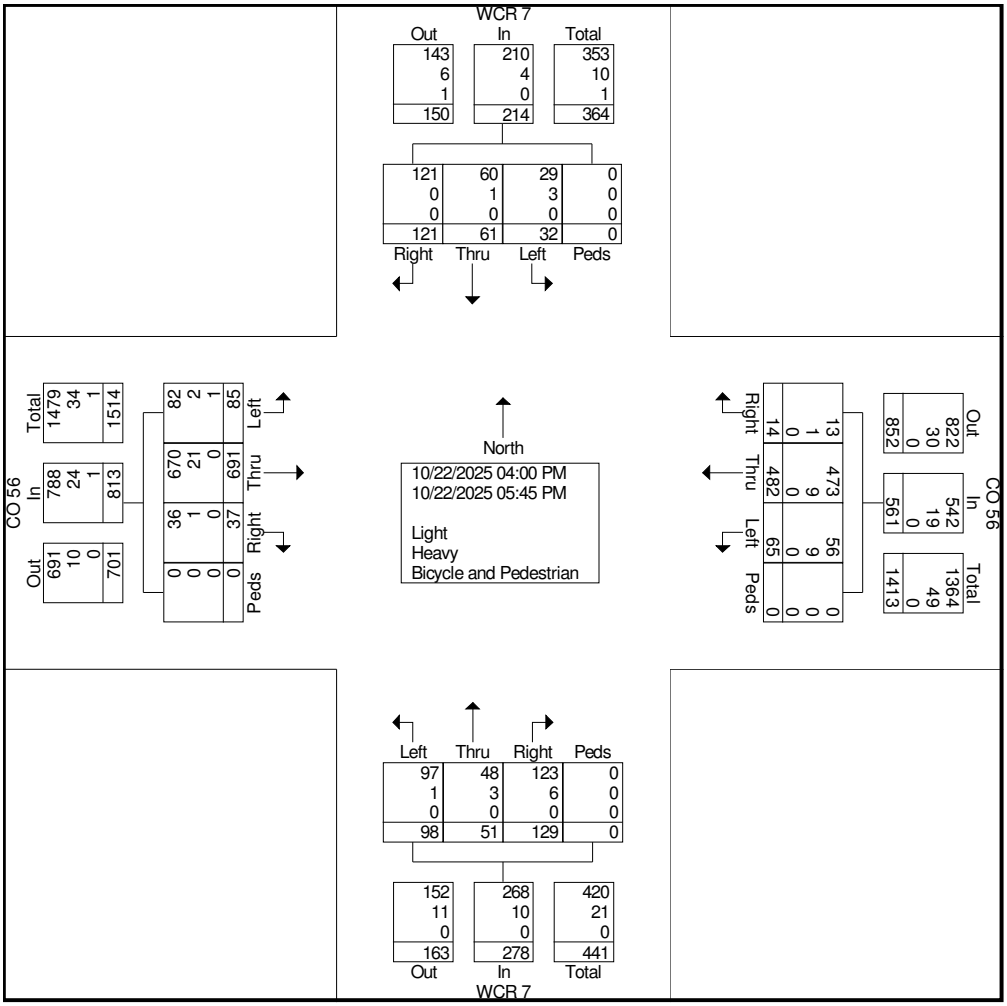
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	CO 56 Eastbound					CO 56 Westbound					WCR 7 Northbound					WCR 7 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	9	92	5	0	106	11	63	1	0	75	10	7	18	0	35	3	5	14	0	22	238
04:15 PM	18	98	9	0	125	8	67	0	0	75	14	4	18	0	36	12	11	19	0	42	278
04:30 PM	17	99	4	0	120	10	49	5	0	64	9	13	8	0	30	3	15	16	0	34	248
04:45 PM	7	90	5	0	102	9	67	1	0	77	19	4	21	0	44	5	2	16	0	23	246
Total	51	379	23	0	453	38	246	7	0	291	52	28	65	0	145	23	33	65	0	121	1010
05:00 PM	7	98	2	0	107	10	61	0	0	71	14	6	24	0	44	3	8	20	0	31	253
05:15 PM	10	71	6	0	87	4	62	1	0	67	17	3	17	0	37	2	2	12	0	16	207
05:30 PM	10	78	5	0	93	6	57	3	0	66	10	9	13	0	32	1	8	14	0	23	214
05:45 PM	7	65	1	0	73	7	56	3	0	66	5	5	10	0	20	3	10	10	0	23	182
Total	34	312	14	0	360	27	236	7	0	270	46	23	64	0	133	9	28	56	0	93	856
Grand Total	85	691	37	0	813	65	482	14	0	561	98	51	129	0	278	32	61	121	0	214	1866
Apprch %	10.5	85	4.6	0		11.6	85.9	2.5	0		35.3	18.3	46.4	0		15	28.5	56.5	0		
Total %	4.6	37	2	0	43.6	3.5	25.8	0.8	0	30.1	5.3	2.7	6.9	0	14.9	1.7	3.3	6.5	0	11.5	
Light	82	670	36	0	788	56	473	13	0	542	97	48	123	0	268	29	60	121	0	210	1808
% Light	96.5	97	97.3	0	96.9	86.2	98.1	92.9	0	96.6	99	94.1	95.3	0	96.4	90.6	98.4	100	0	98.1	96.9
Heavy	2	21	1	0	24	9	9	1	0	19	1	3	6	0	10	3	1	0	0	4	57
% Heavy	2.4	3	2.7	0	3	13.8	1.9	7.1	0	3.4	1	5.9	4.7	0	3.6	9.4	1.6	0	0	1.9	3.1
Bicycle and Pedestrian	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycle and Pedestrian	1.2	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

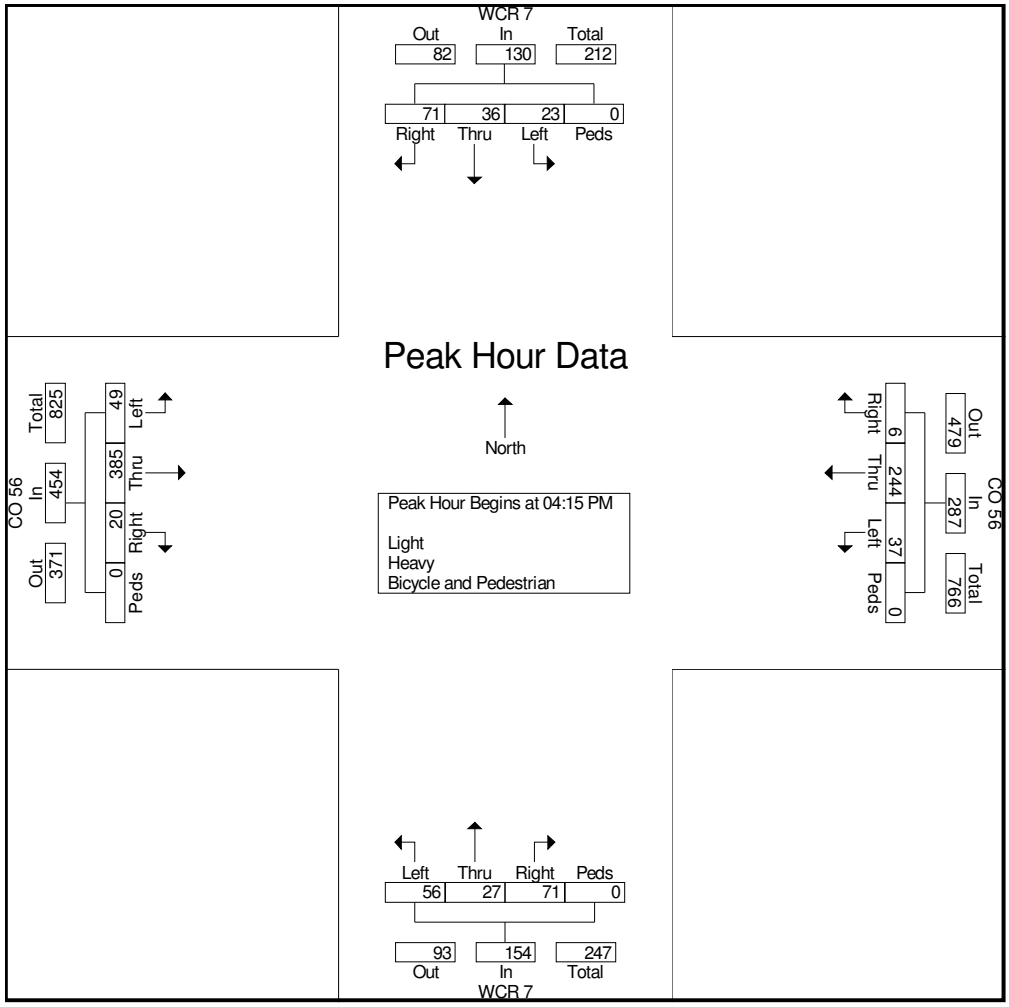


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 PM
Site Code : F&P
Start Date : 10/22/2025

	CO 56 Eastbound					CO 56 Westbound					WCR 7 Northbound					WCR 7 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**18**	98	**9**	0	**125**	8	**67**	0	0	75	14	4	18	0	36	**12**	11	19	0	**42**	**278**
04:30 PM	17	**99**	4	0	120	**10**	49	**5**	0	64	9	**13**	8	0	30	3	**15**	16	0	34	248
04:45 PM	7	90	5	0	102	9	67	1	0	**77**	**19**	4	21	0	**44**	5	2	16	0	23	246
05:00 PM	7	98	2	0	107	10	61	0	0	71	14	6	**24**	0	44	3	8	**20**	0	31	253
Total Volume	49	385	20	0	454	37	244	6	0	287	56	27	71	0	154	23	36	71	0	130	1025
% App. Total	10.8	84.8	4.4	0		12.9	85	2.1	0		36.4	17.5	46.1	0		17.7	27.7	54.6	0		
PHF	.681	.972	.556	.000	.908	.925	.910	.300	.000	.932	.737	.519	.740	.000	.875	.479	.600	.888	.000	.774	.922



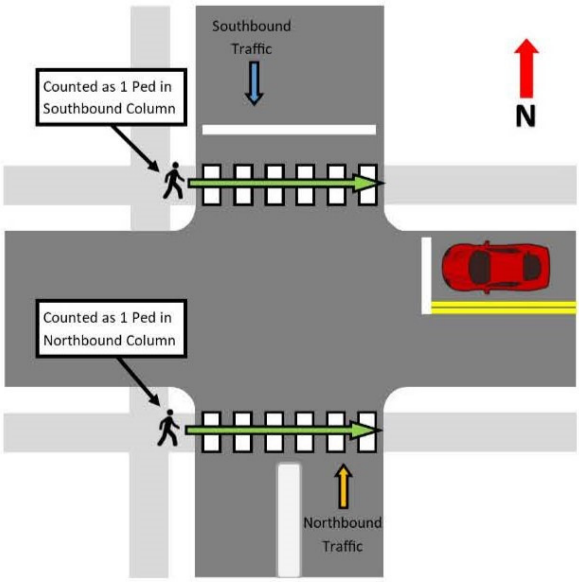
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
CO 56 and WCR 7

File Name : 13 CO 56 and WCR 7 PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

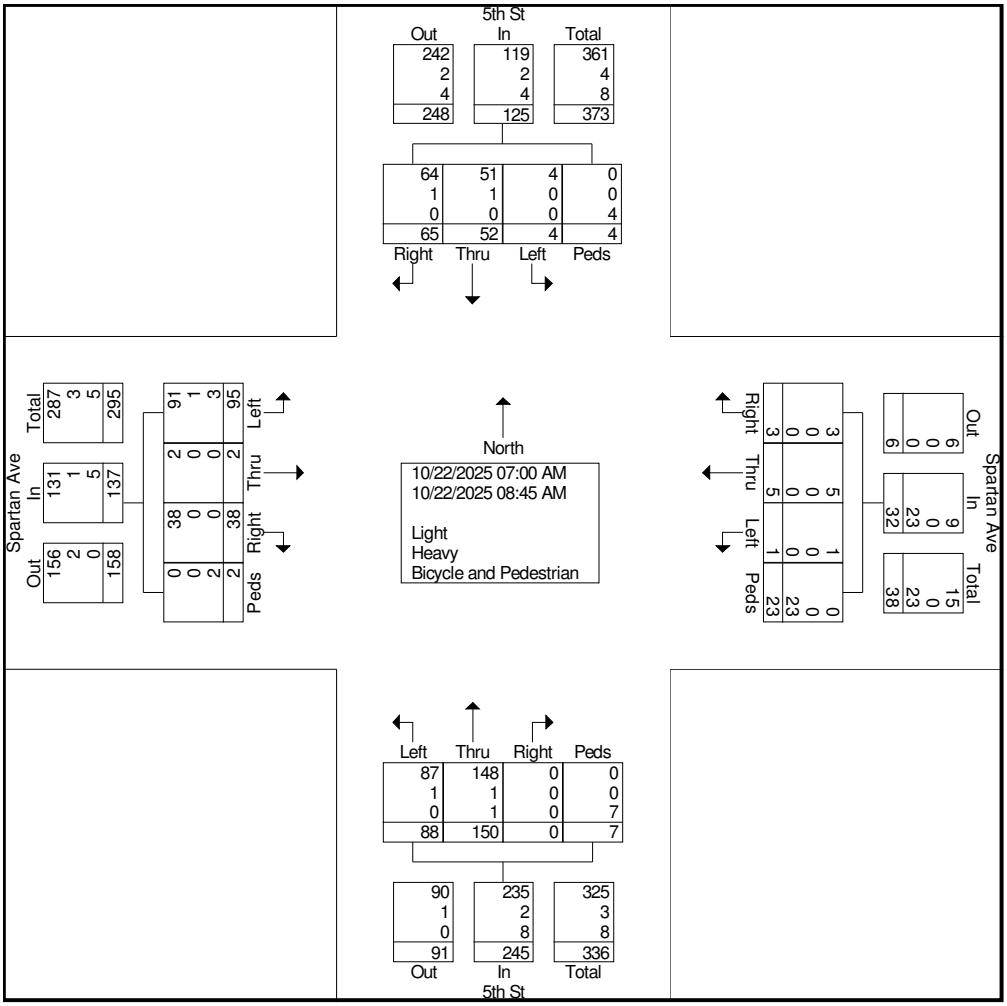
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Spartan Ave Eastbound					Spartan Ave Westbound					5th St Northbound					5th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	10	0	6	0	16	0	0	0	2	2	10	15	0	0	25	0	1	6	0	7	50
07:15 AM	10	0	3	0	13	0	1	0	2	3	7	17	0	0	24	1	8	7	2	18	58
07:30 AM	10	0	5	0	15	1	1	1	0	3	12	14	0	0	26	1	3	4	0	8	52
07:45 AM	9	0	2	0	11	0	1	0	1	2	9	11	0	0	20	0	0	4	0	4	37
Total	39	0	16	0	55	1	3	1	5	10	38	57	0	0	95	2	12	21	2	37	197
08:00 AM	4	0	2	0	6	0	1	1	0	2	14	13	0	0	27	0	5	5	0	10	45
08:15 AM	7	2	8	0	17	0	0	0	1	1	10	7	0	0	17	1	8	3	0	12	47
08:30 AM	14	0	6	1	21	0	1	0	9	10	14	30	0	7	51	1	8	8	1	18	100
08:45 AM	31	0	6	1	38	0	0	1	8	9	12	43	0	0	55	0	19	28	1	48	150
Total	56	2	22	2	82	0	2	2	18	22	50	93	0	7	150	2	40	44	2	88	342
Grand Total	95	2	38	2	137	1	5	3	23	32	88	150	0	7	245	4	52	65	4	125	539
Apprch %	69.3	1.5	27.7	1.5		3.1	15.6	9.4	71.9		35.9	61.2	0	2.9		3.2	41.6	52	3.2		
Total %	17.6	0.4	7.1	0.4	25.4	0.2	0.9	0.6	4.3	5.9	16.3	27.8	0	1.3	45.5	0.7	9.6	12.1	0.7	23.2	
Light	91	2	38	0	131	1	5	3	0	9	87	148	0	0	235	4	51	64	0	119	494
% Light	95.8	100	100	0	95.6	100	100	100	0	28.1	98.9	98.7	0	0	95.9	100	98.1	98.5	0	95.2	91.7
Heavy	1	0	0	0	1	0	0	0	0	0	1	1	0	0	2	0	1	1	0	2	5
% Heavy	1.1	0	0	0	0.7	0	0	0	0	0	1.1	0.7	0	0	0.8	0	1.9	1.5	0	1.6	0.9
Bicycle and Pedestrian	3	0	0	2	5	0	0	0	23	23	0	1	0	7	8	0	0	0	4	4	40
% Bicycle and Pedestrian	3.2	0	0	100	3.6	0	0	0	100	71.9	0	0.7	0	100	3.3	0	0	0	100	3.2	7.4

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

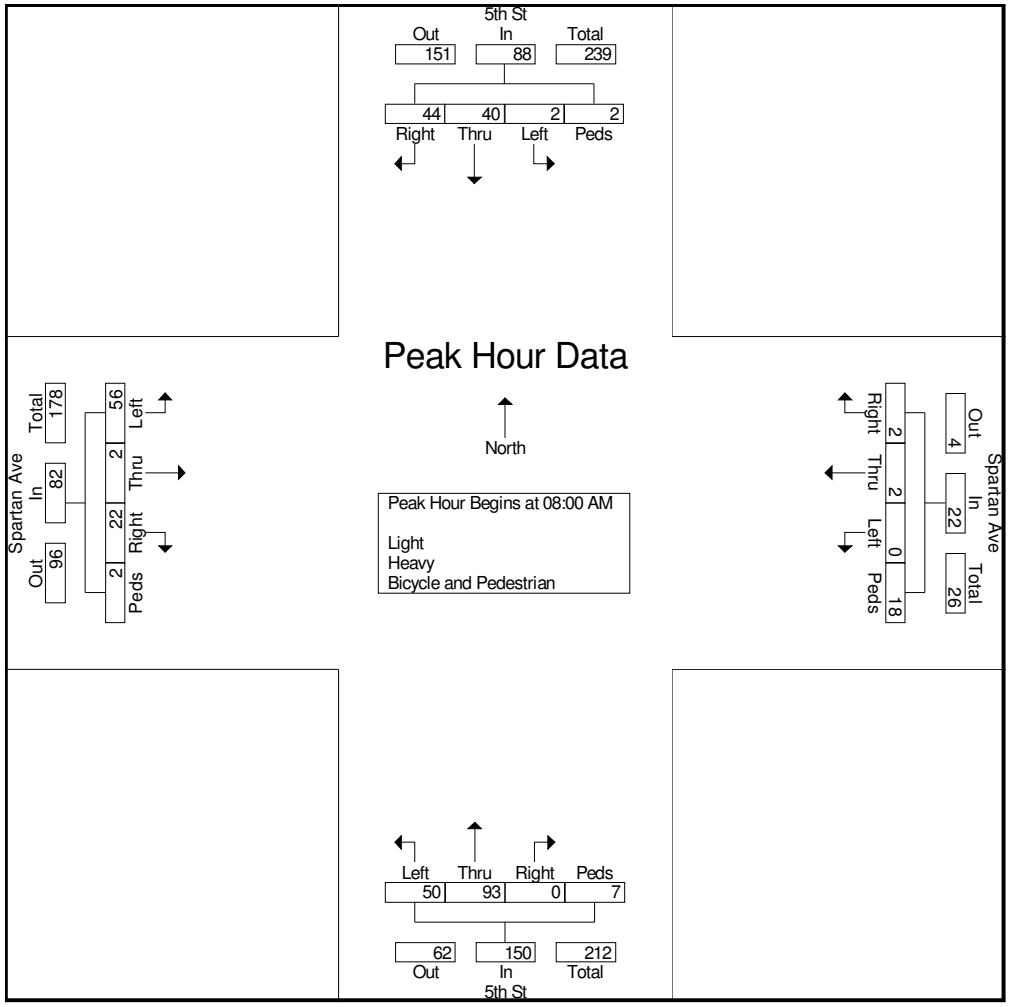


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Spartan Ave Eastbound					Spartan Ave Westbound					5th St Northbound					5th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	4	0	2	0	6	0	**1**	**1**	0	2	**14**	13	0	0	27	0	5	5	0	10	45
08:15 AM	7	**2**	**8**	0	17	0	0	0	1	1	10	7	0	0	17	**1**	8	3	0	12	47
08:30 AM	14	0	6	**1**	21	0	1	0	**9**	**10**	14	30	0	**7**	51	1	8	8	**1**	18	100
08:45 AM	**31**	0	6	1	**38**	0	0	1	8	9	12	**43**	0	0	**55**	0	**19**	**28**	1	**48**	**150**
Total Volume	56	2	22	2	82	0	2	2	18	22	50	93	0	7	150	2	40	44	2	88	342
% App. Total	68.3	2.4	26.8	2.4		0	9.1	9.1	81.8		33.3	62	0	4.7		2.3	45.5	50	2.3		
PHF	.452	.250	.688	.500	.539	.000	.500	.500	.500	.550	.893	.541	.000	.250	.682	.500	.526	.393	.500	.458	.570



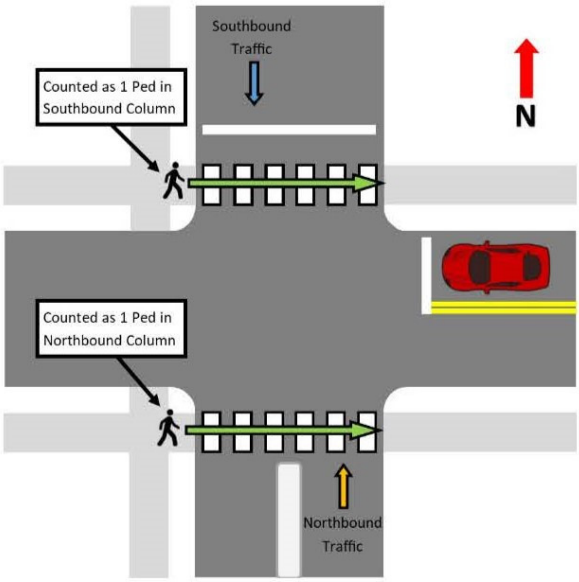
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
AM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave AM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 1

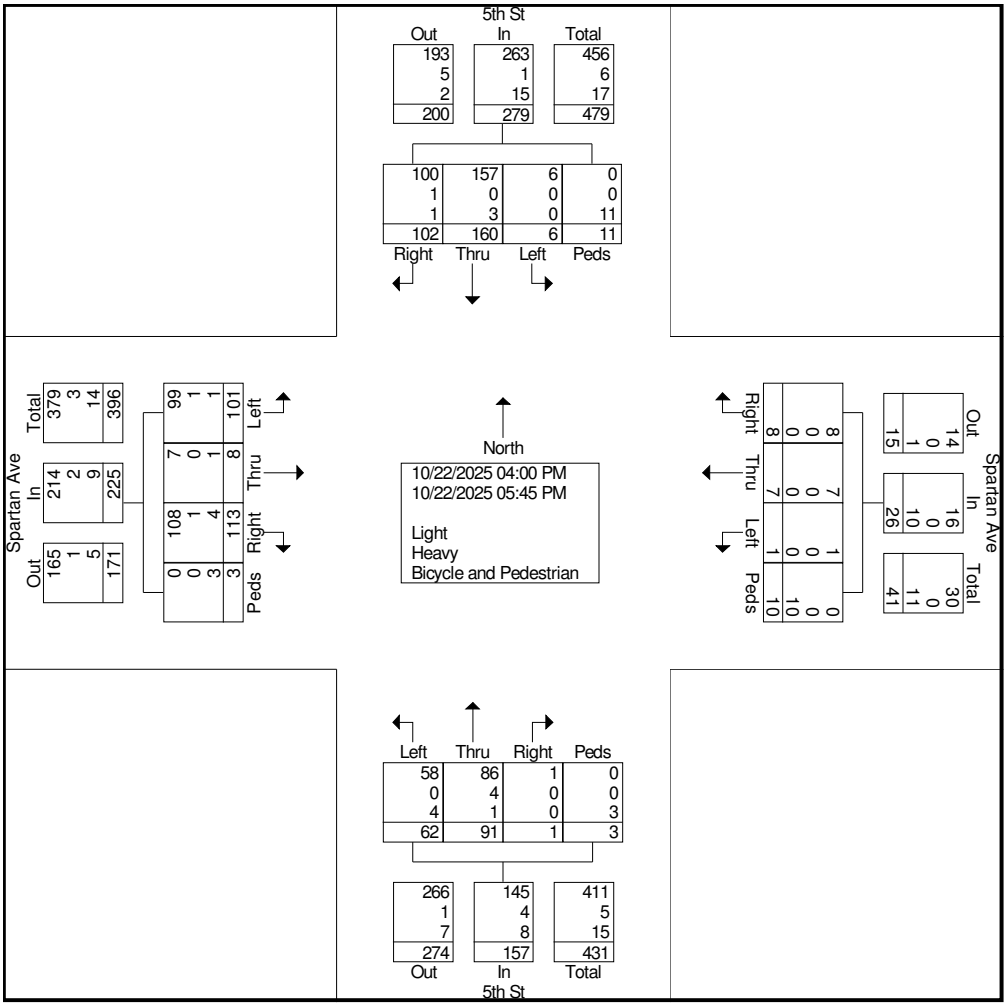
Groups Printed- Light - Heavy - Bicycle and Pedestrian

	Spartan Ave Eastbound					Spartan Ave Westbound					5th St Northbound					5th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	27	1	15	0	43	0	0	1	0	1	10	18	0	0	28	0	12	8	6	26	98
04:15 PM	14	1	19	0	34	0	1	1	1	3	6	13	0	2	21	2	30	18	0	50	108
04:30 PM	8	0	10	0	18	0	0	2	0	2	10	15	0	0	25	0	14	20	0	34	79
04:45 PM	14	1	12	0	27	0	1	0	0	1	8	9	0	0	17	0	17	14	1	32	77
Total	63	3	56	0	122	0	2	4	1	7	34	55	0	2	91	2	73	60	7	142	362
05:00 PM	9	3	16	0	28	0	0	1	3	4	6	10	0	0	16	1	16	13	2	32	80
05:15 PM	11	0	15	2	28	0	1	0	1	2	6	17	0	0	23	1	24	5	0	30	83
05:30 PM	7	2	13	1	23	0	0	0	2	2	10	4	0	0	14	1	25	8	1	35	74
05:45 PM	11	0	13	0	24	1	4	3	3	11	6	5	1	1	13	1	22	16	1	40	88
Total	38	5	57	3	103	1	5	4	9	19	28	36	1	1	66	4	87	42	4	137	325
Grand Total	101	8	113	3	225	1	7	8	10	26	62	91	1	3	157	6	160	102	11	279	687
Apprch %	44.9	3.6	50.2	1.3		3.8	26.9	30.8	38.5		39.5	58	0.6	1.9		2.2	57.3	36.6	3.9		
Total %	14.7	1.2	16.4	0.4	32.8	0.1	1	1.2	1.5	3.8	9	13.2	0.1	0.4	22.9	0.9	23.3	14.8	1.6	40.6	
Light	99	7	108	0	214	1	7	8	0	16	58	86	1	0	145	6	157	100	0	263	638
% Light	98	87.5	95.6	0	95.1	100	100	100	0	61.5	93.5	94.5	100	0	92.4	100	98.1	98	0	94.3	92.9
Heavy	1	0	1	0	2	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	7
% Heavy	1	0	0.9	0	0.9	0	0	0	0	0	0	4.4	0	0	2.5	0	0	1	0	0.4	1
Bicycle and Pedestrian	1	1	4	3	9	0	0	0	10	10	4	1	0	3	8	0	3	1	11	15	42
% Bicycle and Pedestrian	1	12.5	3.5	100	4	0	0	0	100	38.5	6.5	1.1	0	100	5.1	0	1.9	1	100	5.4	6.1

Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 2

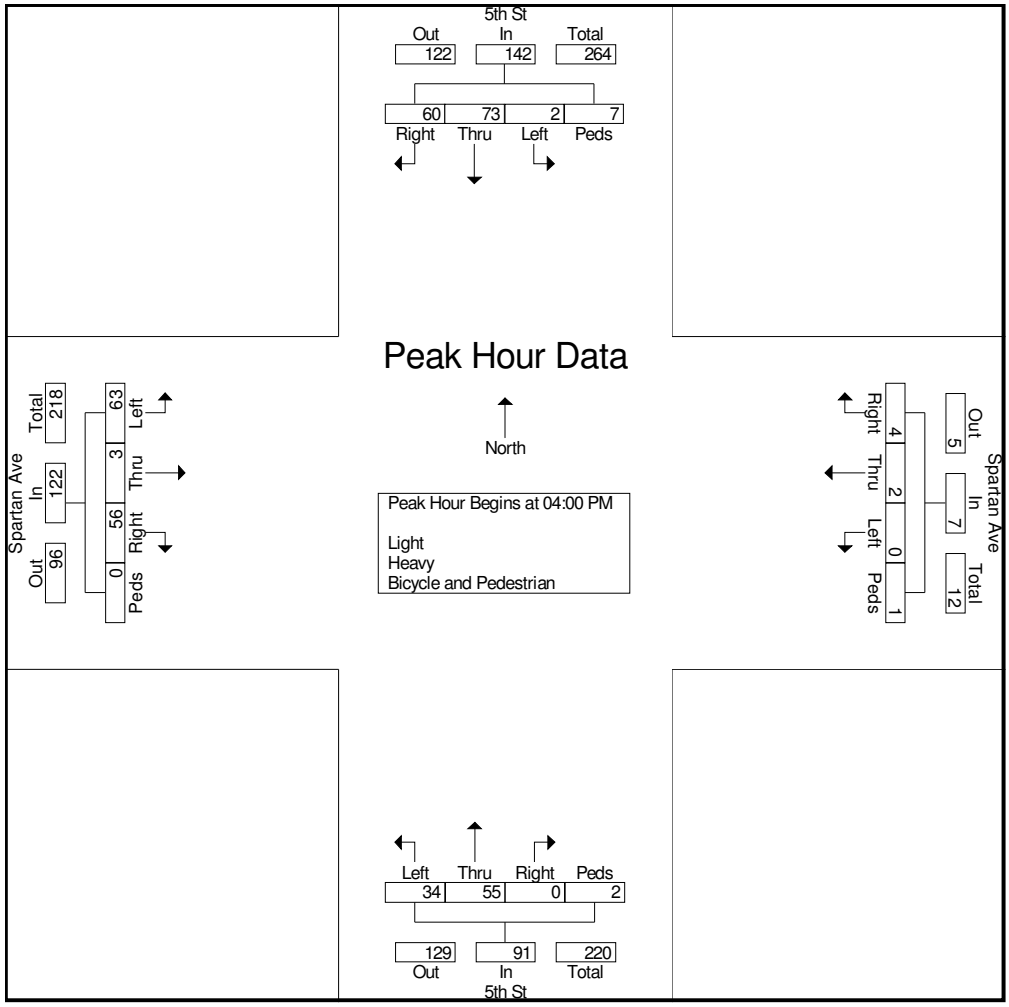


Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 3

	Spartan Ave Eastbound					Spartan Ave Westbound					5th St Northbound					5th St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**27**	**1**	15	0	**43**	0	0	1	0	1	**10**	**18**	0	0	**28**	0	12	8	**6**	26	98
04:15 PM	14	1	**19**	0	34	0	**1**	1	**1**	**3**	6	13	0	**2**	21	**2**	**30**	18	0	**50**	**108**
04:30 PM	8	0	10	0	18	0	0	**2**	0	2	10	15	0	0	25	0	14	**20**	0	34	79
04:45 PM	14	1	12	0	27	0	1	0	0	1	8	9	0	0	17	0	17	14	1	32	77
Total Volume	63	3	56	0	122	0	2	4	1	7	34	55	0	2	91	2	73	60	7	142	362
% App. Total	51.6	2.5	45.9	0		0	28.6	57.1	14.3		37.4	60.4	0	2.2		1.4	51.4	42.3	4.9		
PHF	.583	.750	.737	.000	.709	.000	.500	.500	.250	.583	.850	.764	.000	.250	.813	.250	.608	.750	.292	.710	.838



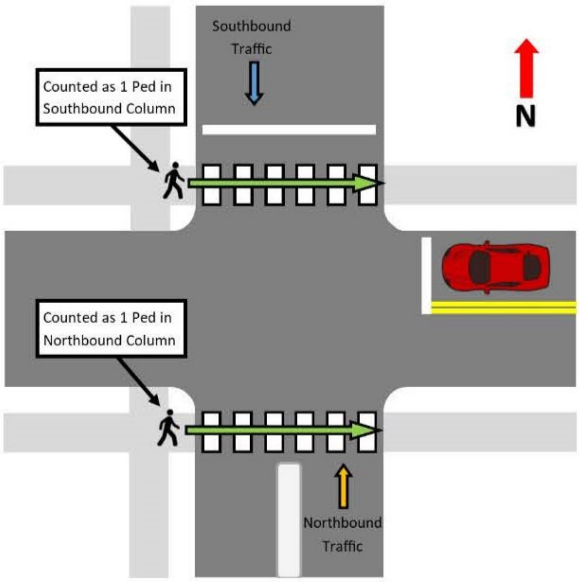
Ridgeview Data Collection

Berthoud, CO
Berthoud Counts
PM Peak
5th St and Spartan Ave

File Name : 15 5th St and Spartan Ave PM
Site Code : F&P
Start Date : 10/22/2025
Page No : 4

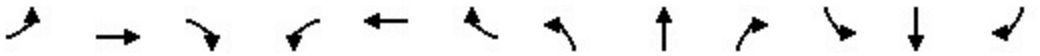
Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Appendix C. Divider Page

Synchro Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	46	51	5	30	37	29	376	6	55	560	23
Future Volume (veh/h)	55	46	51	5	30	37	29	376	6	55	560	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	50	0	5	33	0	32	409	0	60	609	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	575	621	0	560	621	527	322	900	0	462	900	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.33	0.33	0.00	0.33	0.33	0.00	0.48	0.48	0.00	0.48	0.48	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	13.1	12.4	0.0	12.7	12.2	0.0	16.8	10.0	0.0	12.9	12.6	0.0
Ln Grp LOS	B	B		B	B		B	A		B	B	
Approach Vol, veh/h		110			38			441			669	
Approach Delay, s/veh		12.8			12.3			10.5			12.6	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		6.0		6.0		5.0
Phs Duration (G+Y+Rc), s		30.7		22.8		30.7		22.8
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green (Gmax), s		65.0		40.0		65.0		40.0
Max Allow Headway (MAH), s		6.9		6.5		7.0		7.1
Max Q Clear (g_c+I1), s		17.1		4.3		15.4		3.1
Green Ext Time (g_e), s		5.8		0.9		10.3		0.3
Prob of Phs Call (p_c)		1.00		0.89		1.00		0.89
Prob of Max Out (p_x)		0.00		0.00		0.02		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		812		1376		977		1355

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		0		0		0		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	32	0	60	0	60	0	5
Grp Sat Flow (s), veh/h/ln	0	812	0	1376	0	977	0	1355
Q Serve Time (g_s), s	0.0	1.7	0.0	1.7	0.0	2.3	0.0	0.1
Cycle Q Clear Time (g_c), s	0.0	15.1	0.0	2.3	0.0	10.1	0.0	1.1
Perm LT Sat Flow (s_l), veh/h/ln	0	812	0	1376	0	977	0	1355
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	25.7	0.0	17.8	0.0	25.7	0.0	17.8
Perm LT Serve Time (g_u), s	0.0	12.3	0.0	17.1	0.0	18.0	0.0	16.8
Perm LT Q Serve Time (g_ps), s	0.0	1.7	0.0	1.7	0.0	2.3	0.0	0.1
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	322	0	575	0	462	0	560
V/C Ratio (X)	0.00	0.10	0.00	0.10	0.00	0.13	0.00	0.01
Avail Cap (c_a), veh/h	0	917	0	1146	0	1178	0	1122
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	16.5	0.0	12.9	0.0	12.6	0.0	12.6
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.2	0.0	0.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	16.8	0.0	13.1	0.0	12.9	0.0	12.7
1st-Term Q (Q1), veh/ln	0.0	0.3	0.0	0.5	0.0	0.4	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.3	0.0	0.5	0.0	0.5	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.03	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	409	0	50	0	609	0	33
Grp Sat Flow (s), veh/h/ln	0	1870	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	7.8	0.0	1.0	0.0	13.4	0.0	0.6
Cycle Q Clear Time (g_c), s	0.0	7.8	0.0	1.0	0.0	13.4	0.0	0.6
Lane Grp Cap (c), veh/h	0	900	0	621	0	900	0	621
V/C Ratio (X)	0.00	0.45	0.00	0.08	0.00	0.68	0.00	0.05
Avail Cap (c_a), veh/h	0	2271	0	1398	0	2271	0	1398
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	9.2	0.0	12.3	0.0	10.7	0.0	12.1
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.1	0.0	1.9	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.0	0.0	12.4	0.0	12.6	0.0	12.2
1st-Term Q (Q1), veh/ln	0.0	2.2	0.0	0.4	0.0	3.9	0.0	0.2

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.5	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.4	0.0	0.4	0.0	4.4	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.10	0.00	0.01	0.00	0.28	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								R
Lanes in Grp	0	0	0	0	0	0	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	527
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	1184
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	11.9
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	14	41	29	54	509	15	779	470	17	944	50
Future Volume (veh/h)	137	14	41	29	54	509	15	779	470	17	944	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	15	0	32	59	0	16	847	0	18	1026	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	315	317		351	317		270	1529		327	1537	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.17	0.17	0.00	0.17	0.17	0.00	0.02	0.43	0.00	0.02	0.43	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	24.4	20.2	0.0	20.9	20.8	0.0	10.4	12.5	0.0	9.8	13.3	0.0
Ln Grp LOS	C	C		C	C		B	B		A	B	
Approach Vol, veh/h		164			91			863			1044	
Approach Delay, s/veh		24.1			20.8			12.5			13.3	
Approach LOS		C			C			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		5.0	1.1	3.0		5.0
Phs Duration (G+Y+Rc), s	9.3	33.0		15.8	9.1	33.1		15.8
Change Period (Y+Rc), s	8.0	8.0		6.0	8.0	8.0		6.0
Max Green (Gmax), s	7.0	57.0		24.0	7.0	57.0		24.0
Max Allow Headway (MAH), s	2.6	3.7		3.0	2.6	3.7		3.7
Max Q Clear (g_c+I1), s	2.3	12.4		9.8	2.3	15.4		3.6
Green Ext Time (g_e), s	0.0	3.4		0.2	0.0	4.4		0.2
Prob of Phs Call (p_c)	0.25	1.00		0.98	0.23	1.00		0.98
Prob of Max Out (p_x)	0.01	0.00		0.00	0.00	0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1781			1344	1781			1398

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

Lane Assignment	L (Pr/Pm)			LL (Pr/Pm)				L
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	18	0	0	149	16	0	0	32
Grp Sat Flow (s), veh/h/ln	1781	0	0	1344	1781	0	0	1398
Q Serve Time (g_s), s	0.3	0.0	0.0	6.2	0.3	0.0	0.0	1.1
Cycle Q Clear Time (g_c), s	0.3	0.0	0.0	7.8	0.3	0.0	0.0	1.5
Perm LT Sat Flow (s_l), veh/h/ln	650	0	0	1344	550	0	0	1398
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	25.0	0.0	0.0	9.8	25.1	0.0	0.0	9.8
Perm LT Serve Time (g_u), s	14.6	0.0	0.0	8.3	11.7	0.0	0.0	9.4
Perm LT Q Serve Time (g_ps), s	0.3	0.0	0.0	6.2	0.4	0.0	0.0	1.1
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	327	0	0	315	270	0	0	351
V/C Ratio (X)	0.06	0.00	0.00	0.47	0.06	0.00	0.00	0.09
Avail Cap (c_a), veh/h	503	0	0	643	450	0	0	692
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	9.8	0.0	0.0	24.0	10.4	0.0	0.0	20.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	9.8	0.0	0.0	24.4	10.4	0.0	0.0	20.9
1st-Term Q (Q1), veh/ln	0.1	0.0	0.0	1.8	0.1	0.0	0.0	0.3
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	1.9	0.1	0.0	0.0	0.4
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	847	0	15	0	1026	0	59
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	10.4	0.0	0.4	0.0	13.4	0.0	1.6
Cycle Q Clear Time (g_c), s	0.0	10.4	0.0	0.4	0.0	13.4	0.0	1.6
Lane Grp Cap (c), veh/h	0	1529	0	317	0	1537	0	317
V/C Ratio (X)	0.00	0.55	0.00	0.05	0.00	0.67	0.00	0.19
Avail Cap (c_a), veh/h	0	3487	0	773	0	3487	0	773
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	12.4	0.0	20.2	0.0	13.2	0.0	20.7
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	12.5	0.0	20.2	0.0	13.3	0.0	20.8
1st-Term Q (Q1), veh/ln	0.0	2.9	0.0	0.2	0.0	3.7	0.0	0.6

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.9	0.0	0.2	0.0	3.8	0.0	0.6
%ile Storage Ratio (RQ%)	0.00	0.09	0.00	0.01	0.00	0.11	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	682	0	268	0	685	0	268
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1555	0	655	0	1555	0	655
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	14.1
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	27	5	4	45	10	7
Future Vol, veh/h	27	5	4	45	10	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	5	4	49	11	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	35	0	90	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1577	-	911	1042
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1577	-	908	1042
Mov Cap-2 Maneuver	-	-	-	-	908	-
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	962	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.6	8.83
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	959	-	-	147	-
HCM Lane V/C Ratio	0.019	-	-	0.003	-
HCM Control Delay (s/veh)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	12	39	2	5	1	6	5	0	0	4	7
Future Vol, veh/h	13	12	39	2	5	1	6	5	0	0	4	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	260	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	13	42	2	5	1	7	5	0	0	4	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	7	0	0	13	0	0	53	52	13	54	52	6
Stage 1	-	-	-	-	-	-	41	41	-	10	10	-
Stage 2	-	-	-	-	-	-	12	11	-	44	41	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1614	-	-	1605	-	-	945	839	1067	944	840	1077
Stage 1	-	-	-	-	-	-	973	861	-	1011	887	-
Stage 2	-	-	-	-	-	-	1009	887	-	970	861	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1614	-	-	1605	-	-	924	830	1067	928	831	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	924	830	-	928	831	-
Stage 1	-	-	-	-	-	-	964	853	-	1009	886	-
Stage 2	-	-	-	-	-	-	995	885	-	955	853	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.47	1.81	9.15	8.75
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	879	936	-	-	435	-	-	972
HCM Lane V/C Ratio	0.014	0.009	-	-	0.001	-	-	0.012
HCM Control Delay (s/veh)	9.2	7.2	0	-	7.2	0	-	8.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	63	301	4	27	622
Future Vol, veh/h	13	63	301	4	27	622
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	80	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	68	327	4	29	676

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1062	327	0	0	332	0
Stage 1	327	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	247	714	-	-	1228	-
Stage 1	731	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	242	714	-	-	1228	-
Mov Cap-2 Maneuver	360	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.81	0	0.33
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	611	1228	-
HCM Lane V/C Ratio	-	-	0.135	0.024	-
HCM Control Delay (s/veh)	-	-	11.8	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Intersection Delay, s/veh	5.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	330	171	569	757
Demand Flow Rate, veh/h	340	176	587	780
Vehicles Circulating, veh/h	695	621	74	355
Vehicles Exiting, veh/h	231	40	693	442
Ped Vol Crossing Leg, #/h	1	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	1.2	6.7	7.2	6.1
Approach LOS	A	A	A	A

Lane	Left	Bypass	Left	Left	Right	Left	Right	Bypass
Designated Moves	LT	R	LTR	LT	R	LT	TR	R
Assumed Moves	LT		LTR	LT	R	LT	TR	
RT Channelized		Free						Yield
Lane Util	1.000		1.000	0.945	0.055	0.469	0.531	
Follow-Up Headway, s	2.535		2.535	2.667	2.535	2.667	2.535	2.609
Critical Headway, s	4.328		4.328	4.645	4.328	4.645	4.328	4.976
A (Intercept)	1420		1420	1350	1420	1350	1420	1380
B (Slope)	8.501e-4		8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	1.02e-3
Entry Flow, veh/h	72	268	176	555	32	268	303	209
Cap Entry Lane, veh/h	787	1957	838	1261	1334	974	1050	1090
Entry HV Adj Factor	0.970	0.971	0.971	0.970	0.969	0.972	0.970	0.971
Flow Entry, veh/h	70	260	171	538	31	261	294	203
Cap Entry, veh/h	763	1900	813	1223	1292	947	1018	1058
V/C Ratio	0.092	0.137	0.210	0.440	0.024	0.275	0.289	0.192
Control Delay, s/veh	5.7	0.0	6.7	7.4	3.0	6.6	6.4	5.2
LOS	A	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	1	2	0	1	1	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	347	1	40	600	30	28	108	79	39	132	661
Future Volume (veh/h)	147	347	1	40	600	30	28	108	79	39	132	661
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	377	0	43	652	0	30	117	0	42	143	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	249	1546		70	1430		55	200		69	215	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.43	0.00	0.04	0.40	0.00	0.03	0.11	0.00	0.04	0.11	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	34.7	13.6	0.0	38.4	17.1	0.0	38.7	32.7	0.0	38.4	32.9	0.0
Ln Grp LOS	C	B		D	B		D	C		D	C	
Approach Vol, veh/h		537			695			147			185	
Approach Delay, s/veh		19.9			18.5			33.9			34.2	
Approach LOS		B			B			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	11.1	39.4	9.1	14.9	13.6	37.0	9.7	14.3
Change Period (Y+Rc), s	8.2	7.0	6.8	* 6.3	8.2	7.0	6.8	* 6.3
Max Green (Gmax), s	12.0	55.0	10.0	* 25	25.0	55.0	10.0	* 25
Max Allow Headway (MAH), s	2.6	7.7	1.7	3.9	2.6	7.7	2.7	3.9
Max Q Clear (g_c+I1), s	3.8	7.0	3.2	7.5	5.4	12.0	3.7	6.4
Green Ext Time (g_e), s	0.0	6.2	0.0	0.3	0.2	11.6	0.0	0.3
Prob of Phs Call (p_c)	0.59	1.00	0.46	1.00	0.96	1.00	0.58	1.00
Prob of Max Out (p_x)	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		3456		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

Lane Assignment	L (Prot)		L (Prot)		L (Prot)		L (Prot)	
Lanes in Grp	1	0	1	0	2	0	1	0
Grp Vol (v), veh/h	43	0	30	0	160	0	42	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1728	0	1781	0
Q Serve Time (g_s), s	1.8	0.0	1.2	0.0	3.4	0.0	1.7	0.0
Cycle Q Clear Time (g_c), s	1.8	0.0	1.2	0.0	3.4	0.0	1.7	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	70	0	55	0	249	0	69	0
V/C Ratio (X)	0.61	0.00	0.54	0.00	0.64	0.00	0.61	0.00
Avail Cap (c_a), veh/h	287	0	239	0	1159	0	239	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	35.2	0.0	35.6	0.0	33.7	0.0	35.3	0.0
Incr Delay (d2), s/veh	3.2	0.0	3.0	0.0	1.0	0.0	3.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	38.4	0.0	38.7	0.0	34.7	0.0	38.4	0.0
1st-Term Q (Q1), veh/ln	0.7	0.0	0.5	0.0	1.3	0.0	0.7	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.8	0.0	0.6	0.0	1.3	0.0	0.8	0.0
%ile Storage Ratio (RQ%)	0.02	0.00	0.05	0.00	0.03	0.00	0.03	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	377	0	143	0	652	0	117
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	5.0	0.0	5.5	0.0	10.0	0.0	4.4
Cycle Q Clear Time (g_c), s	0.0	5.0	0.0	5.5	0.0	10.0	0.0	4.4
Lane Grp Cap (c), veh/h	0	1546	0	215	0	1430	0	200
V/C Ratio (X)	0.00	0.24	0.00	0.67	0.00	0.46	0.00	0.58
Avail Cap (c_a), veh/h	0	2621	0	627	0	2621	0	627
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	13.3	0.0	31.6	0.0	16.3	0.0	31.7
Incr Delay (d2), s/veh	0.0	0.3	0.0	1.3	0.0	0.8	0.0	1.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	13.6	0.0	32.9	0.0	17.1	0.0	32.7
1st-Term Q (Q1), veh/ln	0.0	1.6	0.0	2.3	0.0	3.3	0.0	1.9

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.7	0.0	2.4	0.0	3.5	0.0	1.9
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.09	0.00	0.07	0.00	0.12
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	689	0	182	0	638	0	170
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1169	0	531	0	1169	0	531
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	22.3
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	6	25	12	10	69	13	229	8	52	228	9
Future Vol, veh/h	6	6	25	12	10	69	13	229	8	52	228	9
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Yield
Storage Length	-	-	100	-	-	-	150	-	-	240	-	245
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	6	6	27	13	11	74	14	246	9	56	245	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	640	641	246	639	636	-	246	0	0	255	0	0
Stage 1	358	358	-	278	278	-	-	-	-	-	-	-
Stage 2	282	283	-	360	358	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	-	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	-	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	384	389	785	385	391	0	1302	-	-	1293	-	-
Stage 1	654	622	-	722	675	0	-	-	-	-	-	-
Stage 2	719	672	-	652	622	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	353	368	785	346	370	-	1301	-	-	1293	-	-
Mov Cap-2 Maneuver	353	368	-	346	370	-	-	-	-	-	-	-
Stage 1	625	595	-	714	667	-	-	-	-	-	-	-
Stage 2	698	665	-	596	595	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.76	15.02	0.41	1.42
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1301	-	-	368	785	370	1293	-	-
HCM Lane V/C Ratio	0.011	-	-	0.018	0.034	0.029	0.043	-	-
HCM Control Delay (s/veh)	7.8	-	-	15	9.8	15	7.9	-	-
HCM Lane LOS	A	-	-	B	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	59	20	255	282	19
Future Vol, veh/h	15	59	20	255	282	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	240	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	16	62	21	268	297	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	617	307	317	0	-	0
Stage 1	307	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	450	728	1232	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	441	728	1232	-	-	-
Mov Cap-2 Maneuver	441	-	-	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.02	0.58	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	131	-	441	728	-	-
HCM Lane V/C Ratio	0.017	-	0.036	0.085	-	-
HCM Control Delay (s/veh)	8	0	13.5	10.4	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.3	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	2	1	2	14	0	0	2	0	0	5	4
Future Vol, veh/h	0	2	1	2	14	0	0	2	0	0	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	1	2	15	0	0	2	0	0	5	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	3	0	0	25	22	3	23	23	15
Stage 1	-	-	-	-	-	-	3	3	-	20	20	-
Stage 2	-	-	-	-	-	-	22	20	-	3	3	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1603	-	-	1619	-	-	986	871	1081	989	871	1064
Stage 1	-	-	-	-	-	-	1020	894	-	999	879	-
Stage 2	-	-	-	-	-	-	996	879	-	1019	893	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1619	-	-	974	870	1081	985	870	1064
Mov Cap-2 Maneuver	-	-	-	-	-	-	974	870	-	985	870	-
Stage 1	-	-	-	-	-	-	1020	894	-	998	878	-
Stage 2	-	-	-	-	-	-	984	878	-	1017	893	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.9	9.15	8.84
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	870	1603	-	-	225	-	-	946
HCM Lane V/C Ratio	0.002	-	-	-	0.001	-	-	0.01
HCM Control Delay (s/veh)	9.1	0	-	-	7.2	0	-	8.8
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	50	185	65	80	202
Future Vol, veh/h	55	50	185	65	80	202
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	58	53	195	68	84	213

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	611	230	0	0	264	0
Stage 1	230	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	455	807	-	-	1294	-
Stage 1	806	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	421	806	-	-	1293	-
Mov Cap-2 Maneuver	421	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.46	0	2.26
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	421	806	511	-
HCM Lane V/C Ratio	-	-	0.137	0.065	0.065	-
HCM Control Delay (s/veh)	-	-	14.9	9.8	8	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2	0.2	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	63	17	16	64	13	19	20	19	29	34	16
Future Vol, veh/h	14	63	17	16	64	13	19	20	19	29	34	16
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	21	95	26	24	97	20	29	30	29	44	52	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	8.6	8.3	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	15%	17%	37%
Vol Thru, %	34%	67%	69%	43%
Vol Right, %	33%	18%	14%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	94	93	79
LT Vol	19	14	16	29
Through Vol	20	63	64	34
RT Vol	19	17	13	16
Lane Flow Rate	88	142	141	120
Geometry Grp	1	1	1	1
Degree of Util (X)	0.113	0.18	0.179	0.156
Departure Headway (Hd)	4.641	4.547	4.576	4.683
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	789	783	765
Service Time	2.677	2.577	2.608	2.717
HCM Lane V/C Ratio	0.114	0.18	0.18	0.157
HCM Control Delay, s/veh	8.3	8.6	8.6	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.7	0.6	0.6

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	49	51	246	194	61
Future Vol, veh/h	55	49	51	246	194	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	71	64	66	319	252	79

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	744	292	331	0	-	0
Stage 1	292	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.254	-	-	-
Pot Cap-1 Maneuver	377	738	1206	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	351	738	1206	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	633	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.83	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	309	-	467	-	-
HCM Lane V/C Ratio	0.055	-	0.289	-	-
HCM Control Delay (s/veh)	8.2	0	15.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-

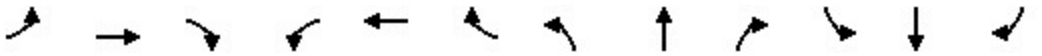
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	233	163	3	14	0
Future Vol, veh/h	1	233	163	3	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	253	177	3	15	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	180	0	-	0	434	179
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1395	-	-	-	579	864
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	787	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1395	-	-	-	578	864
Mov Cap-2 Maneuver	-	-	-	-	578	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	787	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.03	0	11.39
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	8	-	-	-	578
HCM Lane V/C Ratio	0.001	-	-	-	0.026
HCM Control Delay (s/veh)	7.6	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	197	84	262	88	50	21	428	104	54	1181	42
Future Volume (veh/h)	58	197	84	262	88	50	21	428	104	54	1181	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	214	0	285	96	0	23	465	0	59	1284	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	81	256		269	316		121	769		612	1549	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.14	0.00	0.08	0.17	0.00	0.02	0.22	0.00	0.26	0.44	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	49.6	43.9	0.0	113.9	33.8	0.0	35.1	35.4	0.0	21.8	27.9	0.0
Ln Grp LOS	D	D		F	C		D	D		C	C	
Approach Vol, veh/h		277			381			488			1343	
Approach Delay, s/veh		45.2			93.8			35.4			27.6	
Approach LOS		D			F			D			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	2	1	3	4	5	6	7	8
Case No	3.0	1.3	2.0	3.0	1.2	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	27.0	32.5	14.0	18.9	10.7	48.8	11.0	21.9
Change Period (Y+Rc), s	7.0	8.5	6.8	* 6.3	8.5	* 8.5	6.8	* 6.3
Max Green (Gmax), s	41.0	13.5	7.2	* 20	12.5	* 42	7.2	* 20
Max Allow Headway (MAH), s	7.7	2.6	2.6	3.7	2.6	7.7	2.6	3.7
Max Q Clear (g_c+I1), s	12.9	2.0	9.2	12.3	3.0	31.5	5.2	6.2
Green Ext Time (g_e), s	6.8	0.0	0.0	0.3	0.0	8.8	0.0	0.2
Prob of Phs Call (p_c)	1.00	0.78	1.00	1.00	0.45	1.00	0.80	1.00
Prob of Max Out (p_x)	0.06	0.00	1.00	0.06	0.00	0.94	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt		1	3		5		7	
Mvmt Sat Flow, veh/h		1781	3456		1781		1781	

Through Movement Data								
Assigned Mvmt	2			4		6		8
Mvmt Sat Flow, veh/h	3554			1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt	12			14		16		18
Mvmt Sat Flow, veh/h	1585			1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	1	3	0	5	0	7	0

Lane Assignment	L (Pr/Pm)	L (Prot)		L (Pr/Pm)		L (Prot)		
Lanes in Grp	0	1	2	0	1	0	1	0
Grp Vol (v), veh/h	0	59	285	0	23	0	63	0
Grp Sat Flow (s), veh/h/ln	0	1781	1728	0	1781	0	1781	0
Q Serve Time (g_s), s	0.0	0.0	7.2	0.0	1.0	0.0	3.2	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	7.2	0.0	1.0	0.0	3.2	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	928	0	0	430	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	7.3	0.0	0.0	11.3	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	0	612	269	0	121	0	81	0
V/C Ratio (X)	0.00	0.10	1.06	0.00	0.19	0.00	0.78	0.00
Avail Cap (c_a), veh/h	0	612	269	0	319	0	139	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	0.0	21.7	42.6	0.0	34.8	0.0	43.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	71.3	0.0	0.3	0.0	5.9	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	21.8	113.9	0.0	35.1	0.0	49.6	0.0
1st-Term Q (Q1), veh/ln	0.0	0.8	2.9	0.0	0.4	0.0	1.3	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	2.7	0.0	0.0	0.0	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.8	5.5	0.0	0.4	0.0	1.5	0.0
%ile Storage Ratio (RQ%)	0.00	0.02	0.61	0.00	0.01	0.00	0.07	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	2	0	0	4	0	6	0	8
Lane Assignment	T			T		T		T
Lanes in Grp	2	0	0	1	0	2	0	1
Grp Vol (v), veh/h	465	0	0	214	0	1284	0	96
Grp Sat Flow (s), veh/h/ln	1777	0	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	10.9	0.0	0.0	10.3	0.0	29.5	0.0	4.2
Cycle Q Clear Time (g_c), s	10.9	0.0	0.0	10.3	0.0	29.5	0.0	4.2
Lane Grp Cap (c), veh/h	769	0	0	256	0	1549	0	316
V/C Ratio (X)	0.60	0.00	0.00	0.84	0.00	0.83	0.00	0.30
Avail Cap (c_a), veh/h	1576	0	0	398	0	1614	0	398
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	32.7	0.0	0.0	38.9	0.0	23.0	0.0	33.6
Incr Delay (d2), s/veh	2.8	0.0	0.0	5.0	0.0	4.8	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	35.4	0.0	0.0	43.9	0.0	27.9	0.0	33.8
1st-Term Q (Q1), veh/ln	4.3	0.0	0.0	4.4	0.0	10.5	0.0	1.8

2nd-Term Q (Q2), veh/ln	0.3	0.0	0.0	0.4	0.0	1.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	4.6	0.0	0.0	4.7	0.0	11.6	0.0	1.8
%ile Storage Ratio (RQ%)	0.06	0.00	0.00	0.07	0.00	0.17	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	12	0	0	14	0	16	0	18
Lane Assignment	R			R		R		R
Lanes in Grp	1	0	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1585	0	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	343	0	0	217	0	691	0	268
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	703	0	0	338	0	720	0	338
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	41.2
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	318	21	17	321	8	38	2	12	45	5	49
Future Vol, veh/h	16	318	21	17	321	8	38	2	12	45	5	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	300	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	346	23	18	349	9	41	2	13	49	5	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	368	0	0	780	786	357	772	793	353
Stage 1	-	-	-	-	-	-	392	392	-	390	390	-
Stage 2	-	-	-	-	-	-	389	395	-	382	403	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1201	-	-	1190	-	-	312	324	687	317	321	690
Stage 1	-	-	-	-	-	-	633	607	-	634	608	-
Stage 2	-	-	-	-	-	-	635	605	-	641	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1201	-	-	1190	-	-	275	314	687	299	311	690
Mov Cap-2 Maneuver	-	-	-	-	-	-	275	314	-	299	311	-
Stage 1	-	-	-	-	-	-	624	598	-	624	598	-
Stage 2	-	-	-	-	-	-	572	595	-	617	591	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.36	0.4	18.6	15.02
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	321	1201	-	-	1190	-	-	299	621
HCM Lane V/C Ratio	0.176	0.014	-	-	0.016	-	-	0.163	0.095
HCM Control Delay (s/veh)	18.6	8	-	-	8.1	-	-	19.4	11.4
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.6	0.3

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Traffic Vol, veh/h	0	319	396	11	0	12
Future Vol, veh/h	0	319	396	11	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	347	430	12	0	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	430
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	625
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	625
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	10.88
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	625
HCM Lane V/C Ratio	-	-	-	0.021
HCM Control Delay (s/veh)	-	-	-	10.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	175	41	18	207	81	88	122	10	100	132	97
Future Volume (veh/h)	56	175	41	18	207	81	88	122	10	100	132	97
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	190	0	20	225	0	96	133	0	109	143	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	345	457	0	352	380	322	155	214	319	132	173	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.24	0.00	0.04	0.20	0.00	0.20	0.20	0.00	0.17	0.17	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	20.6	25.6	0.0	21.7	31.8	0.0	27.5	0.0	0.0	31.9	0.0	0.0
Ln Grp LOS	C	C		C	C		C			C		
Approach Vol, veh/h		251			245			229			252	
Approach Delay, s/veh		24.4			31.0			27.5			31.9	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	11.0	11.0	1.1	3.0		
Phs Duration (G+Y+Rc), s	9.6	24.0	18.8	21.4	12.6	21.0		
Change Period (Y+Rc), s	6.9	6.0	6.5	6.5	6.9	6.0		
Max Green (Gmax), s	15.0	50.0	30.0	30.0	15.0	50.0		
Max Allow Headway (MAH), s	4.7	7.7	3.4	3.7	4.6	8.0		
Max Q Clear (g_c+I1), s	2.6	8.3	11.8	10.4	3.9	10.0		
Green Ext Time (g_e), s	0.0	2.6	0.5	0.6	0.1	3.4		
Prob of Phs Call (p_c)	0.34	1.00	0.99	0.99	0.71	1.00		
Prob of Max Out (p_x)	0.00	0.00	0.00	0.00	0.00	0.00		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		792	768	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		1870	1039	1064		1870		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		0	1585	1585		1585		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0

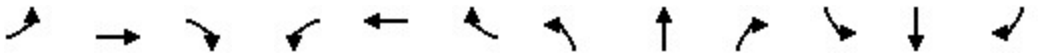
Lane Assignment	L (Pr/Pm)		L+T	L+TL (Pr/Pm)				
Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	20	0	252	229	61	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1831	1832	1781	0	0	0
Q Serve Time (g_s), s	0.6	0.0	9.8	8.4	1.9	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.6	0.0	9.8	8.4	1.9	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1193	0	0	0	1156	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	15.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	11.7	0.0	0.0	0.0	7.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.43	0.42	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	352	0	305	369	345	0	0	0
V/C Ratio (X)	0.06	0.00	0.83	0.62	0.18	0.00	0.00	0.00
Avail Cap (c_a), veh/h	650	0	745	745	569	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	21.6	0.0	29.7	26.9	20.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	2.2	0.6	0.3	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	21.7	0.0	31.9	27.5	20.6	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.2	0.0	3.9	3.5	0.7	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.3	0.0	4.1	3.5	0.7	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.03	0.00	0.04	0.21	0.07	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	190	0	0	0	225	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1870	0	0
Q Serve Time (g_s), s	0.0	6.3	0.0	0.0	0.0	8.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	6.3	0.0	0.0	0.0	8.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	457	0	0	0	380	0	0
V/C Ratio (X)	0.00	0.42	0.00	0.00	0.00	0.59	0.00	0.00
Avail Cap (c_a), veh/h	0	1268	0	0	0	1268	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	23.4	0.0	0.0	0.0	26.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.2	0.0	0.0	0.0	5.2	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	25.6	0.0	0.0	0.0	31.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	2.4	0.0	0.0	0.0	3.3	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.6	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	2.7	0.0	0.0	0.0	3.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.06	0.00	0.00	0.00	0.16	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment			R	R		R		
Lanes in Grp	0	0	1	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	1585	1585	0	1585	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	264	319	0	322	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	645	645	0	1075	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	28.7
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	233	21	20	245	9	42	3	17	5	6	23
Future Volume (veh/h)	25	233	21	20	245	9	42	3	17	5	6	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	0.99		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	28	265	0	23	278	0	48	3	0	6	7	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	569	746	632	576	736	0	368	17	0	207	170	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.03	0.41	0.00	0.03	0.40	0.00	0.14	0.14	0.00	0.14	0.14	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	6.3	8.3	0.0	6.2	8.6	0.0	14.6	0.0	0.0	14.0	0.0	0.0
Ln Grp LOS	A	A		A	A		B			B		
Approach Vol, veh/h		293			301			51			13	
Approach Delay, s/veh		8.1			8.4			14.6			14.0	
Approach LOS		A			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		8.0	1.1	4.0		8.0
Phs Duration (G+Y+Rc), s	5.1	21.4		11.0	5.3	21.2		11.0
Change Period (Y+Rc), s	4.0	6.1		5.7	4.0	6.1		5.7
Max Green (Gmax), s	5.0	35.0		30.0	5.0	35.0		30.0
Max Allow Headway (MAH), s	1.7	7.0		7.4	1.7	7.0		7.4
Max Q Clear (g_c+I1), s	2.3	5.8		2.2	2.3	6.0		3.2
Green Ext Time (g_e), s	0.0	2.9		0.1	0.0	3.1		0.4
Prob of Phs Call (p_c)	0.21	1.00		0.50	0.25	1.00		0.50
Prob of Max Out (p_x)	0.04	0.00		0.00	0.06	0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1739			472	1739			1281

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1826		1198		1826		123

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1547		0		0		0

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

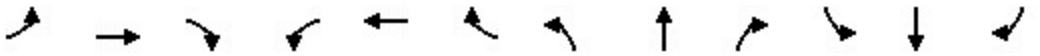
Lane Assignment	L (Pr/Pm)			L+TL (Pr/Pm)				L+T
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	23	0	0	13	28	0	0	51
Grp Sat Flow (s), veh/h/ln	1739	0	0	1670	1739	0	0	1404
Q Serve Time (g_s), s	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.9
Cycle Q Clear Time (g_c), s	0.3	0.0	0.0	0.2	0.3	0.0	0.0	1.2
Perm LT Sat Flow (s_l), veh/h/ln	1087	0	0	1427	1074	0	0	1421
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1779	0	0	0	1733
Perm LT Eff Green (g_p), s	15.3	0.0	0.0	5.3	15.1	0.0	0.0	5.3
Perm LT Serve Time (g_u), s	11.6	0.0	0.0	4.1	11.1	0.0	0.0	5.1
Perm LT Q Serve Time (g_ps), s	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.9
Time to First Blk (g_f), s	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.1
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.46	1.00	0.00	0.00	0.94
Lane Grp Cap (c), veh/h	576	0	0	377	569	0	0	385
V/C Ratio (X)	0.04	0.00	0.00	0.03	0.05	0.00	0.00	0.13
Avail Cap (c_a), veh/h	759	0	0	1420	742	0	0	1298
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	6.2	0.0	0.0	13.9	6.3	0.0	0.0	14.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	6.2	0.0	0.0	14.0	6.3	0.0	0.0	14.6
1st-Term Q (Q1), veh/ln	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.3
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.4
%ile Storage Ratio (RQ%)	0.02	0.00	0.00	0.01	0.02	0.00	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	265	0	0	0	278	0	0
Grp Sat Flow (s), veh/h/ln	0	1826	0	0	0	1826	0	0
Q Serve Time (g_s), s	0.0	3.8	0.0	0.0	0.0	4.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	3.8	0.0	0.0	0.0	4.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	746	0	0	0	736	0	0
V/C Ratio (X)	0.00	0.36	0.00	0.00	0.00	0.38	0.00	0.00
Avail Cap (c_a), veh/h	0	1705	0	0	0	1705	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	7.7	0.0	0.0	0.0	7.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.0	0.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.3	0.0	0.0	0.0	8.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.0	0.0	0.0	0.0	1.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1547	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	632	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1445	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	8.8
HCM 7th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	245	9	4	254	8	10	9	4	20	8	42
Future Volume (veh/h)	14	245	9	4	254	8	10	9	4	20	8	42
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	0.99		1.00	0.99		1.00	0.96		1.00	0.96		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	16	288	0	5	299	0	12	11	0	24	9	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	561	825	0	569	825	0	289	213	0	380	115	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.45	0.45	0.00	0.45	0.45	0.00	0.22	0.22	0.00	0.22	0.22	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	7.9	7.3	0.0	7.7	7.4	0.0	11.2	0.0	0.0	11.3	0.0	0.0
Ln Grp LOS	A	A		A	A		B			B		
Approach Vol, veh/h		304			304			23			33	
Approach Delay, s/veh		7.4			7.4			11.2			11.3	
Approach LOS		A			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		22.4		13.6		22.4		13.6
Change Period (Y+Rc), s		6.1		5.7		6.1		5.7
Max Green (Gmax), s		34.5		30.5		34.5		30.5
Max Allow Headway (MAH), s		8.0		8.5		8.0		8.5
Max Q Clear (g_c+I1), s		6.2		2.5		5.9		2.4
Green Ext Time (g_e), s		4.3		0.3		4.4		0.2
Prob of Phs Call (p_c)		1.00		0.52		1.00		0.52
Prob of Max Out (p_x)		0.02		0.00		0.02		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1046		939		1057		620

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1826		524		1826		968

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		0		0		0		0

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L+T		L		L+T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	16	0	33	0	5	0	23
Grp Sat Flow (s), veh/h/ln	0	1046	0	1462	0	1057	0	1588
Q Serve Time (g_s), s	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	4.2	0.0	0.5	0.0	3.8	0.0	0.4
Perm LT Sat Flow (s_l), veh/h/ln	0	1046	0	1370	0	1057	0	1373
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1710	0	0	0	1742
Perm LT Eff Green (g_p), s	0.0	16.3	0.0	7.9	0.0	16.3	0.0	7.9
Perm LT Serve Time (g_u), s	0.0	12.4	0.0	7.6	0.0	12.6	0.0	7.4
Perm LT Q Serve Time (g_ps), s	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.7
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.4
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.73	0.00	1.00	0.00	0.52
Lane Grp Cap (c), veh/h	0	561	0	495	0	569	0	502
V/C Ratio (X)	0.00	0.03	0.00	0.07	0.00	0.01	0.00	0.05
Avail Cap (c_a), veh/h	0	1091	0	1388	0	1104	0	1456
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	7.9	0.0	11.1	0.0	7.7	0.0	11.1
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.9	0.0	11.3	0.0	7.7	0.0	11.2
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	288	0	0	0	299	0	0
Grp Sat Flow (s), veh/h/ln	0	1826	0	0	0	1826	0	0
Q Serve Time (g_s), s	0.0	3.7	0.0	0.0	0.0	3.9	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	3.7	0.0	0.0	0.0	3.9	0.0	0.0
Lane Grp Cap (c), veh/h	0	825	0	0	0	825	0	0
V/C Ratio (X)	0.00	0.35	0.00	0.00	0.00	0.36	0.00	0.00
Avail Cap (c_a), veh/h	0	1750	0	0	0	1750	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.4	0.0	0.0	0.0	6.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.3	0.0	0.0	0.0	7.4	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.7	0.0	0.0	0.0	0.8	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.9	0.0	0.0	0.0	1.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.7
HCM 7th LOS	A

Intersection	
Intersection Delay, s/veh	6.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	334	408	137	284
Demand Flow Rate, veh/h	340	416	140	290
Vehicles Circulating, veh/h	205	168	478	257
Vehicles Exiting, veh/h	342	409	67	327
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.2	6.7	3.9	6.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
A (Intercept)	1380	1380	1380		1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3		1.02e-3
Entry Flow, veh/h	340	416	99	41	290
Cap Entry Lane, veh/h	1120	1163	847	1938	1062
Entry HV Adj Factor	0.982	0.980	0.984	0.980	0.980
Flow Entry, veh/h	334	408	97	40	284
Cap Entry, veh/h	1100	1139	834	1900	1041
V/C Ratio	0.304	0.358	0.117	0.021	0.273
Control Delay, s/veh	6.2	6.7	5.5	0.0	6.1
LOS	A	A	A	A	A
95th %tile Queue, veh	1	2	0	0	1

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	498	10	18	385	25	49
Future Vol, veh/h	498	10	18	385	25	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	541	11	20	418	27	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	552	0	999	541
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	458	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1018	-	270	541
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1018	-	265	541
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	625	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.38	16.25
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	400	-	-	1018	-
HCM Lane V/C Ratio	0.201	-	-	0.019	-
HCM Control Delay (s/veh)	16.3	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	352	105	38	278	19	44	26	23	5	16	9
Future Vol, veh/h	3	352	105	38	278	19	44	26	23	5	16	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	383	114	41	302	21	48	28	25	5	17	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	497	0	0	840	852	440	798	898	313
Stage 1	-	-	-	-	-	-	446	446	-	395	395	-
Stage 2	-	-	-	-	-	-	393	405	-	403	503	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1237	-	-	1067	-	-	285	297	617	304	279	728
Stage 1	-	-	-	-	-	-	591	574	-	630	605	-
Stage 2	-	-	-	-	-	-	631	598	-	624	541	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1237	-	-	1067	-	-	250	282	617	250	265	728
Mov Cap-2 Maneuver	-	-	-	-	-	-	250	282	-	250	265	-
Stage 1	-	-	-	-	-	-	589	572	-	600	576	-
Stage 2	-	-	-	-	-	-	576	570	-	567	539	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.05	0.97	22.59	17.38
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	11	-	-	202	-	-	323
HCM Lane V/C Ratio	0.332	0.003	-	-	0.039	-	-	0.101
HCM Control Delay (s/veh)	22.6	7.9	0	-	8.5	0	-	17.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.4	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	403	1	1	241	0	19	1	13	2	1	3
Future Vol, veh/h	1	403	1	1	241	0	19	1	13	2	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	438	1	1	262	0	21	1	14	2	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	262	0	0	439	0	0	705	705	439	705	705	262
Stage 1	-	-	-	-	-	-	441	441	-	264	264	-
Stage 2	-	-	-	-	-	-	265	264	-	441	441	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1302	-	-	1121	-	-	351	361	618	351	361	777
Stage 1	-	-	-	-	-	-	595	577	-	741	690	-
Stage 2	-	-	-	-	-	-	741	690	-	595	577	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1302	-	-	1121	-	-	348	360	618	341	360	777
Mov Cap-2 Maneuver	-	-	-	-	-	-	348	360	-	341	360	-
Stage 1	-	-	-	-	-	-	595	576	-	740	689	-
Stage 2	-	-	-	-	-	-	735	689	-	580	576	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.02	0.03	14.36	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	4	-	-	7	-	-	480
HCM Lane V/C Ratio	0.085	0.001	-	-	0.001	-	-	0.014
HCM Control Delay (s/veh)	14.4	7.8	0	-	8.2	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	317	42	71	223	1	19	32	110	6	13	40
Future Vol, veh/h	10	317	42	71	223	1	19	32	110	6	13	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	11	348	46	78	245	1	21	35	121	7	14	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	246	0	0	395	0	0	802	796	371	790	818	246
Stage 1	-	-	-	-	-	-	393	393	-	402	402	-
Stage 2	-	-	-	-	-	-	408	402	-	388	416	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1297	-	-	1143	-	-	298	315	666	303	306	783
Stage 1	-	-	-	-	-	-	624	599	-	617	594	-
Stage 2	-	-	-	-	-	-	612	593	-	628	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1297	-	-	1143	-	-	244	287	666	201	279	783
Mov Cap-2 Maneuver	-	-	-	-	-	-	244	287	-	201	279	-
Stage 1	-	-	-	-	-	-	617	592	-	568	547	-
Stage 2	-	-	-	-	-	-	518	546	-	478	578	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.21	2.02	17.9	14.05
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	454	48	-	-	433	-	-	462
HCM Lane V/C Ratio	0.39	0.008	-	-	0.068	-	-	0.14
HCM Control Delay (s/veh)	17.9	7.8	0	-	8.4	0	-	14.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.8	0	-	-	0.2	-	-	0.5

Intersection	
Intersection Delay, s/veh	2.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	0	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	470	300	0	170
Demand Flow Rate, veh/h	480	306	0	173
Vehicles Circulating, veh/h	47	0	201	306
Vehicles Exiting, veh/h	432	201	37	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	1.3	3.5	0.0	4.6
Approach LOS	A	A	-	A

Lane	Left	Right	Bypass	Left	Right	Left	Right
Designated Moves	LT	TR	R	LT	TR	LT	R
Assumed Moves	LT	TR		LT	TR	LT	R
RT Channelized			Free				
Lane Util	0.471	0.529		0.471	0.529	0.069	0.931
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328		4.645	4.328	4.645	4.328
A (Intercept)	1350	1420		1350	1420	1350	1420
B (Slope)	9.199e-4	8.501e-4		9.199e-4	8.501e-4	9.199e-4	8.501e-4
Entry Flow, veh/h	90	101	289	144	162	12	161
Cap Entry Lane, veh/h	1293	1364	1938	1350	1420	1019	1095
Entry HV Adj Factor	0.978	0.983	0.980	0.978	0.980	0.997	0.981
Flow Entry, veh/h	88	99	283	141	159	12	158
Cap Entry, veh/h	1264	1341	1900	1320	1392	1015	1074
V/C Ratio	0.070	0.074	0.149	0.107	0.114	0.012	0.147
Control Delay, s/veh	3.4	3.3	0.0	3.6	3.5	3.6	4.7
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	1	0	0	0	1

Intersection	
Intersection Delay, s/veh	4.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	3	2	0
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	170	0	219	0
Demand Flow Rate, veh/h	173	0	223	0
Vehicles Circulating, veh/h	0	309	173	241
Vehicles Exiting, veh/h	241	87	0	204
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.2	0.0	4.6	0.0
Approach LOS	A	-	A	-

Lane	Left	Right	Left	Right
Designated Moves	LT	TR	LT	R
Assumed Moves	L	TR	LT	R
RT Channelized				
Lane Util	0.613	0.387	0.910	0.090
Follow-Up Headway, s	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328
A (Intercept)	1350	1420	1350	1420
B (Slope)	9.199e-4	4.501e-4	9.199e-4	4.501e-4
Entry Flow, veh/h	106	67	203	20
Cap Entry Lane, veh/h	1350	1420	1151	1226
Entry HV Adj Factor	0.981	0.980	0.981	1.000
Flow Entry, veh/h	104	66	199	20
Cap Entry, veh/h	1324	1392	1130	1226
V/C Ratio	0.079	0.047	0.176	0.016
Control Delay, s/veh	3.3	2.9	4.7	3.1
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	6	2	0	7	0	2	1	0	8	1	94
Future Vol, veh/h	51	6	2	0	7	0	2	1	0	8	1	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	7	2	0	8	0	2	1	0	9	1	102

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	79	75	52	27	126	1	103	0	0	1	0	0
Stage 1	70	70	-	5	5	-	-	-	-	-	-	-
Stage 2	9	5	-	22	121	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	910	815	1015	983	764	1083	1489	-	-	1622	-	-
Stage 1	940	837	-	1017	891	-	-	-	-	-	-	-
Stage 2	1012	891	-	997	796	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	894	809	1015	966	759	1083	1489	-	-	1622	-	-
Mov Cap-2 Maneuver	894	809	-	966	759	-	-	-	-	-	-	-
Stage 1	935	832	-	1015	890	-	-	-	-	-	-	-
Stage 2	1002	890	-	981	791	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.37	9.79	4.95	0.56
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1200	-	-	888	759	117	-	-
HCM Lane V/C Ratio	0.001	-	-	0.072	0.01	0.005	-	-
HCM Control Delay (s/veh)	7.4	0	-	9.4	9.8	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	28	143	9	16	221
Future Vol, veh/h	8	28	143	9	16	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	30	155	10	17	240

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	435	160	0	0	165	0
Stage 1	160	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	578	885	-	-	1413	-
Stage 1	868	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	570	885	-	-	1413	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	760	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.81	0	0.51
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	788	1413	-
HCM Lane V/C Ratio	-	-	0.05	0.012	-
HCM Control Delay (s/veh)	-	-	9.8	7.6	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	10	141	3	4	224
Future Vol, veh/h	1	10	141	3	4	224
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	11	153	3	4	243

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	407	155	0	0	157	0
Stage 1	155	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	600	891	-	-	1423	-
Stage 1	873	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	598	891	-	-	1423	-
Mov Cap-2 Maneuver	598	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	787	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.28	0	0.13
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	853	32	-
HCM Lane V/C Ratio	-	-	0.014	0.003	-
HCM Control Delay (s/veh)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	7.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	87	107	36	53	183	43
Future Vol, veh/h	87	107	36	53	183	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	116	39	58	199	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	484	39	0	0	97	0
Stage 1	39	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	542	1032	-	-	1497	-
Stage 1	983	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	468	1032	-	-	1497	-
Mov Cap-2 Maneuver	468	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	558	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.82	0	6.29
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	670	1497	-
HCM Lane V/C Ratio	-	-	0.315	0.133	-
HCM Control Delay (s/veh)	-	-	12.8	7.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.5	-

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	2	22	0	2	2	50	92	0	2	40	44
Future Vol, veh/h	53	2	22	0	2	2	50	92	0	2	40	44
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	96	4	40	0	4	4	91	167	0	4	73	80
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay, s/veh	9.5	8.7	11.2	9.4
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	35%	0%	96%	0%	0%	2%
Vol Thru, %	65%	100%	4%	0%	50%	47%
Vol Right, %	0%	0%	0%	100%	50%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	0	55	22	4	86
LT Vol	50	0	53	0	0	2
Through Vol	92	0	2	0	2	40
RT Vol	0	0	0	22	2	44
Lane Flow Rate	258	0	100	40	7	156
Geometry Grp	5	5	5	5	4b	4b
Degree of Util (X)	0.378	0	0.169	0.054	0.011	0.216
Departure Headway (Hd)	5.267	5.09	6.093	4.899	5.532	4.978
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	682	0	587	728	643	719
Service Time	3.006	2.829	3.846	2.652	3.603	3.022
HCM Lane V/C Ratio	0.378	0	0.17	0.055	0.011	0.217
HCM Control Delay, s/veh	11.2	7.8	10.1	7.9	8.7	9.4
HCM Lane LOS	B	N	B	A	A	A
HCM 95th-tile Q	1.8	0	0.6	0.2	0	0.8

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	5	34	113	4	72
Future Vol, veh/h	2	5	34	113	4	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	5	37	123	4	78

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	185	98	0	0	160	0
Stage 1	98	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	804	958	-	-	1419	-
Stage 1	926	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	801	958	-	-	1419	-
Mov Cap-2 Maneuver	801	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	907	95	-
HCM Lane V/C Ratio	-	-	0.008	0.003	-
HCM Control Delay (s/veh)	-	-	9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	5	0	0	1	5	111	0	0	163	3
Future Vol, veh/h	4	0	5	0	0	1	5	111	0	0	163	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	0	0	1	5	121	0	0	177	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	310	310	179	309	312	121	180	0	0	121	0	0
Stage 1	179	179	-	132	132	-	-	-	-	-	-	-
Stage 2	132	132	-	177	180	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	642	604	864	644	603	931	1395	-	-	1467	-	-
Stage 1	823	751	-	872	787	-	-	-	-	-	-	-
Stage 2	872	787	-	825	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	639	602	864	637	601	931	1395	-	-	1467	-	-
Mov Cap-2 Maneuver	639	602	-	637	601	-	-	-	-	-	-	-
Stage 1	823	751	-	868	784	-	-	-	-	-	-	-
Stage 2	867	784	-	819	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.88	8.87	0.33	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	78	-	-	747	931	1467	-	-
HCM Lane V/C Ratio	0.004	-	-	0.013	0.001	-	-	-
HCM Control Delay (s/veh)	7.6	0	-	9.9	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	8	1	1093	1838	3
Future Vol, veh/h	12	8	1	1093	1838	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	700	-	-	700
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	9	1	1188	1998	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2594	999	2001	0	-	0
Stage 1	1998	-	-	-	-	-
Stage 2	596	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	20	242	283	-	-	-
Stage 1	91	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	20	242	283	-	-	-
Mov Cap-2 Maneuver	20	-	-	-	-	-
Stage 1	91	-	-	-	-	-
Stage 2	513	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/veh	243.74	0.02	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	283	-	32	-	-
HCM Lane V/C Ratio	0.004	-	0.678	-	-
HCM Control Delay (s/veh)	17.8	-	243.7	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	2.3	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	2	548	22	1	1734
Future Vol, veh/h	88	2	548	22	1	1734
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	600	720	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	2	596	24	1	1885

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1540	298	0	0	620	0
Stage 1	596	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	106	698	-	-	957	-
Stage 1	513	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	106	698	-	-	957	-
Mov Cap-2 Maneuver	232	-	-	-	-	-
Stage 1	513	-	-	-	-	-
Stage 2	338	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	30.79	0	0.01
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	957	-
HCM Lane V/C Ratio	-	-	0.416	0.001	-
HCM Control Delay (s/veh)	-	-	30.8	8.8	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	6	5	0	4	8	2	34	1	5	44	72
Future Vol, veh/h	34	6	5	0	4	8	2	34	1	5	44	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	7	5	0	4	9	2	37	1	5	48	78

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	141	140	87	104	179	37	126	0	0	38	0	0
Stage 1	98	98	-	42	42	-	-	-	-	-	-	-
Stage 2	43	42	-	62	137	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	828	751	972	876	715	1035	1460	-	-	1572	-	-
Stage 1	909	814	-	973	860	-	-	-	-	-	-	-
Stage 2	971	860	-	949	783	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	812	747	972	859	711	1035	1460	-	-	1572	-	-
Mov Cap-2 Maneuver	812	747	-	859	711	-	-	-	-	-	-	-
Stage 1	905	811	-	971	859	-	-	-	-	-	-	-
Stage 2	956	858	-	933	780	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.68	9.07	0.4	0.3
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	97	-	-	818	898	66	-	-
HCM Lane V/C Ratio	0.001	-	-	0.06	0.015	0.003	-	-
HCM Control Delay (s/veh)	7.5	0	-	9.7	9.1	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	5	1	0	0	1	30	0	0	72	0
Future Vol, veh/h	4	0	5	1	0	0	1	30	0	0	72	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	1	0	0	1	33	0	0	78	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	113	113	78	113	113	33	78	0	0	33	0	0
Stage 1	78	78	-	35	35	-	-	-	-	-	-	-
Stage 2	35	35	-	78	78	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	864	777	982	864	777	1041	1520	-	-	1579	-	-
Stage 1	931	830	-	981	866	-	-	-	-	-	-	-
Stage 2	981	866	-	931	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	864	777	982	859	777	1041	1520	-	-	1579	-	-
Mov Cap-2 Maneuver	864	777	-	859	777	-	-	-	-	-	-	-
Stage 1	931	830	-	980	865	-	-	-	-	-	-	-
Stage 2	980	865	-	925	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.93	9.2	0.24	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	58	-	-	926	859	1579	-	-
HCM Lane V/C Ratio	0.001	-	-	0.011	0.001	-	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.9	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	40.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	128	99	2	992	1910	14
Future Vol, veh/h	128	99	2	992	1910	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	150	-	-	600
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	139	108	2	1078	2076	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2620	1038	2076	0	-	0
Stage 1	2076	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 20	228	264	-	-	-
Stage 1	~ 82	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 19	228	264	-	-	-
Mov Cap-2 Maneuver	~ 69	-	-	-	-	-
Stage 1	~ 82	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $/s	559.48	0.04	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	264	-	120	-	-
HCM Lane V/C Ratio	0.008	-	2.049	-	-
HCM Control Delay (s/veh)	18.7	-	$ 559.5	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0	-	20.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	89	7	551	31	6	1753
Future Vol, veh/h	89	7	551	31	6	1753
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	-	0	-	0	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	8	599	34	7	1905

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1374	299	0	0	599	0
Stage 1	599	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	165	697	-	-	974	-
Stage 1	496	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	164	697	-	-	974	-
Mov Cap-2 Maneuver	271	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	384	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.22	0	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	697	974	-
HCM Lane V/C Ratio	-	-	0.011	0.007	-
HCM Control Delay (s/veh)	-	-	10.2	8.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	20	12	4	13	55
Future Vol, veh/h	22	20	12	4	13	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	22	13	4	14	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	74	44	74	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	929	1026	1526	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	921	1026	1526	-	-	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.9	5.53	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1350	-	968	-	-
HCM Lane V/C Ratio	0.009	-	0.047	-	-
HCM Control Delay (s/veh)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	3	1	27	9	10	0	10	6	6	8	1
Future Vol, veh/h	1	3	1	27	9	10	0	10	6	6	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	1	29	10	11	0	11	7	7	9	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	38	40	9	38	37	14	10	0	0	17	0	0
Stage 1	22	22	-	14	14	-	-	-	-	-	-	-
Stage 2	16	17	-	23	23	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	967	852	1072	968	855	1066	1610	-	-	1600	-	-
Stage 1	996	877	-	1006	884	-	-	-	-	-	-	-
Stage 2	1004	881	-	995	876	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	942	849	1072	959	852	1066	1610	-	-	1600	-	-
Mov Cap-2 Maneuver	942	849	-	959	852	-	-	-	-	-	-	-
Stage 1	992	873	-	1006	884	-	-	-	-	-	-	-
Stage 2	983	881	-	986	873	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9	8.97	0	2.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1610	-	-	905	956	704	-	-
HCM Lane V/C Ratio	-	-	-	0.006	0.052	0.004	-	-
HCM Control Delay (s/veh)	0	-	-	9	9	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	25	15	13	45	52	27	581	9	31	348	33
Future Volume (veh/h)	25	25	15	13	45	52	27	581	9	31	348	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	27	0	14	49	0	29	632	0	34	378	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	540	588	0	560	588	498	505	921	0	325	921	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.31	0.31	0.00	0.31	0.31	0.00	0.49	0.49	0.00	0.49	0.49	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	13.2	12.4	0.0	12.7	12.6	0.0	10.9	12.0	0.0	16.2	9.0	0.0
Ln Grp LOS	B	B		B	B		B	B		B	A	
Approach Vol, veh/h		54			63			661			412	
Approach Delay, s/veh		12.8			12.6			12.0			9.6	
Approach LOS		B			B			B			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		6.0		6.0		5.0
Phs Duration (G+Y+Rc), s		30.5		21.3		30.5		21.3
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green (Gmax), s		65.0		40.0		65.0		40.0
Max Allow Headway (MAH), s		6.9		6.6		7.1		6.9
Max Q Clear (g_c+I1), s		15.4		3.7		17.2		3.0
Green Ext Time (g_e), s		10.1		0.4		5.5		0.5
Prob of Phs Call (p_c)		1.00		0.81		1.00		0.81
Prob of Max Out (p_x)		0.02		0.00		0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1005		1356		795		1383

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		0		0		0		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	29	0	27	0	34	0	14
Grp Sat Flow (s), veh/h/ln	0	1005	0	1356	0	795	0	1383
Q Serve Time (g_s), s	0.0	1.0	0.0	0.7	0.0	1.8	0.0	0.4
Cycle Q Clear Time (g_c), s	0.0	7.6	0.0	1.7	0.0	15.2	0.0	0.9
Perm LT Sat Flow (s_l), veh/h/ln	0	1005	0	1356	0	795	0	1383
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	25.5	0.0	16.3	0.0	25.5	0.0	16.3
Perm LT Serve Time (g_u), s	0.0	18.9	0.0	15.3	0.0	12.1	0.0	15.8
Perm LT Q Serve Time (g_ps), s	0.0	1.0	0.0	0.7	0.0	1.8	0.0	0.4
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	505	0	540	0	325	0	560
V/C Ratio (X)	0.00	0.06	0.00	0.05	0.00	0.10	0.00	0.02
Avail Cap (c_a), veh/h	0	1271	0	1161	0	931	0	1194
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	10.8	0.0	13.1	0.0	15.9	0.0	12.7
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	0.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.9	0.0	13.2	0.0	16.2	0.0	12.7
1st-Term Q (Q1), veh/ln	0.0	0.2	0.0	0.2	0.0	0.3	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.2	0.0	0.2	0.0	0.3	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.01	0.00	0.02	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	632	0	27	0	378	0	49
Grp Sat Flow (s), veh/h/ln	0	1870	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	13.4	0.0	0.5	0.0	6.7	0.0	1.0
Cycle Q Clear Time (g_c), s	0.0	13.4	0.0	0.5	0.0	6.7	0.0	1.0
Lane Grp Cap (c), veh/h	0	921	0	588	0	921	0	588
V/C Ratio (X)	0.00	0.69	0.00	0.05	0.00	0.41	0.00	0.08
Avail Cap (c_a), veh/h	0	2347	0	1444	0	2347	0	1444
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	10.1	0.0	12.4	0.0	8.4	0.0	12.5
Incr Delay (d2), s/veh	0.0	1.9	0.0	0.1	0.0	0.6	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	12.0	0.0	12.4	0.0	9.0	0.0	12.6
1st-Term Q (Q1), veh/ln	0.0	3.6	0.0	0.2	0.0	1.9	0.0	0.4

2nd-Term Q (Q2), veh/ln	0.0	0.5	0.0	0.0	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.1	0.0	0.2	0.0	2.0	0.0	0.4
%ile Storage Ratio (RQ%)	0.00	0.17	0.00	0.01	0.00	0.12	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								R
Lanes in Grp	0	0	0	0	0	0	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	498
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	1224
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	11.2
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	44	47	8	30	435	15	908	431	31	1353	147
Future Volume (veh/h)	70	44	47	8	30	435	15	908	431	31	1353	147
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	48	0	9	33	0	16	987	0	34	1471	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	248	204		236	204		211	1737		351	1796	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.11	0.11	0.00	0.11	0.11	0.00	0.02	0.49	0.00	0.04	0.51	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	26.4	24.7	0.0	25.3	24.4	0.0	10.7	11.0	0.0	8.2	12.9	0.0
Ln Grp LOS	C	C		C	C		B	B		A	B	
Approach Vol, veh/h		124			42			1003			1505	
Approach Delay, s/veh		25.8			24.6			11.0			12.8	
Approach LOS		C			C			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		5.0	1.1	3.0		5.0
Phs Duration (G+Y+Rc), s	10.2	37.4		12.6	9.2	38.4		12.6
Change Period (Y+Rc), s	8.0	8.0		6.0	8.0	8.0		6.0
Max Green (Gmax), s	7.0	57.0		24.0	7.0	57.0		24.0
Max Allow Headway (MAH), s	2.6	3.7		3.4	2.6	3.7		3.9
Max Q Clear (g_c+I1), s	2.6	13.8		6.1	2.3	23.0		3.8
Green Ext Time (g_e), s	0.0	4.2		0.2	0.0	7.4		0.1
Prob of Phs Call (p_c)	0.43	1.00		0.94	0.23	1.00		0.94
Prob of Max Out (p_x)	0.02	0.00		0.00	0.00	0.01		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1781			1376	1781			1357

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

Lane Assignment	L (Pr/Pm)			LL (Pr/Pm)				L
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	34	0	0	76	16	0	0	9
Grp Sat Flow (s), veh/h/ln	1781	0	0	1376	1781	0	0	1357
Q Serve Time (g_s), s	0.6	0.0	0.0	3.2	0.3	0.0	0.0	0.4
Cycle Q Clear Time (g_c), s	0.6	0.0	0.0	4.1	0.3	0.0	0.0	1.8
Perm LT Sat Flow (s_l), veh/h/ln	570	0	0	1376	360	0	0	1357
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	29.4	0.0	0.0	6.6	30.4	0.0	0.0	6.6
Perm LT Serve Time (g_u), s	17.6	0.0	0.0	5.6	9.4	0.0	0.0	5.2
Perm LT Q Serve Time (g_ps), s	0.7	0.0	0.0	3.2	1.0	0.0	0.0	0.4
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	351	0	0	248	211	0	0	236
V/C Ratio (X)	0.10	0.00	0.00	0.31	0.08	0.00	0.00	0.04
Avail Cap (c_a), veh/h	494	0	0	647	383	0	0	630
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	8.2	0.0	0.0	26.2	10.7	0.0	0.0	25.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	8.2	0.0	0.0	26.4	10.7	0.0	0.0	25.3
1st-Term Q (Q1), veh/ln	0.1	0.0	0.0	1.0	0.1	0.0	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	1.0	0.1	0.0	0.0	0.1
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.08	0.00	0.00	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	987	0	48	0	1471	0	33
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	11.8	0.0	1.4	0.0	21.0	0.0	1.0
Cycle Q Clear Time (g_c), s	0.0	11.8	0.0	1.4	0.0	21.0	0.0	1.0
Lane Grp Cap (c), veh/h	0	1737	0	204	0	1796	0	204
V/C Ratio (X)	0.00	0.57	0.00	0.24	0.00	0.82	0.00	0.16
Avail Cap (c_a), veh/h	0	3370	0	747	0	3370	0	747
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	10.9	0.0	24.5	0.0	12.5	0.0	24.3
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.2	0.0	0.4	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.0	0.0	24.7	0.0	12.9	0.0	24.4
1st-Term Q (Q1), veh/ln	0.0	3.1	0.0	0.6	0.0	5.3	0.0	0.4

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.1	0.0	0.6	0.0	5.4	0.0	0.4
%ile Storage Ratio (RQ%)	0.00	0.10	0.00	0.04	0.00	0.16	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	775	0	173	0	801	0	173
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1503	0	633	0	1503	0	633
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.9
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	12	2	43	14	2
Future Vol, veh/h	38	12	2	43	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	13	2	47	15	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	54	0	99	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1551	-	900	1021
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	971	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1551	-	899	1021
Mov Cap-2 Maneuver	-	-	-	-	899	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	970	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.33	9.02
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	912	-	-	80	-
HCM Lane V/C Ratio	0.019	-	-	0.001	-
HCM Control Delay (s/veh)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	12	4	3	18	1	16	1	0	1	3	24
Future Vol, veh/h	7	12	4	3	18	1	16	1	0	1	3	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	260	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	13	4	3	20	1	17	1	0	1	3	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	13	0	0	56	55	13	55	55	20
Stage 1	-	-	-	-	-	-	28	28	-	27	27	-
Stage 2	-	-	-	-	-	-	28	27	-	29	28	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1595	-	-	1605	-	-	941	836	1067	942	836	1058
Stage 1	-	-	-	-	-	-	989	872	-	991	873	-
Stage 2	-	-	-	-	-	-	989	873	-	988	872	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1595	-	-	1605	-	-	908	830	1067	934	831	1058
Mov Cap-2 Maneuver	-	-	-	-	-	-	908	830	-	934	831	-
Stage 1	-	-	-	-	-	-	984	867	-	989	871	-
Stage 2	-	-	-	-	-	-	959	871	-	982	867	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	2.21	0.99	9.07	8.63
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	903	663	-	-	243	-	-	1023
HCM Lane V/C Ratio	0.02	0.005	-	-	0.002	-	-	0.03
HCM Control Delay (s/veh)	9.1	7.3	0	-	7.2	0	-	8.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	28	594	19	35	313
Future Vol, veh/h	6	28	594	19	35	313
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	80	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	30	646	21	38	340

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1062	646	0	0	666	0
Stage 1	646	-	-	-	-	-
Stage 2	416	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	247	472	-	-	923	-
Stage 1	522	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	237	472	-	-	923	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.72	0	0.91
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	450	923	-
HCM Lane V/C Ratio	-	-	0.082	0.041	-
HCM Control Delay (s/veh)	-	-	13.7	9.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	291	81	1070	555
Demand Flow Rate, veh/h	294	82	1081	560
Vehicles Circulating, veh/h	8	1007	103	254
Vehicles Exiting, veh/h	254	177	7	835
Ped Vol Crossing Leg, #/h	0	0	1	0
Ped Cap Adj	1.000	1.000	0.999	1.000
Approach Delay, s/veh	1.1	7.6	13.4	9.5
Approach LOS	A	A	B	A

Lane	Left	Bypass	Left	Left	Right	Left	Right	Bypass
Designated Moves	LT	R	LTR	LT	R	LT	TR	R
Assumed Moves	LT		LTR	LT	R	LT	TR	
RT Channelized		Free						Yield
Lane Util	1.000		1.000	0.852	0.148	0.500	0.500	
Follow-Up Headway, s	2.535		2.535	2.667	2.535	2.667	2.535	2.609
Critical Headway, s	4.328		4.328	4.645	4.328	4.645	4.328	4.976
A (Intercept)	1420		1420	1350	1420	1350	1420	1380
B (Slope)	8.501e-4		8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	1.02e-3
Entry Flow, veh/h	102	192	82	921	160	4	4	552
Cap Entry Lane, veh/h	1410	1919	603	1228	1301	1069	1144	1065
Entry HV Adj Factor	0.989	0.990	0.992	0.990	0.988	0.932	1.051	0.990
Flow Entry, veh/h	101	190	81	912	158	4	4	547
Cap Entry, veh/h	1394	1900	598	1214	1283	996	1202	1054
V/C Ratio	0.072	0.100	0.136	0.751	0.123	0.004	0.003	0.519
Control Delay, s/veh	3.1	0.0	7.6	15.0	3.8	3.6	3.0	9.6
LOS	A	A	A	C	A	A	A	A
95th %tile Queue, veh	0	0	0	8	0	0	0	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	595	705	13	98	384	63	7	240	99	33	207	258
Future Volume (veh/h)	595	705	13	98	384	63	7	240	99	33	207	258
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	647	766	0	107	417	0	8	261	0	36	225	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	652	1886		130	1475		17	290		49	323	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.19	0.53	0.00	0.07	0.42	0.00	0.01	0.15	0.00	0.03	0.17	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	86.8	19.2	0.0	80.1	26.1	0.0	72.4	75.3	0.0	71.3	55.6	0.0
Ln Grp LOS	F	B		F	C		E	E		E	E	
Approach Vol, veh/h		1413			524			269			261	
Approach Delay, s/veh		50.2			37.2			75.2			57.8	
Approach LOS		D			D			E			E	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	17.9	77.3	8.1	29.2	33.2	62.0	10.5	26.8
Change Period (Y+Rc), s	8.2	7.0	6.8	* 6.3	8.2	7.0	6.8	* 6.3
Max Green (Gmax), s	12.0	55.0	10.0	* 25	25.0	55.0	10.0	* 25
Max Allow Headway (MAH), s	2.6	7.7	1.7	3.9	2.6	7.7	2.7	3.9
Max Q Clear (g_c+I1), s	9.8	19.1	2.6	17.0	26.8	12.3	4.7	20.2
Green Ext Time (g_e), s	0.0	13.3	0.0	0.4	0.0	6.8	0.0	0.4
Prob of Phs Call (p_c)	0.98	1.00	0.26	1.00	1.00	1.00	0.73	1.00
Prob of Max Out (p_x)	1.00	0.00	0.00	0.05	1.00	0.00	0.00	0.54

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		3456		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

Lane Assignment	L (Prot)		L (Prot)		L (Prot)		L (Prot)	
Lanes in Grp	1	0	1	0	2	0	1	0
Grp Vol (v), veh/h	107	0	8	0	647	0	36	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1728	0	1781	0
Q Serve Time (g_s), s	7.8	0.0	0.6	0.0	24.8	0.0	2.7	0.0
Cycle Q Clear Time (g_c), s	7.8	0.0	0.6	0.0	24.8	0.0	2.7	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	130	0	17	0	652	0	49	0
V/C Ratio (X)	0.82	0.00	0.47	0.00	0.99	0.00	0.73	0.00
Avail Cap (c_a), veh/h	161	0	134	0	652	0	134	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	60.6	0.0	65.3	0.0	53.6	0.0	63.9	0.0
Incr Delay (d2), s/veh	19.6	0.0	7.1	0.0	33.1	0.0	7.4	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	80.1	0.0	72.4	0.0	86.8	0.0	71.3	0.0
1st-Term Q (Q1), veh/ln	3.4	0.0	0.3	0.0	10.3	0.0	1.2	0.0
2nd-Term Q (Q2), veh/ln	0.7	0.0	0.0	0.0	3.0	0.0	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	4.1	0.0	0.3	0.0	13.3	0.0	1.3	0.0
%ile Storage Ratio (RQ%)	0.11	0.00	0.03	0.00	0.34	0.00	0.05	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	766	0	225	0	417	0	261
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	17.1	0.0	15.0	0.0	10.3	0.0	18.2
Cycle Q Clear Time (g_c), s	0.0	17.1	0.0	15.0	0.0	10.3	0.0	18.2
Lane Grp Cap (c), veh/h	0	1886	0	323	0	1475	0	290
V/C Ratio (X)	0.00	0.41	0.00	0.70	0.00	0.28	0.00	0.90
Avail Cap (c_a), veh/h	0	1886	0	353	0	1475	0	353
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	18.6	0.0	51.5	0.0	25.7	0.0	55.0
Incr Delay (d2), s/veh	0.0	0.7	0.0	4.1	0.0	0.5	0.0	20.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	19.2	0.0	55.6	0.0	26.1	0.0	75.3
1st-Term Q (Q1), veh/ln	0.0	6.5	0.0	6.9	0.0	4.1	0.0	8.4

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.4	0.0	0.1	0.0	1.6
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	6.6	0.0	7.2	0.0	4.2	0.0	10.0
%ile Storage Ratio (RQ%)	0.00	0.12	0.00	0.27	0.00	0.08	0.00	0.64
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	841	0	274	0	658	0	245
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	841	0	299	0	658	0	299
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	50.9
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↳		↰	↳		↰	↑	↱
Traffic Vol, veh/h	14	7	10	1	14	6	24	403	30	0	68	340
Future Vol, veh/h	14	7	10	1	14	6	24	403	30	0	68	340
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Yield
Storage Length	-	-	100	-	-	-	150	-	-	240	-	245
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	15	8	11	1	15	7	26	443	33	0	75	374

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	580	604	76	591	588	-	76	0	0	476	0	0
Stage 1	76	76	-	512	512	-	-	-	-	-	-	-
Stage 2	504	529	-	79	76	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	-	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	-	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	427	414	988	420	423	0	1530	-	-	1092	-	-
Stage 1	936	834	-	546	538	0	-	-	-	-	-	-
Stage 2	552	529	-	933	834	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	404	406	987	401	415	-	1528	-	-	1092	-	-
Mov Cap-2 Maneuver	404	406	-	401	415	-	-	-	-	-	-	-
Stage 1	935	833	-	537	529	-	-	-	-	-	-	-
Stage 2	526	520	-	914	833	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.89	14.01	0.39	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	406	987	415	1092	-	-
HCM Lane V/C Ratio	0.017	-	-	0.019	0.011	0.037	-	-	-
HCM Control Delay (s/veh)	7.4	-	-	14	8.7	14	0	-	-
HCM Lane LOS	A	-	-	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	51	53	479	449	27
Future Vol, veh/h	31	51	53	479	449	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	240	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	56	58	526	493	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1151	508	523	0	-	0
Stage 1	508	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	219	565	1043	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	202	565	1043	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	17.51	0.86	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	179	-	202	565	-	-
HCM Lane V/C Ratio	0.056	-	0.169	0.099	-	-
HCM Control Delay (s/veh)	8.7	0	26.5	12.1	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	0.3	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	4	3	0	1	0	0	5	2	1	4	0
Future Vol, veh/h	4	4	3	0	1	0	0	5	2	1	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	3	0	1	0	0	5	2	1	4	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	8	0	0	18	16	6	17	17	1
Stage 1	-	-	-	-	-	-	15	15	-	1	1	-
Stage 2	-	-	-	-	-	-	3	1	-	16	16	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1613	-	-	996	878	1077	998	877	1083
Stage 1	-	-	-	-	-	-	1005	883	-	1022	895	-
Stage 2	-	-	-	-	-	-	1019	895	-	1004	882	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1613	-	-	989	876	1077	987	874	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-	989	876	-	987	874	-
Stage 1	-	-	-	-	-	-	1003	881	-	1022	895	-
Stage 2	-	-	-	-	-	-	1014	895	-	993	879	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	2.63	0	8.92	9.05
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	925	603	-	-	1613	-	-	895
HCM Lane V/C Ratio	0.008	0.003	-	-	-	-	-	0.006
HCM Control Delay (s/veh)	8.9	7.2	0	-	0	-	-	9
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	86	374	62	0	61
Future Vol, veh/h	36	86	374	62	0	61
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	41	99	430	71	0	70

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	541	471	0	0	506	0
Stage 1	471	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	504	595	-	-	1064	-
Stage 1	631	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	502	592	-	-	1059	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.45	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	502	592	1059	-
HCM Lane V/C Ratio	-	-	0.082	0.167	-	-
HCM Control Delay (s/veh)	-	-	12.8	12.3	0	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.6	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	43	17	4	26	78	8	29	23	8	20	22
Future Vol, veh/h	8	43	17	4	26	78	8	29	23	8	20	22
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	47	19	4	29	86	9	32	25	9	22	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.6	7.4	7.5	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	12%	4%	16%
Vol Thru, %	48%	63%	24%	40%
Vol Right, %	38%	25%	72%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	60	68	108	50
LT Vol	8	8	4	8
Through Vol	29	43	26	20
RT Vol	23	17	78	22
Lane Flow Rate	66	75	119	55
Geometry Grp	1	1	1	1
Degree of Util (X)	0.075	0.085	0.124	0.062
Departure Headway (Hd)	4.105	4.11	3.775	4.086
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	860	862	938	863
Service Time	2.19	2.184	1.848	2.174
HCM Lane V/C Ratio	0.077	0.087	0.127	0.064
HCM Control Delay, s/veh	7.5	7.6	7.4	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.4	0.2

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	104	46	52	408	393	87
Future Vol, veh/h	104	46	52	408	393	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	109	48	55	429	414	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	998	459	505	0	-	0
Stage 1	459	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	269	600	1054	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	251	600	1054	-	-	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	583	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	28.8	0.97	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	203	-	305	-	-
HCM Lane V/C Ratio	0.052	-	0.518	-	-
HCM Control Delay (s/veh)	8.6	0	28.8	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	2.8	-	-

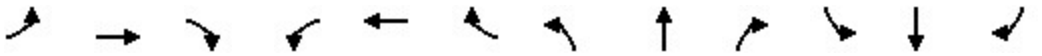
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	278	315	10	10	1
Future Vol, veh/h	4	278	315	10	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	302	342	11	11	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	353	0	-	0	659	348
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	311	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1205	-	-	-	429	695
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1205	-	-	-	427	695
Mov Cap-2 Maneuver	-	-	-	-	427	-
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	743	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.11	0	13.36
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	26	-	-	-	442
HCM Lane V/C Ratio	0.004	-	-	-	0.027
HCM Control Delay (s/veh)	8	0	-	-	13.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	166	48	157	173	28	98	1289	299	42	714	62
Future Volume (veh/h)	71	166	48	157	173	28	98	1289	299	42	714	62
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	77	180	0	171	188	0	107	1401	0	46	776	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	99	223		228	243		295	1680		185	1554	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.12	0.00	0.07	0.13	0.00	0.06	0.47	0.00	0.04	0.44	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	63.5	42.9	0.0	54.6	41.5	0.0	19.8	26.2	0.0	39.2	19.9	0.0
Ln Grp LOS	E	D		D	D		B	C		D	B	
Approach Vol, veh/h		257			359			1508			822	
Approach Delay, s/veh		49.1			47.7			25.7			21.0	
Approach LOS		D			D			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	2	1	3	4	5	6	7	8
Case No	3.0	1.3	2.0	3.0	1.2	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	51.4	12.0	13.0	17.5	13.8	49.6	12.0	18.5
Change Period (Y+Rc), s	7.0	8.5	6.8	* 6.3	8.5	* 8.5	6.8	* 6.3
Max Green (Gmax), s	46.0	12.5	6.2	* 27	25.5	* 33	6.2	* 27
Max Allow Headway (MAH), s	7.7	2.6	2.6	3.7	2.6	7.7	2.6	3.7
Max Q Clear (g_c+I1), s	34.2	2.0	6.6	10.8	5.6	16.8	6.0	11.1
Green Ext Time (g_e), s	10.2	0.0	0.0	0.4	0.1	8.6	0.0	0.4
Prob of Phs Call (p_c)	1.00	0.70	0.99	1.00	0.94	1.00	0.87	1.00
Prob of Max Out (p_x)	0.93	0.00	1.00	0.00	0.00	0.57	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt		1	3		5		7	
Mvmt Sat Flow, veh/h		1781	3456		1781		1781	

Through Movement Data								
Assigned Mvmt	2			4		6		8
Mvmt Sat Flow, veh/h	3554			1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt	12			14		16		18
Mvmt Sat Flow, veh/h	1585			1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	1	3	0	5	0	7	0

Lane Assignment	L (Pr/Pm)	L (Prot)		L (Pr/Pm)		L (Prot)		
Lanes in Grp	0	1	2	0	1	0	1	0
Grp Vol (v), veh/h	0	46	171	0	107	0	77	0
Grp Sat Flow (s), veh/h/ln	0	1781	1728	0	1781	0	1781	0
Q Serve Time (g_s), s	0.0	0.0	4.6	0.0	3.6	0.0	4.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	4.6	0.0	3.6	0.0	4.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	385	0	0	695	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	28.6	0.0	0.0	32.6	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	10.2	0.0	0.0	15.8	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	10.2	0.0	0.0	3.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	0	185	228	0	295	0	99	0
V/C Ratio (X)	0.00	0.25	0.75	0.00	0.36	0.00	0.78	0.00
Avail Cap (c_a), veh/h	0	356	228	0	677	0	118	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	0.0	38.9	43.1	0.0	19.5	0.0	43.8	0.0
Incr Delay (d2), s/veh	0.0	0.3	11.5	0.0	0.3	0.0	19.7	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	39.2	54.6	0.0	19.8	0.0	63.5	0.0
1st-Term Q (Q1), veh/ln	0.0	1.0	1.8	0.0	1.3	0.0	1.7	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.4	0.0	0.0	0.0	0.5	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	1.0	2.2	0.0	1.3	0.0	2.2	0.0
%ile Storage Ratio (RQ%)	0.00	0.02	0.24	0.00	0.03	0.00	0.10	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	2	0	0	4	0	6	0	8
Lane Assignment	T			T		T		T
Lanes in Grp	2	0	0	1	0	2	0	1
Grp Vol (v), veh/h	1401	0	0	180	0	776	0	188
Grp Sat Flow (s), veh/h/ln	1777	0	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	32.2	0.0	0.0	8.8	0.0	14.8	0.0	9.1
Cycle Q Clear Time (g_c), s	32.2	0.0	0.0	8.8	0.0	14.8	0.0	9.1
Lane Grp Cap (c), veh/h	1680	0	0	223	0	1554	0	243
V/C Ratio (X)	0.83	0.00	0.00	0.81	0.00	0.50	0.00	0.77
Avail Cap (c_a), veh/h	1741	0	0	532	0	1554	0	532
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	21.5	0.0	0.0	40.3	0.0	19.0	0.0	39.5
Incr Delay (d2), s/veh	4.6	0.0	0.0	2.6	0.0	0.9	0.0	2.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	26.2	0.0	0.0	42.9	0.0	19.9	0.0	41.5
1st-Term Q (Q1), veh/ln	11.3	0.0	0.0	3.8	0.0	5.3	0.0	3.9

2nd-Term Q (Q2), veh/ln	1.1	0.0	0.0	0.2	0.0	0.2	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	12.4	0.0	0.0	3.9	0.0	5.5	0.0	4.0
%ile Storage Ratio (RQ%)	0.12	0.00	0.00	0.06	0.00	0.07	0.00	0.12
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	12	0	0	14	0	16	0	18
Lane Assignment	R			R		R		R
Lanes in Grp	1	0	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1585	0	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	749	0	0	189	0	693	0	206
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	777	0	0	451	0	693	0	451
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	29.1
HCM 7th LOS	C

Notes

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	422	22	20	311	19	39	2	29	21	1	22
Future Vol, veh/h	63	422	22	20	311	19	39	2	29	21	1	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Yield
Storage Length	180	-	-	300	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	459	24	22	338	21	42	2	32	23	1	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	359	0	-	459	0	0	978	998	459	989	988	348
Stage 1	-	-	-	-	-	-	596	596	-	392	392	-
Stage 2	-	-	-	-	-	-	382	402	-	597	596	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1200	-	0	1102	-	-	230	244	602	226	247	695
Stage 1	-	-	0	-	-	-	490	492	-	633	607	-
Stage 2	-	-	0	-	-	-	640	600	-	490	492	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1200	-	-	1102	-	-	204	225	602	196	229	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	204	225	-	196	229	-
Stage 1	-	-	-	-	-	-	462	464	-	620	595	-
Stage 2	-	-	-	-	-	-	605	588	-	436	464	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.06	0.48	22.4	20.08
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	282	1200	-	1102	-	-	196	389
HCM Lane V/C Ratio	0.27	0.057	-	0.02	-	-	0.116	0.064
HCM Control Delay (s/veh)	22.4	8.2	-	8.3	-	-	25.8	14.9
HCM Lane LOS	C	A	-	A	-	-	D	B
HCM 95th %tile Q(veh)	1.1	0.2	-	0.1	-	-	0.4	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Traffic Vol, veh/h	0	470	355	14	0	7
Future Vol, veh/h	0	470	355	14	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	511	386	15	0	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	386
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	662
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	662
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	662
HCM Lane V/C Ratio	-	-	-	0.011
HCM Control Delay (s/veh)	-	-	-	10.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	321	47	13	225	134	76	121	22	170	90	68
Future Volume (veh/h)	98	321	47	13	225	134	76	121	22	170	90	68
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	349	0	14	245	0	83	132	0	185	98	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	344	490	0	237	367	311	136	216	304	218	116	292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.09	0.26	0.00	0.03	0.20	0.00	0.19	0.19	0.00	0.18	0.18	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	22.0	32.7	0.0	24.1	36.2	0.0	29.3	0.0	0.0	32.8	0.0	0.0
Ln Grp LOS	C	C		C	D		C			C		
Approach Vol, veh/h		456			259			215			283	
Approach Delay, s/veh		30.2			35.5			29.3			32.8	
Approach LOS		C			D			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	11.0	11.0	1.1	3.0		
Phs Duration (G+Y+Rc), s	9.0	26.3	20.8	21.4	14.1	21.2		
Change Period (Y+Rc), s	6.9	6.0	6.5	6.5	6.9	6.0		
Max Green (Gmax), s	15.0	50.0	30.0	30.0	15.0	50.0		
Max Allow Headway (MAH), s	4.7	7.7	3.5	3.7	4.6	8.0		
Max Q Clear (g_c+I1), s	2.5	15.1	13.7	10.3	5.5	11.4		
Green Ext Time (g_e), s	0.0	5.2	0.6	0.5	0.2	3.7		
Prob of Phs Call (p_c)	0.26	1.00	1.00	0.99	0.90	1.00		
Prob of Max Out (p_x)	0.00	0.01	0.00	0.00	0.02	0.00		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		1184	708	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		1870	627	1127		1870		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		0	1585	1585		1585		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0

Lane Assignment	L (Pr/Pm)		L+T	L+TL (Pr/Pm)				
Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	14	0	283	215	107	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1811	1835	1781	0	0	0
Q Serve Time (g_s), s	0.5	0.0	11.7	8.3	3.5	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.5	0.0	11.7	8.3	3.5	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1032	0	0	0	1135	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	15.2	0.0	0.0	0.0	15.4	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	7.2	0.0	0.0	0.0	5.8	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.1	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.65	0.39	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	237	0	334	352	344	0	0	0
V/C Ratio (X)	0.06	0.00	0.85	0.61	0.31	0.00	0.00	0.00
Avail Cap (c_a), veh/h	534	0	702	711	523	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	24.0	0.0	30.5	28.6	21.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	2.3	0.6	0.7	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	24.1	0.0	32.8	29.3	22.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.2	0.0	4.7	3.5	1.3	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.2	0.0	4.9	3.5	1.3	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.02	0.00	0.05	0.21	0.14	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	349	0	0	0	245	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1870	0	0
Q Serve Time (g_s), s	0.0	13.1	0.0	0.0	0.0	9.4	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	13.1	0.0	0.0	0.0	9.4	0.0	0.0
Lane Grp Cap (c), veh/h	0	490	0	0	0	367	0	0
V/C Ratio (X)	0.00	0.71	0.00	0.00	0.00	0.67	0.00	0.00
Avail Cap (c_a), veh/h	0	1209	0	0	0	1209	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	25.9	0.0	0.0	0.0	28.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.8	0.0	0.0	0.0	7.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	32.7	0.0	0.0	0.0	36.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.1	0.0	0.0	0.0	3.9	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.9	0.0	0.0	0.0	0.8	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	6.0	0.0	0.0	0.0	4.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.12	0.00	0.00	0.00	0.19	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment			R	R		R		
Lanes in Grp	0	0	1	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	1585	1585	0	1585	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	292	304	0	311	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	615	615	0	1024	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	31.8
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	324	31	3	44	305	41	30	23	13	22	38
Future Volume (veh/h)	52	324	31	3	44	305	41	30	23	13	22	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	0.98		1.00	0.99		1.00	0.98		1.00	0.98		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	62	386	0	4	52	0	49	36	0	15	26	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	730	788	668	438	687	0	291	181	0	199	283	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.42	0.00	0.01	0.37	0.00	0.22	0.22	0.00	0.22	0.22	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	7.6	10.4	0.0	7.9	9.3	0.0	14.8	0.0	0.0	14.2	0.0	0.0
Ln Grp LOS	A	B		A	A		B			B		
Approach Vol, veh/h		448			56			85			41	
Approach Delay, s/veh		10.0			9.2			14.8			14.2	
Approach LOS		B			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		8.0	1.1	4.0		8.0
Phs Duration (G+Y+Rc), s	4.2	25.2		15.6	6.7	22.8		15.6
Change Period (Y+Rc), s	4.0	6.1		5.7	4.0	6.1		5.7
Max Green (Gmax), s	5.0	35.0		30.0	5.0	35.0		30.0
Max Allow Headway (MAH), s	1.7	7.0		7.4	1.7	7.0		7.4
Max Q Clear (g_c+I1), s	2.1	8.8		2.8	2.9	2.8		3.7
Green Ext Time (g_e), s	0.0	4.4		0.3	0.0	0.4		0.8
Prob of Phs Call (p_c)	0.05	1.00		0.82	0.54	1.00		0.82
Prob of Max Out (p_x)	0.01	0.03		0.00	0.43	0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1767			408	1767			750

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1856		1289		1856		823

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1572		0		0		0

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

Lane Assignment	L (Pr/Pm)			L+TL (Pr/Pm)				L+T
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	4	0	0	41	62	0	0	85
Grp Sat Flow (s), veh/h/ln	1767	0	0	1697	1767	0	0	1573
Q Serve Time (g_s), s	0.1	0.0	0.0	0.0	0.9	0.0	0.0	0.3
Cycle Q Clear Time (g_c), s	0.1	0.0	0.0	0.8	0.9	0.0	0.0	1.7
Perm LT Sat Flow (s_l), veh/h/ln	982	0	0	1369	1320	0	0	1380
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1810	0	0	0	1783
Perm LT Eff Green (g_p), s	19.1	0.0	0.0	9.9	16.7	0.0	0.0	9.9
Perm LT Serve Time (g_u), s	12.3	0.0	0.0	8.2	15.9	0.0	0.0	9.1
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Time to First Blk (g_f), s	0.0	0.0	0.0	3.1	0.0	0.0	0.0	1.4
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.4
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.37	1.00	0.00	0.00	0.58
Lane Grp Cap (c), veh/h	438	0	0	482	730	0	0	471
V/C Ratio (X)	0.01	0.00	0.00	0.09	0.08	0.00	0.00	0.18
Avail Cap (c_a), veh/h	624	0	0	1206	820	0	0	1151
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	7.9	0.0	0.0	14.0	7.6	0.0	0.0	14.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	7.9	0.0	0.0	14.2	7.6	0.0	0.0	14.8
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.6
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.7
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.02	0.06	0.00	0.00	0.06
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	386	0	0	0	52	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	1856	0	0
Q Serve Time (g_s), s	0.0	6.8	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	6.8	0.0	0.0	0.0	0.8	0.0	0.0
Lane Grp Cap (c), veh/h	0	788	0	0	0	687	0	0
V/C Ratio (X)	0.00	0.49	0.00	0.00	0.00	0.08	0.00	0.00
Avail Cap (c_a), veh/h	0	1441	0	0	0	1441	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	9.4	0.0	0.0	0.0	9.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.4	0.0	0.0	0.0	9.3	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.9	0.0	0.0	0.0	0.2	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.1	0.0	0.0	0.0	0.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1572	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	668	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1221	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	10.9
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	369	8	19	10	377	11	17	11	12	33	21
Future Volume (veh/h)	34	369	8	19	10	377	11	17	11	12	33	21
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	0.98		1.00	0.99		1.00	0.96		1.00	0.96		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	401	0	21	11	0	12	18	0	13	36	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	795	832	0	474	832	0	244	303	0	180	377	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.44	0.44	0.00	0.44	0.44	0.00	0.25	0.25	0.00	0.25	0.25	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	6.2	9.1	0.0	9.9	6.0	0.0	11.2	0.0	0.0	11.4	0.0	0.0
Ln Grp LOS	A	A		A	A		B			B		
Approach Vol, veh/h		438			32			30			49	
Approach Delay, s/veh		8.8			8.6			11.2			11.4	
Approach LOS		A			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		23.2		15.2		23.2		15.2
Change Period (Y+Rc), s		6.1		5.7		6.1		5.7
Max Green (Gmax), s		34.5		30.5		34.5		30.5
Max Allow Headway (MAH), s		7.9		8.4		7.9		8.5
Max Q Clear (g_c+I1), s		7.8		2.8		8.4		2.5
Green Ext Time (g_e), s		6.4		0.5		0.2		0.2
Prob of Phs Call (p_c)		1.00		0.65		1.00		0.65
Prob of Max Out (p_x)		0.09		0.00		0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1374		248		974		457

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1526		1870		1225

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		0		0		0		0

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L+T		L		L+T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	37	0	49	0	21	0	30
Grp Sat Flow (s), veh/h/ln	0	1374	0	1773	0	974	0	1682
Q Serve Time (g_s), s	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.7	0.0	0.8	0.0	6.4	0.0	0.5
Perm LT Sat Flow (s_l), veh/h/ln	0	1374	0	1365	0	974	0	1345
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1827	0	0	0	1807
Perm LT Eff Green (g_p), s	0.0	17.1	0.0	9.5	0.0	17.1	0.0	9.5
Perm LT Serve Time (g_u), s	0.0	16.9	0.0	9.0	0.0	11.2	0.0	8.7
Perm LT Q Serve Time (g_ps), s	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	4.3	0.0	0.0	0.0	2.7
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.5
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.27	0.00	1.00	0.00	0.40
Lane Grp Cap (c), veh/h	0	795	0	557	0	474	0	547
V/C Ratio (X)	0.00	0.05	0.00	0.09	0.00	0.04	0.00	0.05
Avail Cap (c_a), veh/h	0	1420	0	1487	0	917	0	1428
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	6.1	0.0	11.2	0.0	9.8	0.0	11.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.2	0.0	11.4	0.0	9.9	0.0	11.2
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.3	0.0	0.1	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.3	0.0	0.1	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.04	0.00	0.00	0.00	0.04	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	401	0	0	0	11	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1870	0	0
Q Serve Time (g_s), s	0.0	5.8	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	5.8	0.0	0.0	0.0	0.1	0.0	0.0
Lane Grp Cap (c), veh/h	0	832	0	0	0	832	0	0
V/C Ratio (X)	0.00	0.48	0.00	0.00	0.00	0.01	0.00	0.00
Avail Cap (c_a), veh/h	0	1684	0	0	0	1684	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	7.5	0.0	0.0	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.1	0.0	0.0	0.0	6.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	9.2
HCM 7th LOS	A

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	448	572	195	334
Demand Flow Rate, veh/h	457	583	199	341
Vehicles Circulating, veh/h	219	248	546	378
Vehicles Exiting, veh/h	500	451	130	453
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.7	10.2	5.2	8.0
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
A (Intercept)	1380	1380	1380		1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3		1.02e-3
Entry Flow, veh/h	457	583	153	46	341
Cap Entry Lane, veh/h	1104	1071	791	1938	938
Entry HV Adj Factor	0.980	0.981	0.979	0.980	0.979
Flow Entry, veh/h	448	572	150	45	334
Cap Entry, veh/h	1082	1051	774	1900	918
V/C Ratio	0.414	0.544	0.194	0.024	0.363
Control Delay, s/veh	7.7	10.2	6.7	0.0	8.0
LOS	A	B	A	A	A
95th %tile Queue, veh	2	3	1	0	2

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	439	29	45	498	26	23
Future Vol, veh/h	439	29	45	498	26	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	477	32	49	541	28	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	509	0	1116	477
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	639	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1056	-	230	588
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	526	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1056	-	219	588
Mov Cap-2 Maneuver	-	-	-	-	219	-
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	501	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.71	18.98
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	-	-	1056	-
HCM Lane V/C Ratio	0.172	-	-	0.046	-
HCM Control Delay (s/veh)	19	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	18

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	420	99	30	424	12	105	48	60	5	11	11
Future Vol, veh/h	2	420	99	30	424	12	105	48	60	5	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	457	108	33	461	13	114	52	65	5	12	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	474	0	0	564	0	0	1047	1054	510	1020	1101	467
Stage 1	-	-	-	-	-	-	515	515	-	533	533	-
Stage 2	-	-	-	-	-	-	532	539	-	487	568	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1088	-	-	1007	-	-	206	226	563	215	212	596
Stage 1	-	-	-	-	-	-	543	535	-	531	525	-
Stage 2	-	-	-	-	-	-	531	522	-	562	506	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1088	-	-	1007	-	-	182	215	563	139	202	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	215	-	139	202	-
Stage 1	-	-	-	-	-	-	541	533	-	507	502	-
Stage 2	-	-	-	-	-	-	486	499	-	447	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.03	0.56	99.78	21.46
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	235	7	-	-	115	-	-	248
HCM Lane V/C Ratio	0.986	0.002	-	-	0.032	-	-	0.118
HCM Control Delay (s/veh)	99.8	8.3	0	-	8.7	0	-	21.5
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	9.1	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	342	6	13	428	1	4	0	6	0	0	0
Future Vol, veh/h	8	342	6	13	428	1	4	0	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	372	7	14	465	1	4	0	7	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	466	0	0	378	0	0	886	887	375	883	890	466
Stage 1	-	-	-	-	-	-	392	392	-	494	494	-
Stage 2	-	-	-	-	-	-	493	495	-	389	396	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1095	-	-	1180	-	-	265	283	671	266	282	597
Stage 1	-	-	-	-	-	-	632	606	-	557	546	-
Stage 2	-	-	-	-	-	-	557	546	-	635	604	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1095	-	-	1180	-	-	258	276	671	257	275	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	276	-	257	275	-
Stage 1	-	-	-	-	-	-	626	600	-	548	538	-
Stage 2	-	-	-	-	-	-	548	537	-	622	598	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.19	0.24	14.03	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	409	40	-	-	53	-	-	-
HCM Lane V/C Ratio	0.027	0.008	-	-	0.012	-	-	-
HCM Control Delay (s/veh)	14	8.3	0	-	8.1	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	48	385	20	0	37	244	56	27	71	0	23	36
Future Vol, veh/h	48	385	20	0	37	244	56	27	71	0	23	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	52	418	22	0	40	265	61	29	77	0	25	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	305	0	0	440	0	0	586	839	429	710	717	173
Stage 1	-	-	-	-	-	-	534	534	-	173	173	-
Stage 2	-	-	-	-	-	-	53	305	-	538	545	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1250	-	-	1114	-	-	420	301	624	347	354	868
Stage 1	-	-	-	-	-	-	528	523	-	827	754	-
Stage 2	-	-	-	-	-	-	957	660	-	526	517	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1250	-	-	1114	-	-	352	284	624	259	334	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	352	284	-	259	334	-
Stage 1	-	-	-	-	-	-	499	494	-	827	754	-
Stage 2	-	-	-	-	-	-	884	660	-	409	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.85	0	19.22	12.64
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	418	189	-	-	1114	-	-	535
HCM Lane V/C Ratio	0.4	0.042	-	-	-	-	-	0.12
HCM Control Delay (s/veh)	19.2	8	0	-	0	-	-	12.6
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.9	0.1	-	-	0	-	-	0.4

Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	0	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	478	398	0	218
Demand Flow Rate, veh/h	487	406	0	222
Vehicles Circulating, veh/h	49	0	336	406
Vehicles Exiting, veh/h	579	336	29	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	2.4	3.8	0.0	5.4
Approach LOS	A	A	-	A

Lane	Left	Right	Bypass	Left	Right	Left	Right
Designated Moves	LT	TR	R	LT	TR	LT	R
Assumed Moves	LT	TR		LT	TR	LT	R
RT Channelized			Free				
Lane Util	0.472	0.528		0.470	0.530	0.099	0.901
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328		4.645	4.328	4.645	4.328
A (Intercept)	1350	1420		1350	1420	1350	1420
B (Slope)	9.199e-4	8.501e-4		9.199e-4	8.501e-4	9.199e-4	8.501e-4
Entry Flow, veh/h	149	167	171	191	215	22	200
Cap Entry Lane, veh/h	1290	1362	1938	1350	1420	929	1006
Entry HV Adj Factor	0.977	0.983	0.980	0.978	0.980	0.998	0.980
Flow Entry, veh/h	146	164	168	187	211	22	196
Cap Entry, veh/h	1261	1339	1900	1321	1392	927	985
V/C Ratio	0.115	0.123	0.088	0.141	0.151	0.024	0.199
Control Delay, s/veh	3.8	3.7	0.0	3.9	3.8	4.1	5.6
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	1	0	1

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	3	2	0
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	331	0	318	0
Demand Flow Rate, veh/h	338	0	325	0
Vehicles Circulating, veh/h	0	479	338	386
Vehicles Exiting, veh/h	386	184	0	218
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	0.0	6.2	0.0
Approach LOS	A	-	A	-

Lane	Left	Right	Left	Right
Designated Moves	LT	TR	LT	R
Assumed Moves	L	TR	LT	R
RT Channelized				
Lane Util	0.583	0.417	0.868	0.132
Follow-Up Headway, s	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328
A (Intercept)	1350	1420	1350	1420
B (Slope)	9.199e-4	4.501e-4	9.199e-4	4.501e-4
Entry Flow, veh/h	197	141	282	43
Cap Entry Lane, veh/h	1350	1420	989	1065
Entry HV Adj Factor	0.980	0.980	0.979	0.977
Flow Entry, veh/h	193	138	276	42
Cap Entry, veh/h	1322	1392	968	1041
V/C Ratio	0.146	0.099	0.285	0.040
Control Delay, s/veh	3.9	3.4	6.6	3.8
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	0

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	13	1	15	7	10	2	23	30	13	21	0
Future Vol, veh/h	0	13	1	15	7	10	2	23	30	13	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	1	16	8	11	2	25	33	14	23	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	84	113	23	104	97	41	23	0	0	58	0	0
Stage 1	51	51	-	46	46	-	-	-	-	-	-	-
Stage 2	33	62	-	58	51	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	902	777	1054	876	793	1030	1592	-	-	1547	-	-
Stage 1	962	852	-	968	857	-	-	-	-	-	-	-
Stage 2	983	843	-	954	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	875	769	1054	850	785	1030	1592	-	-	1547	-	-
Mov Cap-2 Maneuver	875	769	-	850	785	-	-	-	-	-	-	-
Stage 1	953	844	-	967	856	-	-	-	-	-	-	-
Stage 2	963	842	-	928	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.68	9.25	0.26	2.81
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	59	-	-	784	882	688	-	-
HCM Lane V/C Ratio	0.001	-	-	0.019	0.039	0.009	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.7	9.2	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	29	172	12	40	108
Future Vol, veh/h	8	29	172	12	40	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	32	187	13	43	117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	398	193	0	0	200	0
Stage 1	193	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	608	848	-	-	1372	-
Stage 1	839	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	587	848	-	-	1372	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.91	0	2.08
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	774	1372	-
HCM Lane V/C Ratio	-	-	0.052	0.032	-
HCM Control Delay (s/veh)	-	-	9.9	7.7	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	4	175	5	117	4
Future Vol, veh/h	2	4	175	5	117	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	4	190	5	127	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	452	193	0	0	196	0
Stage 1	193	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	566	849	-	-	1377	-
Stage 1	840	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	513	849	-	-	1377	-
Mov Cap-2 Maneuver	513	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.21	0	7.62
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	697	1374	-
HCM Lane V/C Ratio	-	-	0.009	0.092	-
HCM Control Delay (s/veh)	-	-	10.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0.3	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	116	63	89	72	47
Future Vol, veh/h	38	116	63	89	72	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	126	68	97	78	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	276	68	0	0	165	0
Stage 1	68	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	714	995	-	-	1413	-
Stage 1	954	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	673	995	-	-	1413	-
Mov Cap-2 Maneuver	673	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.98	0	4.66
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	890	1413	-
HCM Lane V/C Ratio	-	-	0.188	0.055	-
HCM Control Delay (s/veh)	-	-	10	7.7	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	3	53	0	0	2	32	54	0	2	2	72
Future Vol, veh/h	62	3	53	0	0	2	32	54	0	2	2	72
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	73	4	62	0	0	2	38	64	0	2	2	85
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay, s/veh	8.2	7.6	8.7	8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	37%	0%	95%	0%	0%	3%
Vol Thru, %	63%	100%	5%	0%	0%	3%
Vol Right, %	0%	0%	0%	100%	100%	95%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	0	65	53	2	76
LT Vol	32	0	62	0	0	2
Through Vol	54	0	3	0	0	2
RT Vol	0	0	0	53	2	72
Lane Flow Rate	101	0	76	62	2	89
Geometry Grp	5	5	5	5	4b	4b
Degree of Util (X)	0.144	0	0.116	0.074	0.003	0.11
Departure Headway (Hd)	5.13	4.943	5.472	4.291	4.559	4.43
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	701	0	657	837	786	812
Service Time	2.842	2.656	3.188	2.006	2.579	2.443
HCM Lane V/C Ratio	0.144	0	0.116	0.074	0.003	0.11
HCM Control Delay, s/veh	8.7	7.7	8.9	7.3	7.6	8
HCM Lane LOS	A	N	A	A	A	A
HCM 95th-tile Q	0.5	0	0.4	0.2	0	0.4

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	32	113	3	4	36
Future Vol, veh/h	3	32	113	3	4	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	35	123	3	4	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	172	124	0	0	126	0
Stage 1	124	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	818	926	-	-	1460	-
Stage 1	901	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	815	926	-	-	1460	-
Mov Cap-2 Maneuver	815	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	972	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.1	0	0.75
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	916	180	-
HCM Lane V/C Ratio	-	-	0.042	0.003	-
HCM Control Delay (s/veh)	-	-	9.1	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	5	0	0	2	23	252	0	0	156	3
Future Vol, veh/h	4	0	5	0	0	2	23	252	0	0	156	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	0	0	2	25	274	0	0	170	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	495	495	171	493	497	274	173	0	0	274	0	0
Stage 1	171	171	-	324	324	-	-	-	-	-	-	-
Stage 2	324	324	-	170	173	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	485	476	873	486	475	765	1404	-	-	1289	-	-
Stage 1	831	757	-	688	650	-	-	-	-	-	-	-
Stage 2	688	650	-	832	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	473	466	873	473	465	765	1404	-	-	1289	-	-
Mov Cap-2 Maneuver	473	466	-	473	465	-	-	-	-	-	-	-
Stage 1	831	757	-	674	636	-	-	-	-	-	-	-
Stage 2	672	636	-	827	756	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.76	9.72	0.64	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	151	-	-	635	765	1289	-	-
HCM Lane V/C Ratio	0.018	-	-	0.015	0.003	-	-	-
HCM Control Delay (s/veh)	7.6	0	-	10.8	9.7	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	9	3	1910	1615	12
Future Vol, veh/h	1	9	3	1910	1615	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	700	-	-	700
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	10	3	2076	1755	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2800	878	1768	0	-	0
Stage 1	1755	-	-	-	-	-
Stage 2	1045	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	15	291	349	-	-	-
Stage 1	124	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	291	349	-	-	-
Mov Cap-2 Maneuver	15	-	-	-	-	-
Stage 1	123	-	-	-	-	-
Stage 2	300	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	45.26	0.02	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	349	-	100	-	-
HCM Lane V/C Ratio	0.009	-	0.108	-	-
HCM Control Delay (s/veh)	15.4	-	45.3	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	3	1582	86	1	849
Future Vol, veh/h	31	3	1582	86	1	849
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	600	720	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	3	1720	93	1	923

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2183	860	0	0	1813	0
Stage 1	1720	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	39	299	-	-	335	-
Stage 1	130	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	39	299	-	-	335	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	130	-	-	-	-	-
Stage 2	598	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	51.42	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	113	335	-
HCM Lane V/C Ratio	-	-	0.326	0.003	-
HCM Control Delay (s/veh)	-	-	51.4	15.8	-
HCM Lane LOS	-	-	F	C	-
HCM 95th %tile Q(veh)	-	-	1.3	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	4	2	0	1	5	1	69	1	5	37	36
Future Vol, veh/h	34	4	2	0	1	5	1	69	1	5	37	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	4	2	0	1	5	1	75	1	5	40	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	148	149	60	131	168	76	79	0	0	76	0	0
Stage 1	71	71	-	78	78	-	-	-	-	-	-	-
Stage 2	78	78	-	53	90	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	820	743	1006	841	725	986	1519	-	-	1523	-	-
Stage 1	939	836	-	931	830	-	-	-	-	-	-	-
Stage 2	931	830	-	959	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	810	739	1006	831	722	986	1519	-	-	1523	-	-
Mov Cap-2 Maneuver	810	739	-	831	722	-	-	-	-	-	-	-
Stage 1	936	833	-	930	830	-	-	-	-	-	-	-
Stage 2	924	829	-	949	817	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.69	8.9	0.1	0.47
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	25	-	-	810	929	105	-	-
HCM Lane V/C Ratio	0.001	-	-	0.054	0.007	0.004	-	-
HCM Control Delay (s/veh)	7.4	0	-	9.7	8.9	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	6	0	0	0	8	127	0	0	30	2
Future Vol, veh/h	1	0	6	0	0	0	8	127	0	0	30	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	7	0	0	0	9	138	0	0	33	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	189	189	34	188	190	138	35	0	0	138	0	0
Stage 1	34	34	-	155	155	-	-	-	-	-	-	-
Stage 2	155	155	-	33	35	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	771	706	1040	772	705	910	1577	-	-	1446	-	-
Stage 1	982	867	-	847	769	-	-	-	-	-	-	-
Stage 2	847	769	-	984	866	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	766	701	1040	763	700	910	1577	-	-	1446	-	-
Mov Cap-2 Maneuver	766	701	-	763	700	-	-	-	-	-	-	-
Stage 1	982	867	-	842	764	-	-	-	-	-	-	-
Stage 2	842	764	-	977	866	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.67	0	0.43	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	107	-	-	989	-	1446	-	-
HCM Lane V/C Ratio	0.006	-	-	0.008	-	-	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	50	90	1963	1556	125
Future Vol, veh/h	30	50	90	1963	1556	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	150	-	-	600
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	54	98	2134	1691	136

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2954	846	1691	0	-	0
Stage 1	1691	-	-	-	-	-
Stage 2	1263	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 11	306	373	-	-	-
Stage 1	135	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 8	306	373	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	99	-	-	-	-	-
Stage 2	230	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	45.46	0.79	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	373	-	172	-	-
HCM Lane V/C Ratio	0.262	-	0.505	-	-
HCM Control Delay (s/veh)	18	-	45.5	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	1	-	2.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	15	1685	140	4	849
Future Vol, veh/h	32	15	1685	140	4	849
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	-	0	-	0	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	16	1832	152	4	923

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2209	916	0	0	1832	0
Stage 1	1832	-	-	-	-	-
Stage 2	378	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	52	275	-	-	329	-
Stage 1	111	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	51	275	-	-	329	-
Mov Cap-2 Maneuver	96	-	-	-	-	-
Stage 1	111	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	18.92	0	0.08
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	275	329	-
HCM Lane V/C Ratio	-	-	0.059	0.013	-
HCM Control Delay (s/veh)	-	-	18.9	16.1	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	96	12	21	22	10	16
Future Vol, veh/h	96	12	21	22	10	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	13	23	24	11	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	89	20	28	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	911	1058	1585	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	898	1058	1585	-	-	-
Mov Cap-2 Maneuver	898	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	953	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.52	3.57	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	879	-	914	-	-
HCM Lane V/C Ratio	0.014	-	0.128	-	-
HCM Control Delay (s/veh)	7.3	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

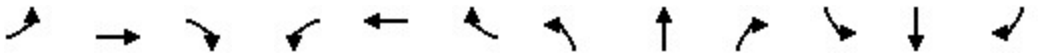
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	13	1	15	7	10	2	23	30	13	21	0
Future Vol, veh/h	0	13	1	15	7	10	2	23	30	13	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	1	16	8	11	2	25	33	14	23	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	84	113	23	104	97	41	23	0	0	58	0	0
Stage 1	51	51	-	46	46	-	-	-	-	-	-	-
Stage 2	33	62	-	58	51	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	902	777	1054	876	793	1030	1592	-	-	1547	-	-
Stage 1	962	852	-	968	857	-	-	-	-	-	-	-
Stage 2	983	843	-	954	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	875	769	1054	850	785	1030	1592	-	-	1547	-	-
Mov Cap-2 Maneuver	875	769	-	850	785	-	-	-	-	-	-	-
Stage 1	953	844	-	967	856	-	-	-	-	-	-	-
Stage 2	963	842	-	928	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.68	9.25	0.26	2.81
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	59	-	-	784	882	688	-	-
HCM Lane V/C Ratio	0.001	-	-	0.019	0.039	0.009	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.7	9.2	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	94	106	24	55	56	56	754	19	88	977	51
Future Volume (veh/h)	124	94	106	24	55	56	56	754	19	88	977	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	102	60	26	60	21	61	820	14	96	1062	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	334	242	142	250	410	348	184	1230	21	346	1215	34
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
Unsig. Movement Delay												
Ln Grp Delay, s/veh	34.7	0.0	32.2	34.9	29.1	28.3	35.0	0.0	10.6	19.8	0.0	19.1
Ln Grp LOS	C		C	C	C	C	C		B	B		B
Approach Vol, veh/h		297			107			895			1188	
Approach Delay, s/veh		33.4			30.3			12.3			19.2	
Approach LOS		C			C			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		6.0		6.0		5.0
Phs Duration (G+Y+Rc), s		66.2		25.0		66.2		25.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green (Gmax), s		65.0		40.0		65.0		40.0
Max Allow Headway (MAH), s		7.1		6.7		7.1		6.7
Max Q Clear (g_c+I1), s		54.3		12.8		44.6		11.0
Green Ext Time (g_e), s		6.9		2.9		15.3		0.9
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.83		0.00		0.74		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		516		1317		658		1224

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1833		1104		1810		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		31		649		51		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	61	0	135	0	96	0	26
Grp Sat Flow (s), veh/h/ln	0	516	0	1317	0	658	0	1224
Q Serve Time (g_s), s	0.0	9.7	0.0	8.4	0.0	9.3	0.0	1.7
Cycle Q Clear Time (g_c), s	0.0	52.3	0.0	10.8	0.0	33.5	0.0	9.0
Perm LT Sat Flow (s_l), veh/h/ln	0	516	0	1317	0	658	0	1224
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	61.2	0.0	20.0	0.0	61.2	0.0	20.0
Perm LT Serve Time (g_u), s	0.0	18.6	0.0	17.6	0.0	36.9	0.0	12.8
Perm LT Q Serve Time (g_ps), s	0.0	9.7	0.0	8.4	0.0	9.3	0.0	1.7
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	184	0	334	0	346	0	250
V/C Ratio (X)	0.00	0.33	0.00	0.40	0.00	0.28	0.00	0.10
Avail Cap (c_a), veh/h	0	206	0	623	0	373	0	518
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	32.8	0.0	33.1	0.0	18.9	0.0	34.5
Incr Delay (d2), s/veh	0.0	2.2	0.0	1.7	0.0	0.9	0.0	0.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.0	0.0	34.7	0.0	19.8	0.0	34.9
1st-Term Q (Q1), veh/ln	0.0	1.1	0.0	2.6	0.0	1.3	0.0	0.5
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.3	0.0	2.8	0.0	1.4	0.0	0.5
%ile Storage Ratio (RQ%)	0.00	0.12	0.00	0.19	0.00	0.09	0.00	0.04
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								T
Lanes in Grp	0	0	0	0	0	0	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	60
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	1870
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	410
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	820
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.1
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	834	0	162	0	1092	0	21
Grp Sat Flow (s), veh/h/ln	0	1865	0	1753	0	1861	0	1585
Q Serve Time (g_s), s	0.0	24.3	0.0	7.2	0.0	42.6	0.0	1.0
Cycle Q Clear Time (g_c), s	0.0	24.3	0.0	7.2	0.0	42.6	0.0	1.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.02	0.00	0.37	0.00	0.03	0.00	1.00
Lane Grp Cap (c), veh/h	0	1251	0	384	0	1249	0	348
V/C Ratio (X)	0.00	0.67	0.00	0.42	0.00	0.87	0.00	0.06
Avail Cap (c_a), veh/h	0	1329	0	769	0	1326	0	695
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	8.9	0.0	30.6	0.0	11.9	0.0	28.2
Incr Delay (d2), s/veh	0.0	1.7	0.0	1.6	0.0	7.2	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.6	0.0	32.2	0.0	19.1	0.0	28.3
1st-Term Q (Q1), veh/ln	0.0	7.2	0.0	3.0	0.0	13.2	0.0	0.4
2nd-Term Q (Q2), veh/ln	0.0	0.6	0.0	0.2	0.0	2.5	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	7.8	0.0	3.2	0.0	15.7	0.0	0.4
%ile Storage Ratio (RQ%)	0.00	0.32	0.00	0.11	0.00	1.00	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	18.9
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	21	62	44	81	764	21	1091	658	24	1322	70
Future Volume (veh/h)	206	21	62	44	81	764	21	1091	658	24	1322	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	23	0	48	88	0	23	1186	0	26	1437	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	344	434		398	434		175	1659		233	1668	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.23	0.23	0.00	0.23	0.23	0.00	0.02	0.47	0.00	0.03	0.47	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	32.6	24.0	0.0	25.2	25.0	0.0	16.1	17.4	0.0	13.5	20.4	0.0
Ln Grp LOS	C	C		C	C		B	B		B	C	
Approach Vol, veh/h		247			136			1209			1463	
Approach Delay, s/veh		31.8			25.1			17.3			20.3	
Approach LOS		C			C			B			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		5.0	1.1	3.0		5.0
Phs Duration (G+Y+Rc), s	10.2	45.5		24.6	10.0	45.7		24.6
Change Period (Y+Rc), s	8.0	8.0		6.0	8.0	8.0		6.0
Max Green (Gmax), s	7.0	57.0		24.0	7.0	57.0		24.0
Max Allow Headway (MAH), s	2.6	3.7		3.1	2.6	3.7		3.7
Max Q Clear (g_c+I1), s	2.6	23.5		18.4	2.5	31.0		5.0
Green Ext Time (g_e), s	0.0	5.3		0.2	0.0	6.8		0.3
Prob of Phs Call (p_c)	0.44	1.00		1.00	0.40	1.00		1.00
Prob of Max Out (p_x)	0.02	0.00		0.10	0.01	0.04		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1781			1309	1781			1388

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

Lane Assignment	L (Pr/Pm)			LL (Pr/Pm)				L
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	26	0	0	224	23	0	0	48
Grp Sat Flow (s), veh/h/ln	1781	0	0	1309	1781	0	0	1388
Q Serve Time (g_s), s	0.6	0.0	0.0	13.4	0.5	0.0	0.0	2.2
Cycle Q Clear Time (g_c), s	0.6	0.0	0.0	16.4	0.5	0.0	0.0	3.0
Perm LT Sat Flow (s_l), veh/h/ln	472	0	0	1309	372	0	0	1388
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	37.5	0.0	0.0	18.6	37.7	0.0	0.0	18.6
Perm LT Serve Time (g_u), s	16.1	0.0	0.0	15.6	8.8	0.0	0.0	17.9
Perm LT Q Serve Time (g_ps), s	1.2	0.0	0.0	13.4	1.9	0.0	0.0	2.2
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	233	0	0	344	175	0	0	398
V/C Ratio (X)	0.11	0.00	0.00	0.65	0.13	0.00	0.00	0.12
Avail Cap (c_a), veh/h	339	0	0	431	285	0	0	491
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	13.5	0.0	0.0	31.5	16.0	0.0	0.0	25.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.1	0.1	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	13.5	0.0	0.0	32.6	16.1	0.0	0.0	25.2
1st-Term Q (Q1), veh/ln	0.2	0.0	0.0	4.1	0.2	0.0	0.0	0.7
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.2	0.0	0.0	4.2	0.2	0.0	0.0	0.7
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.35	0.01	0.00	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	1186	0	23	0	1437	0	88
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	21.5	0.0	0.8	0.0	29.0	0.0	3.0
Cycle Q Clear Time (g_c), s	0.0	21.5	0.0	0.8	0.0	29.0	0.0	3.0
Lane Grp Cap (c), veh/h	0	1659	0	434	0	1668	0	434
V/C Ratio (X)	0.00	0.71	0.00	0.05	0.00	0.86	0.00	0.20
Avail Cap (c_a), veh/h	0	2520	0	558	0	2520	0	558
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	17.1	0.0	24.0	0.0	19.0	0.0	24.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	1.4	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	17.4	0.0	24.0	0.0	20.4	0.0	25.0
1st-Term Q (Q1), veh/ln	0.0	7.0	0.0	0.3	0.0	9.5	0.0	1.3

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	7.1	0.0	0.3	0.0	9.8	0.0	1.3
%ile Storage Ratio (RQ%)	0.00	0.22	0.00	0.02	0.00	0.30	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	740	0	368	0	744	0	368
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1124	0	473	0	1124	0	473
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	20.2
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	43	8	6	72	15	11
Future Vol, veh/h	43	8	6	72	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	9	7	78	16	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	55	0	142	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1549	-	850	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1549	-	847	1017
Mov Cap-2 Maneuver	-	-	-	-	847	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	928	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.56	9.08
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	911	-	-	138	-
HCM Lane V/C Ratio	0.031	-	-	0.004	-
HCM Control Delay (s/veh)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	19	62	3	8	2	9	8	0	0	6	11
Future Vol, veh/h	21	19	62	3	8	2	9	8	0	0	6	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	260	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	21	67	3	9	2	10	9	0	0	7	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	11	0	0	21	0	0	85	84	21	87	83	10
Stage 1	-	-	-	-	-	-	66	66	-	16	16	-
Stage 2	-	-	-	-	-	-	18	17	-	71	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1608	-	-	1595	-	-	902	806	1057	899	808	1072
Stage 1	-	-	-	-	-	-	944	840	-	1003	882	-
Stage 2	-	-	-	-	-	-	1001	881	-	939	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1608	-	-	1595	-	-	869	793	1057	874	794	1072
Mov Cap-2 Maneuver	-	-	-	-	-	-	869	793	-	874	794	-
Stage 1	-	-	-	-	-	-	930	827	-	1001	880	-
Stage 2	-	-	-	-	-	-	980	879	-	915	827	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.5	1.68	9.43	8.85
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	832	945	-	-	399	-	-	954
HCM Lane V/C Ratio	0.022	0.014	-	-	0.002	-	-	0.019
HCM Control Delay (s/veh)	9.4	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	95	653	6	43	1105
Future Vol, veh/h	20	95	653	6	43	1105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	80	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	103	710	7	47	1201

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2004	710	0	0	716	0
Stage 1	710	-	-	-	-	-
Stage 2	1295	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	65	434	-	-	884	-
Stage 1	487	-	-	-	-	-
Stage 2	257	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	62	434	-	-	884	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	243	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	21.37	0	0.35
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	343	884	-
HCM Lane V/C Ratio	-	-	0.364	0.053	-
HCM Control Delay (s/veh)	-	-	21.4	9.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.2	-

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	642	270	985	1329
Demand Flow Rate, veh/h	662	278	1014	1369
Vehicles Circulating, veh/h	1191	1129	188	602
Vehicles Exiting, veh/h	417	73	1188	805
Ped Vol Crossing Leg, #/h	1	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	16.3	21.7	13.2
Approach LOS	A	C	C	B

Lane	Left	Bypass	Left	Left	Right	Left	Right	Bypass
Designated Moves	LT	R	LTR	LT	R	LT	TR	R
Assumed Moves	LT		LTR	LT	R	LT	TR	
RT Channelized		Free						Yield
Lane Util	1.000		1.000	0.952	0.048	0.470	0.530	
Follow-Up Headway, s	2.535		2.535	2.667	2.535	2.667	2.535	2.609
Critical Headway, s	4.328		4.328	4.645	4.328	4.645	4.328	4.976
A (Intercept)	1420		1420	1350	1420	1350	1420	1380
B (Slope)	8.501e-4		8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	1.02e-3
Entry Flow, veh/h	185	477	278	965	49	473	533	363
Cap Entry Lane, veh/h	516	1957	544	1135	1210	776	851	902
Entry HV Adj Factor	0.970	0.971	0.971	0.971	0.980	0.971	0.971	0.971
Flow Entry, veh/h	179	463	270	937	48	459	518	352
Cap Entry, veh/h	500	1900	528	1102	1186	753	827	876
V/C Ratio	0.359	0.244	0.511	0.850	0.040	0.610	0.626	0.402
Control Delay, s/veh	13.0	0.0	16.3	22.6	3.4	15.0	14.5	8.9
LOS	B	A	C	C	A	C	B	A
95th %tile Queue, veh	2	1	3	11	0	4	5	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	488	1	56	885	85	45	246	189	191	284	1168
Future Volume (veh/h)	236	488	1	56	885	85	45	246	189	191	284	1168
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	257	530	0	61	962	0	49	267	0	208	309	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	327	1557		79	1378		64	304		165	411	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.09	0.44	0.00	0.04	0.39	0.00	0.04	0.16	0.00	0.09	0.22	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	49.4	20.5	0.0	57.0	30.1	0.0	58.7	54.6	0.0	205.6	45.3	0.0
Ln Grp LOS	D	C		E	C		E	D		F	D	
Approach Vol, veh/h		787			1023			316			517	
Approach Delay, s/veh		29.9			31.7			55.2			109.8	
Approach LOS		C			C			E			F	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	13.0	54.3	10.6	30.0	18.4	48.9	16.8	23.9
Change Period (Y+Rc), s	8.2	7.0	6.8	* 6.3	8.2	7.0	6.8	* 6.3
Max Green (Gmax), s	12.0	55.0	10.0	* 25	25.0	55.0	10.0	* 25
Max Allow Headway (MAH), s	2.6	7.7	1.7	3.9	2.6	7.7	2.7	3.9
Max Q Clear (g_c+I1), s	5.7	12.6	4.9	18.7	9.9	26.5	12.0	17.0
Green Ext Time (g_e), s	0.0	9.0	0.0	0.5	0.4	15.3	0.0	0.5
Prob of Phs Call (p_c)	0.84	1.00	0.77	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	0.00	0.02	0.00	0.24	0.00	0.40	1.00	0.07

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		3456		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

Lane Assignment	L (Prot)		L (Prot)		L (Prot)		L (Prot)	
Lanes in Grp	1	0	1	0	2	0	1	0
Grp Vol (v), veh/h	61	0	49	0	257	0	208	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1728	0	1781	0
Q Serve Time (g_s), s	3.7	0.0	2.9	0.0	7.9	0.0	10.0	0.0
Cycle Q Clear Time (g_c), s	3.7	0.0	2.9	0.0	7.9	0.0	10.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	79	0	64	0	327	0	165	0
V/C Ratio (X)	0.78	0.00	0.77	0.00	0.79	0.00	1.26	0.00
Avail Cap (c_a), veh/h	198	0	165	0	800	0	165	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	51.0	0.0	51.6	0.0	47.8	0.0	49.0	0.0
Incr Delay (d2), s/veh	6.0	0.0	7.1	0.0	1.6	0.0	156.6	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	57.0	0.0	58.7	0.0	49.4	0.0	205.6	0.0
1st-Term Q (Q1), veh/ln	1.6	0.0	1.3	0.0	3.2	0.0	4.3	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.1	0.0	0.1	0.0	7.2	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.7	0.0	1.4	0.0	3.3	0.0	11.5	0.0
%ile Storage Ratio (RQ%)	0.04	0.00	0.12	0.00	0.08	0.00	0.44	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	10.7	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	530	0	309	0	962	0	267
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	10.6	0.0	16.7	0.0	24.5	0.0	15.0
Cycle Q Clear Time (g_c), s	0.0	10.6	0.0	16.7	0.0	24.5	0.0	15.0
Lane Grp Cap (c), veh/h	0	1557	0	411	0	1378	0	304
V/C Ratio (X)	0.00	0.34	0.00	0.75	0.00	0.70	0.00	0.88
Avail Cap (c_a), veh/h	0	1811	0	433	0	1811	0	433
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	20.0	0.0	39.4	0.0	27.7	0.0	44.1
Incr Delay (d2), s/veh	0.0	0.5	0.0	6.0	0.0	2.4	0.0	10.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	20.5	0.0	45.3	0.0	30.1	0.0	54.6
1st-Term Q (Q1), veh/ln	0.0	4.0	0.0	7.3	0.0	9.4	0.0	6.7

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.7	0.0	0.5	0.0	0.9
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.1	0.0	8.0	0.0	9.9	0.0	7.6
%ile Storage Ratio (RQ%)	0.00	0.07	0.00	0.31	0.00	0.18	0.00	0.49
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	695	0	348	0	615	0	258
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	808	0	367	0	808	0	367
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	49.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	24	60	18	28	109	47	374	13	93	385	21
Future Vol, veh/h	65	24	60	18	28	109	47	374	13	93	385	21
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Yield
Storage Length	-	-	100	-	-	-	150	-	-	240	-	245
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	70	26	65	19	30	117	51	402	14	100	414	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1135	1132	415	1137	1125	-	415	0	0	416	0	0
Stage 1	615	615	-	510	510	-	-	-	-	-	-	-
Stage 2	520	517	-	627	615	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	-	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	-	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	177	200	631	176	202	0	1128	-	-	1127	-	-
Stage 1	473	478	-	540	533	0	-	-	-	-	-	-
Stage 2	534	529	-	466	478	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	130	174	630	120	176	-	1127	-	-	1127	-	-
Mov Cap-2 Maneuver	130	174	-	120	176	-	-	-	-	-	-	-
Stage 1	431	435	-	516	509	-	-	-	-	-	-	-
Stage 2	479	505	-	359	435	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	16.46	29.62	0.9	1.59
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1127	-	-	174	630	176	1127	-	-
HCM Lane V/C Ratio	0.045	-	-	0.148	0.102	0.171	0.089	-	-
HCM Control Delay (s/veh)	8.3	-	-	29.2	11.4	29.6	8.5	-	-
HCM Lane LOS	A	-	-	D	B	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.3	0.6	0.3	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	89	30	383	423	29
Future Vol, veh/h	23	89	30	383	423	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	240	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	24	94	32	403	445	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	927	461	476	0	-	0
Stage 1	461	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	295	597	1076	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	597	1076	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	627	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.53	0.61	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	131	-	284	597	-	-
HCM Lane V/C Ratio	0.029	-	0.085	0.157	-	-
HCM Control Delay (s/veh)	8.4	0	18.8	12.2	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.6	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	2	3	21	0	0	3	0	0	8	6
Future Vol, veh/h	0	3	2	3	21	0	0	3	0	0	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	2	3	23	0	0	3	0	0	9	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	23	0	0	5	0	0	38	34	4	34	35	23
Stage 1	-	-	-	-	-	-	4	4	-	29	29	-
Stage 2	-	-	-	-	-	-	34	29	-	5	5	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1592	-	-	1616	-	-	967	859	1079	972	858	1054
Stage 1	-	-	-	-	-	-	1018	892	-	988	871	-
Stage 2	-	-	-	-	-	-	982	871	-	1017	891	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1592	-	-	1616	-	-	949	857	1079	967	856	1054
Mov Cap-2 Maneuver	-	-	-	-	-	-	949	857	-	967	856	-
Stage 1	-	-	-	-	-	-	1018	892	-	986	869	-
Stage 2	-	-	-	-	-	-	965	869	-	1014	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.9	9.22	8.93
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	857	1592	-	-	225	-	-	931
HCM Lane V/C Ratio	0.004	-	-	-	0.002	-	-	0.016
HCM Control Delay (s/veh)	9.2	0	-	-	7.2	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	75	296	104	128	323
Future Vol, veh/h	83	75	296	104	128	323
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	87	79	312	109	135	340

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	977	367	0	0	422	0
Stage 1	367	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	277	676	-	-	1132	-
Stage 1	698	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	236	675	-	-	1131	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	461	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	20.44	0	2.44
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	236	675	511	-
HCM Lane V/C Ratio	-	-	0.37	0.117	0.119	-
HCM Control Delay (s/veh)	-	-	28.9	11	8.6	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0.4	0.4	-

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	95	26	24	96	20	29	30	29	44	51	24
Future Vol, veh/h	21	95	26	24	96	20	29	30	29	44	51	24
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	32	144	39	36	145	30	44	45	44	67	77	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.2	10.2	9.5	10.1
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	15%	17%	37%
Vol Thru, %	34%	67%	69%	43%
Vol Right, %	33%	18%	14%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	142	140	119
LT Vol	29	21	24	44
Through Vol	30	95	96	51
RT Vol	29	26	20	24
Lane Flow Rate	133	215	212	180
Geometry Grp	1	1	1	1
Degree of Util (X)	0.194	0.296	0.294	0.263
Departure Headway (Hd)	5.234	5.066	5.097	5.245
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	689	714	708	689
Service Time	3.24	3.066	3.097	3.245
HCM Lane V/C Ratio	0.193	0.301	0.299	0.261
HCM Control Delay, s/veh	9.5	10.2	10.2	10.1
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.7	1.2	1.2	1.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	83	74	77	369	291	92
Future Vol, veh/h	83	74	77	369	291	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	108	96	100	479	378	119

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1117	438	497	0	-	0
Stage 1	438	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.254	-	-	-
Pot Cap-1 Maneuver	225	611	1046	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	196	611	1046	-	-	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	496	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	42.82	1.52	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	311	-	288	-	-
HCM Lane V/C Ratio	0.096	-	0.707	-	-
HCM Control Delay (s/veh)	8.8	0	42.8	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.3	-	4.9	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	336	235	4	22	1
Future Vol, veh/h	1	336	235	4	22	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	365	255	4	24	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	625	258
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1305	-	-	-	449	781
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1305	-	-	-	448	781
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.02	0	13.34
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	5	-	-	-	457
HCM Lane V/C Ratio	0.001	-	-	-	0.055
HCM Control Delay (s/veh)	7.8	0	-	-	13.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	367	166	432	205	173	81	651	231	129	1687	92
Future Volume (veh/h)	108	367	166	432	205	173	81	651	231	129	1687	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	399	0	470	223	0	88	708	0	140	1834	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	122	352		237	352		167	1011		465	1424	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.19	0.00	0.07	0.19	0.00	0.06	0.28	0.00	0.19	0.40	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	115.6	132.3	0.0	504.4	42.1	0.0	35.8	36.7	0.0	32.7	166.3	0.0
Ln Grp LOS	F	F		F	D		D	D		C	F	
Approach Vol, veh/h		516			693			796			1974	
Approach Delay, s/veh		128.5			355.6			36.6			156.8	
Approach LOS		F			F			D			F	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	2	1	3	4	5	6	7	8
Case No	3.0	1.3	2.0	3.0	1.2	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	36.8	28.0	14.0	26.0	14.3	50.5	14.0	26.0
Change Period (Y+Rc), s	7.0	8.5	6.8	* 6.3	8.5	* 8.5	6.8	* 6.3
Max Green (Gmax), s	41.0	13.5	7.2	* 20	12.5	* 42	7.2	* 20
Max Allow Headway (MAH), s	7.7	2.6	2.6	3.7	2.6	7.7	2.6	3.7
Max Q Clear (g_c+I1), s	20.7	2.0	9.2	21.7	6.2	44.0	8.9	13.5
Green Ext Time (g_e), s	9.1	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Prob of Phs Call (p_c)	1.00	0.98	1.00	1.00	0.92	1.00	0.97	1.00
Prob of Max Out (p_x)	0.38	0.00	1.00	1.00	0.00	1.00	1.00	0.16

Left-Turn Movement Data								
Assigned Mvmt		1	3		5		7	
Mvmt Sat Flow, veh/h		1781	3456		1781		1781	

Through Movement Data								
Assigned Mvmt	2			4		6		8
Mvmt Sat Flow, veh/h	3554			1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt	12			14		16		18
Mvmt Sat Flow, veh/h	1585			1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	1	3	0	5	0	7	0

Lane Assignment	L (Pr/Pm)		L (Prot)	L (Pr/Pm)		L (Prot)		
Lanes in Grp	0	1	2	0	1	0	1	0
Grp Vol (v), veh/h	0	140	470	0	88	0	117	0
Grp Sat Flow (s), veh/h/ln	0	1781	1728	0	1781	0	1781	0
Q Serve Time (g_s), s	0.0	0.0	7.2	0.0	4.2	0.0	6.9	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	7.2	0.0	4.2	0.0	6.9	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	741	0	0	253	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	13.5	0.0	0.0	17.5	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	0	465	237	0	167	0	122	0
V/C Ratio (X)	0.00	0.30	1.98	0.00	0.53	0.00	0.96	0.00
Avail Cap (c_a), veh/h	0	465	237	0	281	0	122	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	0.0	32.6	48.8	0.0	34.8	0.0	48.6	0.0
Incr Delay (d2), s/veh	0.0	0.1	455.6	0.0	1.0	0.0	67.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	32.7	504.4	0.0	35.8	0.0	115.6	0.0
1st-Term Q (Q1), veh/ln	0.0	2.8	2.9	0.0	1.7	0.0	2.9	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	15.0	0.0	0.0	0.0	2.3	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	2.8	18.0	0.0	1.8	0.0	5.2	0.0
%ile Storage Ratio (RQ%)	0.00	0.07	1.98	0.00	0.04	0.00	0.24	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	58.1	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	2	0	0	4	0	6	0	8
Lane Assignment	T			T		T		T
Lanes in Grp	2	0	0	1	0	2	0	1
Grp Vol (v), veh/h	708	0	0	399	0	1834	0	223
Grp Sat Flow (s), veh/h/ln	1777	0	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	18.7	0.0	0.0	19.7	0.0	42.0	0.0	11.5
Cycle Q Clear Time (g_c), s	18.7	0.0	0.0	19.7	0.0	42.0	0.0	11.5
Lane Grp Cap (c), veh/h	1011	0	0	352	0	1424	0	352
V/C Ratio (X)	0.70	0.00	0.00	1.13	0.00	1.29	0.00	0.63
Avail Cap (c_a), veh/h	1390	0	0	352	0	1424	0	352
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	33.5	0.0	0.0	42.5	0.0	31.4	0.0	39.2
Incr Delay (d2), s/veh	3.2	0.0	0.0	89.8	0.0	134.9	0.0	2.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	36.7	0.0	0.0	132.3	0.0	166.3	0.0	42.1
1st-Term Q (Q1), veh/ln	7.4	0.0	0.0	8.5	0.0	16.0	0.0	5.0

2nd-Term Q (Q2), veh/ln	0.5	0.0	0.0	8.8	0.0	26.7	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	7.9	0.0	0.0	17.3	0.0	42.6	0.0	5.2
%ile Storage Ratio (RQ%)	0.11	0.00	0.00	0.27	0.00	0.61	0.00	0.16
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	11.8	0.0	102.4	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	12	0	0	14	0	16	0	18
Lane Assignment	R			R		R		R
Lanes in Grp	1	0	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1585	0	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	451	0	0	298	0	635	0	298
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	620	0	0	298	0	635	0	298
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	163.7
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	313.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	175	502	52	33	524	75	121	16	46	171	20	166
Future Vol, veh/h	175	502	52	33	524	75	121	16	46	171	20	166
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	180	-	-	300	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	190	546	57	36	570	82	132	17	50	186	22	180

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	651	0	0	602	0	0	1607	1677	574	1617	1665	610
Stage 1	-	-	-	-	-	-	954	954	-	682	682	-
Stage 2	-	-	-	-	-	-	652	723	-	935	983	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	935	-	-	975	-	-	~ 85	95	518	~ 83	97	494
Stage 1	-	-	-	-	-	-	311	337	-	440	450	-
Stage 2	-	-	-	-	-	-	457	431	-	319	327	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	935	-	-	975	-	-	~ 31	73	518	~ 47	74	494
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 31	73	-	~ 47	74	-
Stage 1	-	-	-	-	-	-	247	269	-	424	433	-
Stage 2	-	-	-	-	-	-	265	415	-	214	260	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	2.36	0.46	$ 1779.82	$ 750.76
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	44	935	-	-	975	-	-	47	307
HCM Lane V/C Ratio	4.541	0.203	-	-	0.037	-	-	3.997	0.658
HCM Control Delay (s/veh)	$ 1779.8	9.8	-	-	8.8	-	-	$ 1527.5	36.7
HCM Lane LOS	F	A	-	-	A	-	-	F	E
HCM 95th %tile Q(veh)	22.7	0.8	-	-	0.1	-	-	20.8	4.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Traffic Vol, veh/h	0	476	565	15	0	18
Future Vol, veh/h	0	476	565	15	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	517	614	16	0	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	614
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	492
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	492
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	12.62
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	492
HCM Lane V/C Ratio	-	-	-	0.04
HCM Control Delay (s/veh)	-	-	-	12.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	280	58	76	325	113	134	275	116	150	212	189
Future Volume (veh/h)	96	280	58	76	325	113	134	275	116	150	212	189
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	304	18	83	353	35	146	299	115	163	230	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	237	423	25	258	448	380	151	309	396	175	247	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.24	0.24	0.06	0.24	0.24	0.25	0.25	0.25	0.23	0.23	0.23
Unsig. Movement Delay												
Ln Grp Delay, s/veh	34.8	0.0	49.4	33.3	53.3	35.9	77.9	0.0	36.5	69.5	0.0	38.1
Ln Grp LOS	C		D	C	D	D	E		D	E		D
Approach Vol, veh/h		426			471			560			493	
Approach Delay, s/veh		45.8			48.5			69.4			63.1	
Approach LOS		D			D			E			E	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	11.0	11.0	1.1	3.0		
Phs Duration (G+Y+Rc), s	14.4	35.0	34.1	36.5	14.7	34.8		
Change Period (Y+Rc), s	6.9	6.0	6.5	6.5	6.9	6.0		
Max Green (Gmax), s	15.0	50.0	30.0	30.0	15.0	50.0		
Max Allow Headway (MAH), s	4.7	7.7	3.2	3.4	4.6	7.9		
Max Q Clear (g_c+I1), s	6.1	21.2	27.2	30.7	7.2	23.2		
Green Ext Time (g_e), s	0.2	4.5	0.4	0.0	0.2	5.5		
Prob of Phs Call (p_c)	0.94	1.00	1.00	1.00	0.97	1.00		
Prob of Max Out (p_x)	0.03	0.02	1.00	1.00	0.08	0.06		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		760	604	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		1748	1072	1236		1870		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		104	1585	1585		1585		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0

Lane Assignment	L (Pr/Pm)		L+T	L+TL (Pr/Pm)				
Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	83	0	393	445	104	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1832	1840	1781	0	0	0
Q Serve Time (g_s), s	4.1	0.0	25.2	28.7	5.2	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	4.1	0.0	25.2	28.7	5.2	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1058	0	0	0	996	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	28.8	0.0	0.0	0.0	28.8	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	9.9	0.0	0.0	0.0	7.5	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	1.6	0.0	0.0	0.0	2.5	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.41	0.33	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	258	0	422	460	237	0	0	0
V/C Ratio (X)	0.32	0.00	0.93	0.97	0.44	0.00	0.00	0.00
Avail Cap (c_a), veh/h	369	0	458	460	345	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	32.3	0.0	45.3	44.5	33.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	24.2	33.4	1.8	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	33.3	0.0	69.5	77.9	34.8	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	1.7	0.0	11.1	12.9	2.1	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	2.8	4.3	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	1.8	0.0	13.9	17.1	2.2	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.19	0.00	0.14	1.00	0.23	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment						T		
Lanes in Grp	0	0	0	0	0	1	0	0
Grp Vol (v), veh/h	0	0	0	0	0	353	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	1870	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	21.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	21.2	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	448	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	779	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	42.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	53.3	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	9.6	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	R	R		R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	322	100	115	0	35	0	0
Grp Sat Flow (s), veh/h/ln	0	1852	1585	1585	0	1585	0	0
Q Serve Time (g_s), s	0.0	19.2	6.2	7.0	0.0	2.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	19.2	6.2	7.0	0.0	2.1	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.06	1.00	1.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	448	365	396	0	380	0	0
V/C Ratio (X)	0.00	0.72	0.27	0.29	0.00	0.09	0.00	0.00
Avail Cap (c_a), veh/h	0	771	396	396	0	660	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	41.8	38.0	36.4	0.0	35.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.6	0.1	0.1	0.0	0.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	49.4	38.1	36.5	0.0	35.9	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	8.3	2.4	2.7	0.0	0.8	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	9.2	2.4	2.7	0.0	0.8	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.19	0.26	0.16	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	57.6
HCM 7th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	326	29	28	343	13	63	5	26	8	9	35
Future Volume (veh/h)	35	326	29	28	343	13	63	5	26	8	9	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	40	370	9	32	390	5	72	6	11	9	10	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	446	693	587	459	669	9	368	35	34	155	139	134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.04	0.38	0.38	0.04	0.37	0.37	0.19	0.19	0.19	0.19	0.19	0.19
Unsig. Movement Delay												
Ln Grp Delay, s/veh	7.7	11.2	7.9	7.6	0.0	11.9	14.5	0.0	0.0	13.6	0.0	0.0
Ln Grp LOS	A	B	A	A		B	B			B		
Approach Vol, veh/h		419			427			89			33	
Approach Delay, s/veh		10.8			11.6			14.5			13.6	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		8.0	1.1	4.0		8.0
Phs Duration (G+Y+Rc), s	5.5	21.5		13.6	5.8	21.2		13.6
Change Period (Y+Rc), s	4.0	6.1		5.7	4.0	6.1		5.7
Max Green (Gmax), s	5.0	35.0		30.0	5.0	35.0		30.0
Max Allow Headway (MAH), s	1.7	7.0		7.6	1.7	7.0		7.5
Max Q Clear (g_c+I1), s	2.4	8.4		2.7	2.6	9.1		4.0
Green Ext Time (g_e), s	0.0	4.3		0.2	0.0	4.6		0.8
Prob of Phs Call (p_c)	0.30	1.00		0.75	0.36	1.00		0.75
Prob of Max Out (p_x)	0.09	0.02		0.00	0.14	0.03		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1739			219	1739			1067

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1826		715		1799		182

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1545		688		23		176

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

Lane Assignment	L (Pr/Pm)			L+T+R	L (Pr/Pm)			L+T+R
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	32	0	0	33	40	0	0	89
Grp Sat Flow (s), veh/h/ln	1739	0	0	1623	1739	0	0	1425
Q Serve Time (g_s), s	0.4	0.0	0.0	0.0	0.6	0.0	0.0	1.4
Cycle Q Clear Time (g_c), s	0.4	0.0	0.0	0.7	0.6	0.0	0.0	2.0
Perm LT Sat Flow (s_l), veh/h/ln	979	0	0	1412	965	0	0	1402
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1799	0	0	0	1748
Perm LT Eff Green (g_p), s	15.4	0.0	0.0	7.9	15.1	0.0	0.0	7.9
Perm LT Serve Time (g_u), s	9.0	0.0	0.0	5.9	8.1	0.0	0.0	7.2
Perm LT Q Serve Time (g_ps), s	0.2	0.0	0.0	0.0	0.3	0.0	0.0	1.4
Time to First Blk (g_f), s	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.5
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.5
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.27	1.00	0.00	0.00	0.81
Lane Grp Cap (c), veh/h	459	0	0	428	446	0	0	437
V/C Ratio (X)	0.07	0.00	0.00	0.08	0.09	0.00	0.00	0.20
Avail Cap (c_a), veh/h	608	0	0	1275	583	0	0	1195
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	7.6	0.0	0.0	13.5	7.7	0.0	0.0	14.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	7.6	0.0	0.0	13.6	7.7	0.0	0.0	14.5
1st-Term Q (Q1), veh/ln	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.6
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.7
%ile Storage Ratio (RQ%)	0.04	0.00	0.00	0.02	0.04	0.00	0.00	0.06
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	370	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1826	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	693	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1572	0	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.2	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	9	0	0	0	395	0	0
Grp Sat Flow (s), veh/h/ln	0	1545	0	0	0	1822	0	0
Q Serve Time (g_s), s	0.0	0.1	0.0	0.0	0.0	7.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.1	0.0	0.0	0.0	7.1	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.42	0.00	0.01	0.00	0.12
Lane Grp Cap (c), veh/h	0	587	0	0	0	678	0	0
V/C Ratio (X)	0.00	0.02	0.00	0.00	0.00	0.58	0.00	0.00
Avail Cap (c_a), veh/h	0	1331	0	0	0	1569	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	7.9	0.0	0.0	0.0	10.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.9	0.0	0.0	0.0	11.9	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	11.6
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	343	13	6	356	11	15	14	6	30	12	63
Future Volume (veh/h)	20	343	13	6	356	11	15	14	6	30	12	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	0.99		0.99	0.99		0.99	0.97		0.97	0.97		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	24	404	4	7	419	4	18	16	2	35	14	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	429	783	8	440	783	7	300	229	23	280	120	135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.27	0.27	0.27	0.27	0.27	0.27
Unsig. Movement Delay												
Ln Grp Delay, s/veh	11.2	0.0	10.0	10.6	0.0	10.2	11.0	0.0	0.0	11.5	0.0	0.0
Ln Grp LOS	B		B	B		B	B			B		
Approach Vol, veh/h		432			430			36			74	
Approach Delay, s/veh		10.1			10.2			11.0			11.5	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		23.2		16.1		23.2		16.1
Change Period (Y+Rc), s		6.1		5.7		6.1		5.7
Max Green (Gmax), s		34.5		30.5		34.5		30.5
Max Allow Headway (MAH), s		8.0		8.6		8.0		8.5
Max Q Clear (g_c+I1), s		9.5		3.3		8.7		2.6
Green Ext Time (g_e), s		6.3		0.9		6.4		0.3
Prob of Phs Call (p_c)		1.00		0.75		1.00		0.75
Prob of Max Out (p_x)		0.12		0.00		0.11		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		935		546		948		610

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1805		450		1805		860

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		18		508		17		87

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L+T+R		L		L+T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	24	0	74	0	7	0	36
Grp Sat Flow (s), veh/h/ln	0	935	0	1503	0	948	0	1557
Q Serve Time (g_s), s	0.0	0.8	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	7.5	0.0	1.3	0.0	6.6	0.0	0.6
Perm LT Sat Flow (s_l), veh/h/ln	0	935	0	1371	0	948	0	1348
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1755	0	0	0	1754
Perm LT Eff Green (g_p), s	0.0	17.1	0.0	10.4	0.0	17.1	0.0	10.4
Perm LT Serve Time (g_u), s	0.0	10.3	0.0	9.9	0.0	10.6	0.0	9.1
Perm LT Q Serve Time (g_ps), s	0.0	0.8	0.0	0.0	0.0	0.2	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	2.1	0.0	0.0	0.0	1.9
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.6
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.47	0.00	1.00	0.00	0.50
Lane Grp Cap (c), veh/h	0	429	0	534	0	440	0	551
V/C Ratio (X)	0.00	0.06	0.00	0.14	0.00	0.02	0.00	0.07
Avail Cap (c_a), veh/h	0	844	0	1276	0	861	0	1317
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	11.0	0.0	11.1	0.0	10.5	0.0	10.8
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.4	0.0	0.1	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.2	0.0	11.5	0.0	10.6	0.0	11.0
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	408	0	0	0	423	0	0
Grp Sat Flow (s), veh/h/ln	0	1822	0	0	0	1823	0	0
Q Serve Time (g_s), s	0.0	6.4	0.0	0.0	0.0	6.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	6.4	0.0	0.0	0.0	6.7	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.01	0.00	0.34	0.00	0.01	0.00	0.06
Lane Grp Cap (c), veh/h	0	791	0	0	0	791	0	0
V/C Ratio (X)	0.00	0.52	0.00	0.00	0.00	0.53	0.00	0.00
Avail Cap (c_a), veh/h	0	1600	0	0	0	1600	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	8.1	0.0	0.0	0.0	8.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	0.0	0.0	0.0	2.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.0	0.0	0.0	0.0	10.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.5	0.0	0.0	0.0	1.6	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.9	0.0	0.0	0.0	2.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	0.04	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	10.3
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	477	573	285	444
Demand Flow Rate, veh/h	487	584	290	454
Vehicles Circulating, veh/h	328	322	686	389
Vehicles Exiting, veh/h	515	588	129	517
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.8	11.8	7.4	10.1
Approach LOS	A	B	A	B

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
A (Intercept)	1380	1380	1380		1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3		1.02e-3
Entry Flow, veh/h	487	584	224	66	454
Cap Entry Lane, veh/h	988	994	685	1938	928
Entry HV Adj Factor	0.979	0.981	0.981	0.980	0.979
Flow Entry, veh/h	477	573	220	65	444
Cap Entry, veh/h	967	975	672	1900	908
V/C Ratio	0.493	0.588	0.327	0.034	0.489
Control Delay, s/veh	9.8	11.8	9.6	0.0	10.1
LOS	A	B	A	A	B
95th %tile Queue, veh	3	4	1	0	3

Intersection	
Int Delay, s/veh	20.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	848	25	27	783	76	81
Future Vol, veh/h	848	25	27	783	76	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	922	27	29	851	83	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	949	0	1832	922
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	910	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	724	-	84	328
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	724	-	~ 80	328
Mov Cap-2 Maneuver	-	-	-	-	~ 80	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	377	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.34	241.37
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	132	-	-	724	-
HCM Lane V/C Ratio	1.295	-	-	0.041	-
HCM Control Delay (s/veh)	241.4	-	-	10.2	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	10.8	-	-	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1619.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	506	270	149	402	27	384	65	210	8	34	21
Future Vol, veh/h	9	506	270	149	402	27	384	65	210	8	34	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	550	293	162	437	29	417	71	228	9	37	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	466	0	0	843	0	0	1496	1507	697	1380	1639	452
Stage 1	-	-	-	-	-	-	716	716	-	776	776	-
Stage 2	-	-	-	-	-	-	779	790	-	605	863	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1095	-	-	793	-	-	~ 101	121	441	122	100	608
Stage 1	-	-	-	-	-	-	421	434	-	391	408	-
Stage 2	-	-	-	-	-	-	~ 389	401	-	485	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1095	-	-	793	-	-	~ 39	86	441	10	71	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 39	86	-	10	71	-
Stage 1	-	-	-	-	-	-	~ 414	426	-	282	295	-
Stage 2	-	-	-	-	-	-	~ 237	290	-	192	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.1	2.76	$ 5080.65	$ 429.34
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	60	19	-	-	458	-	-	47
HCM Lane V/C Ratio	12.001	0.009	-	-	0.204	-	-	1.454
HCM Control Delay (s/veh)	$ 5080.6	8.3	0	-	10.7	0	-	$ 429.3
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	85.2	0	-	-	0.8	-	-	6.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	564	1	1	337	0	29	2	20	3	2	5
Future Vol, veh/h	1	564	1	1	337	0	29	2	20	3	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	613	1	1	366	0	32	2	22	3	2	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	614	0	0	985	984	614	985	985	366
Stage 1	-	-	-	-	-	-	616	616	-	368	368	-
Stage 2	-	-	-	-	-	-	370	368	-	616	616	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1192	-	-	965	-	-	227	248	492	227	248	679
Stage 1	-	-	-	-	-	-	478	482	-	651	621	-
Stage 2	-	-	-	-	-	-	650	621	-	478	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1192	-	-	965	-	-	223	248	492	215	247	679
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	248	-	215	247	-
Stage 1	-	-	-	-	-	-	477	481	-	650	620	-
Stage 2	-	-	-	-	-	-	642	620	-	454	481	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.01	0.03	20.66	15.94
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	285	3	-	-	5	-	-	340
HCM Lane V/C Ratio	0.195	0.001	-	-	0.001	-	-	0.032
HCM Control Delay (s/veh)	20.7	8	0	-	8.7	0	-	15.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	15.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	444	59	99	312	1	29	48	165	9	20	60
Future Vol, veh/h	14	444	59	99	312	1	29	48	165	9	20	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	15	488	65	109	343	1	32	53	181	10	22	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	344	0	0	553	0	0	1123	1113	520	1106	1145	343
Stage 1	-	-	-	-	-	-	551	551	-	561	561	-
Stage 2	-	-	-	-	-	-	571	562	-	545	584	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1193	-	-	998	-	-	180	205	548	184	196	690
Stage 1	-	-	-	-	-	-	512	509	-	505	504	-
Stage 2	-	-	-	-	-	-	499	503	-	515	492	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1193	-	-	998	-	-	122	174	548	77	167	690
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	174	-	77	167	-
Stage 1	-	-	-	-	-	-	502	499	-	437	436	-
Stage 2	-	-	-	-	-	-	370	435	-	303	483	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.22	2.17	67.12	25.23
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	297	48	-	-	432	-	-	274
HCM Lane V/C Ratio	0.895	0.013	-	-	0.109	-	-	0.357
HCM Control Delay (s/veh)	67.1	8.1	0	-	9.1	0	-	25.2
HCM Lane LOS	F	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	8.2	0	-	-	0.4	-	-	1.6

Intersection	
Intersection Delay, s/veh	19.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	2	0	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1046	1269	0	641
Demand Flow Rate, veh/h	1066	1294	0	653
Vehicles Circulating, veh/h	782	0	1059	1294
Vehicles Exiting, veh/h	1165	1059	357	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	7.3	0.0	64.2
Approach LOS	A	A	-	F

Lane	Left	Right	Bypass	Left	Right	Left	Right
Designated Moves	LT	TR	R	LT	TR	LT	R
Assumed Moves	LT	TR		LT	TR	LT	R
RT Channelized			Free				
Lane Util	0.470	0.530		0.470	0.530	0.655	0.345
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328		4.645	4.328	4.645	4.328
A (Intercept)	1350	1420		1350	1420	1350	1420
B (Slope)	9.199e-4	8.501e-4		9.199e-4	8.501e-4	9.199e-4	8.501e-4
Entry Flow, veh/h	298	336	432	608	686	428	225
Cap Entry Lane, veh/h	657	730	1938	1350	1420	411	473
Entry HV Adj Factor	0.980	0.980	0.980	0.981	0.980	0.981	0.982
Flow Entry, veh/h	292	329	424	596	672	420	221
Cap Entry, veh/h	645	716	1900	1324	1392	403	464
V/C Ratio	0.453	0.460	0.223	0.450	0.483	1.043	0.476
Control Delay, s/veh	12.4	11.5	0.0	7.2	7.4	89.0	17.0
LOS	B	B	A	A	A	F	C
95th %tile Queue, veh	2	2	1	2	3	14	3

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	3	2	0
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1002	0	579	0
Demand Flow Rate, veh/h	1022	0	590	0
Vehicles Circulating, veh/h	0	444	1022	1179
Vehicles Exiting, veh/h	1179	1168	0	841
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.0	0.0	16.2	0.0
Approach LOS	A	-	C	-

Lane	Left	Right	Left	Right
Designated Moves	LT	TR	LT	R
Assumed Moves	LT	TR	LT	R
RT Channelized				
Lane Util	0.470	0.530	0.481	0.519
Follow-Up Headway, s	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328
A (Intercept)	1350	1420	1350	1420
B (Slope)	9.199e-4	4.501e-4	9.199e-4	4.501e-4
Entry Flow, veh/h	480	542	284	306
Cap Entry Lane, veh/h	1350	1420	527	596
Entry HV Adj Factor	0.981	0.980	0.982	0.980
Flow Entry, veh/h	471	531	279	300
Cap Entry, veh/h	1324	1392	518	584
V/C Ratio	0.356	0.382	0.539	0.514
Control Delay, s/veh	6.0	6.1	17.5	15.1
LOS	A	A	C	C
95th %tile Queue, veh	2	2	3	3

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	204	66	12	8	98	0	10	68	24	8	33	352
Future Vol, veh/h	204	66	12	8	98	0	10	68	24	8	33	352
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	222	72	13	9	107	0	11	74	26	9	36	383

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	393	366	227	198	545	87	418	0	0	100	0	0
Stage 1	245	245	-	109	109	-	-	-	-	-	-	-
Stage 2	149	122	-	89	436	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	566	562	812	761	446	972	1141	-	-	1493	-	-
Stage 1	759	704	-	897	805	-	-	-	-	-	-	-
Stage 2	854	795	-	918	580	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	422	552	812	641	438	972	1141	-	-	1493	-	-
Mov Cap-2 Maneuver	422	552	-	641	438	-	-	-	-	-	-	-
Stage 1	753	698	-	888	797	-	-	-	-	-	-	-
Stage 2	732	787	-	804	575	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	27.5	15.78	0.8	0.15
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	168	-	-	457	449	31	-	-
HCM Lane V/C Ratio	0.01	-	-	0.671	0.257	0.006	-	-
HCM Control Delay (s/veh)	8.2	0	-	27.5	15.8	7.4	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.9	1	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	42	369	14	26	430
Future Vol, veh/h	12	42	369	14	26	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	46	401	15	28	467

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	933	409	0	0	416	0
Stage 1	409	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	296	643	-	-	1143	-
Stage 1	671	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	286	643	-	-	1143	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.1	0	0.47
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	503	1143	-
HCM Lane V/C Ratio	-	-	0.117	0.025	-
HCM Control Delay (s/veh)	-	-	13.1	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	15	336	5	6	425
Future Vol, veh/h	2	15	336	5	6	425
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	16	365	5	7	462

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	843	368	0	0	371	0
Stage 1	368	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	334	677	-	-	1188	-
Stage 1	700	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	332	677	-	-	1188	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.15	0	0.11
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	603	25	-
HCM Lane V/C Ratio	-	-	0.031	0.005	-
HCM Control Delay (s/veh)	-	-	11.2	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	14.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	161	96	87	293	91
Future Vol, veh/h	132	161	96	87	293	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	175	104	95	318	99

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	840	104	0	0	199	0
Stage 1	104	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	335	950	-	-	1373	-
Stage 1	920	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	253	950	-	-	1373	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	358	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	35	0	6.42
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	1373	-
HCM Lane V/C Ratio	-	-	0.751	0.232	-
HCM Control Delay (s/veh)	-	-	35	8.4	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	6.2	0.9	-

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	3	33	0	3	3	75	138	0	3	60	66
Future Vol, veh/h	80	3	33	0	3	3	75	138	0	3	60	66
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	145	5	60	0	5	5	136	251	0	5	109	120
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay, s/veh	11.3	9.7	17.3	11.7
HCM LOS	B	A	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	35%	0%	96%	0%	0%	2%
Vol Thru, %	65%	100%	4%	0%	50%	47%
Vol Right, %	0%	0%	0%	100%	50%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	0	83	33	6	129
LT Vol	75	0	80	0	0	3
Through Vol	138	0	3	0	3	60
RT Vol	0	0	0	33	3	66
Lane Flow Rate	387	0	151	60	11	235
Geometry Grp	5	5	5	5	4b	4b
Degree of Util (X)	0.618	0	0.285	0.093	0.02	0.361
Departure Headway (Hd)	5.741	5.563	6.788	5.587	6.485	5.542
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	631	0	530	641	551	650
Service Time	3.441	3.263	4.525	3.323	4.536	3.574
HCM Lane V/C Ratio	0.613	0	0.285	0.094	0.02	0.362
HCM Control Delay, s/veh	17.3	8.3	12.2	8.9	9.7	11.7
HCM Lane LOS	C	N	B	A	A	B
HCM 95th-tile Q	4.3	0	1.2	0.3	0.1	1.6

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	82	74	1	32	117
Future Vol, veh/h	5	82	74	1	32	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	89	80	1	35	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	278	81	0	0	82	0
Stage 1	81	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	712	979	-	-	1516	-
Stage 1	942	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	694	979	-	-	1516	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	816	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.18	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	956	387	-
HCM Lane V/C Ratio	-	-	0.099	0.023	-
HCM Control Delay (s/veh)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	0	10	0	0	2	9	167	0	0	245	18
Future Vol, veh/h	40	0	10	0	0	2	9	167	0	0	245	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	0	11	0	0	2	10	182	0	0	266	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	477	477	276	467	487	182	286	0	0	182	0	0
Stage 1	276	276	-	201	201	-	-	-	-	-	-	-
Stage 2	201	201	-	266	286	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	498	487	763	506	481	861	1276	-	-	1394	-	-
Stage 1	730	682	-	801	735	-	-	-	-	-	-	-
Stage 2	801	735	-	739	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	493	483	763	494	477	861	1276	-	-	1394	-	-
Mov Cap-2 Maneuver	493	483	-	494	477	-	-	-	-	-	-	-
Stage 1	730	682	-	794	729	-	-	-	-	-	-	-
Stage 2	792	729	-	729	675	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.56	9.19	0.4	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	92	-	-	530	861	1394	-	-
HCM Lane V/C Ratio	0.008	-	-	0.102	0.003	-	-	-
HCM Control Delay (s/veh)	7.8	0	-	12.6	9.2	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	22.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	12	1	1530	2573	4
Future Vol, veh/h	18	12	1	1530	2573	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	700	-	-	700
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	13	1	1663	2797	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3630	1398	2801	0	-	0
Stage 1	2797	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 4	130	136	-	-	-
Stage 1	32	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 4	130	136	-	-	-
Mov Cap-2 Maneuver	~ 4	-	-	-	-	-
Stage 1	32	-	-	-	-	-
Stage 2	387	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	$ 3100.56	0.02	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	136	-	6	-	-
HCM Lane V/C Ratio	0.008	-	5.325	-	-
HCM Control Delay (s/veh)	31.7	-	$ 3100.6	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0	-	5.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	51.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	252	32	863	71	10	2634
Future Vol, veh/h	252	32	863	71	10	2634
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	600	720	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	274	35	938	77	11	2863

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2391	469	0	0	1015	0
Stage 1	938	-	-	-	-	-
Stage 2	1453	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 28	541	-	-	679	-
Stage 1	341	-	-	-	-	-
Stage 2	~ 181	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 28	541	-	-	679	-
Mov Cap-2 Maneuver	~ 118	-	-	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	~ 178	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, $/s	$ 699.21	0	0.04
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	130	679	-
HCM Lane V/C Ratio	-	-	2.382	0.016	-
HCM Control Delay (s/veh)	-	-	$ 699.2	10.4	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	26.7	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	86	18	8	3	44	15	3	94	4	16	128	213
Future Vol, veh/h	86	18	8	3	44	15	3	94	4	16	128	213
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	20	9	3	48	16	3	102	4	17	139	232

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	422	403	255	295	516	104	371	0	0	107	0	0
Stage 1	290	290	-	111	111	-	-	-	-	-	-	-
Stage 2	133	113	-	184	405	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	542	536	784	658	463	950	1188	-	-	1484	-	-
Stage 1	718	673	-	894	804	-	-	-	-	-	-	-
Stage 2	871	802	-	818	598	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	469	527	784	615	454	950	1188	-	-	1484	-	-
Mov Cap-2 Maneuver	469	527	-	615	454	-	-	-	-	-	-	-
Stage 1	707	662	-	892	801	-	-	-	-	-	-	-
Stage 2	802	800	-	773	589	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.72	12.82	0.24	0.33
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	53	-	-	492	528	72	-	-
HCM Lane V/C Ratio	0.003	-	-	0.248	0.128	0.012	-	-
HCM Control Delay (s/veh)	8	0	-	14.7	12.8	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1	0.4	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	0	20	2	0	0	7	47	0	0	114	15
Future Vol, veh/h	15	0	20	2	0	0	7	47	0	0	114	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	22	2	0	0	8	51	0	0	124	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	198	198	132	190	207	51	140	0	0	51	0	0
Stage 1	132	132	-	66	66	-	-	-	-	-	-	-
Stage 2	66	66	-	124	140	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	760	697	917	770	690	1017	1443	-	-	1555	-	-
Stage 1	871	787	-	944	840	-	-	-	-	-	-	-
Stage 2	944	840	-	880	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	756	694	917	747	686	1017	1443	-	-	1555	-	-
Mov Cap-2 Maneuver	756	694	-	747	686	-	-	-	-	-	-	-
Stage 1	871	787	-	939	835	-	-	-	-	-	-	-
Stage 2	939	835	-	859	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.49	9.83	0.97	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	233	-	-	841	747	1555	-	-
HCM Lane V/C Ratio	0.005	-	-	0.045	0.003	-	-	-
HCM Control Delay (s/veh)	7.5	0	-	9.5	9.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	289.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	192	149	3	1389	2674	20
Future Vol, veh/h	192	149	3	1389	2674	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	150	-	-	600
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	162	3	1510	2907	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3668	1453	2907	0	-	0
Stage 1	2907	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 4	~ 120	123	-	-	-
Stage 1	~ 28	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 3	~ 120	123	-	-	-
Mov Cap-2 Maneuver	~ 23	-	-	-	-	-
Stage 1	~ 27	-	-	-	-	-
Stage 2	422	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 3757.12	0.08	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	123	-	41	-	-
HCM Lane V/C Ratio	0.026	-	8.934	-	-
HCM Control Delay (s/veh)	35	-	$ 3757.1	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	44.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	140	11	779	45	8	2477
Future Vol, veh/h	140	11	779	45	8	2477
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	-	0	-	0	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	12	847	49	9	2692

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1941	423	0	0	847	0
Stage 1	847	-	-	-	-	-
Stage 2	1094	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 76	579	-	-	786	-
Stage 1	371	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 75	579	-	-	786	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	371	-	-	-	-	-
Stage 2	257	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.35	0	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	579	786	-
HCM Lane V/C Ratio	-	-	0.021	0.011	-
HCM Control Delay (s/veh)	-	-	11.3	9.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	30	18	6	20	89
Future Vol, veh/h	35	30	18	6	20	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	33	20	7	22	97

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	116	70	118	0	-	0
Stage 1	70	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	880	993	1470	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	869	993	1470	-	-	-
Mov Cap-2 Maneuver	869	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	977	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.23	5.61	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1350	-	922	-	-
HCM Lane V/C Ratio	0.013	-	0.077	-	-
HCM Control Delay (s/veh)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

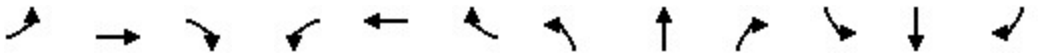
Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	70	2	294	101	21	0	22	156	22	15	3
Future Vol, veh/h	3	70	2	294	101	21	0	22	156	22	15	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	76	2	320	110	23	0	24	170	24	16	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	145	259	18	211	176	109	20	0	0	193	0	0
Stage 1	66	66	-	109	109	-	-	-	-	-	-	-
Stage 2	79	193	-	102	67	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	824	645	1061	746	717	945	1597	-	-	1380	-	-
Stage 1	945	840	-	897	805	-	-	-	-	-	-	-
Stage 2	930	740	-	904	839	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	669	634	1061	645	705	945	1597	-	-	1380	-	-
Mov Cap-2 Maneuver	669	634	-	645	705	-	-	-	-	-	-	-
Stage 1	928	825	-	897	805	-	-	-	-	-	-	-
Stage 2	784	740	-	804	824	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.42	20.81	0	4.21
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	642	670	958	-	-
HCM Lane V/C Ratio	-	-	-	0.127	0.675	0.017	-	-
HCM Control Delay (s/veh)	0	-	-	11.4	20.8	7.7	0	-
HCM Lane LOS	A	-	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	5.2	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	52	37	41	87	78	64	1050	33	50	704	82
Future Volume (veh/h)	59	52	37	41	87	78	64	1050	33	50	704	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	57	24	45	95	28	70	1141	26	54	765	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	292	265	111	306	396	336	364	1242	28	148	1179	82
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.68	0.68	0.68	0.68	0.68	0.68
Unsig. Movement Delay												
Ln Grp Delay, s/veh	35.0	0.0	31.3	33.8	31.5	30.1	17.7	0.0	23.8	41.7	0.0	10.2
Ln Grp LOS	D		C	C	C	C	B		C	D		B
Approach Vol, veh/h		145			168			1237			872	
Approach Delay, s/veh		33.0			31.9			23.5			12.1	
Approach LOS		C			C			C			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		6.0		6.0		5.0
Phs Duration (G+Y+Rc), s		69.4		25.0		69.4		25.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green (Gmax), s		65.0		40.0		65.0		40.0
Max Allow Headway (MAH), s		7.0		6.8		7.2		6.7
Max Q Clear (g_c+I1), s		52.3		10.1		62.5		8.3
Green Ext Time (g_e), s		10.5		1.3		1.9		1.6
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.90		0.00		1.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		668		1268		481		1317

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1821		1250		1729		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		42		526		120		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	70	0	64	0	54	0	45
Grp Sat Flow (s), veh/h/ln	0	668	0	1268	0	481	0	1317
Q Serve Time (g_s), s	0.0	6.3	0.0	4.2	0.0	10.2	0.0	2.8
Cycle Q Clear Time (g_c), s	0.0	30.1	0.0	8.1	0.0	60.5	0.0	6.3
Perm LT Sat Flow (s_l), veh/h/ln	0	668	0	1268	0	481	0	1317
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	64.4	0.0	20.0	0.0	64.4	0.0	20.0
Perm LT Serve Time (g_u), s	0.0	40.6	0.0	16.0	0.0	14.1	0.0	16.4
Perm LT Q Serve Time (g_ps), s	0.0	6.3	0.0	4.2	0.0	10.2	0.0	2.8
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	364	0	292	0	148	0	306
V/C Ratio (X)	0.00	0.19	0.00	0.22	0.00	0.36	0.00	0.15
Avail Cap (c_a), veh/h	0	368	0	560	0	151	0	585
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	17.1	0.0	34.2	0.0	38.5	0.0	33.3
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.8	0.0	3.2	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	17.7	0.0	35.0	0.0	41.7	0.0	33.8
1st-Term Q (Q1), veh/ln	0.0	0.9	0.0	1.3	0.0	1.2	0.0	0.9
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.9	0.0	1.3	0.0	1.3	0.0	0.9
%ile Storage Ratio (RQ%)	0.00	0.09	0.00	0.09	0.00	0.09	0.00	0.07
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								T
Lanes in Grp	0	0	0	0	0	0	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	95
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	1870
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	396
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	793
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.5
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	1167	0	81	0	818	0	28
Grp Sat Flow (s), veh/h/ln	0	1863	0	1776	0	1849	0	1585
Q Serve Time (g_s), s	0.0	50.3	0.0	3.6	0.0	23.8	0.0	1.3
Cycle Q Clear Time (g_c), s	0.0	50.3	0.0	3.6	0.0	23.8	0.0	1.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.02	0.00	0.30	0.00	0.06	0.00	1.00
Lane Grp Cap (c), veh/h	0	1271	0	376	0	1261	0	336
V/C Ratio (X)	0.00	0.92	0.00	0.22	0.00	0.65	0.00	0.08
Avail Cap (c_a), veh/h	0	1283	0	753	0	1274	0	672
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	12.8	0.0	30.7	0.0	8.6	0.0	29.8
Incr Delay (d2), s/veh	0.0	11.1	0.0	0.6	0.0	1.6	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	23.8	0.0	31.3	0.0	10.2	0.0	30.1
1st-Term Q (Q1), veh/ln	0.0	14.9	0.0	1.5	0.0	7.3	0.0	0.5
2nd-Term Q (Q2), veh/ln	0.0	3.9	0.0	0.1	0.0	0.6	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	18.8	0.0	1.6	0.0	7.9	0.0	0.5
%ile Storage Ratio (RQ%)	0.00	0.78	0.00	0.05	0.00	0.46	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	20.5
HCM 7th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	66	71	12	45	653	21	1271	603	43	1894	206
Future Volume (veh/h)	105	66	71	12	45	653	21	1271	603	43	1894	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	72	0	13	49	0	23	1382	0	47	2059	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	223	243		205	243		134	2105		277	2155	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.13	0.13	0.00	0.13	0.13	0.00	0.02	0.59	0.00	0.04	0.61	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	40.7	36.4	0.0	38.0	35.9	0.0	21.8	13.0	0.0	10.1	27.3	0.0
Ln Grp LOS	D	D		D	D		C	B		B	C	
Approach Vol, veh/h		186			62			1405			2106	
Approach Delay, s/veh		39.0			36.3			13.1			26.9	
Approach LOS		D			D			B			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		5.0	1.1	3.0		5.0
Phs Duration (G+Y+Rc), s	11.5	62.4		18.0	10.2	63.7		18.0
Change Period (Y+Rc), s	8.0	8.0		6.0	8.0	8.0		6.0
Max Green (Gmax), s	7.0	57.0		24.0	7.0	57.0		24.0
Max Allow Headway (MAH), s	2.6	3.7		3.4	2.6	3.7		4.0
Max Q Clear (g_c+I1), s	2.9	25.8		11.7	2.4	51.8		6.0
Green Ext Time (g_e), s	0.0	6.6		0.3	0.0	3.9		0.1
Prob of Phs Call (p_c)	0.70	1.00		1.00	0.44	1.00		1.00
Prob of Max Out (p_x)	0.06	0.01		0.00	0.01	0.91		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1781			1356	1781			1328

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

Lane Assignment	L (Pr/Pm)			LL (Pr/Pm)				L
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	47	0	0	114	23	0	0	13
Grp Sat Flow (s), veh/h/ln	1781	0	0	1356	1781	0	0	1328
Q Serve Time (g_s), s	0.9	0.0	0.0	7.5	0.4	0.0	0.0	0.8
Cycle Q Clear Time (g_c), s	0.9	0.0	0.0	9.7	0.4	0.0	0.0	4.0
Perm LT Sat Flow (s_l), veh/h/ln	392	0	0	1356	203	0	0	1328
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	54.4	0.0	0.0	12.0	55.7	0.0	0.0	12.0
Perm LT Serve Time (g_u), s	30.6	0.0	0.0	9.8	5.9	0.0	0.0	8.8
Perm LT Q Serve Time (g_ps), s	3.2	0.0	0.0	7.5	5.9	0.0	0.0	0.8
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	277	0	0	223	134	0	0	205
V/C Ratio (X)	0.17	0.00	0.00	0.51	0.17	0.00	0.00	0.06
Avail Cap (c_a), veh/h	345	0	0	401	227	0	0	379
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	10.0	0.0	0.0	40.0	21.6	0.0	0.0	38.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.7	0.2	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	10.1	0.0	0.0	40.7	21.8	0.0	0.0	38.0
1st-Term Q (Q1), veh/ln	0.3	0.0	0.0	2.5	0.3	0.0	0.0	0.3
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.3	0.0	0.0	2.5	0.3	0.0	0.0	0.3
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.21	0.02	0.00	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	1382	0	72	0	2059	0	49
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	23.8	0.0	3.2	0.0	49.8	0.0	2.2
Cycle Q Clear Time (g_c), s	0.0	23.8	0.0	3.2	0.0	49.8	0.0	2.2
Lane Grp Cap (c), veh/h	0	2105	0	243	0	2155	0	243
V/C Ratio (X)	0.00	0.66	0.00	0.30	0.00	0.96	0.00	0.20
Avail Cap (c_a), veh/h	0	2204	0	488	0	2204	0	488
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	12.5	0.0	36.2	0.0	16.9	0.0	35.7
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.2	0.0	10.4	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	13.0	0.0	36.4	0.0	27.3	0.0	35.9
1st-Term Q (Q1), veh/ln	0.0	7.2	0.0	1.4	0.0	14.8	0.0	1.0

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	3.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	7.4	0.0	1.5	0.0	17.9	0.0	1.0
%ile Storage Ratio (RQ%)	0.00	0.23	0.00	0.10	0.00	0.54	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	939	0	206	0	961	0	206
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	983	0	414	0	983	0	414
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	22.5
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	8	6	68	21	3
Future Vol, veh/h	41	8	6	68	21	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	9	7	74	23	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	53	0	136	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	87	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1552	-	858	1020
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1552	-	854	1020
Mov Cap-2 Maneuver	-	-	-	-	854	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	932	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.59	9.26
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	872	-	-	146	-
HCM Lane V/C Ratio	0.03	-	-	0.004	-
HCM Control Delay (s/veh)	9.3	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	18	59	3	8	2	24	2	0	2	0	0
Future Vol, veh/h	20	18	59	3	8	2	24	2	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	260	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	20	64	3	9	2	26	2	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	11	0	0	20	0	0	78	80	20	80	79	10
Stage 1	-	-	-	-	-	-	63	63	-	16	16	-
Stage 2	-	-	-	-	-	-	15	17	-	64	63	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1608	-	-	1597	-	-	911	810	1058	908	811	1072
Stage 1	-	-	-	-	-	-	948	842	-	1003	882	-
Stage 2	-	-	-	-	-	-	1005	881	-	947	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1608	-	-	1597	-	-	896	797	1058	890	798	1072
Mov Cap-2 Maneuver	-	-	-	-	-	-	896	797	-	890	798	-
Stage 1	-	-	-	-	-	-	934	830	-	1001	880	-
Stage 2	-	-	-	-	-	-	1003	879	-	931	830	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.5	1.68	9.19	9.05
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	887	947	-	-	399	-	-	890
HCM Lane V/C Ratio	0.032	0.014	-	-	0.002	-	-	0.002
HCM Control Delay (s/veh)	9.2	7.3	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	42	1110	30	56	649
Future Vol, veh/h	9	42	1110	30	56	649
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	80	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	46	1207	33	61	705

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2034	1207	0	0	1239	0
Stage 1	1207	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	63	224	-	-	562	-
Stage 1	283	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	56	224	-	-	562	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	283	-	-	-	-	-
Stage 2	383	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	27.78	0	0.97
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	213	562	-
HCM Lane V/C Ratio	-	-	0.261	0.108	-
HCM Control Delay (s/veh)	-	-	27.8	12.2	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	1	0.4	-

Intersection	
Intersection Delay, s/veh	126.7
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	561	126	1847	998
Demand Flow Rate, veh/h	566	127	1866	1008
Vehicles Circulating, veh/h	78	1803	225	482
Vehicles Exiting, veh/h	482	288	76	1448
Ped Vol Crossing Leg, #/h	0	0	1	0
Ped Cap Adj	1.000	1.000	0.999	1.000
Approach Delay, s/veh	1.6	22.0	198.3	77.8
Approach LOS	A	C	F	F

Lane	Left	Bypass	Left	Left	Right	Left	Right	Bypass
Designated Moves	LT	R	LTR	LT	R	LT	TR	R
Assumed Moves	LT		LTR	LT	R	LT	TR	
RT Channelized		Free						Yield
Lane Util	1.000		1.000	0.863	0.137	0.474	0.526	
Follow-Up Headway, s	2.535		2.535	2.667	2.535	2.667	2.535	2.609
Critical Headway, s	4.328		4.328	4.645	4.328	4.645	4.328	4.976
A (Intercept)	1420		1420	1350	1420	1350	1420	1380
B (Slope)	8.501e-4		8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	1.02e-3
Entry Flow, veh/h	223	343	127	1610	256	37	41	930
Cap Entry Lane, veh/h	1329	1919	307	1097	1173	866	943	844
Entry HV Adj Factor	0.990	0.990	0.992	0.990	0.988	0.981	0.999	0.990
Flow Entry, veh/h	221	340	126	1594	253	36	41	921
Cap Entry, veh/h	1315	1900	304	1085	1158	850	941	836
V/C Ratio	0.168	0.179	0.414	1.468	0.218	0.043	0.043	1.102
Control Delay, s/veh	4.1	0.0	22.0	229.0	5.1	4.6	4.2	83.9
LOS	A	A	C	F	A	A	A	F
95th %tile Queue, veh	1	1	2	72	1	0	0	25

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	880	1009	18	137	612	182	11	488	228	127	397	487
Future Volume (veh/h)	880	1009	18	137	612	182	11	488	228	127	397	487
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	957	1097	0	149	665	0	12	530	0	138	432	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	603	1686		149	1364		24	326		124	432	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.17	0.47	0.00	0.08	0.38	0.00	0.01	0.17	0.00	0.07	0.23	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	331.3	30.6	0.0	139.0	34.7	0.0	76.4	353.8	0.0	180.0	98.4	0.0
Ln Grp LOS	F	C		F	C		E	F		F	F	
Approach Vol, veh/h		2054			814			542			570	
Approach Delay, s/veh		170.7			53.8			347.6			118.1	
Approach LOS		F			D			F			F	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	20.2	75.0	8.7	39.4	33.2	62.0	16.8	31.3
Change Period (Y+Rc), s	8.2	7.0	6.8	* 6.3	8.2	7.0	6.8	* 6.3
Max Green (Gmax), s	12.0	55.0	10.0	* 25	25.0	55.0	10.0	* 25
Max Allow Headway (MAH), s	2.6	7.7	1.7	3.9	2.6	7.7	2.7	3.9
Max Q Clear (g_c+I1), s	14.0	35.6	3.0	35.1	27.0	22.3	12.0	27.0
Green Ext Time (g_e), s	0.0	13.3	0.0	0.0	0.0	10.8	0.0	0.0
Prob of Phs Call (p_c)	1.00	1.00	0.38	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		3456		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

Lane Assignment	L (Prot)		L (Prot)		L (Prot)		L (Prot)	
Lanes in Grp	1	0	1	0	2	0	1	0
Grp Vol (v), veh/h	149	0	12	0	957	0	138	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1728	0	1781	0
Q Serve Time (g_s), s	12.0	0.0	1.0	0.0	25.0	0.0	10.0	0.0
Cycle Q Clear Time (g_c), s	12.0	0.0	1.0	0.0	25.0	0.0	10.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	149	0	24	0	603	0	124	0
V/C Ratio (X)	1.00	0.00	0.51	0.00	1.59	0.00	1.11	0.00
Avail Cap (c_a), veh/h	149	0	124	0	603	0	124	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	65.6	0.0	70.2	0.0	59.1	0.0	66.6	0.0
Incr Delay (d2), s/veh	73.3	0.0	6.1	0.0	272.2	0.0	113.4	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	139.0	0.0	76.4	0.0	331.3	0.0	180.0	0.0
1st-Term Q (Q1), veh/ln	5.3	0.0	0.4	0.0	10.5	0.0	4.5	0.0
2nd-Term Q (Q2), veh/ln	3.0	0.0	0.0	0.0	22.8	0.0	3.9	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	8.3	0.0	0.5	0.0	33.3	0.0	8.4	0.0
%ile Storage Ratio (RQ%)	0.21	0.00	0.04	0.00	0.85	0.00	0.32	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	88.5	0.0	3.4	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	1097	0	432	0	665	0	530
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	33.6	0.0	33.1	0.0	20.3	0.0	25.0
Cycle Q Clear Time (g_c), s	0.0	33.6	0.0	33.1	0.0	20.3	0.0	25.0
Lane Grp Cap (c), veh/h	0	1686	0	432	0	1364	0	326
V/C Ratio (X)	0.00	0.65	0.00	1.00	0.00	0.49	0.00	1.62
Avail Cap (c_a), veh/h	0	1686	0	432	0	1364	0	326
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	28.6	0.0	55.1	0.0	33.5	0.0	59.1
Incr Delay (d2), s/veh	0.0	2.0	0.0	43.3	0.0	1.2	0.0	294.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	30.6	0.0	98.4	0.0	34.7	0.0	353.8
1st-Term Q (Q1), veh/ln	0.0	13.4	0.0	15.2	0.0	8.4	0.0	11.6

2nd-Term Q (Q2), veh/ln	0.0	0.5	0.0	5.2	0.0	0.2	0.0	26.7
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	13.9	0.0	20.4	0.0	8.6	0.0	38.3
%ile Storage Ratio (RQ%)	0.00	0.24	0.00	0.77	0.00	0.16	0.00	2.45
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.9
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	752	0	366	0	608	0	277
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	752	0	366	0	608	0	277
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	163.4
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↳		↰	↳		↰	↑	↱
Traffic Vol, veh/h	84	25	45	2	39	18	72	662	49	7	118	562
Future Vol, veh/h	84	25	45	2	39	18	72	662	49	7	118	562
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Yield
Storage Length	-	-	100	-	-	-	150	-	-	240	-	245
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	92	27	49	2	43	20	79	727	54	8	130	618

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1054	1086	131	1071	1059	-	131	0	0	781	0	0
Stage 1	146	146	-	913	913	-	-	-	-	-	-	-
Stage 2	908	940	-	159	146	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	-	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	-	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	205	217	922	199	225	0	1461	-	-	841	-	-
Stage 1	859	778	-	329	354	0	-	-	-	-	-	-
Stage 2	331	344	-	846	778	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	203	921	154	211	-	1459	-	-	841	-	-
Mov Cap-2 Maneuver	155	203	-	154	211	-	-	-	-	-	-	-
Stage 1	850	770	-	311	335	-	-	-	-	-	-	-
Stage 2	273	325	-	765	770	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.96	26.35	0.7	0.09
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1459	-	-	203	921	211	841	-	-
HCM Lane V/C Ratio	0.054	-	-	0.135	0.054	0.203	0.009	-	-
HCM Control Delay (s/veh)	7.6	-	-	25.4	9.1	26.4	9.3	-	-
HCM Lane LOS	A	-	-	D	A	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.2	0.7	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	77	80	719	674	41
Future Vol, veh/h	47	77	80	719	674	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	240	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	85	88	790	741	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1729	763	786	0	-	0
Stage 1	763	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	97	404	833	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	79	404	833	-	-	-
Mov Cap-2 Maneuver	79	-	-	-	-	-
Stage 1	374	-	-	-	-	-
Stage 2	369	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	52.78	0.98	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	180	-	79	404	-	-
HCM Lane V/C Ratio	0.106	-	0.655	0.209	-	-
HCM Control Delay (s/veh)	9.8	0	112.6	16.2	-	-
HCM Lane LOS	A	A	F	C	-	-
HCM 95th %tile Q(veh)	0.4	-	3	0.8	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	6	5	0	2	0	0	8	3	2	6	0
Future Vol, veh/h	6	6	5	0	2	0	0	8	3	2	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	7	5	0	2	0	0	9	3	2	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	12	0	0	28	24	9	26	27	2
Stage 1	-	-	-	-	-	-	22	22	-	2	2	-
Stage 2	-	-	-	-	-	-	5	2	-	24	25	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1607	-	-	982	869	1072	984	866	1082
Stage 1	-	-	-	-	-	-	996	877	-	1021	894	-
Stage 2	-	-	-	-	-	-	1017	894	-	994	874	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1607	-	-	971	865	1072	968	862	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	971	865	-	968	862	-
Stage 1	-	-	-	-	-	-	992	873	-	1021	894	-
Stage 2	-	-	-	-	-	-	1009	894	-	977	871	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	2.55	0	8.99	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	913	582	-	-	1607	-	-	887
HCM Lane V/C Ratio	0.013	0.004	-	-	-	-	-	0.01
HCM Control Delay (s/veh)	9	7.2	0	-	0	-	-	9.1
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	129	598	99	0	98
Future Vol, veh/h	54	129	598	99	0	98
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	62	148	687	114	0	113

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	862	749	0	0	806	0
Stage 1	749	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	327	413	-	-	823	-
Stage 1	469	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	325	411	-	-	819	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	915	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	18.62	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	325	411	819	-
HCM Lane V/C Ratio	-	-	0.191	0.36	-	-
HCM Control Delay (s/veh)	-	-	18.7	18.6	0	-
HCM Lane LOS	-	-	C	C	A	-
HCM 95th %tile Q(veh)	-	-	0.7	1.6	0	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	65	26	6	39	117	12	44	35	12	30	33
Future Vol, veh/h	12	65	26	6	39	117	12	44	35	12	30	33
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	71	29	7	43	129	13	48	38	13	33	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.1	8.1	8.1	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	12%	4%	16%
Vol Thru, %	48%	63%	24%	40%
Vol Right, %	38%	25%	72%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	103	162	75
LT Vol	12	12	6	12
Through Vol	44	65	39	30
RT Vol	35	26	117	33
Lane Flow Rate	100	113	178	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.124	0.138	0.2	0.102
Departure Headway (Hd)	4.45	4.404	4.049	4.443
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	806	815	887	807
Service Time	2.475	2.428	2.07	2.469
HCM Lane V/C Ratio	0.124	0.139	0.201	0.102
HCM Control Delay, s/veh	8.1	8.1	8.1	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.5	0.7	0.3

Intersection	
Int Delay, s/veh	49.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	156	69	78	612	590	131
Future Vol, veh/h	156	69	78	612	590	131
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	164	73	82	644	621	138

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1498	690	759	0	-	0
Stage 1	690	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	~ 134	443	848	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 114	443	848	-	-	-
Mov Cap-2 Maneuver	~ 114	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	437	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 356.6	1.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	203	-	147	-	-
HCM Lane V/C Ratio	0.097	-	1.607	-	-
HCM Control Delay (s/veh)	9.7	0	$ 356.6	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	16.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

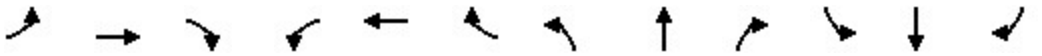
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	410	463	15	16	3
Future Vol, veh/h	7	410	463	15	16	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	446	503	16	17	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	972	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	461	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1047	-	-	-	280	562
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1047	-	-	-	277	562
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	635	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.14	0	17.82
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	30	-	-	-	301
HCM Lane V/C Ratio	0.007	-	-	-	0.069
HCM Control Delay (s/veh)	8.5	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	416	162	298	418	119	233	1850	582	177	1056	156
Future Volume (veh/h)	168	416	162	298	418	119	233	1850	582	177	1056	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	452	0	324	454	0	253	2011	0	192	1148	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	94	423		182	423		291	1385		219	1198	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.23	0.00	0.05	0.23	0.00	0.13	0.39	0.00	0.09	0.34	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	522.0	108.6	0.0	430.1	110.2	0.0	40.4	243.3	0.0	74.8	55.9	0.0
Ln Grp LOS	F	F		F	F		D	F		E	E	
Approach Vol, veh/h		635			778			2264			1340	
Approach Delay, s/veh		227.8			243.4			220.6			58.6	
Approach LOS		F			F			F			E	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	2	1	3	4	5	6	7	8
Case No	3.0	1.3	2.0	3.0	1.2	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	53.0	19.0	13.0	33.0	23.7	48.3	13.0	33.0
Change Period (Y+Rc), s	7.0	8.5	6.8	* 6.3	8.5	* 8.5	6.8	* 6.3
Max Green (Gmax), s	46.0	12.5	6.2	* 27	25.5	* 33	6.2	* 27
Max Allow Headway (MAH), s	7.7	2.6	2.6	3.7	2.6	7.7	2.6	3.7
Max Q Clear (g_c+I1), s	48.0	10.5	8.2	28.7	15.0	39.3	8.2	28.7
Green Ext Time (g_e), s	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0
Prob of Phs Call (p_c)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00

Left-Turn Movement Data								
Assigned Mvmt		1	3		5		7	
Mvmt Sat Flow, veh/h		1781	3456		1781		1781	

Through Movement Data								
Assigned Mvmt	2			4		6		8
Mvmt Sat Flow, veh/h	3554			1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt	12			14		16		18
Mvmt Sat Flow, veh/h	1585			1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	1	3	0	5	0	7	0

Lane Assignment	L (Pr/Pm)	L (Prot)		L (Pr/Pm)		L (Prot)		
Lanes in Grp	0	1	2	0	1	0	1	0
Grp Vol (v), veh/h	0	192	324	0	253	0	183	0
Grp Sat Flow (s), veh/h/ln	0	1781	1728	0	1781	0	1781	0
Q Serve Time (g_s), s	0.0	8.5	6.2	0.0	13.0	0.0	6.2	0.0
Cycle Q Clear Time (g_c), s	0.0	8.5	6.2	0.0	13.0	0.0	6.2	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	213	0	0	490	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	20.3	0.0	0.0	24.3	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	0	219	182	0	291	0	94	0
V/C Ratio (X)	0.00	0.88	1.78	0.00	0.87	0.00	1.96	0.00
Avail Cap (c_a), veh/h	0	250	182	0	446	0	94	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	0.0	51.5	55.9	0.0	32.9	0.0	55.9	0.0
Incr Delay (d2), s/veh	0.0	23.4	374.2	0.0	7.5	0.0	466.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	74.8	430.1	0.0	40.4	0.0	522.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.1	2.6	0.0	5.2	0.0	2.7	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.4	9.4	0.0	0.6	0.0	12.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	6.5	12.0	0.0	5.8	0.0	14.8	0.0
%ile Storage Ratio (RQ%)	0.00	0.16	1.33	0.00	0.15	0.00	0.70	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	35.6	0.0	0.0	0.0	22.3	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.4	0.0	0.0	0.0	0.5	0.0

Middle Lane Group Data								
Assigned Mvmt	2	0	0	4	0	6	0	8
Lane Assignment	T			T		T		T
Lanes in Grp	2	0	0	1	0	2	0	1
Grp Vol (v), veh/h	2011	0	0	452	0	1148	0	454
Grp Sat Flow (s), veh/h/ln	1777	0	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	46.0	0.0	0.0	26.7	0.0	37.3	0.0	26.7
Cycle Q Clear Time (g_c), s	46.0	0.0	0.0	26.7	0.0	37.3	0.0	26.7
Lane Grp Cap (c), veh/h	1385	0	0	423	0	1198	0	423
V/C Ratio (X)	1.45	0.00	0.00	1.07	0.00	0.96	0.00	1.07
Avail Cap (c_a), veh/h	1385	0	0	423	0	1198	0	423
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	36.0	0.0	0.0	45.6	0.0	38.3	0.0	45.6
Incr Delay (d2), s/veh	207.3	0.0	0.0	63.0	0.0	17.6	0.0	64.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	243.3	0.0	0.0	108.6	0.0	55.9	0.0	110.2
1st-Term Q (Q1), veh/ln	18.1	0.0	0.0	11.7	0.0	15.0	0.0	11.7

2nd-Term Q (Q2), veh/ln	39.9	0.0	0.0	7.4	0.0	2.9	0.0	7.6
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	58.0	0.0	0.0	19.1	0.0	17.9	0.0	19.2
%ile Storage Ratio (RQ%)	0.58	0.00	0.00	0.30	0.00	0.24	0.00	0.57
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	156.4	0.0	0.0	7.2	0.0	0.0	0.0	7.7
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.3

Right Lane Group Data								
Assigned Mvmt	12	0	0	14	0	16	0	18
Lane Assignment	R			R		R		R
Lanes in Grp	1	0	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1585	0	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	618	0	0	359	0	534	0	359
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	618	0	0	359	0	534	0	359
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	181.8
HCM 7th LOS	F

Notes

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1626.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	241	695	95	55	528	84	100	23	60	182	19	167
Future Vol, veh/h	241	695	95	55	528	84	100	23	60	182	19	167
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Yield
Storage Length	180	-	-	300	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	262	755	103	60	574	91	109	25	65	198	21	182

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	665	0	-	755	0	0	1983	2064	755	2031	2018	620
Stage 1	-	-	-	-	-	-	1279	1279	-	739	739	-
Stage 2	-	-	-	-	-	-	704	785	-	1292	1279	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	924	-	0	855	-	-	~ 46	55	408	~ 42	58	488
Stage 1	-	-	0	-	-	-	204	237	-	409	424	-
Stage 2	-	-	0	-	-	-	428	404	-	200	237	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	924	-	-	855	-	-	~ 11	36	408	~ 10	39	488
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 11	36	-	~ 10	39	-
Stage 1	-	-	-	-	-	-	146	170	-	380	394	-
Stage 2	-	-	-	-	-	-	237	376	-	~ 103	170	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	2.69	0.79	$ 4811.66	$ 7120.13
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	18	924	-	855	-	-	10	19
HCM Lane V/C Ratio	10.791	0.284	-	0.07	-	-	20.549	10.655
HCM Control Delay (s/veh)	$ 4811.7	10.4	-	9.5	-	-	$ 9552.9	$ 4739.7
HCM Lane LOS	F	B	-	A	-	-	F	F
HCM 95th %tile Q(veh)	25.5	1.2	-	0.2	-	-	26.3	25.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Traffic Vol, veh/h	0	676	525	20	0	11
Future Vol, veh/h	0	676	525	20	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	735	571	22	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	571
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	521
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	521
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	12.08
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	521
HCM Lane V/C Ratio	-	-	-	0.023
HCM Control Delay (s/veh)	-	-	-	12.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	519	69	137	384	188	115	248	122	255	231	131
Future Volume (veh/h)	164	519	69	137	384	188	115	248	122	255	231	131
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	178	564	24	149	417	58	125	270	109	277	251	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	315	597	25	198	607	515	121	261	329	198	180	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.34	0.34	0.07	0.32	0.32	0.21	0.21	0.21	0.21	0.21	0.21
Unsig. Movement Delay												
Ln Grp Delay, s/veh	34.0	0.0	70.8	46.7	47.7	34.6	112.4	0.0	49.0	251.1	0.0	47.6
Ln Grp LOS	C		E	D	D	C	F		D	F		D
Approach Vol, veh/h		766			624			504			596	
Approach Delay, s/veh		62.2			46.3			98.7			227.9	
Approach LOS		E			D			F			F	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	11.0	11.0	1.1	3.0		
Phs Duration (G+Y+Rc), s	17.1	54.5	36.5	36.5	18.6	53.0		
Change Period (Y+Rc), s	6.9	6.0	6.5	6.5	6.9	6.0		
Max Green (Gmax), s	15.0	50.0	30.0	30.0	15.0	50.0		
Max Allow Headway (MAH), s	4.7	7.7	3.3	3.4	4.6	7.9		
Max Q Clear (g_c+I1), s	10.0	46.5	32.0	32.0	11.5	30.0		
Green Ext Time (g_e), s	0.2	2.0	0.0	0.0	0.2	6.0		
Prob of Phs Call (p_c)	1.00	1.00	1.00	1.00	1.00	1.00		
Prob of Max Out (p_x)	0.83	1.00	1.00	1.00	1.00	0.24		

Left-Turn Movement Data												
Assigned Mvmt		1		3	7	5						
Mvmt Sat Flow, veh/h		1781		956	583	1781						

Through Movement Data												
Assigned Mvmt			2	8	4		6					
Mvmt Sat Flow, veh/h			1781	866	1259		1870					

Right-Turn Movement Data												
Assigned Mvmt			12	18	14		16					
Mvmt Sat Flow, veh/h			76	1585	1585		1585					

Left Lane Group Data												
Assigned Mvmt		1	0	3	7	5	0	0	0			

Lane Assignment	L (Pr/Pm)		L+T	L+TL (Pr/Pm)				
Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	149	0	528	395	178	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1823	1841	1781	0	0	0
Q Serve Time (g_s), s	8.0	0.0	30.0	30.0	9.5	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	8.0	0.0	30.0	30.0	9.5	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	828	0	0	0	919	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	47.0	0.0	0.0	0.0	47.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	4.0	0.0	0.0	0.0	18.9	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	4.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.52	0.32	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	198	0	378	382	315	0	0	0
V/C Ratio (X)	0.75	0.00	1.40	1.03	0.57	0.00	0.00	0.00
Avail Cap (c_a), veh/h	257	0	378	382	355	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	36.2	0.0	57.3	57.3	31.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	10.5	0.0	193.8	55.1	2.3	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	46.7	0.0	251.1	112.4	34.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	3.4	0.0	13.5	13.8	3.9	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.6	0.0	20.4	5.8	0.2	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	4.0	0.0	33.8	19.7	4.1	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.42	0.00	0.33	1.15	0.42	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	37.5	3.3	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment						T		
Lanes in Grp	0	0	0	0	0	1	0	0
Grp Vol (v), veh/h	0	0	0	0	0	417	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	1870	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	28.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	28.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	607	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	647	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	42.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	47.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	13.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	R	R		R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	588	68	109	0	58	0	0
Grp Sat Flow (s), veh/h/ln	0	1857	1585	1585	0	1585	0	0
Q Serve Time (g_s), s	0.0	44.5	5.1	8.5	0.0	3.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	44.5	5.1	8.5	0.0	3.7	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.04	1.00	1.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	623	329	329	0	515	0	0
V/C Ratio (X)	0.00	0.94	0.21	0.33	0.00	0.11	0.00	0.00
Avail Cap (c_a), veh/h	0	642	329	329	0	548	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	46.7	47.4	48.8	0.0	34.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	24.0	0.1	0.2	0.0	0.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	70.8	47.6	49.0	0.0	34.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	19.5	2.0	3.3	0.0	1.4	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	23.7	2.0	3.3	0.0	1.5	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.48	0.22	0.19	0.00	0.06	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	105.3
HCM 7th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	454	43	4	62	427	62	45	35	20	33	57
Future Volume (veh/h)	73	454	43	4	62	427	62	45	35	20	33	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	0.99		0.98	0.99		0.98	0.98		0.98	0.99		0.98
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	87	540	14	5	74	145	74	54	15	24	39	23
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	578	795	664	325	201	394	268	175	39	160	222	105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.43	0.43	0.01	0.36	0.36	0.24	0.24	0.24	0.24	0.24	0.24
Unsig. Movement Delay												
Ln Grp Delay, s/veh	8.4	13.3	8.0	9.1	0.0	12.1	16.0	0.0	0.0	15.1	0.0	0.0
Ln Grp LOS	A	B	A	A		B	B			B		
Approach Vol, veh/h		641			224			143			86	
Approach Delay, s/veh		12.5			12.0			16.0			15.1	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Case No	1.1	3.0		8.0	1.1	4.0		8.0
Phs Duration (G+Y+Rc), s	4.3	26.8		17.1	7.4	23.7		17.1
Change Period (Y+Rc), s	4.0	6.1		5.7	4.0	6.1		5.7
Max Green (Gmax), s	5.0	35.0		30.0	5.0	35.0		30.0
Max Allow Headway (MAH), s	1.7	7.0		7.5	1.7	7.3		7.5
Max Q Clear (g_c+I1), s	2.1	13.3		3.9	3.4	6.7		5.4
Green Ext Time (g_e), s	0.0	6.3		0.8	0.0	2.5		1.5
Prob of Phs Call (p_c)	0.06	1.00		0.96	0.69	1.00		0.96
Prob of Max Out (p_x)	0.01	0.17		0.00	1.00	0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7	5			3
Mvmt Sat Flow, veh/h	1767			273	1767			652

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1856		936		553		737

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1549		441		1084		163

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	5	0	0	3

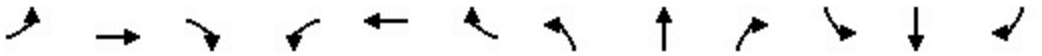
Lane Assignment	L (Pr/Pm)			L+T+R	L (Pr/Pm)			L+T+R
Lanes in Grp	1	0	0	1	1	0	0	1
Grp Vol (v), veh/h	5	0	0	86	87	0	0	143
Grp Sat Flow (s), veh/h/ln	1767	0	0	1650	1767	0	0	1552
Q Serve Time (g_s), s	0.1	0.0	0.0	0.0	1.4	0.0	0.0	1.5
Cycle Q Clear Time (g_c), s	0.1	0.0	0.0	1.9	1.4	0.0	0.0	3.4
Perm LT Sat Flow (s_l), veh/h/ln	843	0	0	1333	1140	0	0	1340
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1822	0	0	0	1793
Perm LT Eff Green (g_p), s	20.7	0.0	0.0	11.4	17.6	0.0	0.0	11.4
Perm LT Serve Time (g_u), s	9.4	0.0	0.0	8.0	12.8	0.0	0.0	9.6
Perm LT Q Serve Time (g_ps), s	0.1	0.0	0.0	0.0	0.4	0.0	0.0	1.5
Time to First Blk (g_f), s	0.0	0.0	0.0	4.4	0.0	0.0	0.0	1.8
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	1.9	0.0	0.0	0.0	1.8
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.28	1.00	0.00	0.00	0.52
Lane Grp Cap (c), veh/h	325	0	0	487	578	0	0	481
V/C Ratio (X)	0.02	0.00	0.00	0.18	0.15	0.00	0.00	0.30
Avail Cap (c_a), veh/h	496	0	0	1095	635	0	0	1058
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	9.0	0.0	0.0	14.8	8.3	0.0	0.0	15.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	9.1	0.0	0.0	15.1	8.4	0.0	0.0	16.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.7	0.4	0.0	0.0	1.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.7	0.4	0.0	0.0	1.3
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.06	0.10	0.00	0.00	0.11
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	540	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	795	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1346	0	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	13.3	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	14	0	0	0	219	0	0
Grp Sat Flow (s), veh/h/ln	0	1549	0	0	0	1637	0	0
Q Serve Time (g_s), s	0.0	0.3	0.0	0.0	0.0	4.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.3	0.0	0.0	0.0	4.7	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.27	0.00	0.66	0.00	0.10
Lane Grp Cap (c), veh/h	0	664	0	0	0	596	0	0
V/C Ratio (X)	0.00	0.02	0.00	0.00	0.00	0.37	0.00	0.00
Avail Cap (c_a), veh/h	0	1124	0	0	0	1188	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	7.9	0.0	0.0	0.0	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.0	0.0	0.0	0.0	12.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.0	0.0	1.3	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.0	0.0	1.4	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	13.1
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	517	11	27	14	528	17	26	17	18	50	32
Future Volume (veh/h)	48	517	11	27	14	528	17	26	17	18	50	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	0.99		0.98	0.99		0.98	0.97		0.96	0.97		0.96
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	562	3	29	15	164	18	28	6	20	54	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	648	894	5	371	64	695	208	283	50	154	334	64
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.26	0.26	0.26	0.26	0.26	0.26
Unsig. Movement Delay												
Ln Grp Delay, s/veh	8.5	0.0	11.5	13.6	0.0	7.6	13.2	0.0	0.0	13.6	0.0	0.0
Ln Grp LOS	A		B	B		A	B			B		
Approach Vol, veh/h		617			208			52			86	
Approach Delay, s/veh		11.3			8.4			13.2			13.6	
Approach LOS		B			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		28.4		17.9		28.4		17.9
Change Period (Y+Rc), s		6.1		5.7		6.1		5.7
Max Green (Gmax), s		34.5		30.5		34.5		30.5
Max Allow Headway (MAH), s		7.9		8.5		8.4		8.5
Max Q Clear (g_c+I1), s		12.4		3.7		13.6		3.0
Green Ext Time (g_e), s		8.8		1.0		2.6		0.5
Prob of Phs Call (p_c)		1.00		0.87		1.00		0.87
Prob of Max Out (p_x)		0.33		0.00		0.05		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1188		219		840		392

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1858		1267		132		1071

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		10		241		1444		191

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L+T+R		L		L+T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	52	0	86	0	29	0	52
Grp Sat Flow (s), veh/h/ln	0	1188	0	1727	0	840	0	1653
Q Serve Time (g_s), s	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	4.3	0.0	1.7	0.0	11.6	0.0	1.0
Perm LT Sat Flow (s_l), veh/h/ln	0	1188	0	1350	0	840	0	1315
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1834	0	0	0	1818
Perm LT Eff Green (g_p), s	0.0	22.3	0.0	12.2	0.0	22.3	0.0	12.2
Perm LT Serve Time (g_u), s	0.0	19.2	0.0	11.2	0.0	11.9	0.0	10.5
Perm LT Q Serve Time (g_ps), s	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	5.3	0.0	0.0	0.0	3.5
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.23	0.00	1.00	0.00	0.35
Lane Grp Cap (c), veh/h	0	648	0	552	0	371	0	541
V/C Ratio (X)	0.00	0.08	0.00	0.16	0.00	0.08	0.00	0.10
Avail Cap (c_a), veh/h	0	962	0	1208	0	593	0	1168
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	8.3	0.0	13.2	0.0	13.3	0.0	12.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.5	0.0	0.3	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.5	0.0	13.6	0.0	13.6	0.0	13.2
1st-Term Q (Q1), veh/ln	0.0	0.2	0.0	0.6	0.0	0.2	0.0	0.4
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.3	0.0	0.7	0.0	0.2	0.0	0.4
%ile Storage Ratio (RQ%)	0.00	0.09	0.00	0.01	0.00	0.07	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	565	0	0	0	179	0	0
Grp Sat Flow (s), veh/h/ln	0	1868	0	0	0	1576	0	0
Q Serve Time (g_s), s	0.0	10.4	0.0	0.0	0.0	3.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	10.4	0.0	0.0	0.0	3.1	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.01	0.00	0.14	0.00	0.92	0.00	0.12
Lane Grp Cap (c), veh/h	0	899	0	0	0	758	0	0
V/C Ratio (X)	0.00	0.63	0.00	0.00	0.00	0.24	0.00	0.00
Avail Cap (c_a), veh/h	0	1393	0	0	0	1175	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	8.9	0.0	0.0	0.0	7.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.6	0.0	0.0	0.0	0.6	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.5	0.0	0.0	0.0	7.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	2.7	0.0	0.0	0.0	0.7	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.7	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.4	0.0	0.0	0.0	0.8	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	11.0
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	26.0
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	652	846	370	553
Demand Flow Rate, veh/h	666	863	378	564
Vehicles Circulating, veh/h	425	414	777	597
Vehicles Exiting, veh/h	736	644	314	680
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	18.8	41.5	9.6	21.9
Approach LOS	C	E	A	C

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
A (Intercept)	1380	1380	1380		1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3		1.02e-3
Entry Flow, veh/h	666	863	281	97	564
Cap Entry Lane, veh/h	895	905	625	1938	751
Entry HV Adj Factor	0.980	0.981	0.979	0.980	0.980
Flow Entry, veh/h	652	846	275	95	553
Cap Entry, veh/h	876	887	612	1900	736
V/C Ratio	0.745	0.954	0.450	0.050	0.751
Control Delay, s/veh	18.8	41.5	12.9	0.0	21.9
LOS	C	E	B	A	C
95th %tile Queue, veh	7	15	2	0	7

Intersection	
Int Delay, s/veh	15.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	876	69	67	871	61	38
Future Vol, veh/h	876	69	67	871	61	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	952	75	73	947	66	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1027	0	2045	952
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	1092	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	676	-	~ 62	315
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	321	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	676	-	~ 55	315
Mov Cap-2 Maneuver	-	-	-	-	~ 55	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	287	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.78	$ 305.52
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	81	-	-	676	-
HCM Lane V/C Ratio	1.335	-	-	0.108	-
HCM Control Delay (s/veh)	$ 305.5	-	-	11	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	8.3	-	-	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2950.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	609	329	190	637	17	403	88	196	8	42	17
Future Vol, veh/h	8	609	329	190	637	17	403	88	196	8	42	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	662	358	207	692	18	438	96	213	9	46	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	711	0	0	1020	0	0	1986	1982	841	1842	2152	702
Stage 1	-	-	-	-	-	-	858	858	-	1115	1115	-
Stage 2	-	-	-	-	-	-	1128	1124	-	727	1037	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	889	-	-	681	-	-	~ 46	~ 61	365	58	48	438
Stage 1	-	-	-	-	-	-	~ 351	374	-	253	283	-
Stage 2	-	-	-	-	-	-	~ 248	281	-	415	308	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	889	-	-	681	-	-	~ 21	~ 30	365	12	~ 23	438
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 21	~ 30	-	12	~ 23	-
Stage 1	-	-	-	-	-	-	~ 343	364	-	125	141	-
Stage 2	-	-	-	-	-	-	~ 80	139	-	124	301	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.08	2.83	$ 10815.71	$ 1103.64
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	30	14	-	-	403	-	-	26
HCM Lane V/C Ratio	24.491	0.01	-	-	0.303	-	-	2.751
HCM Control Delay (s/veh)	$ 10815.7	9.1	0	-	12.6	0	-	$ 1103.6
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	92.6	0	-	-	1.3	-	-	8.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	479	8	18	599	1	6	0	9	0	0	0
Future Vol, veh/h	11	479	8	18	599	1	6	0	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	521	9	20	651	1	7	0	10	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	652	0	0	529	0	0	1239	1240	525	1235	1244	652
Stage 1	-	-	-	-	-	-	549	549	-	691	691	-
Stage 2	-	-	-	-	-	-	690	691	-	545	553	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	934	-	-	1038	-	-	152	175	552	153	174	468
Stage 1	-	-	-	-	-	-	520	516	-	435	446	-
Stage 2	-	-	-	-	-	-	435	445	-	523	514	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	934	-	-	1038	-	-	145	167	552	143	166	468
Mov Cap-2 Maneuver	-	-	-	-	-	-	145	167	-	143	166	-
Stage 1	-	-	-	-	-	-	511	507	-	422	432	-
Stage 2	-	-	-	-	-	-	422	432	-	504	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	0.25	19.76	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	260	40	-	-	52	-	-	-
HCM Lane V/C Ratio	0.063	0.013	-	-	0.019	-	-	-
HCM Control Delay (s/veh)	19.8	8.9	0	-	8.5	0	-	0
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	15.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	67	539	28	0	52	342	84	41	107	0	35	54
Future Vol, veh/h	67	539	28	0	52	342	84	41	107	0	35	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	73	586	30	0	57	372	91	45	116	0	38	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	428	0	0	616	0	0	822	1175	601	996	1004	242
Stage 1	-	-	-	-	-	-	747	747	-	242	242	-
Stage 2	-	-	-	-	-	-	76	428	-	754	762	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1126	-	-	959	-	-	292	191	498	222	241	794
Stage 1	-	-	-	-	-	-	404	419	-	759	703	-
Stage 2	-	-	-	-	-	-	931	583	-	400	412	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1126	-	-	959	-	-	204	172	498	117	217	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	204	172	-	117	217	-
Stage 1	-	-	-	-	-	-	364	377	-	759	703	-
Stage 2	-	-	-	-	-	-	816	583	-	244	371	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.89	0	81.4	17.33
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	268	188	-	-	959	-	-	388
HCM Lane V/C Ratio	0.94	0.065	-	-	-	-	-	0.249
HCM Control Delay (s/veh)	81.4	8.4	0	-	0	-	-	17.3
HCM Lane LOS	F	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	8.8	0.2	-	-	0	-	-	1

Intersection	
Intersection Delay, s/veh	161.0
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	2	2	0	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1376	1552	0	994
Demand Flow Rate, veh/h	1403	1583	0	1013
Vehicles Circulating, veh/h	1198	0	1876	1583
Vehicles Exiting, veh/h	1398	1876	467	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	108.3	9.0	0.0	471.3
Approach LOS	F	A	-	F

Lane	Left	Right	Bypass	Left	Right	Left	Right
Designated Moves	LT	TR	R	LT	TR	LT	R
Assumed Moves	LT	TR		LT	TR	LT	R
RT Channelized			Free				
Lane Util	0.470	0.530		0.470	0.530	0.725	0.275
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328		4.645	4.328	4.645	4.328
A (Intercept)	1350	1420		1350	1420	1350	1420
B (Slope)	9.199e-4	8.501e-4		9.199e-4	8.501e-4	9.199e-4	8.501e-4
Entry Flow, veh/h	538	607	258	744	839	734	279
Cap Entry Lane, veh/h	448	513	1938	1350	1420	315	370
Entry HV Adj Factor	0.981	0.980	0.980	0.980	0.980	0.981	0.982
Flow Entry, veh/h	528	595	253	729	823	720	274
Cap Entry, veh/h	440	503	1900	1323	1392	309	363
V/C Ratio	1.200	1.184	0.133	0.551	0.591	2.332	0.755
Control Delay, s/veh	138.4	127.7	0.0	8.8	9.2	636.0	38.6
LOS	F	F	A	A	A	F	E
95th %tile Queue, veh	21	22	0	4	4	56	6

Intersection	
Intersection Delay, s/veh	119.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	2	3	2	0
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1845	0	859	0
Demand Flow Rate, veh/h	1882	0	876	0
Vehicles Circulating, veh/h	0	691	1882	1526
Vehicles Exiting, veh/h	1526	2067	0	969
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.5	0.0	350.4	0.0
Approach LOS	B	-	F	-

Lane	Left	Right	Left	Right
Designated Moves	LT	TR	LT	R
Assumed Moves	LT	TR	LT	R
RT Channelized				
Lane Util	0.470	0.530	0.451	0.549
Follow-Up Headway, s	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328
A (Intercept)	1350	1420	1350	1420
B (Slope)	9.199e-4	4.501e-4	9.199e-4	4.501e-4
Entry Flow, veh/h	885	997	395	481
Cap Entry Lane, veh/h	1350	1420	239	287
Entry HV Adj Factor	0.980	0.981	0.980	0.981
Flow Entry, veh/h	867	978	387	472
Cap Entry, veh/h	1323	1393	234	281
V/C Ratio	0.656	0.702	1.653	1.678
Control Delay, s/veh	11.0	11.9	348.8	351.6
LOS	B	B	F	F
95th %tile Queue, veh	5	6	25	30

Intersection	
Int Delay, s/veh	228.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	551	139	17	28	99	9	19	42	18	12	78	340
Future Vol, veh/h	551	139	17	28	99	9	19	42	18	12	78	340
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	599	151	18	30	108	10	21	46	20	13	85	370

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	436	402	270	283	577	55	454	0	0	65	0	0
Stage 1	296	296	-	97	97	-	-	-	-	-	-	-
Stage 2	141	107	-	186	480	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 530	537	769	669	427	1011	1106	-	-	1537	-	-
Stage 1	713	668	-	910	815	-	-	-	-	-	-	-
Stage 2	862	807	-	815	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 380	520	769	453	414	1011	1106	-	-	1537	-	-
Mov Cap-2 Maneuver	~ 380	520	-	453	414	-	-	-	-	-	-	-
Stage 1	704	660	-	892	799	-	-	-	-	-	-	-
Stage 2	725	791	-	606	547	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $/#	433.46	17.31	2	0.21
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	408	-	-	406	439	43	-	-
HCM Lane V/C Ratio	0.019	-	-	1.892	0.337	0.008	-	-
HCM Control Delay (s/veh)	8.3	0	-	$ 433.5	17.3	7.4	0	-
HCM Lane LOS	A	A	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	51	1.5	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	44	400	19	64	337
Future Vol, veh/h	12	44	400	19	64	337
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	48	435	21	70	366

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	951	445	0	0	455	0
Stage 1	445	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	288	613	-	-	1105	-
Stage 1	646	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	266	613	-	-	1105	-
Mov Cap-2 Maneuver	266	-	-	-	-	-
Stage 1	646	-	-	-	-	-
Stage 2	558	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.61	0	1.35
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	479	1105	-
HCM Lane V/C Ratio	-	-	0.127	0.063	-
HCM Control Delay (s/veh)	-	-	13.6	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	6	396	8	187	144
Future Vol, veh/h	3	6	396	8	187	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	7	430	9	203	157

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	998	435	0	0	439	0
Stage 1	435	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	270	621	-	-	1121	-
Stage 1	653	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	217	621	-	-	1121	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.65	0	5.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	383	1017	-
HCM Lane V/C Ratio	-	-	0.026	0.181	-
HCM Control Delay (s/veh)	-	-	14.6	8.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.7	-

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	174	138	143	115	122
Future Vol, veh/h	60	174	138	143	115	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	200	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	189	150	155	125	133

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	533	150	0	0	305	0
Stage 1	150	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	508	896	-	-	1255	-
Stage 1	878	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	453	896	-	-	1255	-
Mov Cap-2 Maneuver	453	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	615	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.76	0	3.97
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	717	1255	-
HCM Lane V/C Ratio	-	-	0.355	0.1	-
HCM Control Delay (s/veh)	-	-	12.8	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.3	-

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	5	80	0	0	3	48	81	0	3	3	108
Future Vol, veh/h	93	5	80	0	0	3	48	81	0	3	3	108
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	109	6	94	0	0	4	56	95	0	4	4	127
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay, s/veh	8.9	8	9.7	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	37%	0%	95%	0%	0%	3%
Vol Thru, %	63%	100%	5%	0%	0%	3%
Vol Right, %	0%	0%	0%	100%	100%	95%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	0	98	80	3	114
LT Vol	48	0	93	0	0	3
Through Vol	81	0	5	0	0	3
RT Vol	0	0	0	80	3	108
Lane Flow Rate	152	0	115	94	4	134
Geometry Grp	5	5	5	5	4b	4b
Degree of Util (X)	0.226	0	0.183	0.119	0.005	0.175
Departure Headway (Hd)	5.371	5.184	5.726	4.544	4.922	4.69
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	668	0	626	788	724	764
Service Time	3.104	2.917	3.462	2.279	2.972	2.723
HCM Lane V/C Ratio	0.228	0	0.184	0.119	0.006	0.175
HCM Control Delay, s/veh	9.7	7.9	9.7	7.9	8	8.7
HCM Lane LOS	A	N	A	A	A	A
HCM 95th-tile Q	0.9	0	0.7	0.4	0	0.6

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	96	186	7	83	78
Future Vol, veh/h	7	96	186	7	83	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	104	202	8	90	85

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	471	206	0	0	210	0
Stage 1	206	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	551	835	-	-	1361	-
Stage 1	829	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	513	835	-	-	1361	-
Mov Cap-2 Maneuver	513	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.23	0	4.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	800	928	-
HCM Lane V/C Ratio	-	-	0.14	0.066	-
HCM Control Delay (s/veh)	-	-	10.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	0	9	0	0	3	37	378	0	0	234	40
Future Vol, veh/h	29	0	9	0	0	3	37	378	0	0	234	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	10	0	0	3	40	411	0	0	254	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	767	767	276	746	789	411	298	0	0	411	0	0
Stage 1	276	276	-	491	491	-	-	-	-	-	-	-
Stage 2	491	491	-	254	298	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	319	332	763	330	323	641	1263	-	-	1148	-	-
Stage 1	730	682	-	559	548	-	-	-	-	-	-	-
Stage 2	559	548	-	750	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	304	319	763	312	309	641	1263	-	-	1148	-	-
Mov Cap-2 Maneuver	304	319	-	312	309	-	-	-	-	-	-	-
Stage 1	730	682	-	536	525	-	-	-	-	-	-	-
Stage 2	533	525	-	740	667	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	16.48	10.65	0.71	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	160	-	-	355	641	1148	-	-
HCM Lane V/C Ratio	0.032	-	-	0.116	0.005	-	-	-
HCM Control Delay (s/veh)	7.9	0	-	16.5	10.6	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	14	4	2674	2261	17
Future Vol, veh/h	2	14	4	2674	2261	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	700	-	-	700
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	15	4	2907	2458	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3920	1229	2476	0	-	0
Stage 1	2458	-	-	-	-	-
Stage 2	1462	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	2	170	183	-	-	-
Stage 1	50	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	2	170	183	-	-	-
Mov Cap-2 Maneuver	2	-	-	-	-	-
Stage 1	49	-	-	-	-	-
Stage 2	179	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	$ 548.98	0.04	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	183	-	17	-	-
HCM Lane V/C Ratio	0.024	-	1.043	-	-
HCM Control Delay (s/veh)	25.1	-	$ 549	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	2.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	64.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	126	24	2443	254	34	1351
Future Vol, veh/h	126	24	2443	254	34	1351
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	600	720	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	26	2655	276	37	1468

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3464	1328	0	0	2932	0
Stage 1	2655	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 5	145	-	-	120	-
Stage 1	~ 39	-	-	-	-	-
Stage 2	399	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 3	145	-	-	120	-
Mov Cap-2 Maneuver	~ 32	-	-	-	-	-
Stage 1	~ 39	-	-	-	-	-
Stage 2	276	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 1804.97	0	1.17
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	36	120	-
HCM Lane V/C Ratio	-	-	4.514	0.307	-
HCM Control Delay (s/veh)	-	-	$ 1805	47.6	-
HCM Lane LOS	-	-	F	E	-
HCM 95th %tile Q(veh)	-	-	19.1	1.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	161	6	46	2	30	17	2	183	7	13	124	119
Future Vol, veh/h	161	6	46	2	30	17	2	183	7	13	124	119
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	175	7	50	2	33	18	2	199	8	14	135	129

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	447	439	199	373	499	203	264	0	0	207	0	0
Stage 1	228	228	-	207	207	-	-	-	-	-	-	-
Stage 2	220	211	-	166	292	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	522	512	842	584	473	838	1300	-	-	1365	-	-
Stage 1	775	716	-	795	731	-	-	-	-	-	-	-
Stage 2	783	728	-	836	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	468	505	842	534	466	838	1300	-	-	1365	-	-
Mov Cap-2 Maneuver	468	505	-	534	466	-	-	-	-	-	-	-
Stage 1	765	707	-	793	729	-	-	-	-	-	-	-
Stage 2	730	726	-	769	662	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	17.41	12.18	0.08	0.39
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	19	-	-	519	555	83	-	-
HCM Lane V/C Ratio	0.002	-	-	0.446	0.096	0.01	-	-
HCM Control Delay (s/veh)	7.8	0	-	17.4	12.2	7.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.3	0.3	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	0	17	0	0	0	26	197	0	0	49	17
Future Vol, veh/h	19	0	17	0	0	0	26	197	0	0	49	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	18	0	0	0	28	214	0	0	53	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	333	333	63	324	342	214	72	0	0	214	0	0
Stage 1	63	63	-	271	271	-	-	-	-	-	-	-
Stage 2	271	271	-	53	72	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	620	587	1002	629	580	826	1528	-	-	1356	-	-
Stage 1	949	843	-	735	685	-	-	-	-	-	-	-
Stage 2	735	685	-	959	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	607	574	1002	605	568	826	1528	-	-	1356	-	-
Mov Cap-2 Maneuver	607	574	-	605	568	-	-	-	-	-	-	-
Stage 1	949	843	-	720	671	-	-	-	-	-	-	-
Stage 2	720	671	-	942	835	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.09	0	0.86	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	210	-	-	746	-	1356	-	-
HCM Lane V/C Ratio	0.018	-	-	0.052	-	-	-	-
HCM Control Delay (s/veh)	7.4	0	-	10.1	0	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	0	-	-

Intersection	
Int Delay, s/veh	29.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	75	126	2748	2178	175
Future Vol, veh/h	45	75	126	2748	2178	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	150	-	-	600
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	82	137	2987	2367	190

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	4135	1184	2367	0	-	0
Stage 1	2367	-	-	-	-	-
Stage 2	1767	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 2	182	203	-	-	-
Stage 1	56	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 1	182	203	-	-	-
Mov Cap-2 Maneuver	~ 15	-	-	-	-	-
Stage 1	~ 18	-	-	-	-	-
Stage 2	122	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	$ 1274.1	2.34	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	203	-	39	-	-
HCM Lane V/C Ratio	0.676	-	3.351	-	-
HCM Control Delay (s/veh)	53.4	-	$ 1274.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	4.2	-	14.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	23	2383	202	6	1204
Future Vol, veh/h	52	23	2383	202	6	1204
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	-	0	-	0	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	25	2590	220	7	1309

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3127	1295	0	0	2590	0
Stage 1	2590	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.29	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.67	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 14	153	-	-	165	-
Stage 1	~ 42	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 13	153	-	-	165	-
Mov Cap-2 Maneuver	~ 37	-	-	-	-	-
Stage 1	~ 42	-	-	-	-	-
Stage 2	497	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	33.07	0	0.14
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	153	165	-
HCM Lane V/C Ratio	-	-	0.163	0.039	-
HCM Control Delay (s/veh)	-	-	33.1	27.7	-
HCM Lane LOS	-	-	D	D	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	150	18	32	33	15	28
Future Vol, veh/h	150	18	32	33	15	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	20	35	36	16	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	137	32	47	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	856	1042	1561	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	837	1042	1561	-	-	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	919	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.35	3.62	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	886	-	855	-	-
HCM Lane V/C Ratio	0.022	-	0.214	-	-
HCM Control Delay (s/veh)	7.4	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

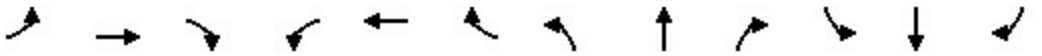
Intersection	
Int Delay, s/veh	69.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	127	2	260	108	54	3	55	344	55	48	3
Future Vol, veh/h	3	127	2	260	108	54	3	55	344	55	48	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	138	2	283	117	59	3	60	374	60	52	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	298	614	54	494	428	247	55	0	0	434	0	0
Stage 1	173	173	-	253	253	-	-	-	-	-	-	-
Stage 2	125	440	-	241	175	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	654	407	1013	486	519	792	1549	-	-	1126	-	-
Stage 1	828	755	-	751	698	-	-	-	-	-	-	-
Stage 2	879	577	-	763	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	440	384	1013	299	489	792	1549	-	-	1126	-	-
Mov Cap-2 Maneuver	440	384	-	299	489	-	-	-	-	-	-	-
Stage 1	783	714	-	749	696	-	-	-	-	-	-	-
Stage 2	674	576	-	580	713	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	19.58	168.62	0.05	4.35
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	11	-	-	389	364	923	-	-
HCM Lane V/C Ratio	0.002	-	-	0.369	1.26	0.053	-	-
HCM Control Delay (s/veh)	7.3	0	-	19.6	168.6	8.4	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	20.3	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	94	106	24	55	56	56	754	19	88	977	51
Future Volume (veh/h)	124	94	106	24	55	56	56	754	19	88	977	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	102	60	26	60	21	61	820	14	96	1062	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	444	313	184	360	530	449	305	2043	911	397	2043	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.57	0.57	0.57	0.57	0.57	0.57
Unsig. Movement Delay												
Ln Grp Delay, s/veh	22.4	0.0	20.8	22.6	18.9	18.4	15.4	8.6	6.4	13.3	9.5	6.5
Ln Grp LOS	C		C	C	B	B	B	A	A	B	A	A
Approach Vol, veh/h		297			107			895			1188	
Approach Delay, s/veh		21.5			19.7			9.0			9.8	
Approach LOS		C			B			A			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		5.0		6.0		5.0		5.0
Phs Duration (G+Y+Rc), s		45.6		25.0		45.6		25.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green (Gmax), s		71.0		34.0		71.0		34.0
Max Allow Headway (MAH), s		7.1		6.7		7.1		6.7
Max Q Clear (g_c+I1), s		20.5		9.6		17.7		8.4
Green Ext Time (g_e), s		15.1		2.8		22.9		0.8
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.06		0.01		0.18		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		516		1317		658		1224

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1104		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		649		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

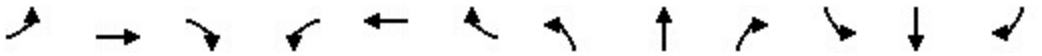
Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	61	0	135	0	96	0	26
Grp Sat Flow (s), veh/h/ln	0	516	0	1317	0	658	0	1224
Q Serve Time (g_s), s	0.0	5.7	0.0	6.0	0.0	6.7	0.0	1.2
Cycle Q Clear Time (g_c), s	0.0	18.5	0.0	7.6	0.0	15.7	0.0	6.4
Perm LT Sat Flow (s_l), veh/h/ln	0	516	0	1317	0	658	0	1224
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	40.6	0.0	20.0	0.0	40.6	0.0	20.0
Perm LT Serve Time (g_u), s	0.0	27.8	0.0	18.3	0.0	31.6	0.0	14.8
Perm LT Q Serve Time (g_ps), s	0.0	5.7	0.0	6.0	0.0	6.7	0.0	1.2
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	305	0	444	0	397	0	360
V/C Ratio (X)	0.00	0.20	0.00	0.30	0.00	0.24	0.00	0.07
Avail Cap (c_a), veh/h	0	528	0	706	0	681	0	603
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	14.7	0.0	21.5	0.0	12.6	0.0	22.5
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.8	0.0	0.7	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	15.4	0.0	22.4	0.0	13.3	0.0	22.6
1st-Term Q (Q1), veh/ln	0.0	0.6	0.0	1.7	0.0	0.8	0.0	0.3
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	1.8	0.0	0.9	0.0	0.4
%ile Storage Ratio (RQ%)	0.00	0.06	0.00	0.13	0.00	0.06	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T				T		T
Lanes in Grp	0	2	0	0	0	2	0	1
Grp Vol (v), veh/h	0	820	0	0	0	1062	0	60
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	1870
Q Serve Time (g_s), s	0.0	9.0	0.0	0.0	0.0	12.8	0.0	1.7
Cycle Q Clear Time (g_c), s	0.0	9.0	0.0	0.0	0.0	12.8	0.0	1.7
Lane Grp Cap (c), veh/h	0	2043	0	0	0	2043	0	530
V/C Ratio (X)	0.00	0.40	0.00	0.00	0.00	0.52	0.00	0.11
Avail Cap (c_a), veh/h	0	3577	0	0	0	3577	0	901
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	8.3	0.0	0.0	0.0	9.1	0.0	18.7
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.6	0.0	0.0	0.0	9.5	0.0	18.9
1st-Term Q (Q1), veh/ln	0.0	2.5	0.0	0.0	0.0	3.8	0.0	0.7

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.6	0.0	0.0	0.0	3.9	0.0	0.7
%ile Storage Ratio (RQ%)	0.00	0.11	0.00	0.00	0.00	0.25	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		T+R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	14	0	162	0	30	0	21
Grp Sat Flow (s), veh/h/ln	0	1585	0	1753	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.3	0.0	5.1	0.0	0.6	0.0	0.7
Cycle Q Clear Time (g_c), s	0.0	0.3	0.0	5.1	0.0	0.6	0.0	0.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.37	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	911	0	497	0	911	0	449
V/C Ratio (X)	0.00	0.02	0.00	0.33	0.00	0.03	0.00	0.05
Avail Cap (c_a), veh/h	0	1595	0	845	0	1595	0	764
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	6.4	0.0	20.0	0.0	6.5	0.0	18.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.4	0.0	20.8	0.0	6.5	0.0	18.4
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	2.0	0.0	0.2	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	2.1	0.0	0.2	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.07	0.00	0.03	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	11.3
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	21	62	44	81	764	21	1091	658	24	1322	70
Future Volume (veh/h)	206	21	62	44	81	764	21	1091	658	24	1322	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	23	0	48	88	0	23	1186	0	26	1437	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	351	439		406	439		170	1610		227	1619	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.23	0.23	0.00	0.23	0.23	0.00	0.03	0.45	0.00	0.03	0.46	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	30.8	22.9	0.0	24.1	23.8	0.0	32.7	18.4	0.0	13.7	23.8	0.0
Ln Grp LOS	C	C		C	C		C	B		B	C	
Approach Vol, veh/h		247			136			1209			1463	
Approach Delay, s/veh		30.1			23.9			18.6			23.6	
Approach LOS		C			C			B			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	6	5		8
Case No	1.2	3.0		5.0	3.0	1.3		5.0
Phs Duration (G+Y+Rc), s	10.1	43.0		24.2	43.2	9.9		24.2
Change Period (Y+Rc), s	8.0	8.0		6.0	8.0	8.0		6.0
Max Green (Gmax), s	5.0	41.0		42.0	41.0	5.0		42.0
Max Allow Headway (MAH), s	2.6	3.7		3.1	3.7	2.6		3.7
Max Q Clear (g_c+I1), s	2.6	23.2		17.7	30.6	2.0		4.9
Green Ext Time (g_e), s	0.0	4.7		0.4	4.6	0.0		0.4
Prob of Phs Call (p_c)	0.43	1.00		1.00	1.00	0.39		1.00
Prob of Max Out (p_x)	1.00	0.06		0.00	0.37	0.43		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7		5		3
Mvmt Sat Flow, veh/h	1781			1309		1781		1388

Through Movement Data								
Assigned Mvmt		2		4	6			8
Mvmt Sat Flow, veh/h		3554		1870	3554			1870

Right-Turn Movement Data								
Assigned Mvmt		12		14	16			18
Mvmt Sat Flow, veh/h		1585		1585	1585			1585

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	0	5	0	3

Lane Assignment	L (Pr/Pm)			L	L (Pr/Pm)			L
Lanes in Grp	1	0	0	1	0	1	0	1
Grp Vol (v), veh/h	26	0	0	224	0	23	0	48
Grp Sat Flow (s), veh/h/ln	1781	0	0	1309	0	1781	0	1388
Q Serve Time (g_s), s	0.6	0.0	0.0	12.8	0.0	0.0	0.0	2.1
Cycle Q Clear Time (g_c), s	0.6	0.0	0.0	15.7	0.0	0.0	0.0	2.9
Perm LT Sat Flow (s_l), veh/h/ln	472	0	0	1309	0	372	0	1388
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	35.0	0.0	0.0	18.2	0.0	35.2	0.0	18.2
Perm LT Serve Time (g_u), s	13.8	0.0	0.0	15.2	0.0	6.6	0.0	17.4
Perm LT Q Serve Time (g_ps), s	1.2	0.0	0.0	12.8	0.0	4.5	0.0	2.1
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	227	0	0	351	0	170	0	406
V/C Ratio (X)	0.11	0.00	0.00	0.64	0.00	0.14	0.00	0.12
Avail Cap (c_a), veh/h	293	0	0	755	0	240	0	834
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	13.7	0.0	0.0	30.1	0.0	32.6	0.0	24.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.7	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	13.7	0.0	0.0	30.8	0.0	32.7	0.0	24.1
1st-Term Q (Q1), veh/ln	0.2	0.0	0.0	3.9	0.0	0.4	0.0	0.7
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.2	0.0	0.0	3.9	0.0	0.4	0.0	0.7
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.33	0.00	0.02	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	6	0	0	8
Lane Assignment		T		T	T			T
Lanes in Grp	0	2	0	1	2	0	0	1
Grp Vol (v), veh/h	0	1186	0	23	1437	0	0	88
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	1777	0	0	1870
Q Serve Time (g_s), s	0.0	21.2	0.0	0.7	28.6	0.0	0.0	2.9
Cycle Q Clear Time (g_c), s	0.0	21.2	0.0	0.7	28.6	0.0	0.0	2.9
Lane Grp Cap (c), veh/h	0	1610	0	439	1619	0	0	439
V/C Ratio (X)	0.00	0.74	0.00	0.05	0.89	0.00	0.00	0.20
Avail Cap (c_a), veh/h	0	1884	0	1016	1884	0	0	1016
Upstream Filter (I)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	17.4	0.0	22.9	19.2	0.0	0.0	23.8
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	4.5	0.0	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	18.4	0.0	22.9	23.8	0.0	0.0	23.8
1st-Term Q (Q1), veh/ln	0.0	6.9	0.0	0.3	9.3	0.0	0.0	1.3

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	1.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	7.1	0.0	0.3	10.3	0.0	0.0	1.3
%ile Storage Ratio (RQ%)	0.00	0.23	0.00	0.02	0.31	0.00	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	16	0	0	18
Lane Assignment		R		R	R			R
Lanes in Grp	0	1	0	1	1	0	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	1585	0	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	718	0	372	722	0	0	372
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	840	0	861	840	0	0	861
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	22.2
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	43	8	6	72	15	11
Future Vol, veh/h	43	8	6	72	15	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	9	7	78	16	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	55	0	142	51
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1549	-	850	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1549	-	847	1017
Mov Cap-2 Maneuver	-	-	-	-	847	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	928	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.56	9.08
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	911	-	-	138	-
HCM Lane V/C Ratio	0.031	-	-	0.004	-
HCM Control Delay (s/veh)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	19	62	3	8	2	9	8	0	0	6	11
Future Vol, veh/h	21	19	62	3	8	2	9	8	0	0	6	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	260	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	21	67	3	9	2	10	9	0	0	7	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	11	0	0	21	0	0	85	84	21	87	83	10
Stage 1	-	-	-	-	-	-	66	66	-	16	16	-
Stage 2	-	-	-	-	-	-	18	17	-	71	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1608	-	-	1595	-	-	902	806	1057	899	808	1072
Stage 1	-	-	-	-	-	-	944	840	-	1003	882	-
Stage 2	-	-	-	-	-	-	1001	881	-	939	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1608	-	-	1595	-	-	869	793	1057	874	794	1072
Mov Cap-2 Maneuver	-	-	-	-	-	-	869	793	-	874	794	-
Stage 1	-	-	-	-	-	-	930	827	-	1001	880	-
Stage 2	-	-	-	-	-	-	980	879	-	915	827	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.5	1.68	9.43	8.85
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	832	945	-	-	399	-	-	954
HCM Lane V/C Ratio	0.022	0.014	-	-	0.002	-	-	0.019
HCM Control Delay (s/veh)	9.4	7.3	0	-	7.3	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

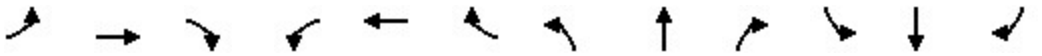
Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	372	125	757	1289
Demand Flow Rate, veh/h	380	127	772	1315
Vehicles Circulating, veh/h	1205	909	192	217
Vehicles Exiting, veh/h	327	55	1393	819
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	29.2	7.9	6.3	10.3
Approach LOS	D	A	A	B

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
A (Intercept)	1420	1420	1350	1420	1350	1420
B (Slope)	8.501e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4
Entry Flow, veh/h	380	127	363	409	618	697
Cap Entry Lane, veh/h	510	656	1131	1206	1106	1181
Entry HV Adj Factor	0.979	0.984	0.980	0.981	0.980	0.980
Flow Entry, veh/h	372	125	356	401	606	683
Cap Entry, veh/h	499	645	1109	1183	1084	1157
V/C Ratio	0.745	0.194	0.321	0.339	0.559	0.590
Control Delay, s/veh	29.2	7.9	6.4	6.3	10.2	10.4
LOS	D	A	A	A	B	B
95th %tile Queue, veh	6	1	1	2	4	4

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	2	3	3	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	636	0	0	1344
Demand Flow Rate, veh/h	655	0	0	1384
Vehicles Circulating, veh/h	1216	1208	141	661
Vehicles Exiting, veh/h	478	63	1213	812
Ped Vol Crossing Leg, #/h	1	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	2.1	0.0	0.0	15.3
Approach LOS	A	-	-	C

Lane	Left	Right	Bypass	Left	Right	Bypass
Designated Moves	L	LTR	R	LT	TR	R
Assumed Moves	L	LTR		LT	TR	
RT Channelized			Free			Yield
Lane Util	0.529	0.471		0.470	0.530	
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.609
Critical Headway, s	4.645	4.328		4.645	4.328	4.976
A (Intercept)	1350	1420		1350	1420	1380
B (Slope)	9.199e-4	4.501e-4		9.199e-4	4.501e-4	1.02e-3
Entry Flow, veh/h	73	65	517	486	547	351
Cap Entry Lane, veh/h	441	505	1957	735	810	847
Entry HV Adj Factor	0.970	0.966	0.971	0.970	0.972	0.971
Flow Entry, veh/h	71	63	502	471	532	341
Cap Entry, veh/h	428	488	1900	713	787	823
V/C Ratio	0.166	0.129	0.264	0.661	0.676	0.414
Control Delay, s/veh	10.9	9.1	0.0	17.7	16.9	9.5
LOS	B	A	A	C	C	A
95th %tile Queue, veh	1	0	1	5	5	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	488	1	56	885	85	45	246	189	191	284	1168
Future Volume (veh/h)	236	488	1	56	885	85	45	246	189	191	284	1168
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	257	530	0	61	962	0	49	267	0	208	309	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	272	1262		79	1182		67	313		242	498	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.36	0.00	0.04	0.33	0.00	0.04	0.17	0.00	0.14	0.27	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	85.1	25.1	0.0	53.0	35.9	0.0	58.6	42.7	0.0	45.3	32.5	0.0
Ln Grp LOS	F	C		D	D		E	D		D	C	
Approach Vol, veh/h		787			1023			316			517	
Approach Delay, s/veh		44.7			36.9			45.2			37.6	
Approach LOS		D			D			D			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	6	5	7	8
Case No	2.0	3.0	2.0	3.0	3.0	2.0	2.0	3.0
Phs Duration (G+Y+Rc), s	12.6	43.4	10.5	32.7	40.0	16.0	20.3	22.9
Change Period (Y+Rc), s	8.2	* 8.2	6.8	* 6.3	7.0	8.2	6.8	* 6.3
Max Green (Gmax), s	8.7	* 35	5.0	* 67	35.5	7.8	27.0	* 45
Max Allow Headway (MAH), s	2.6	7.7	1.7	3.9	7.7	2.6	2.7	3.9
Max Q Clear (g_c+I1), s	5.4	13.2	4.7	16.4	26.6	9.3	13.3	15.8
Green Ext Time (g_e), s	0.0	6.9	0.0	1.0	6.4	0.0	0.2	0.8
Prob of Phs Call (p_c)	0.81	1.00	0.74	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	0.28	0.20	1.00	0.00	0.95	1.00	0.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3			5	7	
Mvmt Sat Flow, veh/h	1781		1781			3456	1781	

Through Movement Data								
Assigned Mvmt		2		4	6			8
Mvmt Sat Flow, veh/h		3554		1870	3554			1870

Right-Turn Movement Data								
Assigned Mvmt		12		14	16			18
Mvmt Sat Flow, veh/h		1585		1585	1585			1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	0	5	7	0

Lane Assignment	L (Prot)		L (Prot)			L (Prot)	L (Prot)	
Lanes in Grp	1	0	1	0	0	2	1	0
Grp Vol (v), veh/h	61	0	49	0	0	257	208	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	0	1728	1781	0
Q Serve Time (g_s), s	3.4	0.0	2.7	0.0	0.0	7.3	11.3	0.0
Cycle Q Clear Time (g_c), s	3.4	0.0	2.7	0.0	0.0	7.3	11.3	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Lane Grp Cap (c), veh/h	79	0	67	0	0	272	242	0
V/C Ratio (X)	0.78	0.00	0.74	0.00	0.00	0.95	0.86	0.00
Avail Cap (c_a), veh/h	156	0	90	0	0	272	485	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d1), s/veh	46.9	0.0	47.3	0.0	0.0	45.5	41.9	0.0
Incr Delay (d2), s/veh	6.0	0.0	11.3	0.0	0.0	39.6	3.4	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	53.0	0.0	58.6	0.0	0.0	85.1	45.3	0.0
1st-Term Q (Q1), veh/ln	1.4	0.0	1.2	0.0	0.0	3.0	4.8	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.2	0.0	0.0	1.5	0.2	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.5	0.0	1.4	0.0	0.0	4.5	5.0	0.0
%ile Storage Ratio (RQ%)	0.04	0.00	0.12	0.00	0.00	0.11	0.19	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	6	0	0	8
Lane Assignment		T		T	T			T
Lanes in Grp	0	2	0	1	2	0	0	1
Grp Vol (v), veh/h	0	530	0	309	962	0	0	267
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	1777	0	0	1870
Q Serve Time (g_s), s	0.0	11.2	0.0	14.4	24.6	0.0	0.0	13.8
Cycle Q Clear Time (g_c), s	0.0	11.2	0.0	14.4	24.6	0.0	0.0	13.8
Lane Grp Cap (c), veh/h	0	1262	0	498	1182	0	0	313
V/C Ratio (X)	0.00	0.42	0.00	0.62	0.81	0.00	0.00	0.85
Avail Cap (c_a), veh/h	0	1262	0	1258	1272	0	0	843
Upstream Filter (I)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	24.2	0.0	32.0	30.3	0.0	0.0	40.1
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.5	5.6	0.0	0.0	2.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	25.1	0.0	32.5	35.9	0.0	0.0	42.7
1st-Term Q (Q1), veh/ln	0.0	4.3	0.0	6.2	9.5	0.0	0.0	6.0

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.1	0.9	0.0	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.4	0.0	6.2	10.4	0.0	0.0	6.3
%ile Storage Ratio (RQ%)	0.00	0.08	0.00	0.24	0.19	0.00	0.00	0.40
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	16	0	0	18
Lane Assignment		R		R	R			R
Lanes in Grp	0	1	0	1	1	0	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	1585	0	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	563	0	422	527	0	0	265
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	563	0	1066	567	0	0	714
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	40.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	24	60	18	28	109	47	374	13	93	385	21
Future Volume (veh/h)	65	24	60	18	28	109	47	374	13	93	385	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	0.99		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	70	26	65	19	30	0	51	402	14	100	414	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	527	310	262	518	310		571	791	670	576	791	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.43	0.43	0.43	0.43	0.43	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	8.6	8.0	8.6	8.2	8.1	0.0	6.5	5.2	3.7	6.8	5.2	0.0
Ln Grp LOS	A	A	A	A	A		A	A	A	A	A	
Approach Vol, veh/h		161			49			467			514	
Approach Delay, s/veh		8.5			8.1			5.3			5.6	
Approach LOS		A			A			A			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		5.0		5.0		5.0		5.0
Phs Duration (G+Y+Rc), s		14.3		8.4		14.3		8.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		4.7		4.1		5.1		4.7
Max Q Clear (g_c+I1), s		6.7		3.4		7.6		2.6
Green Ext Time (g_e), s		1.8		0.4		2.2		0.1
Prob of Phs Call (p_c)		1.00		0.74		1.00		0.74
Prob of Max Out (p_x)		0.12		0.00		0.25		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		949		1342		947		1268

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1826		1826		1826		1826

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1546		1540		1547		1547

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	51	0	70	0	100	0	19
Grp Sat Flow (s), veh/h/ln	0	949	0	1342	0	947	0	1268
Q Serve Time (g_s), s	0.0	0.9	0.0	1.1	0.0	1.9	0.0	0.3
Cycle Q Clear Time (g_c), s	0.0	4.7	0.0	1.4	0.0	5.6	0.0	0.6
Perm LT Sat Flow (s_l), veh/h/ln	0	949	0	1342	0	947	0	1268
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	9.8	0.0	3.9	0.0	9.8	0.0	3.9
Perm LT Serve Time (g_u), s	0.0	6.1	0.0	3.5	0.0	6.2	0.0	3.6
Perm LT Q Serve Time (g_ps), s	0.0	0.9	0.0	1.1	0.0	1.9	0.0	0.3
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	571	0	527	0	576	0	518
V/C Ratio (X)	0.00	0.09	0.00	0.13	0.00	0.17	0.00	0.04
Avail Cap (c_a), veh/h	0	913	0	1365	0	918	0	1309
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	6.4	0.0	8.5	0.0	6.7	0.0	8.2
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.5	0.0	8.6	0.0	6.8	0.0	8.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.03	0.00	0.02	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	402	0	26	0	414	0	30
Grp Sat Flow (s), veh/h/ln	0	1826	0	1826	0	1826	0	1826
Q Serve Time (g_s), s	0.0	3.6	0.0	0.3	0.0	3.8	0.0	0.3
Cycle Q Clear Time (g_c), s	0.0	3.6	0.0	0.3	0.0	3.8	0.0	0.3
Lane Grp Cap (c), veh/h	0	791	0	310	0	791	0	310
V/C Ratio (X)	0.00	0.51	0.00	0.08	0.00	0.52	0.00	0.10
Avail Cap (c_a), veh/h	0	1449	0	1449	0	1449	0	1449
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	4.7	0.0	7.9	0.0	4.7	0.0	7.9
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.1	0.0	0.5	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	5.2	0.0	8.0	0.0	5.2	0.0	8.1
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.1

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.1	0.0	0.4	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	14	0	65	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1546	0	1540	0	1547	0	1547
Q Serve Time (g_s), s	0.0	0.1	0.0	0.8	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.1	0.0	0.8	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	670	0	262	0	670	0	263
V/C Ratio (X)	0.00	0.02	0.00	0.25	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1227	0	1223	0	1228	0	1228
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.7	0.0	8.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.7	0.0	8.6	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	6.0
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	89	30	383	423	29
Future Vol, veh/h	23	89	30	383	423	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	240	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	24	94	32	403	445	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	927	461	476	0	-	0
Stage 1	461	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	295	597	1076	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	597	1076	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	627	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.53	0.61	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	131	-	284	597	-	-
HCM Lane V/C Ratio	0.029	-	0.085	0.157	-	-
HCM Control Delay (s/veh)	8.4	0	18.8	12.2	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.6	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	2	3	21	0	0	3	0	0	8	6
Future Vol, veh/h	0	3	2	3	21	0	0	3	0	0	8	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	2	3	23	0	0	3	0	0	9	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	23	0	0	5	0	0	38	34	4	34	35	23
Stage 1	-	-	-	-	-	-	4	4	-	29	29	-
Stage 2	-	-	-	-	-	-	34	29	-	5	5	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1592	-	-	1616	-	-	967	859	1079	972	858	1054
Stage 1	-	-	-	-	-	-	1018	892	-	988	871	-
Stage 2	-	-	-	-	-	-	982	871	-	1017	891	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1592	-	-	1616	-	-	949	857	1079	967	856	1054
Mov Cap-2 Maneuver	-	-	-	-	-	-	949	857	-	967	856	-
Stage 1	-	-	-	-	-	-	1018	892	-	986	869	-
Stage 2	-	-	-	-	-	-	965	869	-	1014	891	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.9	9.22	8.93
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	857	1592	-	-	225	-	-	931
HCM Lane V/C Ratio	0.004	-	-	-	0.002	-	-	0.016
HCM Control Delay (s/veh)	9.2	0	-	-	7.2	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	75	296	104	128	323
Future Vol, veh/h	83	75	296	104	128	323
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	87	79	312	109	135	340

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	977	367	0	0	422	0
Stage 1	367	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	277	676	-	-	1132	-
Stage 1	698	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	236	675	-	-	1131	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	461	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	20.44	0	2.44
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	236	675	511	-
HCM Lane V/C Ratio	-	-	0.37	0.117	0.119	-
HCM Control Delay (s/veh)	-	-	28.9	11	8.6	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0.4	0.4	-

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	95	26	24	96	20	29	30	29	44	51	24
Future Vol, veh/h	21	95	26	24	96	20	29	30	29	44	51	24
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	32	144	39	36	145	30	44	45	44	67	77	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.2	10.2	9.5	10.1
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	15%	17%	37%
Vol Thru, %	34%	67%	69%	43%
Vol Right, %	33%	18%	14%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	142	140	119
LT Vol	29	21	24	44
Through Vol	30	95	96	51
RT Vol	29	26	20	24
Lane Flow Rate	133	215	212	180
Geometry Grp	1	1	1	1
Degree of Util (X)	0.194	0.296	0.294	0.263
Departure Headway (Hd)	5.234	5.066	5.097	5.245
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	689	714	708	689
Service Time	3.24	3.066	3.097	3.245
HCM Lane V/C Ratio	0.193	0.301	0.299	0.261
HCM Control Delay, s/veh	9.5	10.2	10.2	10.1
HCM Lane LOS	A	B	B	B
HCM 95th-tile Q	0.7	1.2	1.2	1.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	83	74	77	369	291	92
Future Vol, veh/h	83	74	77	369	291	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	108	96	100	479	378	119

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1117	438	497	0	-	0
Stage 1	438	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.254	-	-	-
Pot Cap-1 Maneuver	225	611	1046	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	196	611	1046	-	-	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	496	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	42.82	1.52	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	311	-	288	-	-
HCM Lane V/C Ratio	0.096	-	0.707	-	-
HCM Control Delay (s/veh)	8.8	0	42.8	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.3	-	4.9	-	-

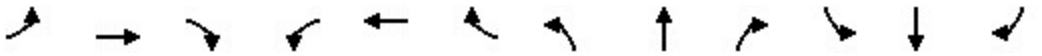
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	336	235	4	22	1
Future Vol, veh/h	1	336	235	4	22	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	365	255	4	24	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	625	258
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1305	-	-	-	449	781
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1305	-	-	-	448	781
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.02	0	13.34
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	5	-	-	-	457
HCM Lane V/C Ratio	0.001	-	-	-	0.055
HCM Control Delay (s/veh)	7.8	0	-	-	13.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	367	166	432	205	173	81	651	231	129	1687	92
Future Volume (veh/h)	108	367	166	432	205	173	81	651	231	129	1687	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	399	0	470	223	0	88	708	0	140	1834	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	179	502		362	672		309	1456		699	1469	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.14	0.00	0.10	0.19	0.00	0.05	0.41	0.00	0.05	0.41	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	46.7	41.5	0.0	196.1	34.2	0.0	23.1	22.1	0.0	16.0	146.3	0.0
Ln Grp LOS	D	D		F	C		C	C		B	F	
Approach Vol, veh/h		516			693			796			1974	
Approach Delay, s/veh		42.7			144.0			22.2			137.0	
Approach LOS		D			F			C			F	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	4	3	5	6	7	8
Case No	1.1	3.0	3.0	2.0	1.1	3.0	2.0	4.0
Phs Duration (G+Y+Rc), s	13.4	46.8	20.0	17.0	13.0	47.2	11.8	25.2
Change Period (Y+Rc), s	8.5	7.0	6.3	* 6.8	8.5	7.0	6.8	* 6.8
Max Green (Gmax), s	5.1	40.1	26.0	* 10	5.0	40.2	8.1	* 28
Max Allow Headway (MAH), s	2.6	7.7	3.7	2.6	2.6	7.7	2.6	3.7
Max Q Clear (g_c+I1), s	4.2	16.3	12.6	12.2	3.4	42.2	5.2	7.3
Green Ext Time (g_e), s	0.0	10.0	1.2	0.0	0.0	0.0	0.0	0.7
Prob of Phs Call (p_c)	0.98	1.00	1.00	1.00	0.91	1.00	0.96	1.00
Prob of Max Out (p_x)	1.00	0.29	0.00	1.00	1.00	1.00	0.67	0.00

Left-Turn Movement Data								
Assigned Mvmt	1			3	5		7	
Mvmt Sat Flow, veh/h	3456			3456	3456		3456	

Through Movement Data								
Assigned Mvmt		2	4			6		8
Mvmt Sat Flow, veh/h		3554	3554			3554		3647

Right-Turn Movement Data								
Assigned Mvmt		12	14			16		18
Mvmt Sat Flow, veh/h		1585	1585			1585		0

Left Lane Group Data								
Assigned Mvmt	1	0	0	3	5	0	7	0

Lane Assignment	L (Pr/Pm)			L (Prot)	L (Pr/Pm)		L (Prot)	
Lanes in Grp	2	0	0	2	2	0	2	0
Grp Vol (v), veh/h	140	0	0	470	88	0	117	0
Grp Sat Flow (s), veh/h/ln	1728	0	0	1728	1728	0	1728	0
Q Serve Time (g_s), s	2.2	0.0	0.0	10.2	1.4	0.0	3.2	0.0
Cycle Q Clear Time (g_c), s	2.2	0.0	0.0	10.2	1.4	0.0	3.2	0.0
Perm LT Sat Flow (s_l), veh/h/ln	718	0	0	0	246	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	39.8	0.0	0.0	0.0	39.8	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	25.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	699	0	0	362	309	0	179	0
V/C Ratio (X)	0.20	0.00	0.00	1.30	0.28	0.00	0.65	0.00
Avail Cap (c_a), veh/h	707	0	0	362	326	0	288	0
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	15.9	0.0	0.0	43.5	22.9	0.0	45.2	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	152.6	0.2	0.0	1.5	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	16.0	0.0	0.0	196.1	23.1	0.0	46.7	0.0
1st-Term Q (Q1), veh/ln	0.8	0.0	0.0	4.1	0.5	0.0	1.3	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	7.7	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.8	0.0	0.0	11.8	0.5	0.0	1.3	0.0
%ile Storage Ratio (RQ%)	0.02	0.00	0.00	1.30	0.01	0.00	0.06	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	26.9	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	4	0	0	6	0	8
Lane Assignment		T	T			T		T
Lanes in Grp	0	2	2	0	0	2	0	2
Grp Vol (v), veh/h	0	708	399	0	0	1834	0	223
Grp Sat Flow (s), veh/h/ln	0	1777	1777	0	0	1777	0	1777
Q Serve Time (g_s), s	0.0	14.3	10.6	0.0	0.0	40.2	0.0	5.3
Cycle Q Clear Time (g_c), s	0.0	14.3	10.6	0.0	0.0	40.2	0.0	5.3
Lane Grp Cap (c), veh/h	0	1456	502	0	0	1469	0	672
V/C Ratio (X)	0.00	0.49	0.80	0.00	0.00	1.25	0.00	0.33
Avail Cap (c_a), veh/h	0	1465	950	0	0	1469	0	1027
Upstream Filter (I)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	21.2	40.4	0.0	0.0	28.5	0.0	34.1
Incr Delay (d2), s/veh	0.0	0.9	1.1	0.0	0.0	117.8	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	22.1	41.5	0.0	0.0	146.3	0.0	34.2
1st-Term Q (Q1), veh/ln	0.0	5.3	4.3	0.0	0.0	14.8	0.0	2.1

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.1	0.0	0.0	24.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.5	4.4	0.0	0.0	38.8	0.0	2.1
%ile Storage Ratio (RQ%)	0.00	0.07	0.14	0.00	0.00	0.56	0.00	0.16
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	91.3	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	14	0	0	16	0	18
Lane Assignment		R	R			R		
Lanes in Grp	0	1	1	0	0	1	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	0	0	1585	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	649	224	0	0	655	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	653	424	0	0	655	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	103.1
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	502	52	33	524	75	121	16	46	171	20	166
Future Volume (veh/h)	175	502	52	33	524	75	121	16	46	171	20	166
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	190	546	57	36	570	82	132	17	50	186	22	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	425	942	799	446	942	799	479	102	300	485	456	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.24	0.24	0.24	0.24	0.24	0.24
Unsig. Movement Delay												
Ln Grp Delay, s/veh	12.7	7.1	4.6	9.2	7.4	4.7	12.1	0.0	10.8	13.4	10.4	12.4
Ln Grp LOS	B	A	A	A	A	A	B		B	B	B	B
Approach Vol, veh/h		793			688			199			388	
Approach Delay, s/veh		8.3			7.2			11.6			12.7	
Approach LOS		A			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		5.0		5.0		5.0
Phs Duration (G+Y+Rc), s		13.2		22.5		13.2		22.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		4.6		4.9		4.1		4.7
Max Q Clear (g_c+I1), s		5.8		18.0		7.7		10.5
Green Ext Time (g_e), s		0.6		0.0		1.0		2.2
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.01		1.00		0.05		0.53

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1180		780		1334		816

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		418		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1230		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	132	0	190	0	186	0	36
Grp Sat Flow (s), veh/h/ln	0	1180	0	780	0	1334	0	816
Q Serve Time (g_s), s	0.0	3.4	0.0	8.2	0.0	4.6	0.0	1.2
Cycle Q Clear Time (g_c), s	0.0	3.8	0.0	16.0	0.0	5.7	0.0	8.5
Perm LT Sat Flow (s_l), veh/h/ln	0	1180	0	780	0	1334	0	816
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	8.7	0.0	18.0	0.0	8.7	0.0	18.0
Perm LT Serve Time (g_u), s	0.0	8.4	0.0	10.2	0.0	7.6	0.0	10.7
Perm LT Q Serve Time (g_ps), s	0.0	3.4	0.0	8.2	0.0	4.6	0.0	1.2
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	479	0	425	0	485	0	446
V/C Ratio (X)	0.00	0.28	0.00	0.45	0.00	0.38	0.00	0.08
Avail Cap (c_a), veh/h	0	786	0	426	0	832	0	447
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	11.8	0.0	12.0	0.0	12.9	0.0	9.2
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.7	0.0	0.5	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	12.1	0.0	12.7	0.0	13.4	0.0	9.2
1st-Term Q (Q1), veh/ln	0.0	0.7	0.0	0.8	0.0	1.1	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.7	0.0	0.9	0.0	1.2	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.12	0.00	0.12	0.00	0.30	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T		T		T
Lanes in Grp	0	0	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	546	0	22	0	570
Grp Sat Flow (s), veh/h/ln	0	0	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	0.0	0.0	7.3	0.0	0.3	0.0	7.8
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	7.3	0.0	0.3	0.0	7.8
Lane Grp Cap (c), veh/h	0	0	0	942	0	456	0	942
V/C Ratio (X)	0.00	0.00	0.00	0.58	0.00	0.05	0.00	0.60
Avail Cap (c_a), veh/h	0	0	0	943	0	943	0	943
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	6.2	0.0	10.3	0.0	6.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.0	1.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	7.1	0.0	10.4	0.0	7.4
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.7	0.0	0.1	0.0	0.7

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.9	0.0	0.1	0.0	1.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.05	0.00	0.01	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	67	0	57	0	180	0	82
Grp Sat Flow (s), veh/h/ln	0	1649	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	1.1	0.0	0.7	0.0	3.5	0.0	1.0
Cycle Q Clear Time (g_c), s	0.0	1.1	0.0	0.7	0.0	3.5	0.0	1.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.75	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	402	0	799	0	387	0	799
V/C Ratio (X)	0.00	0.17	0.00	0.07	0.00	0.47	0.00	0.10
Avail Cap (c_a), veh/h	0	832	0	800	0	800	0	800
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	10.6	0.0	4.6	0.0	11.5	0.0	4.6
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.9	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.8	0.0	4.6	0.0	12.4	0.0	4.7
1st-Term Q (Q1), veh/ln	0.0	0.3	0.0	0.1	0.0	1.0	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.3	0.0	0.1	0.0	1.1	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.01	0.00	0.18	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	9.1
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	476	57	40	565	15	72	1	25	0	2	18
Future Volume (veh/h)	0	476	57	40	565	15	72	1	25	0	2	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	517	62	43	614	16	78	1	27	0	2	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	283	840	712	482	840	712	541	11	302	283	29	288
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.00	0.45	0.45	0.45	0.45	0.45	0.20	0.20	0.20	0.00	0.20	0.20
Unsig. Movement Delay												
Ln Grp Delay, s/veh	0.0	6.1	4.1	7.8	7.0	3.9	9.0	0.0	8.5	0.0	0.0	8.4
Ln Grp LOS		A	A	A	A	A	A		A			A
Approach Vol, veh/h		579			673			106			22	
Approach Delay, s/veh		5.9			7.0			8.9			8.4	
Approach LOS		A			A			A			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		5.0		6.0		5.0
Phs Duration (G+Y+Rc), s		9.5		15.9		9.5		15.9
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		4.3		4.6		5.7		4.7
Max Q Clear (g_c+I1), s		3.5		7.3		2.3		8.8
Green Ext Time (g_e), s		0.3		2.2		0.0		2.6
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.00		0.20		0.00		0.39

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1390		796		1382		835

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		57		1870		146		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1537		1585		1461		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	78	0	0	0	0	0	43
Grp Sat Flow (s), veh/h/ln	0	1390	0	796	0	1382	0	835
Q Serve Time (g_s), s	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.1
Cycle Q Clear Time (g_c), s	0.0	1.5	0.0	0.0	0.0	0.0	0.0	6.4
Perm LT Sat Flow (s_l), veh/h/ln	0	1390	0	796	0	1382	0	835
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	5.0	0.0	0.0	0.0	0.0	0.0	11.4
Perm LT Serve Time (g_u), s	0.0	4.7	0.0	0.0	0.0	0.0	0.0	6.1
Perm LT Q Serve Time (g_ps), s	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.1
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	541	0	283	0	283	0	482
V/C Ratio (X)	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.09
Avail Cap (c_a), veh/h	0	1252	0	490	0	991	0	699
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	8.9	0.0	0.0	0.0	0.0	0.0	7.8
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.0	0.0	0.0	0.0	0.0	0.0	7.8
1st-Term Q (Q1), veh/ln	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	517	0	0	0	614
Grp Sat Flow (s), veh/h/ln	0	0	0	1870	0	0	0	1870
Q Serve Time (g_s), s	0.0	0.0	0.0	5.3	0.0	0.0	0.0	6.8
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	5.3	0.0	0.0	0.0	6.8
Lane Grp Cap (c), veh/h	0	0	0	840	0	0	0	840
V/C Ratio (X)	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.73
Avail Cap (c_a), veh/h	0	0	0	1325	0	0	0	1325
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	5.3	0.0	0.0	0.0	5.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	6.1	0.0	0.0	0.0	7.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	28	0	62	0	22	0	16
Grp Sat Flow (s), veh/h/ln	0	1594	0	1585	0	1607	0	1585
Q Serve Time (g_s), s	0.0	0.4	0.0	0.6	0.0	0.3	0.0	0.1
Cycle Q Clear Time (g_c), s	0.0	0.4	0.0	0.6	0.0	0.3	0.0	0.1
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.96	0.00	1.00	0.00	0.91	0.00	1.00
Lane Grp Cap (c), veh/h	0	314	0	712	0	316	0	712
V/C Ratio (X)	0.00	0.09	0.00	0.09	0.00	0.07	0.00	0.02
Avail Cap (c_a), veh/h	0	1129	0	1123	0	1139	0	1123
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	8.3	0.0	4.0	0.0	8.3	0.0	3.9
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.5	0.0	4.1	0.0	8.4	0.0	3.9
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	6.7
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	280	58	76	325	113	134	275	116	150	212	189
Future Volume (veh/h)	96	280	58	76	325	113	134	275	116	150	212	189
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	304	18	83	353	35	146	299	115	163	230	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	308	482	408	231	492	417	338	355	301	269	283	239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.09	0.26	0.26	0.08	0.26	0.26	0.19	0.19	0.19	0.15	0.15	0.15
Unsig. Movement Delay												
Ln Grp Delay, s/veh	34.0	32.5	23.5	29.8	35.0	23.6	30.3	34.8	29.9	34.0	36.6	32.6
Ln Grp LOS	C	C	C	C	C	C	C	C	C	C	D	C
Approach Vol, veh/h		426			471			560			493	
Approach Delay, s/veh		32.4			33.2			32.6			34.9	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	6	5		
Case No	1.2	3.0	9.0	9.0	3.0	1.3		
Phs Duration (G+Y+Rc), s	13.7	28.5	19.2	22.4	28.0	14.2		
Change Period (Y+Rc), s	6.9	* 6.9	6.5	6.5	6.0	6.9		
Max Green (Gmax), s	8.1	* 47	31.5	38.5	44.9	10.1		
Max Allow Headway (MAH), s	4.7	7.7	2.8	3.0	7.9	4.6		
Max Q Clear (g_c+I1), s	5.3	14.1	12.0	14.9	16.4	2.0		
Green Ext Time (g_e), s	0.1	4.5	0.7	1.0	5.7	0.2		
Prob of Phs Call (p_c)	0.86	1.00	1.00	1.00	1.00	0.91		
Prob of Max Out (p_x)	1.00	0.01	0.00	0.00	0.05	0.06		

Left-Turn Movement Data												
Assigned Mvmt		1		3	7		5					
Mvmt Sat Flow, veh/h		1781		1781	1781		1781					

Through Movement Data												
Assigned Mvmt			2	8	4	6						
Mvmt Sat Flow, veh/h			1870	1870	1870	1870						

Right-Turn Movement Data												
Assigned Mvmt			12	18	14	16						
Mvmt Sat Flow, veh/h			1585	1585	1585	1585						

Left Lane Group Data												
Assigned Mvmt		1	0	3	7	0	5	0	0			

Lane Assignment	L (Pr/Pm)		L	L	L (Pr/Pm)			
Lanes in Grp	1	0	1	1	0	1	0	0
Grp Vol (v), veh/h	83	0	163	146	0	104	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	0	1781	0	0
Q Serve Time (g_s), s	3.3	0.0	7.2	6.1	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	3.3	0.0	7.2	6.1	0.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1058	0	1781	1781	0	996	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	10.3	0.0	0.0	0.0	0.0	6.3	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	231	0	269	338	0	308	0	0
V/C Ratio (X)	0.36	0.00	0.61	0.43	0.00	0.34	0.00	0.00
Avail Cap (c_a), veh/h	258	0	670	819	0	368	0	0
Upstream Filter (I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	28.4	0.0	33.2	30.0	0.0	33.1	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.8	0.3	0.0	0.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	29.8	0.0	34.0	30.3	0.0	34.0	0.0	0.0
1st-Term Q (Q1), veh/ln	1.3	0.0	2.9	2.5	0.0	1.8	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	1.4	0.0	3.0	2.5	0.0	1.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.15	0.00	0.50	0.40	0.00	0.19	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	6	0	0	0
Lane Assignment		T	T	T	T			
Lanes in Grp	0	1	1	1	1	0	0	0
Grp Vol (v), veh/h	0	304	230	299	353	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	1870	1870	1870	0	0	0
Q Serve Time (g_s), s	0.0	12.1	10.0	12.9	14.4	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	12.1	10.0	12.9	14.4	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	482	283	355	492	0	0	0
V/C Ratio (X)	0.00	0.63	0.81	0.84	0.72	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1047	703	860	1003	0	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	27.6	34.4	32.7	28.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.9	2.2	2.1	6.9	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	32.5	36.6	34.8	35.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	4.8	4.2	5.6	6.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.7	0.2	0.2	0.9	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	5.5	4.4	5.8	7.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.11	0.04	0.34	0.29	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	16	0	0	0
Lane Assignment		R	R	R	R			
Lanes in Grp	0	1	1	1	1	0	0	0
Grp Vol (v), veh/h	0	18	100	115	35	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	1585	1585	0	0	0
Q Serve Time (g_s), s	0.0	0.7	4.8	5.3	1.4	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.7	4.8	5.3	1.4	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	408	239	301	417	0	0	0
V/C Ratio (X)	0.00	0.04	0.42	0.38	0.08	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	887	596	729	850	0	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	23.4	32.2	29.6	23.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	23.5	32.6	29.9	23.6	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.2	1.7	1.9	0.5	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.3	1.8	1.9	0.5	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.04	0.19	0.32	0.02	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	33.3
HCM 7th LOS	C

Notes

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	326	29	28	343	13	63	5	26	8	9	35
Future Volume (veh/h)	35	326	29	28	343	13	63	5	26	8	9	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	40	370	9	32	390	5	72	6	11	9	10	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	410	744	630	483	632	8	353	34	33	148	134	130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.04	0.41	0.41	0.04	0.35	0.35	0.19	0.19	0.19	0.19	0.19	0.19
Unsig. Movement Delay												
Ln Grp Delay, s/veh	13.8	10.6	7.6	7.3	0.0	13.6	15.5	0.0	0.0	14.6	0.0	0.0
Ln Grp LOS	B	B	A	A		B	B			B		
Approach Vol, veh/h		419			427			89			33	
Approach Delay, s/veh		10.8			13.2			15.5			14.6	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	6	5		8
Case No	1.2	3.0		8.0	4.0	1.3		8.0
Phs Duration (G+Y+Rc), s	5.6	23.6		13.8	21.2	8.0		13.8
Change Period (Y+Rc), s	4.0	6.1		5.7	* 6.1	6.1		5.7
Max Green (Gmax), s	5.0	37.7		27.3	* 38	5.0		27.3
Max Allow Headway (MAH), s	1.7	7.0		7.6	7.0	1.7		7.5
Max Q Clear (g_c+I1), s	2.4	8.5		2.7	9.7	2.0		4.2
Green Ext Time (g_e), s	0.0	4.4		0.2	4.7	0.0		0.8
Prob of Phs Call (p_c)	0.32	1.00		0.77	1.00	0.38		0.77
Prob of Max Out (p_x)	0.09	0.01		0.00	0.02	0.03		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7		5		3
Mvmt Sat Flow, veh/h	1739			222		1739		1070

Through Movement Data								
Assigned Mvmt		2		4	6			8
Mvmt Sat Flow, veh/h		1826		711	1799			180

Right-Turn Movement Data								
Assigned Mvmt		12		14	16			18
Mvmt Sat Flow, veh/h		1545		688	23			176

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	0	5	0	3

Lane Assignment	L (Pr/Pm)			L+T+R	L (Pr/Pm)			L+T+R
Lanes in Grp	1	0	0	1	0	1	0	1
Grp Vol (v), veh/h	32	0	0	33	0	40	0	89
Grp Sat Flow (s), veh/h/ln	1739	0	0	1622	0	1739	0	1426
Q Serve Time (g_s), s	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Cycle Q Clear Time (g_c), s	0.4	0.0	0.0	0.7	0.0	0.0	0.0	2.2
Perm LT Sat Flow (s_l), veh/h/ln	979	0	0	1412	0	965	0	1402
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1799	0	0	0	1748
Perm LT Eff Green (g_p), s	17.5	0.0	0.0	8.1	0.0	15.1	0.0	8.1
Perm LT Serve Time (g_u), s	11.1	0.0	0.0	5.9	0.0	7.4	0.0	7.4
Perm LT Q Serve Time (g_ps), s	0.2	0.0	0.0	0.0	0.0	1.5	0.0	1.5
Time to First Blk (g_f), s	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.5
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.5
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.27	0.00	1.00	0.00	0.81
Lane Grp Cap (c), veh/h	483	0	0	412	0	410	0	420
V/C Ratio (X)	0.07	0.00	0.00	0.08	0.00	0.10	0.00	0.21
Avail Cap (c_a), veh/h	621	0	0	1106	0	535	0	1041
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	7.3	0.0	0.0	14.5	0.0	13.8	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	7.3	0.0	0.0	14.6	0.0	13.8	0.0	15.5
1st-Term Q (Q1), veh/ln	0.1	0.0	0.0	0.2	0.0	0.3	0.0	0.7
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.3	0.0	0.3	0.0	0.7
%ile Storage Ratio (RQ%)	0.04	0.00	0.00	0.02	0.00	0.07	0.00	0.06
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	6	0	0	8
Lane Assignment		T						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	370	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1826	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	744	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1599	0	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.6	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0

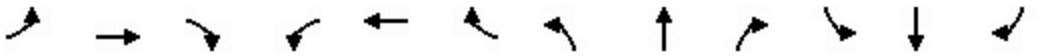
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	16	0	0	18
Lane Assignment		R			T+R			
Lanes in Grp	0	1	0	0	1	0	0	0
Grp Vol (v), veh/h	0	9	0	0	395	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1545	0	0	1822	0	0	0
Q Serve Time (g_s), s	0.0	0.1	0.0	0.0	7.7	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.1	0.0	0.0	7.7	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.42	0.01	0.00	0.00	0.12
Lane Grp Cap (c), veh/h	0	630	0	0	640	0	0	0
V/C Ratio (X)	0.00	0.01	0.00	0.00	0.62	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1353	0	0	1595	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	7.6	0.0	0.0	11.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.6	0.0	0.0	13.6	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.4
HCM 7th LOS	B

Notes

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	343	13	6	356	11	15	14	6	30	12	63
Future Volume (veh/h)	20	343	13	6	356	11	15	14	6	30	12	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	0.99		0.99	0.99		0.99	0.97		0.97	0.97		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	24	404	4	7	419	4	18	16	2	35	14	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	431	788	8	442	788	8	298	228	23	279	119	135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.27	0.27	0.27	0.27	0.27	0.27
Unsig. Movement Delay												
Ln Grp Delay, s/veh	11.1	0.0	9.9	10.5	0.0	10.2	11.1	0.0	0.0	11.6	0.0	0.0
Ln Grp LOS	B		A	B		B	B			B		
Approach Vol, veh/h		432			430			36			74	
Approach Delay, s/veh		10.0			10.2			11.1			11.6	
Approach LOS		B			B			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		23.4		16.2		23.4		16.2
Change Period (Y+Rc), s		6.1		5.7		6.1		5.7
Max Green (Gmax), s		36.7		28.3		36.7		28.3
Max Allow Headway (MAH), s		8.0		8.6		8.0		8.5
Max Q Clear (g_c+I1), s		9.5		3.3		8.7		2.6
Green Ext Time (g_e), s		6.5		0.8		6.6		0.3
Prob of Phs Call (p_c)		1.00		0.76		1.00		0.76
Prob of Max Out (p_x)		0.09		0.00		0.08		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		935		546		948		611

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1805		449		1805		859

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		18		508		17		86

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L+T+R		L		L+T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	24	0	74	0	7	0	36
Grp Sat Flow (s), veh/h/ln	0	935	0	1503	0	948	0	1557
Q Serve Time (g_s), s	0.0	0.8	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	7.5	0.0	1.3	0.0	6.6	0.0	0.6
Perm LT Sat Flow (s_l), veh/h/ln	0	935	0	1371	0	948	0	1348
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1755	0	0	0	1753
Perm LT Eff Green (g_p), s	0.0	17.3	0.0	10.5	0.0	17.3	0.0	10.5
Perm LT Serve Time (g_u), s	0.0	10.5	0.0	9.9	0.0	10.8	0.0	9.2
Perm LT Q Serve Time (g_ps), s	0.0	0.8	0.0	0.0	0.0	0.2	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1.9
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.6
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.47	0.00	1.00	0.00	0.50
Lane Grp Cap (c), veh/h	0	431	0	532	0	442	0	549
V/C Ratio (X)	0.00	0.06	0.00	0.14	0.00	0.02	0.00	0.07
Avail Cap (c_a), veh/h	0	891	0	1187	0	908	0	1225
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	10.9	0.0	11.2	0.0	10.5	0.0	10.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.4	0.0	0.1	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.1	0.0	11.6	0.0	10.5	0.0	11.1
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	408	0	0	0	423	0	0
Grp Sat Flow (s), veh/h/ln	0	1822	0	0	0	1823	0	0
Q Serve Time (g_s), s	0.0	6.4	0.0	0.0	0.0	6.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	6.4	0.0	0.0	0.0	6.7	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.01	0.00	0.34	0.00	0.01	0.00	0.06
Lane Grp Cap (c), veh/h	0	796	0	0	0	796	0	0
V/C Ratio (X)	0.00	0.51	0.00	0.00	0.00	0.53	0.00	0.00
Avail Cap (c_a), veh/h	0	1691	0	0	0	1691	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	8.1	0.0	0.0	0.0	8.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	0.0	0.0	0.0	2.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.9	0.0	0.0	0.0	10.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	1.5	0.0	0.0	0.0	1.6	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.9	0.0	0.0	0.0	2.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	0.04	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	10.2
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	477	573	285	444
Demand Flow Rate, veh/h	487	584	290	454
Vehicles Circulating, veh/h	328	322	686	389
Vehicles Exiting, veh/h	515	588	129	517
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.8	11.8	7.4	10.1
Approach LOS	A	B	A	B

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
A (Intercept)	1380	1380	1380		1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3		1.02e-3
Entry Flow, veh/h	487	584	224	66	454
Cap Entry Lane, veh/h	988	994	685	1938	928
Entry HV Adj Factor	0.979	0.981	0.981	0.980	0.979
Flow Entry, veh/h	477	573	220	65	444
Cap Entry, veh/h	967	975	672	1900	908
V/C Ratio	0.493	0.588	0.327	0.034	0.489
Control Delay, s/veh	9.8	11.8	9.6	0.0	10.1
LOS	A	B	A	A	B
95th %tile Queue, veh	3	4	1	0	3

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	848	25	27	783	76	81
Future Vol, veh/h	848	25	27	783	76	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	922	27	29	851	83	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	949	0	1406	461
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	719	-	130	547
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	585	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	719	-	125	547
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	561	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.34	71.96
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	207	-	-	719	-
HCM Lane V/C Ratio	0.823	-	-	0.041	-
HCM Control Delay (s/veh)	72	-	-	10.2	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	6	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	853	628	716	69
Demand Flow Rate, veh/h	870	641	730	70
Vehicles Circulating, veh/h	212	507	580	1036
Vehicles Exiting, veh/h	894	803	502	112
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	8.3	12.7	7.6
Approach LOS	A	A	B	A

Lane	Left	Right	Left	Right	Left	Right	Left
Designated Moves	LT	R	LT	TR	LT	R	LTR
Assumed Moves	LT	R	LT	TR	LT	R	LTR
RT Channelized							
Lane Util	0.656	0.344	0.470	0.530	0.681	0.319	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1350	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	571	299	301	340	497	233	70
Cap Entry Lane, veh/h	1111	1186	847	923	792	867	589
Entry HV Adj Factor	0.981	0.980	0.981	0.979	0.981	0.979	0.989
Flow Entry, veh/h	560	293	295	333	488	228	69
Cap Entry, veh/h	1089	1162	831	904	777	849	582
V/C Ratio	0.514	0.252	0.355	0.368	0.628	0.269	0.119
Control Delay, s/veh	9.3	5.4	8.5	8.1	15.3	7.1	7.6
LOS	A	A	A	A	C	A	A
95th %tile Queue, veh	3	1	2	2	4	1	0

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	564	1	1	337	0	29	2	20	3	2	5
Future Vol, veh/h	1	564	1	1	337	0	29	2	20	3	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	613	1	1	366	0	32	2	22	3	2	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	614	0	0	985	984	614	985	985	366
Stage 1	-	-	-	-	-	-	616	616	-	368	368	-
Stage 2	-	-	-	-	-	-	370	368	-	616	616	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1192	-	-	965	-	-	227	248	492	227	248	679
Stage 1	-	-	-	-	-	-	478	482	-	651	621	-
Stage 2	-	-	-	-	-	-	650	621	-	478	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1192	-	-	965	-	-	223	248	492	215	247	679
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	248	-	215	247	-
Stage 1	-	-	-	-	-	-	477	481	-	650	620	-
Stage 2	-	-	-	-	-	-	642	620	-	454	481	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.01	0.03	20.66	15.94
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	285	3	-	-	5	-	-	340
HCM Lane V/C Ratio	0.195	0.001	-	-	0.001	-	-	0.032
HCM Control Delay (s/veh)	20.7	8	0	-	8.7	0	-	15.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	15.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	14	444	59	99	312	1	29	48	165	9	20	60
Future Vol, veh/h	14	444	59	99	312	1	29	48	165	9	20	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	15	488	65	109	343	1	32	53	181	10	22	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	344	0	0	553	0	0	1123	1113	520	1106	1145	343
Stage 1	-	-	-	-	-	-	551	551	-	561	561	-
Stage 2	-	-	-	-	-	-	571	562	-	545	584	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1193	-	-	998	-	-	180	205	548	184	196	690
Stage 1	-	-	-	-	-	-	512	509	-	505	504	-
Stage 2	-	-	-	-	-	-	499	503	-	515	492	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1193	-	-	998	-	-	122	174	548	77	167	690
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	174	-	77	167	-
Stage 1	-	-	-	-	-	-	502	499	-	437	436	-
Stage 2	-	-	-	-	-	-	370	435	-	303	483	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.22	2.17	67.12	25.23
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	297	48	-	-	432	-	-	274
HCM Lane V/C Ratio	0.895	0.013	-	-	0.109	-	-	0.357
HCM Control Delay (s/veh)	67.1	8.1	0	-	9.1	0	-	25.2
HCM Lane LOS	F	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	8.2	0	-	-	0.4	-	-	1.6

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	2	2	0	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1046	1269	0	641
Demand Flow Rate, veh/h	1066	1294	0	653
Vehicles Circulating, veh/h	782	0	1059	1294
Vehicles Exiting, veh/h	1165	1059	357	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	7.3	0.0	35.7
Approach LOS	A	A	-	E

Lane	Left	Right	Bypass	Left	Right	Left	Right
Designated Moves	LT	TR	R	LT	TR	L	LTR
Assumed Moves	LT	TR		LT	TR	L	LTR
RT Channelized			Free				
Lane Util	0.470	0.530		0.470	0.530	0.530	0.470
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328		4.645	4.328	4.645	4.328
A (Intercept)	1350	1420		1350	1420	1350	1420
B (Slope)	9.199e-4	8.501e-4		9.199e-4	8.501e-4	9.199e-4	8.501e-4
Entry Flow, veh/h	298	336	432	608	686	346	307
Cap Entry Lane, veh/h	657	730	1938	1350	1420	411	473
Entry HV Adj Factor	0.980	0.980	0.980	0.981	0.980	0.982	0.981
Flow Entry, veh/h	292	329	424	596	672	340	301
Cap Entry, veh/h	645	716	1900	1324	1392	403	464
V/C Ratio	0.453	0.460	0.223	0.450	0.483	0.843	0.649
Control Delay, s/veh	12.4	11.5	0.0	7.2	7.4	45.9	24.3
LOS	B	B	A	A	A	E	C
95th %tile Queue, veh	2	2	1	2	3	8	5

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	3	2	0
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1002	0	579	0
Demand Flow Rate, veh/h	1022	0	590	0
Vehicles Circulating, veh/h	0	444	1022	1179
Vehicles Exiting, veh/h	1179	1168	0	841
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.0	0.0	16.2	0.0
Approach LOS	A	-	C	-

Lane	Left	Right	Left	Right
Designated Moves	LT	TR	LT	R
Assumed Moves	LT	TR	LT	R
RT Channelized				
Lane Util	0.470	0.530	0.481	0.519
Follow-Up Headway, s	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328
A (Intercept)	1350	1420	1350	1420
B (Slope)	9.199e-4	4.501e-4	9.199e-4	4.501e-4
Entry Flow, veh/h	480	542	284	306
Cap Entry Lane, veh/h	1350	1420	527	596
Entry HV Adj Factor	0.981	0.980	0.982	0.980
Flow Entry, veh/h	471	531	279	300
Cap Entry, veh/h	1324	1392	518	584
V/C Ratio	0.356	0.382	0.539	0.514
Control Delay, s/veh	6.0	6.1	17.5	15.1
LOS	A	A	C	C
95th %tile Queue, veh	2	2	3	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	66	12	8	98	0	10	68	24	8	33	352
Future Volume (veh/h)	204	66	12	8	98	0	10	68	24	8	33	352
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	222	72	13	9	107	0	11	74	26	9	36	383
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	1169	802	358	608	802	358	673	1273	568	779	1273	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.00	0.36	0.36	0.36	0.36	0.36	0.36
Unsig. Movement Delay												
Ln Grp Delay, s/veh	7.6	6.7	6.6	6.8	6.8	0.0	4.6	4.6	4.6	4.7	4.5	7.3
Ln Grp LOS	A	A	A	A	A		A	A	A	A	A	A
Approach Vol, veh/h		307			116			111			428	
Approach Delay, s/veh		7.4			6.8			4.6			7.0	
Approach LOS		A			A			A			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		5.0		5.0		5.0		5.0
Phs Duration (G+Y+Rc), s		12.3		9.4		12.3		9.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		5.0		4.3		4.2		5.0
Max Q Clear (g_c+I1), s		2.3		4.2		6.4		2.5
Green Ext Time (g_e), s		0.4		1.1		1.3		0.5
Prob of Phs Call (p_c)		1.00		0.92		1.00		0.92
Prob of Max Out (p_x)		0.00		0.00		0.04		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		968		2496		1295		1313

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		3554		3554		3554

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	2	0	1	0	1
Grp Vol (v), veh/h	0	11	0	222	0	9	0	9
Grp Sat Flow (s), veh/h/ln	0	968	0	1248	0	1295	0	1313
Q Serve Time (g_s), s	0.0	0.2	0.0	1.7	0.0	0.1	0.0	0.1
Cycle Q Clear Time (g_c), s	0.0	0.3	0.0	2.2	0.0	0.4	0.0	0.5
Perm LT Sat Flow (s_l), veh/h/ln	0	968	0	1248	0	1295	0	1313
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	7.8	0.0	4.9	0.0	7.8	0.0	4.9
Perm LT Serve Time (g_u), s	0.0	7.6	0.0	4.4	0.0	7.5	0.0	4.5
Perm LT Q Serve Time (g_ps), s	0.0	0.2	0.0	1.7	0.0	0.1	0.0	0.1
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	673	0	1169	0	779	0	608
V/C Ratio (X)	0.00	0.02	0.00	0.19	0.00	0.01	0.00	0.01
Avail Cap (c_a), veh/h	0	1131	0	2682	0	1392	0	1404
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	4.6	0.0	7.6	0.0	4.7	0.0	6.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.6	0.0	7.6	0.0	4.7	0.0	6.8
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	2	0	2	0	2
Grp Vol (v), veh/h	0	74	0	72	0	36	0	107
Grp Sat Flow (s), veh/h/ln	0	1777	0	1777	0	1777	0	1777
Q Serve Time (g_s), s	0.0	0.3	0.0	0.3	0.0	0.1	0.0	0.5
Cycle Q Clear Time (g_c), s	0.0	0.3	0.0	0.3	0.0	0.1	0.0	0.5
Lane Grp Cap (c), veh/h	0	1273	0	802	0	1273	0	802
V/C Ratio (X)	0.00	0.06	0.00	0.09	0.00	0.03	0.00	0.13
Avail Cap (c_a), veh/h	0	2956	0	2956	0	2956	0	2956
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	4.6	0.0	6.6	0.0	4.5	0.0	6.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.6	0.0	6.7	0.0	4.5	0.0	6.8
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	26	0	13	0	383	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.2	0.0	0.1	0.0	4.4	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.2	0.0	0.1	0.0	4.4	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	568	0	358	0	568	0	358
V/C Ratio (X)	0.00	0.05	0.00	0.04	0.00	0.67	0.00	0.00
Avail Cap (c_a), veh/h	0	1319	0	1319	0	1319	0	1319
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	4.5	0.0	6.5	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.6	0.0	6.6	0.0	7.3	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.00	0.00	0.10	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	6.8
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	0	4	12	0	42	7	369	14	26	430	18
Future Vol, veh/h	55	0	4	12	0	42	7	369	14	26	430	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	0	4	13	0	46	8	401	15	28	467	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	940	955	467	948	967	409	487	0	0	416	0	0
Stage 1	524	524	-	424	424	-	-	-	-	-	-	-
Stage 2	416	432	-	524	543	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	244	258	596	241	254	643	1076	-	-	1143	-	-
Stage 1	537	530	-	608	587	-	-	-	-	-	-	-
Stage 2	614	583	-	537	519	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	219	250	596	231	246	643	1076	-	-	1143	-	-
Mov Cap-2 Maneuver	219	250	-	231	246	-	-	-	-	-	-	-
Stage 1	523	517	-	604	583	-	-	-	-	-	-	-
Stage 2	566	578	-	519	507	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	26.73	13.95	0.15	0.45
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1076	-	-	229	461	1143	-	-
HCM Lane V/C Ratio	0.007	-	-	0.28	0.127	0.025	-	-
HCM Control Delay (s/veh)	8.4	-	-	26.7	14	8.2	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	0	8	2	0	15	3	336	5	6	425	14
Future Vol, veh/h	37	0	8	2	0	15	3	336	5	6	425	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	0	9	2	0	16	3	365	5	7	462	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	847	852	462	849	865	368	477	0	0	371	0	0
Stage 1	475	475	-	374	374	-	-	-	-	-	-	-
Stage 2	372	377	-	475	490	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	282	297	600	281	292	677	1085	-	-	1188	-	-
Stage 1	570	557	-	647	617	-	-	-	-	-	-	-
Stage 2	649	616	-	570	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	273	294	600	274	289	677	1085	-	-	1188	-	-
Mov Cap-2 Maneuver	273	294	-	274	289	-	-	-	-	-	-	-
Stage 1	567	554	-	645	615	-	-	-	-	-	-	-
Stage 2	631	614	-	559	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	19.21	11.44	0.07	0.11
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1085	-	-	302	578	1188	-	-
HCM Lane V/C Ratio	0.003	-	-	0.162	0.032	0.005	-	-
HCM Control Delay (s/veh)	8.3	-	-	19.2	11.4	8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0	-	-

Intersection	
Int Delay, s/veh	45.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	75	11	33	132	10	161	25	96	87	293	91	53
Future Vol, veh/h	75	11	33	132	10	161	25	96	87	293	91	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	200	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	12	36	143	11	175	27	104	95	318	99	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	929	1018	128	948	999	152	157	0	0	199	0	0
Stage 1	765	765	-	206	206	-	-	-	-	-	-	-
Stage 2	164	253	-	742	793	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	248	237	922	241	243	895	1423	-	-	1373	-	-
Stage 1	396	412	-	796	731	-	-	-	-	-	-	-
Stage 2	838	698	-	408	400	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	144	179	922	165	183	895	1423	-	-	1373	-	-
Mov Cap-2 Maneuver	144	179	-	165	183	-	-	-	-	-	-	-
Stage 1	304	317	-	781	717	-	-	-	-	-	-	-
Stage 2	651	684	-	290	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	55.59	128.16	0.91	5.64
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1423	-	-	192	293	1373	-	-
HCM Lane V/C Ratio	0.019	-	-	0.674	1.122	0.232	-	-
HCM Control Delay (s/veh)	7.6	-	-	55.6	128.2	8.4	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.1	13.6	0.9	-	-

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	3	33	0	3	3	75	138	0	3	60	66
Future Vol, veh/h	80	3	33	0	3	3	75	138	0	3	60	66
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	145	5	60	0	5	5	136	251	0	5	109	120
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay, s/veh	11.3	9.7	17.3	11.7
HCM LOS	B	A	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	35%	0%	96%	0%	0%	2%
Vol Thru, %	65%	100%	4%	0%	50%	47%
Vol Right, %	0%	0%	0%	100%	50%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	0	83	33	6	129
LT Vol	75	0	80	0	0	3
Through Vol	138	0	3	0	3	60
RT Vol	0	0	0	33	3	66
Lane Flow Rate	387	0	151	60	11	235
Geometry Grp	5	5	5	5	4b	4b
Degree of Util (X)	0.618	0	0.285	0.093	0.02	0.361
Departure Headway (Hd)	5.741	5.563	6.788	5.587	6.485	5.542
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	631	0	530	641	551	650
Service Time	3.441	3.263	4.525	3.323	4.536	3.574
HCM Lane V/C Ratio	0.613	0	0.285	0.094	0.02	0.362
HCM Control Delay, s/veh	17.3	8.3	12.2	8.9	9.7	11.7
HCM Lane LOS	C	N	B	A	A	B
HCM 95th-tile Q	4.3	0	1.2	0.3	0.1	1.6

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	82	74	1	32	117
Future Vol, veh/h	5	82	74	1	32	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	89	80	1	35	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	278	81	0	0	82	0
Stage 1	81	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	712	979	-	-	1516	-
Stage 1	942	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	694	979	-	-	1516	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	816	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.18	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	956	387	-
HCM Lane V/C Ratio	-	-	0.099	0.023	-
HCM Control Delay (s/veh)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	0	10	0	0	2	9	167	0	0	245	18
Future Vol, veh/h	40	0	10	0	0	2	9	167	0	0	245	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	0	11	0	0	2	10	182	0	0	266	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	477	477	276	467	487	182	286	0	0	182	0	0
Stage 1	276	276	-	201	201	-	-	-	-	-	-	-
Stage 2	201	201	-	266	286	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	498	487	763	506	481	861	1276	-	-	1394	-	-
Stage 1	730	682	-	801	735	-	-	-	-	-	-	-
Stage 2	801	735	-	739	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	493	483	763	494	477	861	1276	-	-	1394	-	-
Mov Cap-2 Maneuver	493	483	-	494	477	-	-	-	-	-	-	-
Stage 1	730	682	-	794	729	-	-	-	-	-	-	-
Stage 2	792	729	-	729	675	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.56	9.19	0.4	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	92	-	-	530	861	1394	-	-
HCM Lane V/C Ratio	0.008	-	-	0.102	0.003	-	-	-
HCM Control Delay (s/veh)	7.8	0	-	12.6	9.2	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	22.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	12	1	1530	2573	4
Future Vol, veh/h	18	12	1	1530	2573	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	700	-	-	700
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	13	1	1663	2797	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3630	1398	2801	0	-	0
Stage 1	2797	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 4	130	136	-	-	-
Stage 1	32	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 4	130	136	-	-	-
Mov Cap-2 Maneuver	~ 4	-	-	-	-	-
Stage 1	32	-	-	-	-	-
Stage 2	387	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	$ 3100.56	0.02	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	136	-	6	-	-
HCM Lane V/C Ratio	0.008	-	5.325	-	-
HCM Control Delay (s/veh)	31.7	-	$ 3100.6	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0	-	5.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	252	32	863	71	10	2634
Future Volume (veh/h)	252	32	863	71	10	2634
Number	3	18	2	12	1	6
Initial Q, veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Lanes Open During Work Zone						
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	274	35	938	77	11	2863
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Opposing Right Turn Influence	Yes				Yes	
Cap, veh/h	274	244	2793	1246	442	2793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.15	0.15	0.79	0.79	0.79	0.79
Unsig. Movement Delay						
Ln Grp Delay, s/veh	117.4	55.2	4.7	3.6	6.5	39.8
Ln Grp LOS	F	E	A	A	A	F
Approach Vol, veh/h	309		1015			2874
Approach Delay, s/veh	110.4		4.7			39.7
Approach LOS	F		A			D

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2	8			6		
Case No		7.0	9.0			6.0		
Phs Duration (G+Y+Rc), s		122.4	27.6			122.4		
Change Period (Y+Rc), s		4.5	4.5			4.5		
Max Green (Gmax), s		117.9	23.1			117.9		
Max Allow Headway (MAH), s		4.7	3.8			4.7		
Max Q Clear (g_c+I1), s		13.5	25.1			119.9		
Green Ext Time (g_e), s		7.2	0.0			0.0		
Prob of Phs Call (p_c)		1.00	1.00			1.00		
Prob of Max Out (p_x)		0.00	1.00			1.00		
Left-Turn Movement Data								
Assigned Mvmt		5	3			1		
Mvmt Sat Flow, veh/h		0	1781			555		
Through Movement Data								
Assigned Mvmt		2	8			6		
Mvmt Sat Flow, veh/h		3647	0			3647		
Right-Turn Movement Data								
Assigned Mvmt		12	18			16		
Mvmt Sat Flow, veh/h		1585	1585			0		
Left Lane Group Data								
Assigned Mvmt	0	5	3	0	0	1	0	0

Lane Assignment			L			L		
Lanes in Grp	0	0	1	0	0	1	0	0
Grp Vol (v), veh/h	0	0	274	0	0	11	0	0
Grp Sat Flow (s), veh/h/ln	0	0	1781	0	0	555	0	0
Q Serve Time (g_s), s	0.0	0.0	23.1	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	23.1	0.0	0.0	12.4	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	1781	0	0	555	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	117.9	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	106.4	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0
Time to First Blk (g_f), s	0.0	117.9	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	274	0	0	442	0	0
V/C Ratio (X)	0.00	0.00	1.00	0.00	0.00	0.02	0.00	0.00
Avail Cap (c_a), veh/h	0	0	274	0	0	442	0	0
Upstream Filter (I)	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	63.4	0.0	0.0	6.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	117.4	0.0	0.0	6.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	10.4	0.0	0.0	0.1	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	14.5	0.0	0.0	0.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	2	0	0
Grp Vol (v), veh/h	0	938	0	0	0	2863	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	11.5	0.0	0.0	0.0	117.9	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	11.5	0.0	0.0	0.0	117.9	0.0	0.0
Lane Grp Cap (c), veh/h	0	2793	0	0	0	2793	0	0
V/C Ratio (X)	0.00	0.34	0.00	0.00	0.00	1.02	0.00	0.00
Avail Cap (c_a), veh/h	0	2793	0	0	0	2793	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	4.7	0.0	0.0	0.0	16.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.0	23.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.7	0.0	0.0	0.0	39.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.1	0.0	0.0	0.0	32.1	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	3.2	0.0	0.0	0.0	41.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	1.17	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	17.5	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		R	R					
Lanes in Grp	0	1	1	0	0	0	0	0
Grp Vol (v), veh/h	0	77	35	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	0	0	0	0	0
Q Serve Time (g_s), s	0.0	1.6	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	1.6	2.9	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1246	244	0	0	0	0	0
V/C Ratio (X)	0.00	0.06	0.14	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1246	244	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.6	54.9	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.6	55.2	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.4	1.2	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.4	1.2	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.02	0.20	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	36.4
HCM 7th LOS	D

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	18	8	3	44	15	3	94	4	16	128	213
Future Vol, veh/h	86	18	8	3	44	15	3	94	4	16	128	213
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	20	9	3	48	16	3	102	4	17	139	232
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay, s/veh	9.8	8.8	8.8	10.9
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	3%	100%	0%	5%	4%
Vol Thru, %	93%	0%	69%	71%	36%
Vol Right, %	4%	0%	31%	24%	60%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	101	86	26	62	357
LT Vol	3	86	0	3	16
Through Vol	94	0	18	44	128
RT Vol	4	0	8	15	213
Lane Flow Rate	110	93	28	67	388
Geometry Grp	2	5	5	4a	2
Degree of Util (X)	0.148	0.161	0.043	0.097	0.458
Departure Headway (Hd)	4.866	6.207	5.484	5.193	4.249
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	732	574	648	683	846
Service Time	2.924	3.984	3.26	3.275	2.286
HCM Lane V/C Ratio	0.15	0.162	0.043	0.098	0.459
HCM Control Delay, s/veh	8.8	10.2	8.5	8.8	10.9
HCM Lane LOS	A	B	A	A	B
HCM 95th-tile Q	0.5	0.6	0.1	0.3	2.4

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	0	20	2	0	0	7	47	0	0	114	15
Future Vol, veh/h	15	0	20	2	0	0	7	47	0	0	114	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	22	2	0	0	8	51	0	0	124	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	198	198	132	190	207	51	140	0	0	51	0	0
Stage 1	132	132	-	66	66	-	-	-	-	-	-	-
Stage 2	66	66	-	124	140	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	760	697	917	770	690	1017	1443	-	-	1555	-	-
Stage 1	871	787	-	944	840	-	-	-	-	-	-	-
Stage 2	944	840	-	880	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	756	694	917	747	686	1017	1443	-	-	1555	-	-
Mov Cap-2 Maneuver	756	694	-	747	686	-	-	-	-	-	-	-
Stage 1	871	787	-	939	835	-	-	-	-	-	-	-
Stage 2	939	835	-	859	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.49	9.83	0.97	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	233	-	-	841	747	1555	-	-
HCM Lane V/C Ratio	0.005	-	-	0.045	0.003	-	-	-
HCM Control Delay (s/veh)	7.5	0	-	9.5	9.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	289.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	192	149	3	1389	2674	20
Future Vol, veh/h	192	149	3	1389	2674	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	150	-	-	600
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	162	3	1510	2907	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3668	1453	2907	0	-	0
Stage 1	2907	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 4	~ 120	123	-	-	-
Stage 1	~ 28	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 3	~ 120	123	-	-	-
Mov Cap-2 Maneuver	~ 23	-	-	-	-	-
Stage 1	~ 27	-	-	-	-	-
Stage 2	422	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 3757.12	0.08	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	123	-	41	-	-
HCM Lane V/C Ratio	0.026	-	8.934	-	-
HCM Control Delay (s/veh)	35	-	$ 3757.1	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	44.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	140	11	779	45	8	2477
Future Vol, veh/h	140	11	779	45	8	2477
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	150	-	0	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	12	847	49	9	2692

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2210	423	0	0	847	0
Stage 1	847	-	-	-	-	-
Stage 2	1364	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 37	579	-	-	786	-
Stage 1	381	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 37	579	-	-	786	-
Mov Cap-2 Maneuver	~ 135	-	-	-	-	-
Stage 1	381	-	-	-	-	-
Stage 2	200	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	168	0	0.03
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	135	579	786	-
HCM Lane V/C Ratio	-	-	1.128	0.021	0.011	-
HCM Control Delay (s/veh)	-	-	180.3	11.3	9.6	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	8.7	0.1	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	30	18	6	20	89
Future Vol, veh/h	35	30	18	6	20	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	33	20	7	22	97

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	116	70	118	0	-	0
Stage 1	70	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	880	993	1470	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	869	993	1470	-	-	-
Mov Cap-2 Maneuver	869	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	977	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.23	5.61	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1350	-	922	-	-
HCM Lane V/C Ratio	0.013	-	0.077	-	-
HCM Control Delay (s/veh)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

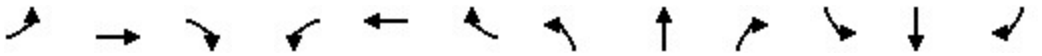
Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	70	2	294	101	21	0	22	156	22	15	3
Future Vol, veh/h	3	70	2	294	101	21	0	22	156	22	15	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	150	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	76	2	320	110	23	0	24	170	24	16	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	145	259	18	126	91	24	20	0	0	193	0	0
Stage 1	66	66	-	24	24	-	-	-	-	-	-	-
Stage 2	79	193	-	102	67	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	824	645	1061	848	799	1053	1597	-	-	1380	-	-
Stage 1	945	840	-	994	875	-	-	-	-	-	-	-
Stage 2	930	740	-	904	839	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	683	634	1061	733	785	1053	1597	-	-	1380	-	-
Mov Cap-2 Maneuver	683	634	-	733	785	-	-	-	-	-	-	-
Stage 1	928	826	-	994	875	-	-	-	-	-	-	-
Stage 2	796	740	-	805	824	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.35	12.59	0	4.21
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	683	641	733	785	1053	1380	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.122	0.436	0.14	0.022	0.017	-	-
HCM Control Delay (s/veh)	0	-	-	10.3	11.4	13.7	10.3	8.5	7.7	-	-
HCM Lane LOS	A	-	-	B	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	2.2	0.5	0.1	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	52	37	41	87	78	64	1050	33	50	704	82
Future Volume (veh/h)	59	52	37	41	87	78	64	1050	33	50	704	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	57	-15	45	95	45	70	1141	29	54	765	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	403	524	0	461	524	444	408	2060	919	284	2060	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.28	0.28	0.00	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
Unsig. Movement Delay												
Ln Grp Delay, s/veh	22.0	19.0	0.0	20.2	19.8	19.2	11.8	9.8	6.4	16.1	8.3	6.6
Ln Grp LOS	C	B		C	B	B	B	A	A	B	A	A
Approach Vol, veh/h		106			185			1240			883	
Approach Delay, s/veh		20.8			19.7			9.8			8.6	
Approach LOS		C			B			A			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		5.0		6.0		5.0		5.0
Phs Duration (G+Y+Rc), s		46.3		24.9		46.3		24.9
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green (Gmax), s		78.0		27.0		78.0		27.0
Max Allow Headway (MAH), s		7.0		6.5		7.1		6.6
Max Q Clear (g_c+I1), s		16.2		7.7		21.8		5.0
Green Ext Time (g_e), s		25.1		0.7		15.2		1.5
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.14		0.00		0.04		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		661		1249		480		1365

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		1870		3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		0		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	70	0	64	0	54	0	45
Grp Sat Flow (s), veh/h/ln	0	661	0	1249	0	480	0	1365
Q Serve Time (g_s), s	0.0	4.5	0.0	2.9	0.0	5.6	0.0	1.8
Cycle Q Clear Time (g_c), s	0.0	12.7	0.0	5.7	0.0	19.8	0.0	3.0
Perm LT Sat Flow (s_l), veh/h/ln	0	661	0	1249	0	480	0	1365
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	41.3	0.0	19.9	0.0	41.3	0.0	19.9
Perm LT Serve Time (g_u), s	0.0	33.1	0.0	17.2	0.0	27.1	0.0	18.8
Perm LT Q Serve Time (g_ps), s	0.0	4.5	0.0	2.9	0.0	5.6	0.0	1.8
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	408	0	403	0	284	0	461
V/C Ratio (X)	0.00	0.17	0.00	0.16	0.00	0.19	0.00	0.10
Avail Cap (c_a), veh/h	0	749	0	526	0	531	0	596
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	11.4	0.0	21.6	0.0	15.4	0.0	20.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.4	0.0	0.7	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.8	0.0	22.0	0.0	16.1	0.0	20.2
1st-Term Q (Q1), veh/ln	0.0	0.6	0.0	0.8	0.0	0.5	0.0	0.5
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	0.9	0.0	0.6	0.0	0.6
%ile Storage Ratio (RQ%)	0.00	0.06	0.00	0.06	0.00	0.04	0.00	0.04
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	1	0	2	0	1
Grp Vol (v), veh/h	0	1141	0	42	0	765	0	95
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	0	1777	0	1870
Q Serve Time (g_s), s	0.0	14.2	0.0	1.2	0.0	8.2	0.0	2.7
Cycle Q Clear Time (g_c), s	0.0	14.2	0.0	1.2	0.0	8.2	0.0	2.7
Lane Grp Cap (c), veh/h	0	2060	0	524	0	2060	0	524
V/C Ratio (X)	0.00	0.55	0.00	0.08	0.00	0.37	0.00	0.18
Avail Cap (c_a), veh/h	0	3892	0	709	0	3892	0	709
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	9.3	0.0	18.9	0.0	8.0	0.0	19.5
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.1	0.0	0.2	0.0	0.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.8	0.0	19.0	0.0	8.3	0.0	19.8
1st-Term Q (Q1), veh/ln	0.0	4.0	0.0	0.5	0.0	2.4	0.0	1.1

2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.1	0.0	0.5	0.0	2.5	0.0	1.2
%ile Storage Ratio (RQ%)	0.00	0.17	0.00	0.02	0.00	0.16	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R				R		R
Lanes in Grp	0	1	0	0	0	1	0	1
Grp Vol (v), veh/h	0	29	0	0	0	64	0	45
Grp Sat Flow (s), veh/h/ln	0	1585	0	0	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.6	0.0	0.0	0.0	1.3	0.0	1.5
Cycle Q Clear Time (g_c), s	0.0	0.6	0.0	0.0	0.0	1.3	0.0	1.5
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	919	0	0	0	919	0	444
V/C Ratio (X)	0.00	0.03	0.00	0.00	0.00	0.07	0.00	0.10
Avail Cap (c_a), veh/h	0	1736	0	0	0	1736	0	601
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	6.4	0.0	0.0	0.0	6.6	0.0	19.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.4	0.0	0.0	0.0	6.6	0.0	19.2
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.5
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.6
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	0.00	0.00	0.06	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	10.6
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	66	71	12	45	653	21	1271	603	43	1894	206
Future Volume (veh/h)	105	66	71	12	45	653	21	1271	603	43	1894	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	72	0	13	49	0	23	1382	0	47	2059	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	231	247		213	247		132	2042		272	2094	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.13	0.13	0.00	0.13	0.13	0.00	0.02	0.57	0.00	0.04	0.59	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	38.1	34.1	0.0	35.7	33.6	0.0	41.2	13.5	0.0	10.3	33.2	0.0
Ln Grp LOS	D	C		D	C		D	B		B	C	
Approach Vol, veh/h		186			62			1405			2106	
Approach Delay, s/veh		36.6			34.0			14.0			32.7	
Approach LOS		D			C			B			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	6	5		8
Case No	1.2	3.0		5.0	3.0	1.3		5.0
Phs Duration (G+Y+Rc), s	11.4	57.7		17.4	59.0	10.1		17.4
Change Period (Y+Rc), s	8.0	8.0		6.0	8.0	8.0		6.0
Max Green (Gmax), s	5.0	51.0		32.0	51.0	5.0		32.0
Max Allow Headway (MAH), s	2.6	3.7		3.4	3.7	2.6		4.0
Max Q Clear (g_c+I1), s	2.9	25.4		11.1	51.0	2.0		5.8
Green Ext Time (g_e), s	0.0	6.4		0.4	0.0	0.0		0.1
Prob of Phs Call (p_c)	0.68	1.00		1.00	1.00	0.42		1.00
Prob of Max Out (p_x)	1.00	0.03		0.00	1.00	0.43		0.00

Left-Turn Movement Data								
Assigned Mvmt	1			7		5		3
Mvmt Sat Flow, veh/h	1781			1356		1781		1328

Through Movement Data								
Assigned Mvmt		2		4	6			8
Mvmt Sat Flow, veh/h		3554		1870	3554			1870

Right-Turn Movement Data								
Assigned Mvmt		12		14	16			18
Mvmt Sat Flow, veh/h		1585		1585	1585			1585

Left Lane Group Data								
Assigned Mvmt	1	0	0	7	0	5	0	3

Lane Assignment	L (Pr/Pm)			L		L (Pr/Pm)		L
Lanes in Grp	1	0	0	1	0	1	0	1
Grp Vol (v), veh/h	47	0	0	114	0	23	0	13
Grp Sat Flow (s), veh/h/ln	1781	0	0	1356	0	1781	0	1328
Q Serve Time (g_s), s	0.9	0.0	0.0	7.1	0.0	0.0	0.0	0.8
Cycle Q Clear Time (g_c), s	0.9	0.0	0.0	9.1	0.0	0.0	0.0	3.8
Perm LT Sat Flow (s_l), veh/h/ln	392	0	0	1356	0	203	0	1328
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	49.7	0.0	0.0	11.4	0.0	51.0	0.0	11.4
Perm LT Serve Time (g_u), s	26.3	0.0	0.0	9.4	0.0	2.0	0.0	8.4
Perm LT Q Serve Time (g_ps), s	3.2	0.0	0.0	7.1	0.0	2.0	0.0	0.8
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	272	0	0	231	0	132	0	213
V/C Ratio (X)	0.17	0.00	0.00	0.49	0.00	0.17	0.00	0.06
Avail Cap (c_a), veh/h	305	0	0	553	0	191	0	528
Upstream Filter (I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	10.2	0.0	0.0	37.5	0.0	41.0	0.0	35.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.6	0.0	0.2	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	10.3	0.0	0.0	38.1	0.0	41.2	0.0	35.7
1st-Term Q (Q1), veh/ln	0.3	0.0	0.0	2.3	0.0	0.4	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.3	0.0	0.0	2.3	0.0	0.5	0.0	0.2
%ile Storage Ratio (RQ%)	0.01	0.00	0.00	0.20	0.00	0.03	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	6	0	0	8
Lane Assignment		T		T	T			T
Lanes in Grp	0	2	0	1	2	0	0	1
Grp Vol (v), veh/h	0	1382	0	72	2059	0	0	49
Grp Sat Flow (s), veh/h/ln	0	1777	0	1870	1777	0	0	1870
Q Serve Time (g_s), s	0.0	23.4	0.0	3.0	49.0	0.0	0.0	2.0
Cycle Q Clear Time (g_c), s	0.0	23.4	0.0	3.0	49.0	0.0	0.0	2.0
Lane Grp Cap (c), veh/h	0	2042	0	247	2094	0	0	247
V/C Ratio (X)	0.00	0.68	0.00	0.29	0.98	0.00	0.00	0.20
Avail Cap (c_a), veh/h	0	2094	0	691	2094	0	0	691
Upstream Filter (I)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	12.8	0.0	33.9	17.4	0.0	0.0	33.5
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.2	15.8	0.0	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	13.5	0.0	34.1	33.2	0.0	0.0	33.6
1st-Term Q (Q1), veh/ln	0.0	7.0	0.0	1.3	14.4	0.0	0.0	0.9

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	4.6	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	7.2	0.0	1.4	19.0	0.0	0.0	0.9
%ile Storage Ratio (RQ%)	0.00	0.23	0.00	0.09	0.57	0.00	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	16	0	0	18
Lane Assignment		R		R	R			R
Lanes in Grp	0	1	0	1	1	0	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	1585	0	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	911	0	209	934	0	0	209
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	934	0	586	934	0	0	586
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	25.9
HCM 7th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	8	6	68	21	3
Future Vol, veh/h	41	8	6	68	21	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	9	7	74	23	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	53	0	136	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	87	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1552	-	858	1020
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1552	-	854	1020
Mov Cap-2 Maneuver	-	-	-	-	854	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	932	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.59	9.26
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	872	-	-	146	-
HCM Lane V/C Ratio	0.03	-	-	0.004	-
HCM Control Delay (s/veh)	9.3	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	18	59	3	8	2	24	2	0	2	0	0
Future Vol, veh/h	20	18	59	3	8	2	24	2	0	2	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	260	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	20	64	3	9	2	26	2	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	11	0	0	20	0	0	78	80	20	80	79	10
Stage 1	-	-	-	-	-	-	63	63	-	16	16	-
Stage 2	-	-	-	-	-	-	15	17	-	64	63	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1608	-	-	1597	-	-	911	810	1058	908	811	1072
Stage 1	-	-	-	-	-	-	948	842	-	1003	882	-
Stage 2	-	-	-	-	-	-	1005	881	-	947	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1608	-	-	1597	-	-	896	797	1058	890	798	1072
Mov Cap-2 Maneuver	-	-	-	-	-	-	896	797	-	890	798	-
Stage 1	-	-	-	-	-	-	934	830	-	1001	880	-
Stage 2	-	-	-	-	-	-	1003	879	-	931	830	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.5	1.68	9.19	9.05
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	887	947	-	-	399	-	-	890
HCM Lane V/C Ratio	0.032	0.014	-	-	0.002	-	-	0.002
HCM Control Delay (s/veh)	9.2	7.3	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	422	55	1547	890
Demand Flow Rate, veh/h	430	56	1579	907
Vehicles Circulating, veh/h	691	1752	280	394
Vehicles Exiting, veh/h	611	106	841	1414
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.8	14.8	15.7	9.3
Approach LOS	B	B	C	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
A (Intercept)	1420	1420	1350	1420	1350	1420
B (Slope)	8.501e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4
Entry Flow, veh/h	430	56	742	837	426	481
Cap Entry Lane, veh/h	789	320	1043	1119	939	1016
Entry HV Adj Factor	0.981	0.981	0.980	0.980	0.982	0.981
Flow Entry, veh/h	422	55	727	820	418	472
Cap Entry, veh/h	774	314	1022	1097	922	996
V/C Ratio	0.545	0.175	0.711	0.748	0.453	0.473
Control Delay, s/veh	12.8	14.8	15.2	16.0	9.4	9.2
LOS	B	B	C	C	A	A
95th %tile Queue, veh	3	1	6	7	2	3

Intersection	
Intersection Delay, s/veh	67.0
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	2	3	3	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	622	0	0	999
Demand Flow Rate, veh/h	640	0	0	1029
Vehicles Circulating, veh/h	138	1974	219	608
Vehicles Exiting, veh/h	608	278	136	1490
Ped Vol Crossing Leg, #/h	1	0	0	0
Ped Cap Adj	0.999	1.000	1.000	1.000
Approach Delay, s/veh	1.3	0.0	0.0	108.0
Approach LOS	A	-	-	F

Lane	Left	Right	Bypass		Left	Right	Bypass
Designated Moves	L	LTR	R		LT	TR	R
Assumed Moves	L	LTR			LT	TR	
RT Channelized			Free				Yield
Lane Util	0.530	0.470			0.471	0.529	
Follow-Up Headway, s	2.667	2.535			2.667	2.535	2.609
Critical Headway, s	4.645	4.328			4.645	4.328	4.976
A (Intercept)	1350	1420			1350	1420	1380
B (Slope)	9.199e-4	4.501e-4			9.199e-4	4.501e-4	1.02e-3
Entry Flow, veh/h	115	102	423		65	73	891
Cap Entry Lane, veh/h	1189	1263	1959		772	847	742
Entry HV Adj Factor	0.972	0.972	0.971		0.969	0.973	0.971
Flow Entry, veh/h	112	99	411		63	71	865
Cap Entry, veh/h	1155	1226	1900		748	824	721
V/C Ratio	0.097	0.081	0.216		0.084	0.086	1.200
Control Delay, s/veh	3.9	3.6	0.0		5.7	5.2	123.9
LOS	A	A	A		A	A	F
95th %tile Queue, veh	0	0	1		0	0	29

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	880	1009	18	137	612	182	11	488	228	127	397	487
Future Volume (veh/h)	880	1009	18	137	612	182	11	488	228	127	397	487
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	957	1097	0	149	665	0	12	530	0	138	432	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	872	1328		166	762		155	484		128	462	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.25	0.37	0.00	0.09	0.21	0.00	0.09	0.26	0.00	0.07	0.25	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	113.9	45.8	0.0	105.1	66.2	0.0	59.6	122.2	0.0	167.9	72.3	0.0
Ln Grp LOS	F	D		F	E		E	F		F	E	
Approach Vol, veh/h		2054			814			542			570	
Approach Delay, s/veh		77.5			73.3			120.8			95.5	
Approach LOS		E			E			F			F	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	4	3	5	6	7	8
Case No	2.0	3.0	3.0	2.0	2.0	3.0	2.0	3.0
Phs Duration (G+Y+Rc), s	21.4	60.0	41.4	19.1	44.0	37.4	17.0	43.5
Change Period (Y+Rc), s	8.2	7.0	6.3	* 6.8	8.2	7.0	6.8	* 6.8
Max Green (Gmax), s	13.2	54.9	41.9	* 5	35.8	32.3	10.2	* 37
Max Allow Headway (MAH), s	2.6	7.7	3.9	1.7	2.6	7.7	2.7	3.9
Max Q Clear (g_c+I1), s	13.8	41.7	34.1	2.9	37.8	27.7	12.2	38.7
Green Ext Time (g_e), s	0.0	9.8	1.0	0.0	0.0	2.8	0.0	0.0
Prob of Phs Call (p_c)	1.00	1.00	1.00	0.38	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.83	0.17	0.21	1.00	1.00	1.00	1.00

Left-Turn Movement Data								
Assigned Mvmt	1			3	5		7	
Mvmt Sat Flow, veh/h	1781			1781	3456		1781	

Through Movement Data								
Assigned Mvmt		2	4			6		8
Mvmt Sat Flow, veh/h		3554	1870			3554		1870

Right-Turn Movement Data								
Assigned Mvmt		12	14			16		18
Mvmt Sat Flow, veh/h		1585	1585			1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	0	3	5	0	7	0

Lane Assignment	L (Prot)			L (Prot)	L (Prot)		L (Prot)	
Lanes in Grp	1	0	0	1	2	0	1	0
Grp Vol (v), veh/h	149	0	0	12	957	0	138	0
Grp Sat Flow (s), veh/h/ln	1781	0	0	1781	1728	0	1781	0
Q Serve Time (g_s), s	11.8	0.0	0.0	0.9	35.8	0.0	10.2	0.0
Cycle Q Clear Time (g_c), s	11.8	0.0	0.0	0.9	35.8	0.0	10.2	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	166	0	0	155	872	0	128	0
V/C Ratio (X)	0.90	0.00	0.00	0.08	1.10	0.00	1.08	0.00
Avail Cap (c_a), veh/h	166	0	0	155	872	0	128	0
Upstream Filter (I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	63.7	0.0	0.0	59.6	53.1	0.0	65.9	0.0
Incr Delay (d2), s/veh	41.4	0.0	0.0	0.1	60.8	0.0	102.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	105.1	0.0	0.0	59.6	113.9	0.0	167.9	0.0
1st-Term Q (Q1), veh/ln	5.2	0.0	0.0	0.4	14.8	0.0	4.6	0.0
2nd-Term Q (Q2), veh/ln	1.9	0.0	0.0	0.0	7.4	0.0	3.6	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	7.1	0.0	0.0	0.4	22.2	0.0	8.2	0.0
%ile Storage Ratio (RQ%)	0.18	0.00	0.00	0.03	0.56	0.00	0.31	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	21.3	0.0	2.5	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	4	0	0	6	0	8
Lane Assignment		T	T			T		T
Lanes in Grp	0	2	1	0	0	2	0	1
Grp Vol (v), veh/h	0	1097	432	0	0	665	0	530
Grp Sat Flow (s), veh/h/ln	0	1777	1870	0	0	1777	0	1870
Q Serve Time (g_s), s	0.0	39.7	32.1	0.0	0.0	25.7	0.0	36.7
Cycle Q Clear Time (g_c), s	0.0	39.7	32.1	0.0	0.0	25.7	0.0	36.7
Lane Grp Cap (c), veh/h	0	1328	462	0	0	762	0	484
V/C Ratio (X)	0.00	0.83	0.94	0.00	0.00	0.87	0.00	1.10
Avail Cap (c_a), veh/h	0	1375	552	0	0	809	0	484
Upstream Filter (I)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	40.3	52.3	0.0	0.0	53.9	0.0	52.6
Incr Delay (d2), s/veh	0.0	5.5	20.0	0.0	0.0	12.3	0.0	69.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	45.8	72.3	0.0	0.0	66.2	0.0	122.2
1st-Term Q (Q1), veh/ln	0.0	16.4	14.7	0.0	0.0	11.0	0.0	16.7

2nd-Term Q (Q2), veh/ln	0.0	1.0	2.6	0.0	0.0	1.3	0.0	9.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	17.4	17.2	0.0	0.0	12.3	0.0	26.1
%ile Storage Ratio (RQ%)	0.00	0.30	0.65	0.00	0.00	0.23	0.00	1.67
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3

Right Lane Group Data								
Assigned Mvmt	0	12	14	0	0	16	0	18
Lane Assignment		R	R			R		R
Lanes in Grp	0	1	1	0	0	1	0	1
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	0	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	592	391	0	0	340	0	410
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	613	468	0	0	361	0	410
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	85.1
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	25	45	2	39	18	72	662	49	7	118	562
Future Volume (veh/h)	84	25	45	2	39	18	72	662	49	7	118	562
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		0.99	0.99		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	90	27	48	2	42	0	77	712	53	8	127	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	455	286	241	458	286		846	917	776	399	917	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.50	0.50	0.50	0.50	0.50	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	10.7	9.7	10.1	9.7	9.8	0.0	4.1	7.5	3.4	8.9	3.6	0.0
Ln Grp LOS	B	A	B	A	A		A	A	A	A	A	
Approach Vol, veh/h		165			44			842			135	
Approach Delay, s/veh		10.4			9.8			7.0			3.9	
Approach LOS		B			A			A			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		5.0		5.0		5.0		5.0
Phs Duration (G+Y+Rc), s		17.7		8.6		17.7		8.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		4.6		4.1		5.2		5.1
Max Q Clear (g_c+I1), s		10.4		4.2		10.6		2.5
Green Ext Time (g_e), s		2.8		0.4		0.3		0.1
Prob of Phs Call (p_c)		1.00		0.79		1.00		0.79
Prob of Max Out (p_x)		0.60		0.00		0.26		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1233		1328		685		1286

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1826		1826		1826		1826

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1546		1539		1547		1547

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	77	0	90	0	8	0	2
Grp Sat Flow (s), veh/h/ln	0	1233	0	1328	0	685	0	1286
Q Serve Time (g_s), s	0.0	0.9	0.0	1.7	0.0	0.3	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	1.9	0.0	2.2	0.0	8.6	0.0	0.4
Perm LT Sat Flow (s_l), veh/h/ln	0	1233	0	1328	0	685	0	1286
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	13.2	0.0	4.1	0.0	13.2	0.0	4.1
Perm LT Serve Time (g_u), s	0.0	12.2	0.0	3.6	0.0	4.8	0.0	3.8
Perm LT Q Serve Time (g_ps), s	0.0	0.9	0.0	1.7	0.0	0.3	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	846	0	455	0	399	0	458
V/C Ratio (X)	0.00	0.09	0.00	0.20	0.00	0.02	0.00	0.00
Avail Cap (c_a), veh/h	0	1069	0	1154	0	523	0	1135
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	4.0	0.0	10.5	0.0	8.9	0.0	9.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.1	0.0	10.7	0.0	8.9	0.0	9.7
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	712	0	27	0	127	0	42
Grp Sat Flow (s), veh/h/ln	0	1826	0	1826	0	1826	0	1826
Q Serve Time (g_s), s	0.0	8.4	0.0	0.3	0.0	1.0	0.0	0.5
Cycle Q Clear Time (g_c), s	0.0	8.4	0.0	0.3	0.0	1.0	0.0	0.5
Lane Grp Cap (c), veh/h	0	917	0	286	0	917	0	286
V/C Ratio (X)	0.00	0.78	0.00	0.09	0.00	0.14	0.00	0.15
Avail Cap (c_a), veh/h	0	1247	0	1247	0	1247	0	1247
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	5.4	0.0	9.5	0.0	3.5	0.0	9.6
Incr Delay (d2), s/veh	0.0	2.2	0.0	0.1	0.0	0.1	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.5	0.0	9.7	0.0	3.6	0.0	9.8
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1

2nd-Term Q (Q2), veh/ln	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	0.1	0.0	0.1	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	53	0	48	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1546	0	1539	0	1547	0	1547
Q Serve Time (g_s), s	0.0	0.5	0.0	0.7	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.5	0.0	0.7	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	776	0	241	0	777	0	242
V/C Ratio (X)	0.00	0.07	0.00	0.20	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1056	0	1051	0	1057	0	1057
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.4	0.0	9.7	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.4	0.0	10.1	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.2
HCM 7th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	77	80	719	674	41
Future Vol, veh/h	47	77	80	719	674	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	240	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	49	81	84	757	709	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1656	731	753	0	-	0
Stage 1	731	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	107	418	848	-	-	-
Stage 1	473	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	88	418	848	-	-	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	383	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	43.29	0.97	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	180	-	88	418	-	-
HCM Lane V/C Ratio	0.099	-	0.561	0.194	-	-
HCM Control Delay (s/veh)	9.7	0	88.6	15.7	-	-
HCM Lane LOS	A	A	F	C	-	-
HCM 95th %tile Q(veh)	0.3	-	2.5	0.7	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	6	5	0	2	0	0	8	3	2	6	0
Future Vol, veh/h	6	6	5	0	2	0	0	8	3	2	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	7	5	0	2	0	0	9	3	2	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	12	0	0	28	24	9	26	27	2
Stage 1	-	-	-	-	-	-	22	22	-	2	2	-
Stage 2	-	-	-	-	-	-	5	2	-	24	25	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1620	-	-	1607	-	-	982	869	1072	984	866	1082
Stage 1	-	-	-	-	-	-	996	877	-	1021	894	-
Stage 2	-	-	-	-	-	-	1017	894	-	994	874	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1620	-	-	1607	-	-	971	865	1072	968	862	1082
Mov Cap-2 Maneuver	-	-	-	-	-	-	971	865	-	968	862	-
Stage 1	-	-	-	-	-	-	992	873	-	1021	894	-
Stage 2	-	-	-	-	-	-	1009	894	-	977	871	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	2.55	0	8.99	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	913	582	-	-	1607	-	-	887
HCM Lane V/C Ratio	0.013	0.004	-	-	-	-	-	0.01
HCM Control Delay (s/veh)	9	7.2	0	-	0	-	-	9.1
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	129	598	99	0	98
Future Vol, veh/h	54	129	598	99	0	98
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	57	136	629	104	0	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	786	683	0	0	735	0
Stage 1	683	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	360	448	-	-	866	-
Stage 1	500	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	359	447	-	-	865	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	919	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	16.63	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	359	447	865	-
HCM Lane V/C Ratio	-	-	0.158	0.304	-	-
HCM Control Delay (s/veh)	-	-	16.9	16.5	0	-
HCM Lane LOS	-	-	C	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	1.3	0	-

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	65	26	6	39	117	12	44	35	12	30	33
Future Vol, veh/h	12	65	26	6	39	117	12	44	35	12	30	33
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	18	98	39	9	59	177	18	67	53	18	45	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9	9.2	9	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	12%	4%	16%
Vol Thru, %	48%	63%	24%	40%
Vol Right, %	38%	25%	72%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	103	162	75
LT Vol	12	12	6	12
Through Vol	44	65	39	30
RT Vol	35	26	117	33
Lane Flow Rate	138	156	245	114
Geometry Grp	1	1	1	1
Degree of Util (X)	0.184	0.205	0.296	0.152
Departure Headway (Hd)	4.81	4.722	4.337	4.816
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	742	755	825	740
Service Time	2.871	2.776	2.385	2.878
HCM Lane V/C Ratio	0.186	0.207	0.297	0.154
HCM Control Delay, s/veh	9	9	9.2	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.8	1.2	0.5

Intersection	
Int Delay, s/veh	179.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	156	69	78	612	590	131
Future Vol, veh/h	156	69	78	612	590	131
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	203	90	101	795	766	170

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1849	851	936	0	-	0
Stage 1	851	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.254	-	-	-
Pot Cap-1 Maneuver	~ 80	354	715	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 60	354	715	-	-	-
Mov Cap-2 Maneuver	~ 60	-	-	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	351	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	$ 1301.84	1.23	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	203	-	80	-	-
HCM Lane V/C Ratio	0.142	-	3.651	-	-
HCM Control Delay (s/veh)	10.9	-	$ 1301.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	30.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

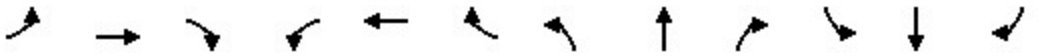
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	410	463	15	16	3
Future Vol, veh/h	7	410	463	15	16	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	446	503	16	17	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	972	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	461	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1047	-	-	-	280	562
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1047	-	-	-	277	562
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	635	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.14	0	17.82
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	30	-	-	-	301
HCM Lane V/C Ratio	0.007	-	-	-	0.069
HCM Control Delay (s/veh)	8.5	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	416	162	298	418	119	233	1850	582	177	1056	156
Future Volume (veh/h)	168	416	162	298	418	119	233	1850	582	177	1056	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	452	0	324	454	0	253	2011	0	192	1148	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	263	553		249	556		487	1534		317	1502	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.16	0.00	0.07	0.16	0.00	0.06	0.43	0.00	0.05	0.42	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	51.6	42.0	0.0	209.1	42.0	0.0	20.1	173.2	0.0	26.1	28.0	0.0
Ln Grp LOS	D	D		F	D		C	F		C	C	
Approach Vol, veh/h		635			778			2264			1340	
Approach Delay, s/veh		44.8			111.6			156.1			27.7	
Approach LOS		D			F			F			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	8	7
Case No	1.1	3.0	2.0	3.0	1.1	3.0	4.0	2.0
Phs Duration (G+Y+Rc), s	13.5	50.2	14.0	22.4	14.4	49.3	22.0	14.4
Change Period (Y+Rc), s	8.5	7.0	6.8	* 6.8	8.5	7.0	6.3	* 6.8
Max Green (Gmax), s	5.0	43.2	7.2	* 26	5.9	42.3	26.3	* 6.9
Max Allow Headway (MAH), s	2.6	7.7	2.6	3.7	2.6	7.7	3.7	2.6
Max Q Clear (g_c+I1), s	5.1	45.2	9.2	14.3	6.1	29.6	14.4	7.2
Green Ext Time (g_e), s	0.0	0.0	0.0	1.3	0.0	9.8	1.3	0.0
Prob of Phs Call (p_c)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Prob of Max Out (p_x)	1.00	1.00	1.00	0.01	1.00	0.86	0.01	1.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5			7
Mvmt Sat Flow, veh/h	3456		3456		3456			3456

Through Movement Data								
Assigned Mvmt		2		4		6	8	
Mvmt Sat Flow, veh/h		3554		3554		3554	3647	

Right-Turn Movement Data								
Assigned Mvmt		12		14		16	18	
Mvmt Sat Flow, veh/h		1585		1585		1585	0	

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	0	7

Lane Assignment	L (Pr/Pm)		L (Prot)		L (Pr/Pm)			L (Prot)
Lanes in Grp	2	0	2	0	2	0	0	2
Grp Vol (v), veh/h	192	0	324	0	253	0	0	183
Grp Sat Flow (s), veh/h/ln	1728	0	1728	0	1728	0	0	1728
Q Serve Time (g_s), s	3.1	0.0	7.2	0.0	4.1	0.0	0.0	5.2
Cycle Q Clear Time (g_c), s	3.1	0.0	7.2	0.0	4.1	0.0	0.0	5.2
Perm LT Sat Flow (s_l), veh/h/ln	207	0	0	0	475	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	42.3	0.0	0.0	0.0	42.3	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	14.7	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	317	0	249	0	487	0	0	263
V/C Ratio (X)	0.61	0.00	1.30	0.00	0.52	0.00	0.00	0.69
Avail Cap (c_a), veh/h	317	0	249	0	487	0	0	263
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	23.7	0.0	46.4	0.0	19.7	0.0	0.0	45.1
Incr Delay (d2), s/veh	2.4	0.0	162.6	0.0	0.5	0.0	0.0	6.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	26.1	0.0	209.1	0.0	20.1	0.0	0.0	51.6
1st-Term Q (Q1), veh/ln	1.1	0.0	2.9	0.0	1.4	0.0	0.0	2.1
2nd-Term Q (Q2), veh/ln	0.1	0.0	5.6	0.0	0.0	0.0	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	1.2	0.0	8.5	0.0	1.4	0.0	0.0	2.3
%ile Storage Ratio (RQ%)	0.03	0.00	0.94	0.00	0.04	0.00	0.00	0.11
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	18.9	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	8	0
Lane Assignment		T		T		T	T	
Lanes in Grp	0	2	0	2	0	2	2	0
Grp Vol (v), veh/h	0	2011	0	452	0	1148	454	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	1777	0	1777	1777	0
Q Serve Time (g_s), s	0.0	43.2	0.0	12.3	0.0	27.6	12.4	0.0
Cycle Q Clear Time (g_c), s	0.0	43.2	0.0	12.3	0.0	27.6	12.4	0.0
Lane Grp Cap (c), veh/h	0	1534	0	553	0	1502	556	0
V/C Ratio (X)	0.00	1.31	0.00	0.82	0.00	0.76	0.82	0.00
Avail Cap (c_a), veh/h	0	1534	0	923	0	1502	934	0
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d1), s/veh	0.0	28.4	0.0	40.9	0.0	24.6	40.8	0.0
Incr Delay (d2), s/veh	0.0	144.8	0.0	1.1	0.0	3.4	1.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	173.2	0.0	42.0	0.0	28.0	42.0	0.0
1st-Term Q (Q1), veh/ln	0.0	15.9	0.0	5.0	0.0	10.2	5.1	0.0

2nd-Term Q (Q2), veh/ln	0.0	30.8	0.0	0.1	0.0	0.7	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	46.7	0.0	5.1	0.0	10.9	5.1	0.0
%ile Storage Ratio (RQ%)	0.00	0.64	0.00	0.16	0.00	0.16	0.39	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	119.3	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	18	0
Lane Assignment		R		R		R		
Lanes in Grp	0	1	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	684	0	247	0	670	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	684	0	412	0	670	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	100.8
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	695	95	55	528	84	100	23	60	182	19	167
Future Volume (veh/h)	241	695	95	55	528	84	100	23	60	182	19	167
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	262	755	103	60	574	91	109	25	65	198	21	182
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	401	918	778	291	918	778	497	121	315	485	493	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.26	0.26	0.26	0.26	0.26	0.26
Unsig. Movement Delay												
Ln Grp Delay, s/veh	18.3	14.0	5.2	15.1	8.2	5.1	11.4	0.0	10.7	13.7	10.1	12.0
Ln Grp LOS	B	B	A	B	A	A	B		B	B	B	B
Approach Vol, veh/h		1120			725			199			401	
Approach Delay, s/veh		14.2			8.4			11.1			12.7	
Approach LOS		B			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		5.0		5.0		5.0
Phs Duration (G+Y+Rc), s		14.2		22.5		14.2		22.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		4.7		4.9		4.1		4.8
Max Q Clear (g_c+I1), s		5.1		20.0		8.7		17.8
Green Ext Time (g_e), s		0.7		0.0		1.0		0.1
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.01		1.00		0.09		1.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1179		771		1307		644

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		460		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1195		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	109	0	262	0	198	0	60
Grp Sat Flow (s), veh/h/ln	0	1179	0	771	0	1307	0	644
Q Serve Time (g_s), s	0.0	2.8	0.0	9.7	0.0	5.1	0.0	3.2
Cycle Q Clear Time (g_c), s	0.0	3.1	0.0	18.0	0.0	6.7	0.0	15.8
Perm LT Sat Flow (s_l), veh/h/ln	0	1179	0	771	0	1307	0	644
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	9.7	0.0	18.0	0.0	9.7	0.0	18.0
Perm LT Serve Time (g_u), s	0.0	9.4	0.0	9.7	0.0	8.1	0.0	5.4
Perm LT Q Serve Time (g_ps), s	0.0	2.8	0.0	9.7	0.0	5.1	0.0	3.2
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	497	0	401	0	485	0	291
V/C Ratio (X)	0.00	0.22	0.00	0.65	0.00	0.41	0.00	0.21
Avail Cap (c_a), veh/h	0	766	0	401	0	783	0	291
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	11.2	0.0	14.5	0.0	13.1	0.0	14.7
Incr Delay (d2), s/veh	0.0	0.2	0.0	3.8	0.0	0.6	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.4	0.0	18.3	0.0	13.7	0.0	15.1
1st-Term Q (Q1), veh/ln	0.0	0.5	0.0	1.4	0.0	1.2	0.0	0.3
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.4	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	1.8	0.0	1.3	0.0	0.3
%ile Storage Ratio (RQ%)	0.00	0.10	0.00	0.25	0.00	0.33	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T		T		T
Lanes in Grp	0	0	0	1	0	1	0	1
Grp Vol (v), veh/h	0	0	0	755	0	21	0	574
Grp Sat Flow (s), veh/h/ln	0	0	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	0.0	0.0	12.6	0.0	0.3	0.0	8.3
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	12.6	0.0	0.3	0.0	8.3
Lane Grp Cap (c), veh/h	0	0	0	918	0	493	0	918
V/C Ratio (X)	0.00	0.00	0.00	0.82	0.00	0.04	0.00	0.63
Avail Cap (c_a), veh/h	0	0	0	918	0	918	0	918
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	8.0	0.0	10.1	0.0	6.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	6.1	0.0	0.0	0.0	1.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	14.0	0.0	10.1	0.0	8.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	1.5	0.0	0.1	0.0	1.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	3.0	0.0	0.1	0.0	1.3
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	90	0	103	0	182	0	91
Grp Sat Flow (s), veh/h/ln	0	1655	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	1.6	0.0	1.3	0.0	3.5	0.0	1.1
Cycle Q Clear Time (g_c), s	0.0	1.6	0.0	1.3	0.0	3.5	0.0	1.1
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.72	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	436	0	778	0	418	0	778
V/C Ratio (X)	0.00	0.21	0.00	0.13	0.00	0.44	0.00	0.12
Avail Cap (c_a), veh/h	0	813	0	778	0	778	0	778
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	10.5	0.0	5.1	0.0	11.2	0.0	5.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.1	0.0	0.7	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.7	0.0	5.2	0.0	12.0	0.0	5.1
1st-Term Q (Q1), veh/ln	0.0	0.4	0.0	0.1	0.0	1.0	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.4	0.0	0.1	0.0	1.1	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.02	0.00	0.18	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.0
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	676	120	71	525	20	113	4	82	0	4	11
Future Volume (veh/h)	0	676	120	71	525	20	113	4	82	0	4	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	735	130	77	571	22	123	4	89	0	4	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	238	980	831	376	980	831	476	12	272	238	73	220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.00	0.52	0.52	0.52	0.52	0.52	0.18	0.18	0.18	0.00	0.18	0.18
Unsig. Movement Delay												
Ln Grp Delay, s/veh	0.0	8.1	3.8	10.8	5.5	3.5	11.7	0.0	11.5	0.0	0.0	10.4
Ln Grp LOS		A	A	B	A	A	B		B			B
Approach Vol, veh/h		865			670			216			16	
Approach Delay, s/veh		7.5			6.1			11.6			10.4	
Approach LOS		A			A			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		5.0		6.0		5.0
Phs Duration (G+Y+Rc), s		9.9		20.3		9.9		20.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		4.6		4.6		5.6		4.9
Max Q Clear (g_c+I1), s		4.7		11.3		2.2		14.6
Green Ext Time (g_e), s		0.7		2.6		0.0		1.3
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.01		0.71		0.00		1.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		1397		824		1303		640

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		69		1870		412		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1527		1585		1236		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	123	0	0	0	0	0	77
Grp Sat Flow (s), veh/h/ln	0	1397	0	824	0	1303	0	640
Q Serve Time (g_s), s	0.0	2.4	0.0	0.0	0.0	0.0	0.0	3.2
Cycle Q Clear Time (g_c), s	0.0	2.7	0.0	0.0	0.0	0.0	0.0	12.6
Perm LT Sat Flow (s_l), veh/h/ln	0	1397	0	824	0	1303	0	640
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	5.4	0.0	0.0	0.0	0.0	0.0	15.8
Perm LT Serve Time (g_u), s	0.0	5.1	0.0	0.0	0.0	0.0	0.0	6.5
Perm LT Q Serve Time (g_ps), s	0.0	2.4	0.0	0.0	0.0	0.0	0.0	3.2
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	476	0	238	0	238	0	376
V/C Ratio (X)	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.20
Avail Cap (c_a), veh/h	0	1059	0	297	0	783	0	422
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	11.4	0.0	0.0	0.0	0.0	0.0	10.6
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.7	0.0	0.0	0.0	0.0	0.0	10.8
1st-Term Q (Q1), veh/ln	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.3
%ile Storage Ratio (RQ%)	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.04
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	735	0	0	0	571
Grp Sat Flow (s), veh/h/ln	0	0	0	1870	0	0	0	1870
Q Serve Time (g_s), s	0.0	0.0	0.0	9.3	0.0	0.0	0.0	6.3
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	9.3	0.0	0.0	0.0	6.3
Lane Grp Cap (c), veh/h	0	0	0	980	0	0	0	980
V/C Ratio (X)	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.58
Avail Cap (c_a), veh/h	0	0	0	1114	0	0	0	1114
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	5.6	0.0	0.0	0.0	4.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	8.1	0.0	0.0	0.0	5.5
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	93	0	130	0	16	0	22
Grp Sat Flow (s), veh/h/ln	0	1596	0	1585	0	1648	0	1585
Q Serve Time (g_s), s	0.0	1.5	0.0	1.3	0.0	0.2	0.0	0.2
Cycle Q Clear Time (g_c), s	0.0	1.5	0.0	1.3	0.0	0.2	0.0	0.2
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.96	0.00	1.00	0.00	0.75	0.00	1.00
Lane Grp Cap (c), veh/h	0	284	0	831	0	293	0	831
V/C Ratio (X)	0.00	0.33	0.00	0.16	0.00	0.05	0.00	0.03
Avail Cap (c_a), veh/h	0	950	0	944	0	982	0	944
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	10.8	0.0	3.7	0.0	10.3	0.0	3.5
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.1	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.5	0.0	3.8	0.0	10.4	0.0	3.5
1st-Term Q (Q1), veh/ln	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.5	0.0	0.0	0.0	0.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	7.5
HCM 7th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	519	69	137	384	188	115	248	122	255	231	131
Future Volume (veh/h)	164	519	69	137	384	188	115	248	122	255	231	131
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	178	564	30	149	417	116	125	270	122	277	251	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	354	680	576	261	657	556	294	308	261	312	328	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.36	0.36	0.07	0.35	0.35	0.16	0.16	0.16	0.18	0.18	0.18
Unsig. Movement Delay												
Ln Grp Delay, s/veh	24.5	42.9	23.8	28.6	34.7	26.7	43.4	54.9	43.8	55.2	46.6	40.0
Ln Grp LOS	C	D	C	C	C	C	D	D	D	E	D	D
Approach Vol, veh/h		772			682			517			565	
Approach Delay, s/veh		37.9			32.0			49.5			50.4	
Approach LOS		D			C			D			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	3.0	9.0	9.0	1.1	3.0		
Phs Duration (G+Y+Rc), s	15.0	47.7	26.6	25.4	16.4	46.2		
Change Period (Y+Rc), s	6.9	6.0	6.5	6.5	6.9	6.0		
Max Green (Gmax), s	10.1	55.9	30.5	28.5	15.1	50.9		
Max Allow Headway (MAH), s	4.7	7.7	2.8	3.0	4.6	7.8		
Max Q Clear (g_c+I1), s	8.1	33.5	19.4	18.2	9.2	23.3		
Green Ext Time (g_e), s	0.1	8.1	0.7	0.8	0.3	7.7		
Prob of Phs Call (p_c)	0.99	1.00	1.00	1.00	1.00	1.00		
Prob of Max Out (p_x)	1.00	0.27	0.00	0.01	0.45	0.12		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		1781	1781	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		1870	1870	1870		1870		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		1585	1585	1585		1585		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0

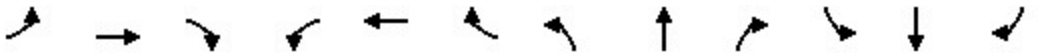
Lane Assignment	L (Pr/Pm)		L	LL (Pr/Pm)				
Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	149	0	277	125	178	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	6.1	0.0	17.4	7.2	7.2	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	6.1	0.0	17.4	7.2	7.2	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	823	0	1781	1781	871	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	40.2	0.0	0.0	0.0	40.2	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	10.1	0.0	0.0	0.0	18.9	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	6.7	0.0	0.0	0.0	5.5	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	261	0	312	294	354	0	0	0
V/C Ratio (X)	0.57	0.00	0.89	0.43	0.50	0.00	0.00	0.00
Avail Cap (c_a), veh/h	293	0	474	443	441	0	0	0
Upstream Filter (I)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	25.8	0.0	46.2	43.0	22.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.0	9.1	0.4	1.6	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	28.6	0.0	55.2	43.4	24.5	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	2.4	0.0	7.4	3.2	2.8	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.2	0.0	0.8	0.0	0.2	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	2.7	0.0	8.2	3.2	2.9	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.28	0.00	1.39	0.51	0.30	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T	T	T		T		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	564	251	270	0	417	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	1870	1870	0	1870	0	0
Q Serve Time (g_s), s	0.0	31.5	14.7	16.2	0.0	21.3	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	31.5	14.7	16.2	0.0	21.3	0.0	0.0
Lane Grp Cap (c), veh/h	0	680	328	308	0	657	0	0
V/C Ratio (X)	0.00	0.83	0.77	0.88	0.00	0.64	0.00	0.00
Avail Cap (c_a), veh/h	0	912	498	465	0	830	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	33.3	45.0	46.7	0.0	31.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	9.6	1.6	8.2	0.0	3.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	42.9	46.6	54.9	0.0	34.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	13.1	6.6	7.4	0.0	9.3	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	1.8	0.1	0.7	0.0	0.7	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	14.9	6.7	8.1	0.0	10.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.31	0.07	0.48	0.00	0.42	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		R	R	R		R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	30	37	122	0	116	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	1585	0	1585	0	0
Q Serve Time (g_s), s	0.0	1.4	2.3	8.0	0.0	5.9	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	1.4	2.3	8.0	0.0	5.9	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	576	278	261	0	556	0	0
V/C Ratio (X)	0.00	0.05	0.13	0.47	0.00	0.21	0.00	0.00
Avail Cap (c_a), veh/h	0	773	422	394	0	704	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	23.7	39.9	43.3	0.0	26.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.0	0.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	23.8	40.0	43.8	0.0	26.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.5	0.9	3.0	0.0	2.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.5	0.9	3.1	0.0	2.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.09	0.10	0.52	0.00	0.10	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	41.5
HCM 7th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	454	43	4	62	427	62	45	35	20	33	57
Future Volume (veh/h)	73	454	43	4	62	427	62	45	35	20	33	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	83	516	25	5	70	475	70	51	21	23	38	39
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	384	720	610	411	91	620	213	139	44	120	150	120
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.39	0.39	0.08	0.45	0.45	0.19	0.19	0.19	0.19	0.19	0.19
Unsig. Movement Delay												
Ln Grp Delay, s/veh	9.2	16.6	10.1	15.7	0.0	16.1	20.4	0.0	0.0	19.5	0.0	0.0
Ln Grp LOS	A	B	B	B		B	C			B		
Approach Vol, veh/h		624			550			142			100	
Approach Delay, s/veh		15.4			16.1			20.4			19.5	
Approach LOS		B			B			C			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	2	1		4	5	6		8
Case No	3.0	1.3		8.0	1.2	4.0		8.0
Phs Duration (G+Y+Rc), s	27.4	10.6		15.9	7.6	30.4		15.9
Change Period (Y+Rc), s	* 6.1	6.1		5.7	4.0	6.1		5.7
Max Green (Gmax), s	* 39	5.0		26.3	5.0	38.7		26.3
Max Allow Headway (MAH), s	7.0	1.7		7.6	1.7	7.3		7.5
Max Q Clear (g_c+I1), s	14.9	2.0		4.7	3.3	17.6		6.0
Green Ext Time (g_e), s	6.3	0.0		0.9	0.0	6.7		1.4
Prob of Phs Call (p_c)	1.00	0.07		0.97	0.71	1.00		0.97
Prob of Max Out (p_x)	0.12	0.01		0.00	1.00	0.21		0.01

Left-Turn Movement Data								
Assigned Mvmt		1		7	5			3
Mvmt Sat Flow, veh/h		1739		198	1739			597

Through Movement Data								
Assigned Mvmt	2			4		6		8
Mvmt Sat Flow, veh/h	1826			793		203		730

Right-Turn Movement Data								
Assigned Mvmt	12			14		16		18
Mvmt Sat Flow, veh/h	1545			634		1374		230

Left Lane Group Data								
Assigned Mvmt	0	1	0	7	5	0	0	3

Lane Assignment	L (Pr/Pm)			L+T+R	L (Pr/Pm)			L+T+R
Lanes in Grp	0	1	0	1	1	0	0	1
Grp Vol (v), veh/h	0	5	0	100	83	0	0	142
Grp Sat Flow (s), veh/h/ln	0	1739	0	1626	1739	0	0	1558
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	2.7	1.3	0.0	0.0	4.0
Perm LT Sat Flow (s_l), veh/h/ln	0	844	0	1344	841	0	0	1338
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	1803	0	0	0	1778
Perm LT Eff Green (g_p), s	0.0	21.3	0.0	10.2	24.3	0.0	0.0	10.2
Perm LT Serve Time (g_u), s	0.0	8.4	0.0	6.2	8.7	0.0	0.0	7.5
Perm LT Q Serve Time (g_ps), s	0.0	0.2	0.0	0.0	1.7	0.0	0.0	1.3
Time to First Blk (g_f), s	0.0	0.0	0.0	4.6	0.0	0.0	0.0	2.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	2.7	0.0	0.0	0.0	2.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.23	1.00	0.00	0.00	0.49
Lane Grp Cap (c), veh/h	0	411	0	390	384	0	0	395
V/C Ratio (X)	0.00	0.01	0.00	0.26	0.22	0.00	0.00	0.36
Avail Cap (c_a), veh/h	0	426	0	857	431	0	0	836
Upstream Filter (I)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	15.7	0.0	18.8	9.1	0.0	0.0	19.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.7	0.1	0.0	0.0	1.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	15.7	0.0	19.5	9.2	0.0	0.0	20.4
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	1.0	0.3	0.0	0.0	1.5
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	1.1	0.3	0.0	0.0	1.6
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.08	0.09	0.00	0.00	0.14
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	2	0	0	4	0	6	0	8
Lane Assignment	T							
Lanes in Grp	1	0	0	0	0	0	0	0
Grp Vol (v), veh/h	516	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	1826	0	0	0	0	0	0	0
Q Serve Time (g_s), s	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	720	0	0	0	0	0	0	0
V/C Ratio (X)	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	1311	0	0	0	0	0	0	0
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	16.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	12	0	0	14	0	16	0	18
Lane Assignment	R					T+R		
Lanes in Grp	1	0	0	0	0	1	0	0
Grp Vol (v), veh/h	25	0	0	0	0	545	0	0
Grp Sat Flow (s), veh/h/ln	1545	0	0	0	0	1577	0	0
Q Serve Time (g_s), s	0.5	0.0	0.0	0.0	0.0	15.6	0.0	0.0
Cycle Q Clear Time (g_c), s	0.5	0.0	0.0	0.0	0.0	15.6	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	0.39	0.00	0.87	0.00	0.15
Lane Grp Cap (c), veh/h	610	0	0	0	0	711	0	0
V/C Ratio (X)	0.04	0.00	0.00	0.00	0.00	0.77	0.00	0.00
Avail Cap (c_a), veh/h	1110	0	0	0	0	1132	0	0
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	10.0	0.0	0.0	0.0	0.0	12.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	3.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	10.1	0.0	0.0	0.0	0.0	16.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.1	0.0	0.0	0.0	0.0	4.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.2	0.0	0.0	0.0	0.0	4.8	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	16.5
HCM 7th LOS	B

Notes

* HCM 7th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	517	11	27	14	528	17	26	17	18	50	32
Future Volume (veh/h)	48	517	11	27	14	528	17	26	17	18	50	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	0.96		0.96	0.97		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	56	608	2	32	16	612	20	31	15	21	59	-11
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	319	1004	3	389	22	827	159	217	86	216	489	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.23	0.23	0.23	0.23	0.23	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	18.0	0.0	10.5	13.4	0.0	14.1	17.4	0.0	0.0	0.0	0.0	0.0
Ln Grp LOS	B		B	B		B	B					
Approach Vol, veh/h		666			660			66			0	
Approach Delay, s/veh		11.1			14.1			17.4			0.0	
Approach LOS		B			B			B				

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		6.0		8.0		6.0		8.0
Phs Duration (G+Y+Rc), s		36.7		18.7		36.7		18.7
Change Period (Y+Rc), s		6.1		5.7		6.1		5.7
Max Green (Gmax), s		38.9		26.1		38.9		26.1
Max Allow Headway (MAH), s		8.1		0.0		8.4		8.6
Max Q Clear (g_c+I1), s		22.4		0.0		19.1		3.7
Green Ext Time (g_e), s		8.2		0.0		9.7		0.7
Prob of Phs Call (p_c)		1.00		0.00		1.00		0.91
Prob of Max Out (p_x)		0.57		0.00		0.50		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		777		344		789		318

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1819		1661		39		923

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		6		-276		1498		365

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L				L		L+T+R
Lanes in Grp	0	1	0	0	0	1	0	1
Grp Vol (v), veh/h	0	56	0	0	0	32	0	66
Grp Sat Flow (s), veh/h/ln	0	777	0	0	0	789	0	1606
Q Serve Time (g_s), s	0.0	3.3	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	20.4	0.0	0.0	0.0	14.0	0.0	1.7
Perm LT Sat Flow (s_l), veh/h/ln	0	777	0	1335	0	789	0	1329
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	1778
Perm LT Eff Green (g_p), s	0.0	30.6	0.0	13.0	0.0	30.6	0.0	13.0
Perm LT Serve Time (g_u), s	0.0	13.4	0.0	11.3	0.0	18.1	0.0	13.0
Perm LT Q Serve Time (g_ps), s	0.0	3.3	0.0	0.0	0.0	1.6	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	4.2
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	0.30	0.00	1.00	0.00	0.30
Lane Grp Cap (c), veh/h	0	319	0	0	0	389	0	462
V/C Ratio (X)	0.00	0.18	0.00	0.00	0.00	0.08	0.00	0.14
Avail Cap (c_a), veh/h	0	436	0	0	0	507	0	828
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	17.1	0.0	0.0	0.0	13.1	0.0	16.9
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.0	0.0	0.3	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	18.0	0.0	0.0	0.0	13.4	0.0	17.4
1st-Term Q (Q1), veh/ln	0.0	0.5	0.0	0.0	0.0	0.2	0.0	0.6
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	0.0	0.0	0.3	0.0	0.7
%ile Storage Ratio (RQ%)	0.00	0.20	0.00	0.00	0.00	0.09	0.00	0.06
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R				T+R		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	610	0	0	0	628	0	0
Grp Sat Flow (s), veh/h/ln	0	1825	0	0	0	1537	0	0
Q Serve Time (g_s), s	0.0	12.4	0.0	0.0	0.0	17.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	12.4	0.0	0.0	0.0	17.1	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	-0.16	0.00	0.97	0.00	0.23
Lane Grp Cap (c), veh/h	0	1008	0	0	0	849	0	0
V/C Ratio (X)	0.00	0.61	0.00	0.00	0.00	0.74	0.00	0.00
Avail Cap (c_a), veh/h	0	1282	0	0	0	1080	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	8.3	0.0	0.0	0.0	9.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	0.0	0.0	0.0	4.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.5	0.0	0.0	0.0	14.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.2	0.0	0.0	0.0	3.8	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.6	0.0	0.0	0.0	1.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.8	0.0	0.0	0.0	4.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.07	0.00	0.00	0.00	0.09	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.8
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	26.0
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	652	846	370	553
Demand Flow Rate, veh/h	666	863	378	564
Vehicles Circulating, veh/h	425	414	777	597
Vehicles Exiting, veh/h	736	644	314	680
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	18.8	41.5	9.6	21.9
Approach LOS	C	E	A	C

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
A (Intercept)	1380	1380	1380		1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3		1.02e-3
Entry Flow, veh/h	666	863	281	97	564
Cap Entry Lane, veh/h	895	905	625	1938	751
Entry HV Adj Factor	0.980	0.981	0.979	0.980	0.980
Flow Entry, veh/h	652	846	275	95	553
Cap Entry, veh/h	876	887	612	1900	736
V/C Ratio	0.745	0.954	0.450	0.050	0.751
Control Delay, s/veh	18.8	41.5	12.9	0.0	21.9
LOS	C	E	B	A	C
95th %tile Queue, veh	7	15	2	0	7

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	876	69	67	871	61	38
Future Vol, veh/h	876	69	67	871	61	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	952	75	73	947	66	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1027	0	1571	476
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	619	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	672	-	101	535
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	499	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	672	-	90	535
Mov Cap-2 Maneuver	-	-	-	-	90	-
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	445	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.79	98.21
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	132	-	-	672	-
HCM Lane V/C Ratio	0.812	-	-	0.108	-
HCM Control Delay (s/veh)	98.2	-	-	11	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	5	-	-	0.4	-

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1029	917	747	73
Demand Flow Rate, veh/h	1049	935	762	74
Vehicles Circulating, veh/h	267	554	693	1364
Vehicles Exiting, veh/h	1171	901	623	125
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.6	12.2	19.1	10.6
Approach LOS	B	B	C	B

Lane	Left	Right	Left	Right	Left	Right	Left
Designated Moves	LT	R	LT	TR	LT	R	LTR
Assumed Moves	LT	R	LT	TR	LT	R	LTR
RT Channelized							
Lane Util	0.652	0.348	0.470	0.530	0.715	0.285	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1350	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	684	365	439	496	545	217	74
Cap Entry Lane, veh/h	1056	1132	811	887	714	788	445
Entry HV Adj Factor	0.981	0.981	0.982	0.980	0.980	0.982	0.988
Flow Entry, veh/h	671	358	431	486	534	213	73
Cap Entry, veh/h	1035	1110	796	869	699	773	440
V/C Ratio	0.648	0.323	0.541	0.559	0.764	0.275	0.166
Control Delay, s/veh	12.9	6.4	12.4	12.1	23.6	7.8	10.6
LOS	B	A	B	B	C	A	B
95th %tile Queue, veh	5	1	3	4	7	1	1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	11	479	8	18	599	1	6	0	9	0	0	0
Future Vol, veh/h	11	479	8	18	599	1	6	0	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	521	9	20	651	1	7	0	10	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	652	0	0	529	0	0	1239	1240	525	1235	1244	652
Stage 1	-	-	-	-	-	-	549	549	-	691	691	-
Stage 2	-	-	-	-	-	-	690	691	-	545	553	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	934	-	-	1038	-	-	152	175	552	153	174	468
Stage 1	-	-	-	-	-	-	520	516	-	435	446	-
Stage 2	-	-	-	-	-	-	435	445	-	523	514	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	934	-	-	1038	-	-	145	167	552	143	166	468
Mov Cap-2 Maneuver	-	-	-	-	-	-	145	167	-	143	166	-
Stage 1	-	-	-	-	-	-	511	507	-	422	432	-
Stage 2	-	-	-	-	-	-	422	432	-	504	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	0.25	19.76	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	260	40	-	-	52	-	-	-
HCM Lane V/C Ratio	0.063	0.013	-	-	0.019	-	-	-
HCM Control Delay (s/veh)	19.8	8.9	0	-	8.5	0	-	0
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	17.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	67	539	28	0	52	342	84	41	107	0	35	54
Future Vol, veh/h	67	539	28	0	52	342	84	41	107	0	35	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	74	592	31	0	57	376	92	45	118	0	38	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	433	0	0	623	0	0	831	1188	608	1007	1015	245
Stage 1	-	-	-	-	-	-	755	755	-	245	245	-
Stage 2	-	-	-	-	-	-	76	433	-	762	770	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1106	-	-	939	-	-	284	185	489	216	234	784
Stage 1	-	-	-	-	-	-	395	411	-	750	696	-
Stage 2	-	-	-	-	-	-	923	575	-	391	404	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1106	-	-	939	-	-	196	166	489	110	210	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	166	-	110	210	-
Stage 1	-	-	-	-	-	-	354	369	-	750	696	-
Stage 2	-	-	-	-	-	-	806	575	-	234	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.9	0	93.28	17.81
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	260	188	-	-	939	-	-	378
HCM Lane V/C Ratio	0.982	0.067	-	-	-	-	-	0.259
HCM Control Delay (s/veh)	93.3	8.5	0	-	0	-	-	17.8
HCM Lane LOS	F	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	9.5	0.2	-	-	0	-	-	1

Intersection	
Intersection Delay, s/veh	111.4
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	2	2	0	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1376	1552	0	994
Demand Flow Rate, veh/h	1403	1583	0	1013
Vehicles Circulating, veh/h	1198	0	1876	1583
Vehicles Exiting, veh/h	1398	1876	467	0
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	108.3	9.0	0.0	275.4
Approach LOS	F	A	-	F

Lane	Left	Right	Bypass	Left	Right		Left	Right
Designated Moves	LT	TR	R	LT	TR		L	LTR
Assumed Moves	LT	TR		LT	TR		L	LTR
RT Channelized			Free					
Lane Util	0.470	0.530		0.470	0.530		0.530	0.470
Follow-Up Headway, s	2.667	2.535		2.667	2.535		2.667	2.535
Critical Headway, s	4.645	4.328		4.645	4.328		4.645	4.328
A (Intercept)	1350	1420		1350	1420		1350	1420
B (Slope)	9.199e-4	8.501e-4		9.199e-4	8.501e-4		9.199e-4	8.501e-4
Entry Flow, veh/h	538	607	258	744	839		537	476
Cap Entry Lane, veh/h	448	513	1938	1350	1420		315	370
Entry HV Adj Factor	0.981	0.980	0.980	0.980	0.980		0.981	0.981
Flow Entry, veh/h	528	595	253	729	823		527	467
Cap Entry, veh/h	440	503	1900	1323	1392		309	363
V/C Ratio	1.200	1.184	0.133	0.551	0.591		1.706	1.287
Control Delay, s/veh	138.4	127.7	0.0	8.8	9.2		360.6	179.3
LOS	F	F	A	A	A		F	F
95th %tile Queue, veh	21	22	0	4	4		33	21

Intersection	
Intersection Delay, s/veh	119.2
Intersection LOS	F

Approach	EB	WB	NB	SB
Entry Lanes	2	3	2	0
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1845	0	859	0
Demand Flow Rate, veh/h	1882	0	876	0
Vehicles Circulating, veh/h	0	691	1882	1526
Vehicles Exiting, veh/h	1526	2067	0	969
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.5	0.0	350.4	0.0
Approach LOS	B	-	F	-

Lane	Left	Right	Left	Right
Designated Moves	LT	TR	LT	R
Assumed Moves	LT	TR	LT	R
RT Channelized				
Lane Util	0.470	0.530	0.451	0.549
Follow-Up Headway, s	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328
A (Intercept)	1350	1420	1350	1420
B (Slope)	9.199e-4	4.501e-4	9.199e-4	4.501e-4
Entry Flow, veh/h	885	997	395	481
Cap Entry Lane, veh/h	1350	1420	239	287
Entry HV Adj Factor	0.980	0.981	0.980	0.981
Flow Entry, veh/h	867	978	387	472
Cap Entry, veh/h	1323	1393	234	281
V/C Ratio	0.656	0.702	1.653	1.678
Control Delay, s/veh	11.0	11.9	348.8	351.6
LOS	B	B	F	F
95th %tile Queue, veh	5	6	25	30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	551	139	17	28	99	9	19	42	18	12	78	340
Future Volume (veh/h)	551	139	17	28	99	9	19	42	18	12	78	340
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	599	151	18	30	108	10	21	46	20	13	85	370
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	1367	1342	598	666	1342	598	526	1142	509	658	1142	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Unsig. Movement Delay												
Ln Grp Delay, s/veh	8.4	6.1	5.9	6.5	6.0	5.8	7.4	7.0	7.0	7.1	7.1	11.0
Ln Grp LOS	A	A	A	A	A	A	A	A	A	A	A	B
Approach Vol, veh/h		768			148			87			468	
Approach Delay, s/veh		7.8			6.1			7.1			10.2	
Approach LOS		A			A			A			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		5.0		5.0		5.0		5.0
Phs Duration (G+Y+Rc), s		14.1		15.8		14.1		15.8
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green (Gmax), s		18.0		18.0		18.0		18.0
Max Allow Headway (MAH), s		5.0		4.3		4.3		4.8
Max Q Clear (g_c+I1), s		3.0		8.7		8.2		3.3
Green Ext Time (g_e), s		0.3		2.6		1.4		0.6
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.00		0.27		0.12		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		936		2471		1335		1216

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3554		3554		3554		3554

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3

Lane Assignment		L		L		L		L
Lanes in Grp	0	1	0	2	0	1	0	1
Grp Vol (v), veh/h	0	21	0	599	0	13	0	30
Grp Sat Flow (s), veh/h/ln	0	936	0	1236	0	1335	0	1216
Q Serve Time (g_s), s	0.0	0.5	0.0	6.1	0.0	0.2	0.0	0.5
Cycle Q Clear Time (g_c), s	0.0	1.0	0.0	6.7	0.0	0.5	0.0	1.3
Perm LT Sat Flow (s_l), veh/h/ln	0	936	0	1236	0	1335	0	1216
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	9.6	0.0	11.3	0.0	9.6	0.0	11.3
Perm LT Serve Time (g_u), s	0.0	9.1	0.0	10.7	0.0	9.3	0.0	10.5
Perm LT Q Serve Time (g_ps), s	0.0	0.5	0.0	6.1	0.0	0.2	0.0	0.5
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	526	0	1367	0	658	0	666
V/C Ratio (X)	0.00	0.04	0.00	0.44	0.00	0.02	0.00	0.05
Avail Cap (c_a), veh/h	0	789	0	1922	0	1033	0	940
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	7.4	0.0	8.1	0.0	7.1	0.0	6.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.4	0.0	8.4	0.0	7.1	0.0	6.5
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.9	0.0	0.0	0.0	0.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.9	0.0	0.0	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.08	0.00	0.01	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	2	0	2	0	2	0	2
Grp Vol (v), veh/h	0	46	0	151	0	85	0	108
Grp Sat Flow (s), veh/h/ln	0	1777	0	1777	0	1777	0	1777
Q Serve Time (g_s), s	0.0	0.3	0.0	0.8	0.0	0.5	0.0	0.6
Cycle Q Clear Time (g_c), s	0.0	0.3	0.0	0.8	0.0	0.5	0.0	0.6
Lane Grp Cap (c), veh/h	0	1142	0	1342	0	1142	0	1342
V/C Ratio (X)	0.00	0.04	0.00	0.11	0.00	0.07	0.00	0.08
Avail Cap (c_a), veh/h	0	2140	0	2140	0	2140	0	2140
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	7.0	0.0	6.0	0.0	7.1	0.0	6.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.0	0.0	6.1	0.0	7.1	0.0	6.0
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.1

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	20	0	18	0	370	0	10
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.3	0.0	0.2	0.0	6.2	0.0	0.1
Cycle Q Clear Time (g_c), s	0.0	0.3	0.0	0.2	0.0	6.2	0.0	0.1
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	509	0	598	0	509	0	598
V/C Ratio (X)	0.00	0.04	0.00	0.03	0.00	0.73	0.00	0.02
Avail Cap (c_a), veh/h	0	954	0	954	0	954	0	954
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	7.0	0.0	5.9	0.0	9.0	0.0	5.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.0	0.0	5.9	0.0	11.0	0.0	5.8
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.0	0.0	1.4	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.0	0.0	1.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.01	0.00	0.01	0.00	0.22	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	8.4
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	0	14	12	0	44	12	400	19	64	337	54
Future Vol, veh/h	32	0	14	12	0	44	12	400	19	64	337	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	0	15	13	0	48	13	435	21	70	366	59

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	966	987	366	977	1035	445	425	0	0	455	0	0
Stage 1	505	505	-	471	471	-	-	-	-	-	-	-
Stage 2	461	482	-	505	564	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	234	247	679	230	232	613	1134	-	-	1105	-	-
Stage 1	549	540	-	573	559	-	-	-	-	-	-	-
Stage 2	581	554	-	549	508	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	200	229	679	208	215	613	1134	-	-	1105	-	-
Mov Cap-2 Maneuver	200	229	-	208	215	-	-	-	-	-	-	-
Stage 1	515	506	-	567	553	-	-	-	-	-	-	-
Stage 2	529	547	-	503	476	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	22.58	14.67	0.23	1.19
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1134	-	-	254	433	1105	-	-
HCM Lane V/C Ratio	0.011	-	-	0.197	0.141	0.063	-	-
HCM Control Delay (s/veh)	8.2	-	-	22.6	14.7	8.5	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	0	5	3	0	6	8	396	8	187	144	41
Future Vol, veh/h	21	0	5	3	0	6	8	396	8	187	144	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	0	5	3	0	7	9	430	9	203	157	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1011	1020	157	1015	1060	435	201	0	0	439	0	0
Stage 1	563	563	-	452	452	-	-	-	-	-	-	-
Stage 2	448	457	-	563	608	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	218	237	889	217	224	621	1371	-	-	1121	-	-
Stage 1	511	509	-	587	570	-	-	-	-	-	-	-
Stage 2	590	568	-	511	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	176	193	889	175	182	621	1371	-	-	1121	-	-
Mov Cap-2 Maneuver	176	193	-	175	182	-	-	-	-	-	-	-
Stage 1	418	417	-	583	567	-	-	-	-	-	-	-
Stage 2	580	564	-	416	398	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	25.05	16.03	0.15	4.49
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1371	-	-	208	336	1121	-	-
HCM Lane V/C Ratio	0.006	-	-	0.136	0.029	0.181	-	-
HCM Control Delay (s/veh)	7.6	-	-	25.1	16	8.9	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0.7	-	-

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	15	36	60	15	174	41	138	143	115	122	95
Future Vol, veh/h	86	15	36	60	15	174	41	138	143	115	122	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	200	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	16	39	65	16	189	45	150	155	125	133	103

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	682	829	184	708	803	228	236	0	0	305	0	0
Stage 1	434	434	-	317	317	-	-	-	-	-	-	-
Stage 2	247	395	-	391	486	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	364	306	858	350	317	812	1331	-	-	1255	-	-
Stage 1	600	581	-	694	654	-	-	-	-	-	-	-
Stage 2	757	605	-	634	551	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	230	266	858	275	276	812	1331	-	-	1255	-	-
Mov Cap-2 Maneuver	230	266	-	275	276	-	-	-	-	-	-	-
Stage 1	540	523	-	671	632	-	-	-	-	-	-	-
Stage 2	546	585	-	527	496	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	29.72	19.69	0.99	2.84
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1331	-	-	291	511	1255	-	-
HCM Lane V/C Ratio	0.033	-	-	0.512	0.529	0.1	-	-
HCM Control Delay (s/veh)	7.8	-	-	29.7	19.7	8.2	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.7	3.1	0.3	-	-

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	5	80	0	0	3	48	81	0	3	3	108
Future Vol, veh/h	93	5	80	0	0	3	48	81	0	3	3	108
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	169	9	145	0	0	5	87	147	0	5	5	196
Number of Lanes	0	1	1	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	2
HCM Control Delay, s/veh	10.5	8.8	12.2	10.4
HCM LOS	B	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	37%	0%	95%	0%	0%	3%
Vol Thru, %	63%	100%	5%	0%	0%	3%
Vol Right, %	0%	0%	0%	100%	100%	95%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	0	98	80	3	114
LT Vol	48	0	93	0	0	3
Through Vol	81	0	5	0	0	3
RT Vol	0	0	0	80	3	108
Lane Flow Rate	235	0	178	145	5	207
Geometry Grp	5	5	5	5	4b	4b
Degree of Util (X)	0.379	0	0.306	0.202	0.009	0.297
Departure Headway (Hd)	5.812	5.624	6.182	4.995	5.74	5.155
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	612	0	576	710	627	690
Service Time	3.605	3.417	3.978	2.79	3.74	3.246
HCM Lane V/C Ratio	0.384	0	0.309	0.204	0.008	0.3
HCM Control Delay, s/veh	12.2	8.4	11.7	9.1	8.8	10.4
HCM Lane LOS	B	N	B	A	A	B
HCM 95th-tile Q	1.8	0	1.3	0.8	0	1.2

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	96	186	7	83	78
Future Vol, veh/h	7	96	186	7	83	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	104	202	8	90	85

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	471	206	0	0	210	0
Stage 1	206	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	551	835	-	-	1361	-
Stage 1	829	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	513	835	-	-	1361	-
Mov Cap-2 Maneuver	513	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.23	0	4.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	800	928	-
HCM Lane V/C Ratio	-	-	0.14	0.066	-
HCM Control Delay (s/veh)	-	-	10.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	0	9	0	0	3	37	378	0	0	234	40
Future Vol, veh/h	29	0	9	0	0	3	37	378	0	0	234	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	10	0	0	3	40	411	0	0	254	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	767	767	276	746	789	411	298	0	0	411	0	0
Stage 1	276	276	-	491	491	-	-	-	-	-	-	-
Stage 2	491	491	-	254	298	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	319	332	763	330	323	641	1263	-	-	1148	-	-
Stage 1	730	682	-	559	548	-	-	-	-	-	-	-
Stage 2	559	548	-	750	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	304	319	763	312	309	641	1263	-	-	1148	-	-
Mov Cap-2 Maneuver	304	319	-	312	309	-	-	-	-	-	-	-
Stage 1	730	682	-	536	525	-	-	-	-	-	-	-
Stage 2	533	525	-	740	667	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	16.48	10.65	0.71	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	160	-	-	355	641	1148	-	-
HCM Lane V/C Ratio	0.032	-	-	0.116	0.005	-	-	-
HCM Control Delay (s/veh)	7.9	0	-	16.5	10.6	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	14	4	2674	2261	17
Future Vol, veh/h	2	14	4	2674	2261	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	700	-	-	700
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	15	4	2907	2458	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3920	1229	2476	0	-	0
Stage 1	2458	-	-	-	-	-
Stage 2	1462	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	2	170	183	-	-	-
Stage 1	50	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	2	170	183	-	-	-
Mov Cap-2 Maneuver	2	-	-	-	-	-
Stage 1	49	-	-	-	-	-
Stage 2	179	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	$548.98	0.04	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	183	-	17	-	-
HCM Lane V/C Ratio	0.024	-	1.043	-	-
HCM Control Delay (s/veh)	25.1	-	$ 549	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.1	-	2.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	126	24	2443	254	34	1351
Future Volume (veh/h)	126	24	2443	254	34	1351
Number	3	18	2	12	1	6
Initial Q, veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Lanes Open During Work Zone						
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	26	2655	276	37	1468
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Opposing Right Turn Influence	Yes				Yes	
Cap, veh/h	172	153	2897	1292	94	2897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.10	0.82	0.82	0.82	0.82
Unsig. Movement Delay						
Ln Grp Delay, s/veh	53.2	42.8	12.1	2.2	45.1	3.1
Ln Grp LOS	D	D	B	A	D	A
Approach Vol, veh/h	163		2931			1505
Approach Delay, s/veh	51.5		11.2			4.1
Approach LOS	D		B			A

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2	8			6		
Case No		7.0	9.0			6.0		
Phs Duration (G+Y+Rc), s		87.5	14.3			87.5		
Change Period (Y+Rc), s		4.5	4.5			4.5		
Max Green (Gmax), s		83.0	18.0			83.0		
Max Allow Headway (MAH), s		4.7	3.8			5.4		
Max Q Clear (g_c+I1), s		57.6	9.7			85.0		
Green Ext Time (g_e), s		22.5	0.3			0.0		
Prob of Phs Call (p_c)		1.00	0.99			1.00		
Prob of Max Out (p_x)		0.84	0.02			1.00		
Left-Turn Movement Data								
Assigned Mvmt		5	3			1		
Mvmt Sat Flow, veh/h		0	1781			85		
Through Movement Data								
Assigned Mvmt		2	8			6		
Mvmt Sat Flow, veh/h		3647	0			3647		
Right-Turn Movement Data								
Assigned Mvmt		12	18			16		
Mvmt Sat Flow, veh/h		1585	1585			0		
Left Lane Group Data								
Assigned Mvmt	0	5	3	0	0	1	0	0

Lane Assignment			L			L		
Lanes in Grp	0	0	1	0	0	1	0	0
Grp Vol (v), veh/h	0	0	137	0	0	37	0	0
Grp Sat Flow (s), veh/h/ln	0	0	1781	0	0	85	0	0
Q Serve Time (g_s), s	0.0	0.0	7.7	0.0	0.0	27.4	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	7.7	0.0	0.0	83.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	1781	0	0	85	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	83.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	27.4	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	27.4	0.0	0.0
Time to First Blk (g_f), s	0.0	83.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	172	0	0	94	0	0
V/C Ratio (X)	0.00	0.00	0.80	0.00	0.00	0.40	0.00	0.00
Avail Cap (c_a), veh/h	0	0	315	0	0	94	0	0
Upstream Filter (I)	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	45.0	0.0	0.0	42.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	8.2	0.0	0.0	2.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	53.2	0.0	0.0	45.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	3.3	0.0	0.0	0.9	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	3.7	0.0	0.0	1.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.18	0.00	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	2	0	0
Grp Vol (v), veh/h	0	2655	0	0	0	1468	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	55.6	0.0	0.0	0.0	13.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	55.6	0.0	0.0	0.0	13.2	0.0	0.0
Lane Grp Cap (c), veh/h	0	2897	0	0	0	2897	0	0
V/C Ratio (X)	0.00	0.92	0.00	0.00	0.00	0.51	0.00	0.00
Avail Cap (c_a), veh/h	0	2897	0	0	0	2897	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.9	0.0	0.0	0.0	3.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.2	0.0	0.0	0.0	0.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	12.1	0.0	0.0	0.0	3.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	6.5	0.0	0.0	0.0	1.5	0.0	0.0

2nd-Term Q (Q2), veh/ln	0.0	2.1	0.0	0.0	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	8.6	0.0	0.0	0.0	1.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.08	0.00	0.00	0.00	0.05	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		R	R					
Lanes in Grp	0	1	1	0	0	0	0	0
Grp Vol (v), veh/h	0	276	26	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1585	1585	0	0	0	0	0
Q Serve Time (g_s), s	0.0	4.0	1.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	4.0	1.5	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1292	153	0	0	0	0	0
V/C Ratio (X)	0.00	0.21	0.17	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1292	280	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	2.1	42.3	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	2.2	42.8	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.4	0.6	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.4	0.6	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.02	0.31	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	10.3
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	161	6	46	2	30	17	2	183	7	13	124	119
Future Vol, veh/h	161	6	46	2	30	17	2	183	7	13	124	119
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	175	7	50	2	33	18	2	199	8	14	135	129
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay, s/veh	11	9	10.3	10.6
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	1%	100%	0%	4%	5%
Vol Thru, %	95%	0%	12%	61%	48%
Vol Right, %	4%	0%	88%	35%	46%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	192	161	52	49	256
LT Vol	2	161	0	2	13
Through Vol	183	0	6	30	124
RT Vol	7	0	46	17	119
Lane Flow Rate	209	175	57	53	278
Geometry Grp	2	5	5	4a	2
Degree of Util (X)	0.298	0.308	0.082	0.081	0.365
Departure Headway (Hd)	5.146	6.343	5.21	5.492	4.725
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	703	569	690	654	751
Service Time	3.146	4.056	2.923	3.511	2.824
HCM Lane V/C Ratio	0.297	0.308	0.083	0.081	0.37
HCM Control Delay, s/veh	10.3	11.9	8.4	9	10.6
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.2	1.3	0.3	0.3	1.7

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	0	17	0	0	0	26	197	0	0	49	17
Future Vol, veh/h	19	0	17	0	0	0	26	197	0	0	49	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	18	0	0	0	28	214	0	0	53	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	333	333	63	324	342	214	72	0	0	214	0	0
Stage 1	63	63	-	271	271	-	-	-	-	-	-	-
Stage 2	271	271	-	53	72	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	620	587	1002	629	580	826	1528	-	-	1356	-	-
Stage 1	949	843	-	735	685	-	-	-	-	-	-	-
Stage 2	735	685	-	959	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	607	574	1002	605	568	826	1528	-	-	1356	-	-
Mov Cap-2 Maneuver	607	574	-	605	568	-	-	-	-	-	-	-
Stage 1	949	843	-	720	671	-	-	-	-	-	-	-
Stage 2	720	671	-	942	835	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.09	0	0.86	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	210	-	-	746	-	1356	-	-
HCM Lane V/C Ratio	0.018	-	-	0.052	-	-	-	-
HCM Control Delay (s/veh)	7.4	0	-	10.1	0	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	0	-	-

Intersection	
Int Delay, s/veh	29.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	75	126	2748	2178	175
Future Vol, veh/h	45	75	126	2748	2178	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	0	-	150	-	-	600
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	82	137	2987	2367	190

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	4135	1184	2367	0	-	0
Stage 1	2367	-	-	-	-	-
Stage 2	1767	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 2	182	203	-	-	-
Stage 1	56	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 1	182	203	-	-	-
Mov Cap-2 Maneuver	~ 15	-	-	-	-	-
Stage 1	~ 18	-	-	-	-	-
Stage 2	122	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	$ 1274.1	2.34	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	203	-	39	-	-
HCM Lane V/C Ratio	0.676	-	3.351	-	-
HCM Control Delay (s/veh)	53.4	-	$ 1274.1	-	-
HCM Lane LOS	F	-	F	-	-
HCM 95th %tile Q(veh)	4.2	-	14.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	23	2383	202	6	1204
Future Vol, veh/h	52	23	2383	202	6	1204
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	150	-	0	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	25	2590	220	7	1309

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3258	1295	0	0	2590	0
Stage 1	2590	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 7	153	-	-	165	-
Stage 1	~ 42	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 7	153	-	-	165	-
Mov Cap-2 Maneuver	~ 36	-	-	-	-	-
Stage 1	~ 42	-	-	-	-	-
Stage 2	453	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, $/s	$ 375.46	0	0.14
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	36	153	165	-
HCM Lane V/C Ratio	-	-	1.567	0.163	0.039	-
HCM Control Delay (s/veh)	-	-	$ 526.9	33.1	27.7	-
HCM Lane LOS	-	-	F	D	D	-
HCM 95th %tile Q(veh)	-	-	6.1	0.6	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	150	18	32	33	15	28
Future Vol, veh/h	150	18	32	33	15	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	20	35	36	16	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	137	32	47	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	856	1042	1561	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	837	1042	1561	-	-	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	919	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.35	3.62	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	886	-	855	-	-
HCM Lane V/C Ratio	0.022	-	0.214	-	-
HCM Control Delay (s/veh)	7.4	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Intersection	
Int Delay, s/veh	12.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	127	2	260	108	54	3	55	344	55	48	3
Future Vol, veh/h	3	127	2	260	108	54	3	55	344	55	48	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	150	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	138	2	283	117	59	3	60	374	60	52	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	298	614	54	307	241	60	55	0	0	434	0	0
Stage 1	173	173	-	66	66	-	-	-	-	-	-	-
Stage 2	125	440	-	241	175	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	654	407	1013	645	660	1006	1549	-	-	1126	-	-
Stage 1	828	755	-	944	840	-	-	-	-	-	-	-
Stage 2	879	577	-	763	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	477	385	1013	398	624	1006	1549	-	-	1126	-	-
Mov Cap-2 Maneuver	477	385	-	398	624	-	-	-	-	-	-	-
Stage 1	784	715	-	942	838	-	-	-	-	-	-	-
Stage 2	710	576	-	582	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	19.25	24.75	0.05	4.35
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1549	-	-	477	389	398	624	1006	1126	-	-
HCM Lane V/C Ratio	0.002	-	-	0.007	0.361	0.71	0.188	0.058	0.053	-	-
HCM Control Delay (s/veh)	7.3	-	-	12.6	19.4	33.3	12.1	8.8	8.4	-	-
HCM Lane LOS	A	-	-	B	C	D	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.6	5.4	0.7	0.2	0.2	-	-

Appendix D. Divider Page

Traffic Impact Studies

Board of Trustees Information

Community Development Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Public Hearing: Berthoud Industrial (Buckner) Annexation and Zoning**
Type of Item:	**Public Hearing**
Purpose:	**Consider the applicant's request for approval of Annexation to the Town of Berthoud and Zoning District designation for property known as Berthoud Industrial**
Presented by:	**Bella Manzo**

Attachments:

1. Staff Report
2. Petition for Annexation
3. Berthoud Industrial Annexation Map
4. Berthoud Industrial Zoning Map
5. Ordinance 1382 Berthoud Industrial Annexation and Zoning
6. Berthoud Industrial Ordinance 1382 Exhibit B - Zoning Map
7. Berthoud Industrial Ordinance 1382 Exhibit C - Annexation Agreement
8. Resolution 2026.15 Berthoud Industrial Findings of Fact
9. Resolution 2026.13 Berthoud Industrial Petition for Annexation
10. Berthoud Industrial Project Narrative & Annexation Impact Report
11. Berthoud Industrial Mineral Notice
12. Berthoud Industrial Public Notice Postcards
13. Berthoud Industrial Public Notice Newspaper
14. Berthoud Industrial Public Notice Sign Posting
15. Berthoud Industrial Annexation Presentation Slides

Background:

The applicant, Peak Investments, LLC has submitted a petition to annex 1.988 +/- acres of land generally located west of 1st Street/Larimer County Road 15, north of the Larimer County Rd 10E, and south of State Highway 287. This proposed annexation is east of and adjacent to Lot 4, High Ground Industrial Park, which has been annexed into the Town of Berthoud.

This one memo provides an overview of both application submittals, the Annexation and the requested Zoning. There will be one presentation. Both requests are separate agenda items and require separate motions to either approve, approve with conditions, or deny the request. The Town Board of Trustees approved Resolution 13 (2026) on April 28, 2026. Resolution 13 (2026) establishes the Town Board of Trustees public hearing for June 9, 2026.

The applicant is proposing annexation of property from unincorporated Larimer County into the

Town of Berthoud. The subject property is currently zoned CC, Commercial Corridor in Larimer County. The property is located in the north central area of the Town's Urban Growth Boundary and the proposed zoning allocation of M2 Industrial aligns with the vision established in the 2021 Comprehensive Plan Future Land Use Map.

- The property being considered for Annexation is in the Town's Future Land Use area as designated on the 2021 Comprehensive Plan Future Land Use Map.
    - The Town of Berthoud has envisioned the property to be annexed on the Future Land Use Map as being appropriate for the Innovation District Character District. Per the 2021 Comprehensive Plan, the Innovation District Character District is envisioned to continue supporting existing technical businesses and production uses, while also integrating emerging business types that focus on research and development (R&D), technology startups, makerspaces, and other related commercial and light industrial uses. Per the 2021 Comprehensive Plan, relevant zone districts within the Innovation District Character District include Light Industrial (M1), Industrial (M2), Mixed Use (R4), and General Commercial (C2).
- Should the annexation request be approved, the applicant is requesting zoning of M2 Industrial.

Sample motions are included in the Staff Report.

Update/Next Steps:
Should the Trustees approve the Annexation and Zoning requests, the applicant shall file subsequent land use applications as necessitated by any future development plans for the property.

Fiscal Impact and Fund Source:
An Annexation Assessment Report has been prepared and included indicating how public services may be impacted and the applicant's agreement to fund impacts. At this time the impact of this property's annexation and zoning into the Town of Berthoud is minimal, given that no development of the property is currently proposed.

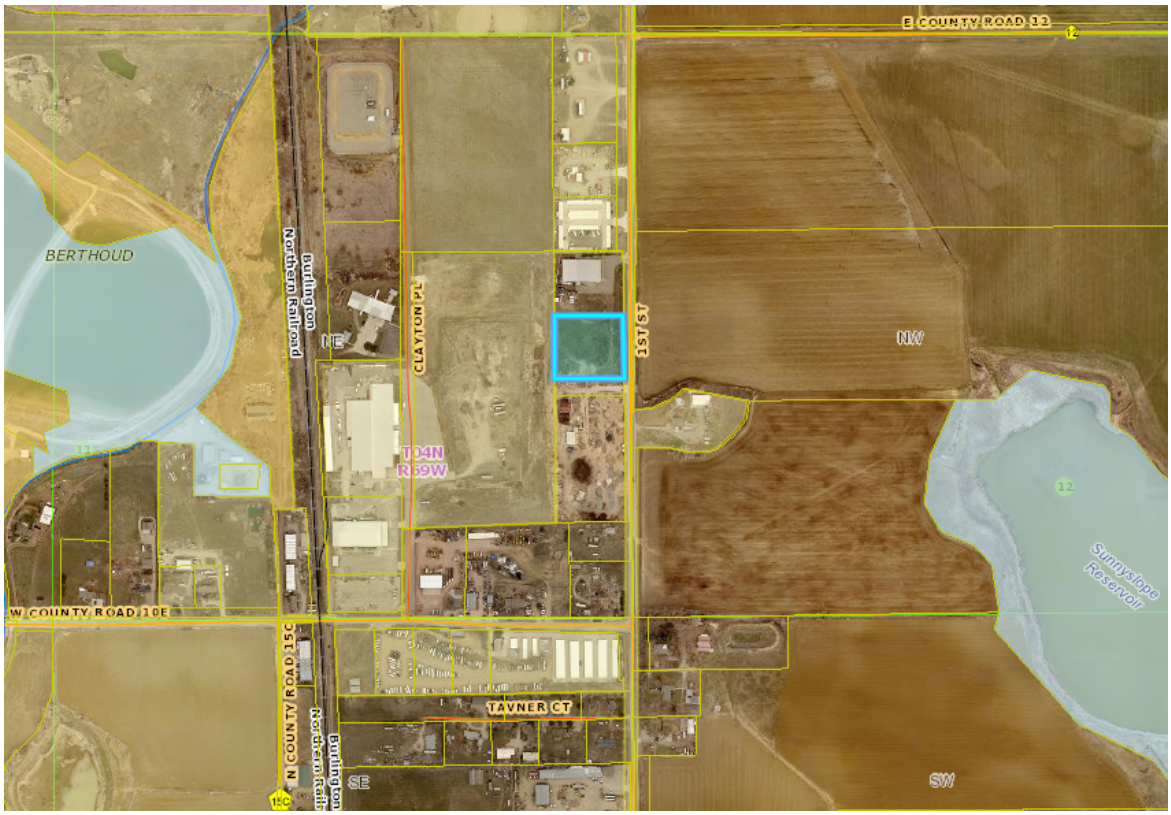
Community Touchstones:
The 2021 Comprehensive Plan Future Land Use Map identifies this property as being compatible with future commercial development and industrial uses. Adherence to the intent of the 2021 Plan ensures the vision of the community established through the master planning process is upheld inclusive of the objective to establish a clear new vision for the future of Berthoud reflecting community values. The Comprehensive Plan and the Future Land Use Map are not legislative. Flexibility is required when reviewing land use activities with the Future Land Use Map. The applicant shall be held accountable in achieving the goals and action items outlined in the Comprehensive Plan and master plans affecting the properties.

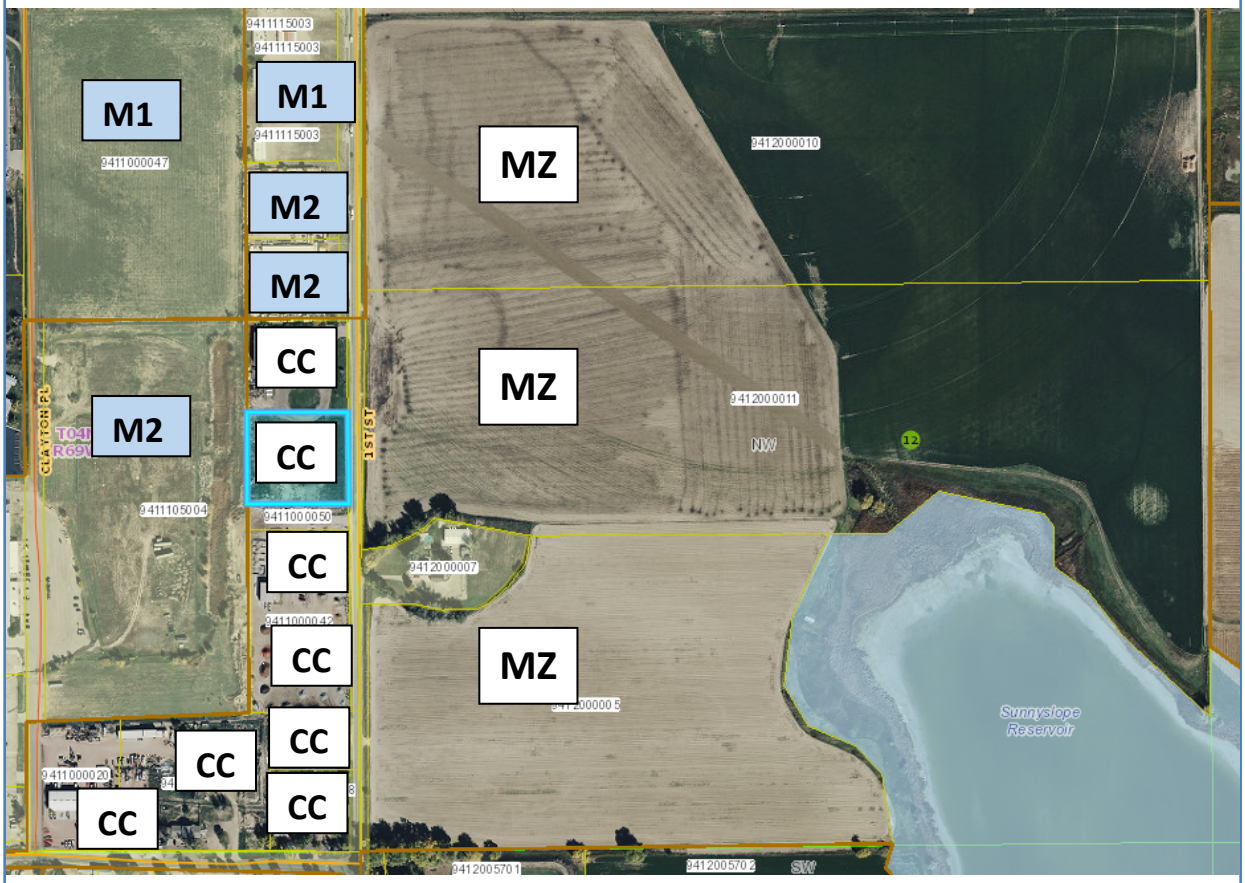
Recommended Action(s):
Planning Commission heard the request for annexation and change of zone at their meeting on May 14, 2026. Planning Commission finds the applications to be in substantial conformance and recommends approval of the requests. Motions have been provided in the Staff Report for the two requests.

807 Mountain Avenue | PO Box 1229 | Berthoud, CO 80513 | O: 970.532.2643 | F: 970.532.0640 | Berthoud.org

STAFF REPORT: BERTHOUD INDUSTRIAL ANNEXATION WITH ANNEXATION AGREEMENT AND ZONING

DATE: June 9, 2026

GENERAL INFORMATION		
Applicant	**Peak Investments, LLC** **Derek Greiss**	**Size: 1.988 +/- acres for Annexation and Zoning**
Site Location	The property under consideration is in unincorporated Larimer County. Parcel 9411000034 (1.988 acres) is west of and adjacent to 1st Street, north of W County Road 10E. 	
Applicant's Request	The Applicant is requesting Annexation and a Zoning proposal of M2, Industrial.	
Surrounding Property Current Uses	*North*: Plumbing supply store in unincorporated Larimer County (Commercial) *West*: Lot 4, High Ground Industrial Park in Berthoud (Vacant) *South*: Landscape supply yard in unincorporated Larimer County (Commercial) *East*: Mountain View proposed annexation, zoning, and neighborhood master plan. Currently in unincorporated Larimer County (Residential)	

Surrounding Properties and Current Zoning	

	Land Use Code minimum bulk standards for proposed zone district M2, Industrial
Min. Lot Width	50 feet
Front Setback	20-feet; All C1, C2, M1, and M2 districts require no less than 35 foot setback buffer from the property line of a residential zoning district.
Side Setback	0 feet; 20 feet from adjacent zoning district boundary.
Rear Setback	20-feet.
Building Height	50 feet. In the case of large buildings for employment, storage or auto-related uses, where greater setbacks are needed, a minimum of 30 percent of the building shall be brought forward to the front/street facing setback line.

SURROUNDING ZONING, LAND USE AND REQUIRED BUFFERS

Adjacent Zoning		**Adjacent Land Uses**	**Setback requirements**
North:	**CC Larimer County**	Vacant, Commercial (Retail Supply Yard, Retail Sales Building)	30’ perimeter from arterial streets; 20’ perimeter from collector streets
South:	**CC Larimer County**		
East:	**MZ Larimer County**		
West:	**M2 Berthoud**		

Report and Process Overview

This one staff report covers the review of two application submittals: the Annexation with the Annexation Agreement, and the request Zoning. The Annexation Agreement is reviewed by the Town Board. Each of these applications will be separate agenda items and require separate motions of approval, approval with conditions, or denial. The related items will be presented together for a comprehensive review.

Municipal Code Section 30-8-104.B outlines the processing steps for an Annexation and Zoning.

The following referral agencies provided response during this development review application and comments were addressed by the application to the satisfaction of these agencies. This referral process has been completed so that the application can move forward to the public hearing phase.

Berthoud Development Review Engineer
Berthoud Water Utilities
Berthoud Public Works
Berthoud Town Forester
Baseline Surveyor
Baseline Engineer
Berthoud Fire Protection District
Little Thompson Water District
Colorado Parks and Wildlife
Larimer County Planning
Larimer County Engineering
Larimer County Assessor
Larimer County Health
Lightgig
Poudre Valley REA
Xcel
Comcast
Century Link/Lumen
US Post Office
Little Thompson Observatory
CDOT

Proposal

The applicant is proposing annexation of property from unincorporated Larimer County into the Town of Berthoud. The property being considered for Annexation is in the Town's Future Land Use area as designated on the Comprehensive Plan Future Land Use Map. Should the annexation request be approved, the applicant is requesting zoning of Industrial (M2).

Background

The subject property is currently zoned CC, Commercial Corridor in Larimer County. The property is in the north central portion of the Town's Urban Growth Boundary and the proposed zoning allocations align closely with the vision established in the 2021 Comprehensive Plan Future Land Use Map.

The Town Trustees accepted the Annexation Petition and established public hearing dates at their meeting on April 28, 2026. Planning Commission heard the requests for Annexation and Zoning at their regular meeting on May 14, 2026.

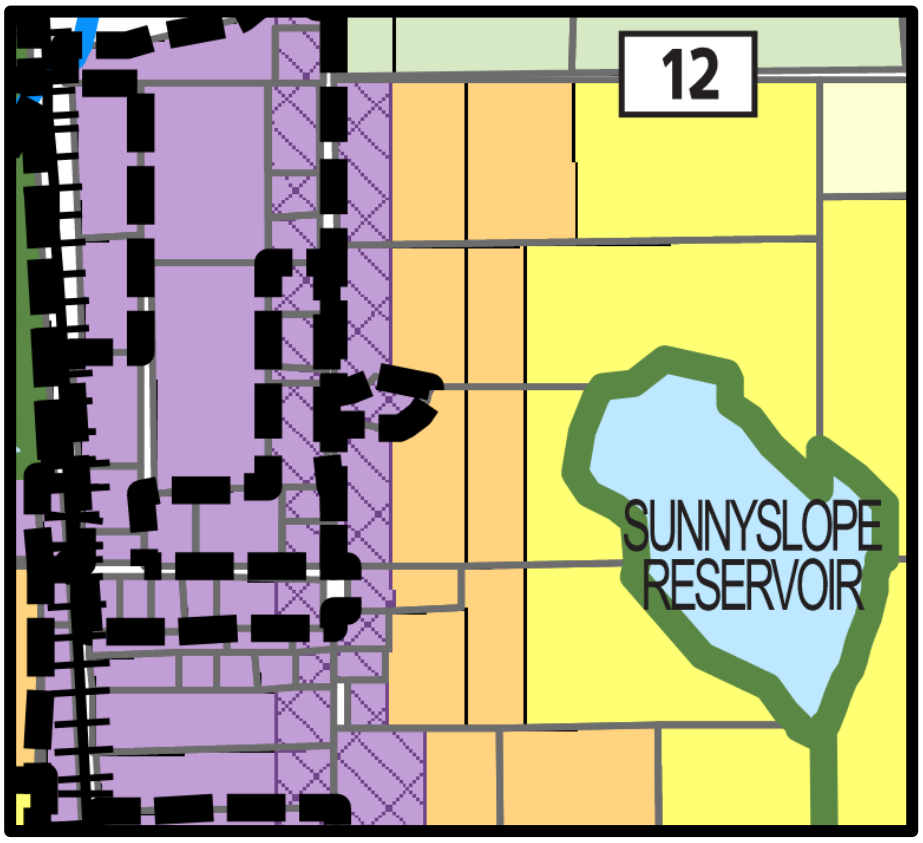
A history of the development review process for this application is listed below:

Submittal	**Staff Comments Issued to Applicant**
August 22, 2025	September 9, 2025
November 17, 2025	December 29, 2025
February 4, 2026	February 25, 2026
April 22, 2026 Final changes to the application materials completed for public hearing	April 23, 2026

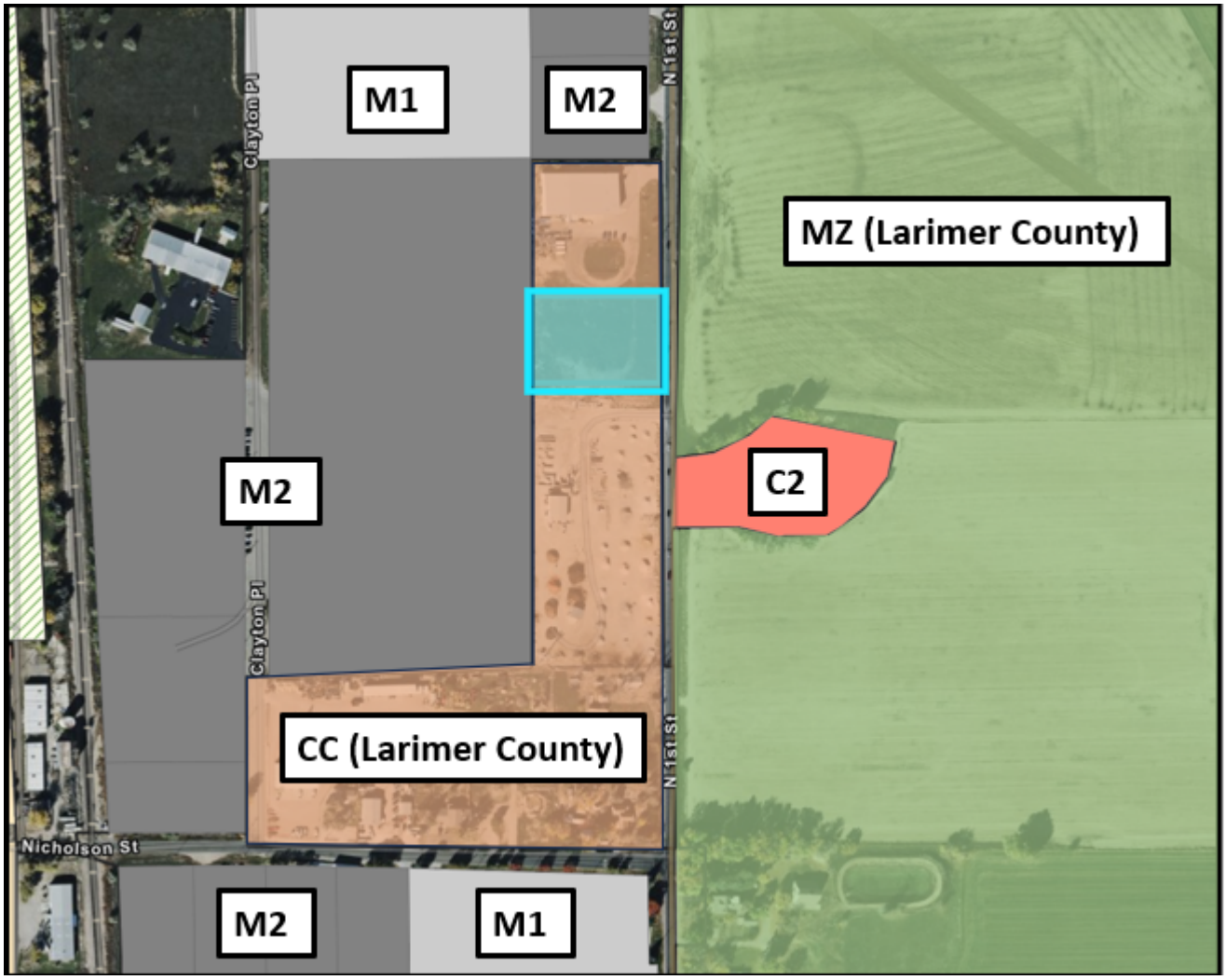
Town Master Plan Adherence

Comprehensive Plan – Future Land Use Map: The intended use of the properties proposed is consistent with the vision established in the 2021 Comprehensive Plan. The location on the Town's 2021 Future Land Use Map is located below. The purple shaded area is envisioned as Innovation District. The cross-hatched area represents the 1st Street Overlay, of which this property is a part. Parcels east of this property, across 1st Street, are also envisioned for the Innovation District designation. Parcels shaded in orange are envisioned as Urban Residential, while those in bright yellow are envisioned as Suburban Residential.

The Town of Berthoud has envisioned the property to be annexed on the Future Land Use Map as being appropriate for the Innovation District. Per the 2021 Comprehensive Plan, the Innovation District is envisioned to continue supporting existing technical businesses and production uses, while also integrating emerging business types that focus on research and development (R&D), technology startups, makerspaces, and other related commercial dn light industrial uses. Per the 2021 Comprehensive Plan, relevant zone districts within the Innovation District Character District include Light Industrial (M1), Industrial (M2), Mixed Use (R4), and General Commercial (C2). While the Comprehensive Plan and the Future Land Use Map adopted by the Town in 2021 are not legislative and rather a vision document only, the intent illustrated on the map has been adhered to with the Petition presented.



Zoning. The location of the property is highlighted in blue on the map below. This map is a portion of the Town's Zoning Map and illustrates the proposed zoning of the property in relationship to adjacent properties. The property highlighted in red is zoned C2 General Commercial. The properties shaded in dark grey are zoned M2 Industrial. The properties zoned in light grey are zoned M1 Light Industrial. The area shaded in orange is zoned CC – Commercial Corridor in unincorporated Larimer County. The area shaded in green is zoned MZ – MultiZoned in Larimer County.



Open Space Plan: The Town of Berthoud adopted the Open Space Plan in 2021. This plan maps the vision for connected open space areas in the Town. The proposed project is identified on the Open Space Plan as residential development, depicted on the map below. The Open Space Plan discusses the importance of preserving frontage along the river corridors and protecting riparian habitat. The proposed development was evaluated by staff with this plan and finds that the proposal meets the vision of the 2021 Open Space Plan.

Trails Master Plan: The Town of Berthoud adopted the Trails Master Plan update in 2022. This plan provides direction for a connected system of trails throughout Berthoud as well as opportunities to connect to regional trail systems and those in adjacent communities. As properties develop, they are required to adhere to the vision of the Trails Master Plan. A regional trail is envisioned running north-south along 1st Street. Future development of this property will be required to adhere to the Trails Master Plan.

Overlay Districts: The Town has adopted the Mountain Avenue Overlay and the 1st Street Corridor Overlay Districts. This property falls within the 1st Street Corridor Overlay District. Future development of this property will require adherence to the 1st Street Corridor Overlay requirements.

Regulations, Guidelines, Specifications and Standards: The Town has adopted Guidelines which provide requirements for architecture and landscaping. Future applications will be required to illustrate how the Engineering Specifications and Standards have been incorporated as well as the Landscaping and Architectural guidelines. The Town has a Design and Zoning Chapter in the Land Development Code which outlines requirements for development. Future development applications will need to adhere to these expectations.

Annexation

The act of Annexation brings properties from unincorporated Larimer or Weld County into the Town of Berthoud in compliance with the Colorado Municipal Act of 1965, C.R.S. 31-12-101 – 123, as may be amended. A meeting with the Board of Trustees was held on April 28, 2026, and it was determined that the application met the requirements of Colorado Revised Statutes and the Municipal Code. Findings of compliance are outlined in Resolution 2026.13, a copy of which is included in this packet of materials.

The process of Annexation allows Berthoud the ability to control the quality of design and development, require the developer to incorporate local and regional trails and open space areas into the design, require parks and public amenities within the proposed development, require adjacent roads to be developed according to the Town's standards and adhere to the allowances of its zoning districts. The act of Annexation allows municipalities to control the development of territory to ensure the development is consistent with the vision found in the Town's Comprehensive Plan.

The Town of Berthoud has criteria for approval when considering Annexation. This criteria for approval is found in Section 30-8-102 of the Municipal Code and is outlined below for convenience along with staff's findings following the referral review process and detailed Code review.

30-8-102.A	Finding	Rationale
1. Annexation is a discretionary act. With the exception of a petition initiated by the Town for the annexation of an enclave, the Town Board shall exercise its sole discretion in the annexation of territory to the Town.	Yes	The proposed parcel to be considered for annexation is presented willingly by the applicant. The Town set the hearing dates and accepted the Petition via Resolution 13.2026 on April 28, 2026. The Planning Commission heard the request at their meeting on May 14, 2026 and motioned to send a recommendation of approval of the request to the Town Board of Trustees.
2. The land to be annexed and the uses proposed for the land shall conform to the goals, policies and strategies of the Town of Berthoud Comprehensive Plan and to the land uses depicted on the Preferred [Future] Land Use Map, as amended. Furthermore, all annexation proceedings shall comply with the Colorado Municipal Annexation Act of 1965, as amended.	Yes	The proposed land use and zoning is Industrial. The proposed land uses follow the envisioned uses depicted on the Future Land Use Map. The M2 zone district is a relevant zone district within the Innovation District Character District designation on the Future Land Use Map.
3. At the time development occurs, certain public facilities and amenities are necessary and must be constructed as part of any territory annexed to and developed within the Town in order that the	Yes	The Annexation Assessment Impact Report provided with the application submittal addresses the impacts anticipated. The Town and referral agencies have no concerns for service provision that need to be addressed at this time.

public needs may be served by such facilities. These facilities include, but are not limited to, arterial streets, bridges, public parks and recreation areas, water and sanitary sewer facilities, school sites, fire and police station sites, and storm drainage facilities. Typically, the annexation of lands to the Town shall be shown not to create any additional cost or burden on the then-existing residents of the Town to provide such public facilities in any newly annexed area.		Future submittal stages such as Site Plan or Use by Special Review are required to illustrate public facilities and amenities necessary to serve this development. Construction documents and drawings are engineered, and these documents and drawings are required elements of a Site Plan/Use by Special Review. Agencies such as the Town's water utilities, public works teams, and the fire protection district review the application at this stage of the process and will continue to review application materials and construction documents and drawings throughout the development review process. All comments from the Town Engineer, Operations and Public Works, Larimer County Engineering, and Planning teams for this application have been addressed. The Town scrutinizes each application submittal and requires any number of resubmittals to ensure the application materials inclusive of utility design and concerns of the referral entities have been met prior to scheduling public hearings. Development expectations for projects in the Town of Berthoud include integration into and connection to, the Town's and the Regional Master Planning open space, trail, pedestrian and traffic networks; provision of street trees, parks and public amenities; design, engineering and installation of adjacent roadways; adherence to requirements of the school district and the fire protection district; and coordination with all public utilities serving the development, for example. Staff also reviewed the specifications, standards, guidelines and expectations outlined in the Town's Comprehensive Plan, Land Development Code, Landscape and Architectural Design Guidelines to ensure they can be met. All Special Districts are provided an opportunity to respond to an Annexation request.
4. Typically, the petitioner for annexation shall be responsible for paying application fees and the Town's full cost for processing the annexation applications and petition; from initial discussion with Town Staff before submittal of the petition, through the approval and recording of the final annexation documents.	Yes	The applicant has paid application fees and a development review deposit. The deposit is used to pay fees of third party consultants the Town utilizes, publications, mailings, recording fees and staff's time.
5. Annexed areas will not typically divide tracts of land to prevent further annexation of adjoining parcels. (For example, leaving a	Yes	This annexation request meets the intent of this section.

"gap" or a "strip" of land between property to be annexed and the adjoining property.		
6. The property owner shall comply with the Annexation Application requirements of this Chapter prior to submitting an annexation petition.	Yes	The applicant has complied with the application requirements and the processing regulations.

Staff and the Planning Commission find that the Annexation application materials listed in Section 30-8-103 have been submitted correctly. Timing of application submittals and development review can be found on page 3 of this Staff Report.

Zoning

The subject project is currently zoned CC in unincorporated Larimer County. The process of annexation is accompanied by a zoning request. The applicant is requesting zoning to M2, Industrial. Rezoning is addressed through an official zoning map amendment. Section 30-3-110.D states for the purpose of establishing and maintaining sound stable and desirable development within the Town, the Zoning Map shall not be amended except when it addresses one or more of the criteria in the following table. The process for considering a Zoning application have been followed.

30-3-110(D) Zoning Map Amendment Criteria	Finding	Rationale
1. To correct a manifest error in an ordinance establishing the zoning for a specific property; or 2. To rezone an area or extend the boundary of an existing district because of changed or changing conditions in a particular area or in the Town generally; or 3. The land to be rezoned was zoned in error and as presently zoned is inconsistent with the policies and goals of the Town Comprehensive Plan; or 4. The proposed rezoning is necessary to provide land for a community-related use that was not anticipated at the time of the adoption of the Town Comprehensive Plan, and the rezoning will be consistent with the policies and goals of the Comprehensive Plan; or 5. The area requested for rezoning has changed or is changing to such a degree that it is in the public interest to encourage development or redevelopment of the area	Yes	The 2nd and 5th criteria have been met. The Town's boundary is changing with the annexation request. The property is in unincorporated Larimer County and the property owner seeks to develop in the Town of Berthoud, according to the Town's design, development, and engineering standards. The applicant seeks to develop in the Town and agrees to adhere to regional and local transportation, trails and open space networks pursuant to the Town's various comprehensive and master plans in effect. The applicant has requested a zoning classification which meets the intent of the future land use envisioned in the 2021 Comprehensive Plan update. The Town of Berthoud has envisioned the property to be annexed on the Future Land Use Map as being appropriate for the Innovation District. Per the 2021 Comprehensive Plan, the Innovation District is envisioned to continue supporting existing technical businesses and production uses, while also integrating emerging business types that focus on research and development (R&D), technology startups, makerspaces, and other related commercial and light industrial uses. While the Comprehensive Plan and the Future Land Use Map adopted by the Town in 2021 are not legislative and rather a vision document only, the intent illustrated on the map has been adhered to with the application.

PUBLIC NOTICE AND COMMENT

Notice of the Public Hearings was published in *Loveland Report Herald* on 5/9, 5/13, 5/23, 5/30 and 6/6/2026. A postcard to surrounding property owners within 500' was mailed 14 days in advance of the Planning Commission hearing, listing both the Planning Commission and Town Board of Trustees hearing dates. The applicant posted a sign on April 23, 2026 announcing the proposed land use applications. The location for this sign is on the east frontage of the property facing 1st Street.

FINDINGS AND RECOMMENDATIONS

Annexation

After review of the procedures, application material requirements, staff review, and the Criteria for Approval, Planning Commission recommends the Town Board approve the request for Annexation. Planning Commission's findings are based on the Criteria for Approval found in Section 30-8-102 of the Municipal Code as discussed in this Staff Report.

Rezoning

After review of the procedures, application material requirements, staff review, and the Criteria for Approval, Planning Commission recommends that the Town Board of Trustees approve the request for the proposed Zoning. Planning Commission's findings are based on the Criteria for Approval found in Section 30-3-110 as discussed in this Staff Report.

The following motions are provided for consideration:

I move to approve the Berthoud Industrial Annexation based on the Criteria for Approval found in Section 30-8-102 of the Municipal Code as discussed in the Staff Report.

I move to approve the Berthoud Industrial Zoning to M2, Industrial in accordance with the 2021 Comprehensive Plan Future Land Use Map, the Criteria for Approval found in Section 30-3-110 of the Municipal Code, and the findings in the Staff Report

Should the Town Board of Trustees wish to deny any of the application requests, the following template may be used:

I move to deny the Berthoud Industrial _____ request. I find that the following Criteria for Approval have not been met: _____.

Berthoud Industrial – Parcel 1 Buckner North Exemption

PETITION FOR ANNEXATION

We represent that we are the landowners of 100% of the land described in this Petition, excluding public streets, alleys, roads and easements, which is legally described on **Exhibit "A"** and depicted on **Exhibit "B"**, and affirm the following to be true and correct as of April 2026, our petition for annexation is filed with the Town of Berthoud.

CONTIGUITY:

1. The perimeter of the proposed annexation has a distance of 1,177.25 feet of which 577.25 are contiguous to the existing Town Limits of Berthoud.

2. This contiguity results in a minimum of 49% of the perimeter (at least 1/6) of proposed annexation being contiguous to the Town of Berthoud.

3. The proposed annexation contains approximately 1.988 acres.

4. The requirements of §31-12-104 and §31-12-105 C.R.S., exist or have been met.

5. We further allege:

   a. It is desirable and necessary that the territory be annexed to the Town of Berthoud.

   b. A community of interest exists between the territory and the Town of Berthoud.

   c. The territory is integrated or capable of being integrated with the Town of Berthoud.

   d. The territory is urban or will be urbanized in the near future.

   e. No land held in identical ownership is divided into separate parcels unless the owner of said tract has consented in writing or joins in this Petition.

   f. No proceedings for annexation of the land described in this Petition have been commenced for annexation to another municipality.

6. The Petitioners understand that there may be a significant period of time before municipal utilities will be available, but anticipate that urbanization will be able to take place at a pace acceptable to them without immediate access to these utilities. Until urbanization takes place the petitioners intend to maintain their properties in their current uses, which uses are acceptable to the Town of Berthoud.

7. The Petitioners have submitted the petition with the intention that the property will be developed in accordance with Berthoud's Development Code, Comprehensive Plan, Municipal Code, resolutions and ordinances.

8. The Petitioners are aware that Berthoud has enacted fees and policies with the intention that growth should pay its own way and that growth should improve the health, safety and welfare of its citizens. Examples of Berthoud's fees which are acceptable to the petitioners include fees for: building, electric, construction meter, plan review, building permit administration, parks, trails and open space, public facilities infrastructure, streets, drainage, police facility infrastructure, general administration facility infrastructure, water administration, water meter, water tap, sewer tap, raw water, and other supplemental fees as appropriate.

9. The Petitioners understand that Berthoud is required by Colorado Revised Statutes to prepare and file an annexation impact report. The Petitioners will prepare a proposed annexation impact report and provide it to Berthoud for review and consideration six (6) weeks prior to the hearing.

10. The Petitioners agree to dedicate free and clear of all liens and encumbrances of any kind, and at no charge to the Town, all easements and rights-of-way for streets and other public ways and for other public purposes, within the Property.

11. The Petitioners agree to dedicate, with the subdivision of the Property and at no cost to the Town, all required easements and right-of-way for installation and maintenance of infrastructure.

12. The Petitioners agree to design and install transportation infrastructure, utility infrastructure, and stormwater improvements to serve the Property prior to the issuance of any building permits for all or any portion of the property in accordance with Town standards. The Petitioners shall make such other improvements as required by Town ordinances and resolutions, to guarantee construction of all required improvements, and, if requested by Berthoud, to dedicate to Berthoud any or all other required improvements. The Petitioners agrees to enter into a subdivision improvements agreement pertaining to such improvements and other matters at time of final plat.

13. The Petitioners agree that oversizing agreements may exist that the Petitioners may be responsible for his/her fair share for oversizing of infrastructure. Likewise, Petitioners acknowledges that the Town may require the Petitioners to oversize infrastructure, which would be reimbursed by subsequent developers. The Petitioners acknowledge that the Town shall facilitate reimbursement of any financial participation by the Petitioners, over and above the proportionate impact of the development. Such

reimbursement shall come from new development directly connecting to the improvements.

14. The Petitioners agree to satisfy the public land dedication and landscaping requirements specified in the Town's Development Code.

15. The Petitioners agree that future development of the site will comply with any adopted infrastructure plans including but not limited to transportation, drainage, water, sewer, land use, parks, trails, open space and comprehensive plans.

16. The Petitioners agree that the design, improvement, construction, development, and use of the property shall be in conformance with, and that Petitioners shall comply with, all municipal, county, state and federal statutes, ordinances, rules and regulations.

17. The Petitioners agree that all land use approvals and building permits for the development of the Property shall be subject to requirements including, but not limited to, the payment of impact fees and development charges and other land use and development requirements in effect at the time that such proposed development applies for a building permit.

18. The Petitioners agree to convey to the Town, all water rights necessary for development and all irrigation water rights and associated carrying rights and groundwater rights associated with the property, and any related stock certificates evidencing ownership of the water rights, free and clear of all encumbrances and with all taxes and assessments related hereto paid in full, unless the Town in writing rejects any or all such water rights. Water rights may be conveyed on a pro-rata basis as building permits are issued.

19. Berthoud has various enterprise funds through which the utilities provided by Berthoud are financed. Examples of Berthoud's services are its water, wastewater and drainage utilities. Berthoud's Board of Trustees believe that the provision of utilities by Berthoud assists in complying with the *Berthoud Comprehensive Plan* and *Berthoud Development Code* and the petitioners request that Berthoud provide all utility services which are available now or in the future through Berthoud at a cost comparable to that which can be provided by any third party.

20. The Petitioners understand that the R2-J School District forms an integral part of the Berthoud community. Berthoud has enacted fees to support the acquisition of land by this School District. The Petitioners are aware of these fees and agree to financially support the District's land acquisition programs.

The terms of this Petition are binding on the heirs, devisers, successors and assigns of the parties. Therefore, the undersigned hereby request that the Town of Berthoud approve the annexation of the areas described herein.

PETITIONER SIGNATURES

Petitioner 1:

Signature: _____ Date: 4/17/26

Printed Name: Derek Griess

Title: Owner

Ownership Percentage: 50%

Petitioner 2:

Signature: _____ Date: 4/17/26

Printed Name: James Jansma

Title: Owner

Ownership Percentage: 50%

STATE OF COLORADO)
) ss.
COUNTY OF Larimer)

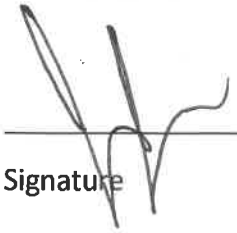
The foregoing instrument was acknowledged before me this 17th day of April, 2026, by Derek Griess and James Jansma.

Witness my hand and official seal.

My commission expires: March 19 2028

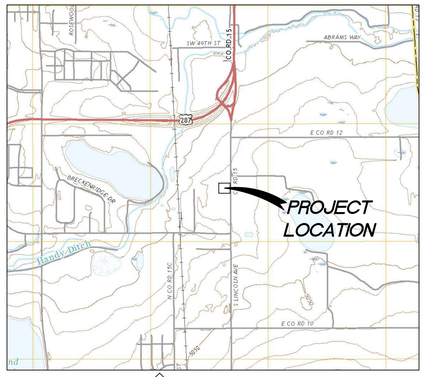
Notary Public

AARON J WESTHUIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20204000115
MY COMMISSION EXPIRES MARCH 19 2028

Landowner(s) Name(s) and Signature(s	Mailing Address	Date
James Jansma	5651 Neighbors Way Loveland, CO 80537	
Printed Name		
		4/17/26
Signature		
Derek Griess	5805 Mangrove Ct	
Printed Name		
	Loveland CO 80538	4/17/26
Signature		
Printed Name		
Signature		

BERTHOUD INDUSTRIAL ANNEXATION

TO THE TOWN OF BERTHOUD, COLORADO
PARCEL 1, BUCKNER NORTH EXEMPTION, BEING A PART OF THE NORTHEAST 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M.
TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO
1.988 ACRES



VICINITY MAP
1" = 2000'

DESCRIPTION

KNOWN ALL MEN BY THESE PRESENTS: THAT THE UNDERSIGNED, BEING THE OWNERS OF PARCEL 1, BUCKNER NORTH EXEMPTION, RECORDED AT REC. NO. 20120055489, BEING A PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49 FEET; THENCE S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 52' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

TOTAL ANNEXED AREA: FOR THE BERTHOUD INDUSTRIAL ANNEXATION IS 86,588 SQ. FT. OR 1.988 ACRES, MORE OR LESS

OWNERS APPROVAL AND DEDICATION

THE UNDERSIGNED, BEING SOLE OWNERS OF THE LAND DESCRIBED HEREIN, HAVE CAUSED SAID LAND TO BE LAID OUT AND ANNEXED UNDER THE NAME OF BERTHOUD INDUSTRIAL ANNEXATION AND DO HEREBY DEDICATE TO THE PUBLIC FOREVER ALL STREETS, ALLEYS AND UTILITY EASEMENTS AS INDICATED HEREON, IN COMPLIANCE WITH THE TOWN OF BERTHOUD SUBDIVISIONS AND BY CONTRACTURAL AGREEMENT, THE UNDERSIGNED SHALL BEAR ALL EXPENSES INVOLVED IN IMPROVEMENTS.

OWNER: PEAK INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY

_____
OWNER

_____
TITLE

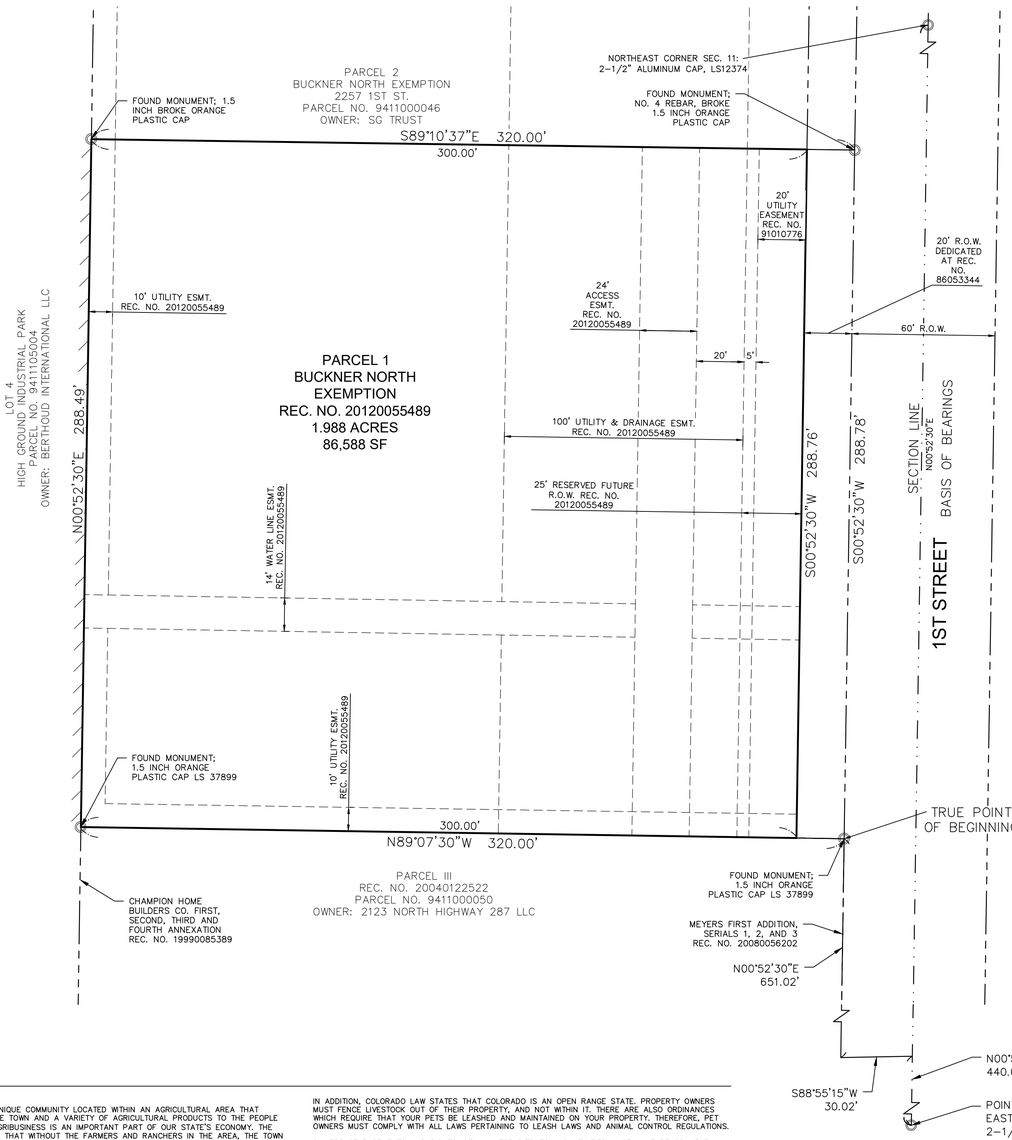
STATE OF COLORADO)
)SS
COUNTY OF LARIMER)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY _____

THIS _____ DAY OF _____, 20_____.

MY COMMISSION EXPIRES: _____

_____
NOTARY PUBLIC



APPROVAL CERTIFICATES

APPROVED BY THE BOARD OF TRUSTEES OF THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____, 2026.

_____
MAYOR, WILLIAM KARSPECK

THE FOREGOING MAP IS APPROVED FOR FILING AND ACCEPTED BY THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____, 2026.

ATTEST: _____
TOWN CLERK, CHRISTIAN R. SAMORA

APPROVED BY THE PLANNING COMMISSION OF THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____, 2026.

_____
CHAIRPERSON

THE FOREGOING MAP IS APPROVED FOR FILING AND ACCEPTED BY THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____, 2026.

ATTEST: _____
PLANNER

SURVEYOR'S CERTIFICATE:

I, MICHAEL MASSEY, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY STATE THAT THIS PROPERTY DESCRIPTION OF LAND PROPOSED TO BE ANNEXED TO THE TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO, WAS PREPARED UNDER MY PERSONAL SUPERVISION AND CHECKING, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, BELIEF, AND IN MY PROFESSIONAL OPINION.

I FURTHER STATE THAT NOT LESS THAN ONE-SIXTH OF THE PERIMETER OF THE AREA PROPOSED TO BE ANNEXED IS CONTIGUOUS TO THE BOUNDARY LINE OF THE TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO.

DRAFT 04/21/2026

_____
MICHAEL MASSEY, #38346
COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR

NOTE:
TOTAL PERIMETER OF ANNEXATION: 1177.25'
CONTIGUOUS LENGTH TO THE EXISTING TOWN BOUNDARY: 288.49'
ONE-SIXTH OF TOTAL ANNEXATION PERIMETER: 196.21'

	SQUARE FEET	ACRES
PARCEL 1	86,588	1.988

PROJECT CONTACTS:

SURVEYOR
RIDGETOP ENGINEERING AND SURVEYING
541 E. GARDEN DRIVE, UNIT N
WINDSOR, CO 80550
(970) 663-4552
CONTACT: MICHAEL MASSEY, P.L.S.

OWNER
PEAK INVESTMENTS, LLC
5805 MANGROVE CT
LOVELAND, CO 80538
(970) 218-1477

SURVEYOR'S NOTES:

1. THIS ANNEXATION MAP DOES NOT CONSTITUTE A TITLE SEARCH BY RIDGETOP ENGINEERING AND SURVEYING. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY, OR TITLE OF RECORD, RIDGETOP ENGINEERING AND SURVEYING RELIED ON THE TITLE INSURANCE COMMITMENT FILE NO: 383-F07558-24, AMENDMENT NO. 3, ISSUED BY LAND TITLE GUARANTEE COMPANY, EFFECTIVE JULY 22, 2025 AT 8:00 A.M.
2. THE LINEAL UNIT USED IN THE PREPARATION OF THIS ANNEXATION MAP IS THE U.S. SURVEY FOOT AS DEFINED BY THE UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.
3. BASIS OF BEARINGS: CONSIDERING THE EAST LINE OF THE NORTHEAST 1/4 SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST AS BEARING NORTH 00°52'30" EAST, MONUMENTED BY A 2-1/2" ALUMINUM CAP, LS12374 AT THE EAST 1/4 CORNER OF SAID SECTION 11 AND BY A 2-1/2" ALUMINUM CAP, LS12374 AT THE NORTHEAST CORNER OF SAID SECTION 11.
4. THE SUBJECT PROPERTY IS LOCATED IN UNSHADED ZONE X, THE AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. ALL ACCORDING TO FIRM MAP NO. 08069C1400G, DATED FEBRUARY 6, 2013.

GENERAL DEVELOPMENT STANDARD NOTES:

1. PROJECT APPROVAL:
   THE PLANS CONTAINED ON THIS MAP/PLAT AS WELL AS THE STAFF REPORT DATED _____ AND RESOLUTION _____ (AND/OR) ORDINANCE _____ ARE THE LIMITS OF THE APPROVAL. ANY CHANGES TO THE APPROVED PLANS MAY NECESSITATE AN AMENDMENT OR NEW PERMIT.
2. DEVELOPMENT IMPROVEMENTS:
   ALL DEVELOPMENT IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLAT AND PLANS AS WELL AS THE REQUIREMENTS OF THE BERTHOUD MUNICIPAL CODE. IF APPLICABLE: THE DEVELOPMENT SHALL ADHERE TO THE DEVELOPMENT AGREEMENT ENTERED INTO BETWEEN THE DEVELOPER AND THE TOWN OF BERTHOUD.
3. EROSION CONTROL:
   PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY DEVELOPMENT IMPROVEMENTS INCLUDING ALTERATIONS TO EXISTING GRADING CONTOURS, REMOVAL OF VEGETATION AND/OR EXCAVATING, THE TOWN-APPROVED EROSION CONTROL PLAN WILL BE IMPLEMENTED. THE TOWN-APPROVED EROSION CONTROL PLAN MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE CONSTRUCTION OF DEVELOPMENT IMPROVEMENTS AND SHALL NOT BE REMOVED OR ABANDONED UNTIL AUTHORIZED BY THE TOWN. AT ALL TIMES DURING CONSTRUCTION ON THE PROPERTY, OR OFF-SITE PROJECTS ASSOCIATED WITH DEVELOPMENT OF THE PROPERTY, DEVELOPER SHALL MAINTAIN ALL STREETS, DRAINAGE, AND DRAINAGE FACILITIES IN AN ORDERLY AND WORKMANLIKE FASHION.
4. CONSTRUCTION RULES AND REGULATIONS:
   CONSTRUCTION ACTIVITIES SHALL ADHERE TO THE CONSTRUCTION RULES AND REGULATIONS FOUND IN CHAPTER 30 OF THE BERTHOUD MUNICIPAL CODE AT ALL TIMES.
5. DARK SKY:
   THE TOWN OF BERTHOUD HAS ADOPTED A DARK SKY ORDINANCE. ALL DEVELOPMENT SHALL ADHERE TO THE TOWN OF BERTHOUD DARK SKY ORDINANCE NO. 1230, ADOPTED JANUARY 9, 2018, AND AS MAY BE AMENDED, AT ALL TIMES.
6. RIGHT TO FARM STATEMENT:
   THE TOWN OF BERTHOUD HAS ADOPTED A 'RIGHT TO FARM POLICY'. ALL NEW AND EXISTING RESIDENTS ARE EXPECTED TO READ AND UNDERSTAND THE POLICY. FOR A COPY OF THE POLICY, PLEASE CONTACT THE TOWN OF BERTHOUD.

THE TOWN OF BERTHOUD IS A UNIQUE COMMUNITY LOCATED WITHIN AN AGRICULTURAL AREA THAT PROVIDES MANY BENEFITS TO THE TOWN AND A VARIETY OF AGRICULTURAL PRODUCTS TO THE PEOPLE OF THE STATE OF COLORADO. AGRIBUSINESS IS AN IMPORTANT PART OF OUR STATE'S ECONOMY. THE TOWN OF BERTHOUD RECOGNIZES THAT WITHOUT THE FARMERS AND RANCHERS IN THE AREA, THE TOWN WOULD NOT MAINTAIN ITS SMALL TOWN CHARACTER, LIFESTYLE AND APPEAL. THEREFORE, IT BECOMES IMPERATIVE TO EDUCATE PEOPLE MOVING TO THIS AREA RELATIVE TO THE DAY TO DAY ACTIVITIES AND EVENTS THAT OCCUR IN AREAS OF LARIMER AND WELD COUNTIES ADJACENT TO RESIDENTIAL AREAS OF THE TOWN.

THE LAWS OF COLORADO CLASSIFY IT AS A "RIGHT TO FARM" STATE. NEW AND EXISTING RESIDENTS OF THE TOWN OF BERTHOUD AND THOSE TO WHOM THE TOWN SUPPLIES MUNICIPAL SERVICES SHOULD UNDERSTAND THAT ALL OF US BENEFIT FROM THE LARGE AREAS OF OPEN FARMLANDS AND FIELDS THAT SURROUND OUR COMMUNITY. IN ORDER FOR THESE LANDS TO REMAIN PRODUCTIVE, THE FARMING AND RANCHING OPERATIONS ON THESE PROPERTIES MUST CONTINUE. THEREFORE, IT IS THE RESPONSIBILITY OF THE NEIGHBORING PROPERTY OWNERS TO UNDERSTAND AND RESEARCH THE AREA THEY ARE CONSIDERING MOVING INTO, AND FULLY UNDERSTAND AND ACCEPT THAT THE ACTIVITIES, SIGHTS, SOUNDS AND SMELLS OF AGRICULTURAL OPERATIONS ARE NORMAL FACTS OF LIFE WHEN LIVING IN THE AREAS WITHIN AND AROUND THE TOWN OF BERTHOUD.

SOME INDIVIDUALS MAY NOT APPRECIATE THESE AGRICULTURAL OPERATIONS AND MAY PERCEIVE THEM AS ANNOYANCES, EYESORES OR NUISANCES. STATE LAW AND TOWN RESOLUTIONS RECOGNIZE THAT RANCHING, FARMING OR OTHER AGRICULTURAL ACTIVITIES AND OPERATIONS WITHIN THE AREAS SURROUNDING BERTHOUD SHALL NOT BE CONSIDERED TO BE NUISANCES SO LONG AS THEY ARE OPERATED IN CONFORMANCE WITH THE LAW IN A NON-NEGLIGENT MANNER. THEREFORE, LOCAL RESIDENTS SHOULD BE PREPARED TO ENCOUNTER NOISES, 24 HOUR OPERATIONS, ODORS, LIGHTS, MUD, DUST, SMOKE, CHEMICALS, MACHINERY ON PUBLIC ROADS, LIVESTOCK, STORAGE AND DISPOSAL OF FEED AND MANURE, THE APPLICATION BY SPRAYING OF OTHER CHEMICAL FERTILIZERS, SOIL AMENDMENTS, HERBICIDES AND PESTICIDES, ANYONE OR MORE OF WHICH MAY NORMALLY OCCUR AS PART OF LEGAL AND NON-NEGLIGENT AGRICULTURAL OPERATIONS.

IN ADDITION, COLORADO LAW STATES THAT COLORADO IS AN OPEN RANGE STATE. PROPERTY OWNERS MUST FENCE LIVESTOCK OUT OF THEIR PROPERTY, AND NOT WITHIN IT. THERE ARE ALSO ORDINANCES WHICH REQUIRE THAT YOUR PETS BE LEASHED AND MAINTAINED ON YOUR PROPERTY. THEREFORE, PET OWNERS MUST COMPLY WITH ALL LAWS PERTAINING TO LEASH LAWS AND ANIMAL CONTROL REGULATIONS.

OWNERS OF EASEMENTS AND RIGHTS-OF-WAY FOR DITCHES AND UTILITIES MUST HAVE REASONABLE ACCESS TO BURN, CONTROL WEEDS, MAINTAIN AND SERVICE THEIR LINES AND DITCHES. THESE DITCHES AND EASEMENTS ARE NOT FOR PUBLIC USE AND MAY NOT BE USED WITHOUT THE WRITTEN CONSENT OF THE DITCH OWNER. THE WATER CONTAINED IN THESE DITCHES IS PRIVATE PROPERTY AND ANY USE OF THIS WATER WITHOUT WRITTEN CONSENT IS TO BE CONSIDERED THEFT. RESIDENTS AND LANDOWNERS ARE ENCOURAGED TO LEARN. MORE ABOUT THESE RIGHTS AND RESPONSIBILITIES AND THE POSITION THE STATE OF COLORADO AND THIS TOWN HAVE ADOPTED REGARDING THESE ISSUES. THE TOWN BELIEVES FARMING AND RANCHING OPERATIONS CAN PROVIDE MANY BENEFITS TO LOCAL RESIDENTS AND THAT AGRICULTURE AND RESIDENTIAL USES CAN COEXIST.

FOR ADDITIONAL INFORMATION PLEASE REFER TO LARIMER COUNTY'S "THE CODE OF THE WEST," AND WELD COUNTY'S "RIGHT TO FARM COVENANT," ADOPTED MAY 1997

7. 1ST STREET CORRIDOR PLAN
   THE TOWN OF BERTHOUD HAS ADOPTED THE 1ST STREET CORRIDOR PLAN. THIS DEVELOPMENT FALLS WITHIN THE 1ST STREET CORRIDOR OVERLAY DISTRICT AND IS REQUIRED TO ADHERE TO THE OVERLAY PLAN, ADOPTED APRIL 25, 2023, AND AS MAY BE AMENDED.

LEGEND:

- EASEMENT LINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- TOWN OF BERTHOUD BOUNDARIES
- SECTION LINE
- FOUND MONUMENT AS NOTED

DATE	REVISED	REQUEST BY	CHECK

Project: 21-163-001
Drawing: ANNEXATION
Drafted By: BSA
Date: 11/07/2026
Rev. Date:
Check By: MM

BERTHOUD INDUSTRIAL ANNEXATION
TO THE TOWN OF BERTHOUD, COLORADO
PARCEL 1, BUCKNER NORTH EXEMPTION, BEING A PART OF THE NORTHEAST 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M.
TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO

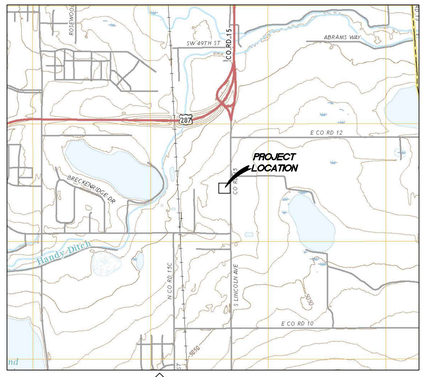
541 E. GARDEN DRIVE
UNIT N
WINDSOR, CO 80550
970-663-4552
RIDGETOP ENGINEERING & SURVEYING

Sheet: 1 / 1

DRAWING FILENAME: V:\Projects\21-163-001 Berthoud Lot 3\dgn\Working Files\SWO\Annexation.dwg LAYOUT NAME: 24x36 Landscape DATE: Apr 21, 2026 - 12:09am

ZONING AMENDMENT MAP
BERTHOUD INDUSTRIAL

TO THE TOWN OF BERTHOUD, COLORADO
PARCEL 1, BUCKNER NORTH EXEMPTION, BEING A PART OF THE NORTHEAST 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M. TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO
1.988 ACRES



VICINITY MAP
1" = 2000'

STATEMENT OF OWNERSHIP AND SUBDIVISION:

PROPOSED M2 INDUSTRIAL ZONING:

KNOWN ALL MEN BY THESE PRESENTS: THAT THE UNDERSIGNED, BEING THE OWNERS OF PARCEL 1, BUCKNER NORTH EXEMPTION, RECORDED AT REC. NO. 20120055489, BEING A PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49 FEET; THENCE S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 52' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

SAID PARCEL CONTAINS 86,588 SQ. FT. OR 1.988 ACRES, MORE OR LESS

OWNER: PEAK INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY

_____
OWNER

_____
TITLE

STATE OF COLORADO)
)SS
COUNTY OF LARIMER)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY _____

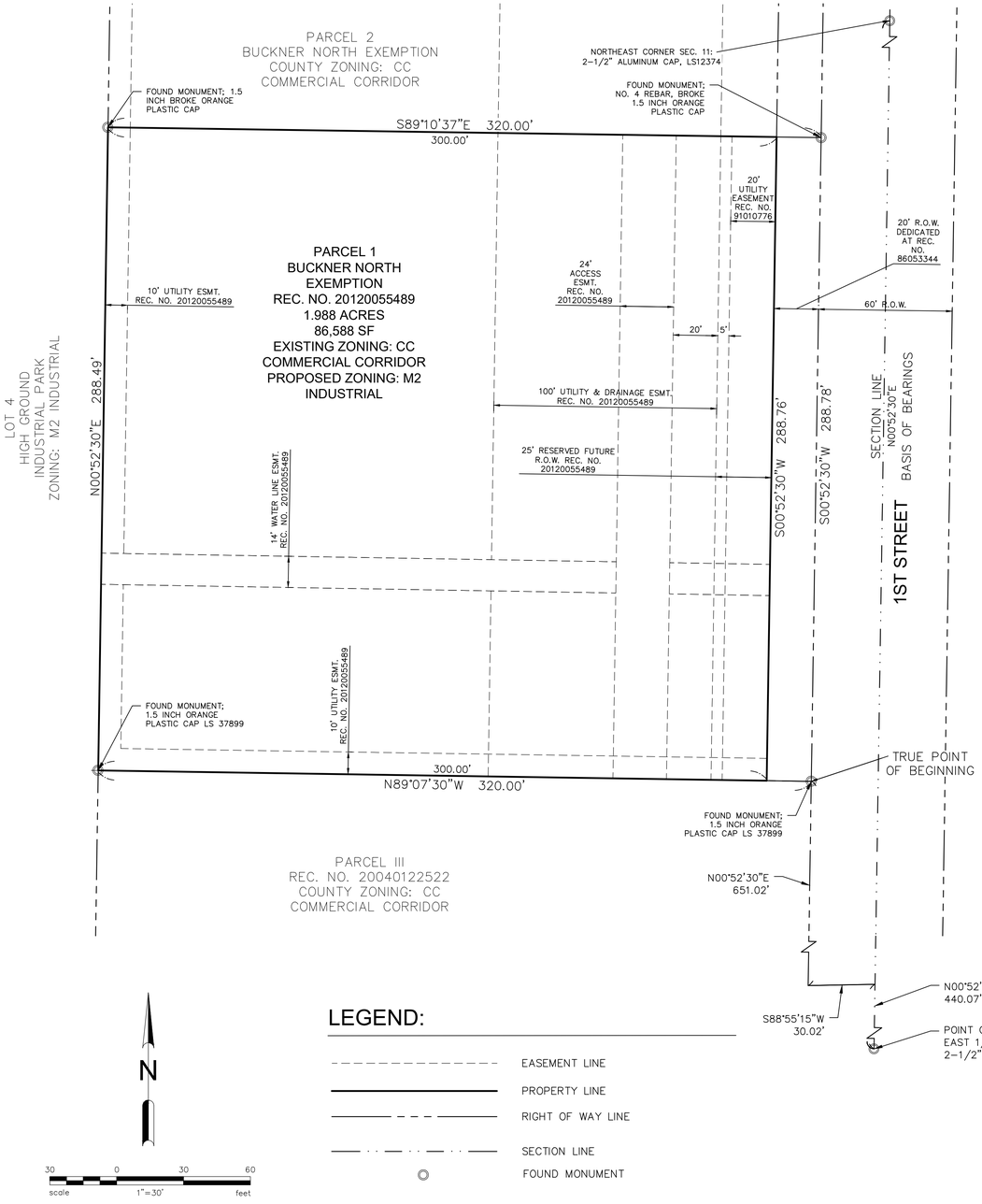
THIS _____ DAY OF _____, 20_____.

MY COMMISSION EXPIRES: _____

_____
NOTARY PUBLIC

SURVEYOR'S NOTES:

1. THIS ZONING AMENDMENT MAP DOES NOT CONSTITUTE A TITLE SEARCH BY RIDGETOP ENGINEERING AND SURVEYING. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY, OR TITLE OF RECORD, RIDGETOP ENGINEERING AND SURVEYING RELIED ON THE TITLE INSURANCE COMMITMENT FILE NO: 383-F07558-24, AMENDMENT NO. 3, ISSUED BY LAND TITLE GUARANTEE COMPANY, EFFECTIVE JULY 22, 2025 AT 8:00 A.M.
2. THE LINEAL UNIT USED IN THE PREPARATION OF THIS ZONING MAP IS THE U.S. SURVEY FOOT AS DEFINED BY THE UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.
3. BASIS OF BEARINGS: CONSIDERING THE EAST LINE OF THE NORTHEAST 1/4 SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST AS BEARING NORTH 00°52'30" EAST, MONUMENTED BY A 2-1/2" ALUMINUM CAP, LS12374 AT THE EAST 1/4 CORNER OF SAID SECTION 11 AND BY A 2-1/2" ALUMINUM CAP, LS12374 AT THE NORTHEAST CORNER OF SAID SECTION 11.



LEGEND:

- EASEMENT LINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- SECTION LINE
- FOUND MONUMENT

APPROVAL CERTIFICATE:

APPROVED BY THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____ 2026.

_____
MAYOR, WILLIAM KARSPECK

THE FOREGOING ZONING AMENDMENT MAP IS APPROVED FOR FILING AND ACCEPTED BY THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____ 2026.

ATTEST: _____
TOWN CLERK, CHRISTIAN R. SAMORA

SURVEYOR'S CERTIFICATE:

I, MICHAEL MASSEY, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE ZONING AMENDMENT MAP OF BERTHOUD INDUSTRIAL WAS PREPARED UNDER MY PERSONAL SUPERVISION, THAT THE FOREGOING MAP IS AN ACCURATE REPRESENTATION THEREOF, AND IS IN COMPLIANCE WITH THE DEVELOPMENT REGULATIONS OF THE TOWN OF BERTHOUD, ALL THIS TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

DRAFT
04/21/2026

_____
MICHAEL MASSEY, #38346
COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR

LARIMER COUNTY CLERK AND RECORDER CERTIFICATE:

THE FOREGOING ZONING AMENDMENT MAP IS APPROVED FOR FILING AND ACCEPTED BY THE COUNTY OF LARIMER COUNTY, COLORADO, THIS _____ DAY OF _____, 2026.

ATTEST: _____
LARIMER COUNTY CLERK AND RECORDER

DATE	REQUEST BY	REVISED	CHECK

Project: 21-163-001
Drawing: ZONING MAP
Drafted By: BSA
Date: 10/10/2026
Rev. Date: MM
Check By: MM

ZONING AMENDMENT MAP BERTHOUD INDUSTRIAL
TO THE TOWN OF BERTHOUD, COLORADO
PARCEL 1, BUCKNER NORTH EXEMPTION, BEING A PART OF THE NORTHEAST 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M.
TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO

541 E. GARDEN DRIVE
UNIT N
WINDSOR, CO 80550
970-663-4552
RIDGETOP ENGINEERING & SURVEYING

Sheet: 1 / 1

DRAWING FILENAME: V:\Projects\21-163-001 Berthoud Lot Split\Working Files\SWG\Zoning Map.dwg LAYOUT NAME: 24x36 Landscape DATE: Apr 21, 2026 - 12:08pm

Ordinance No. 1382
Series 2026

An Ordinance of the Town of Berthoud Annexing the Real Property Known as Berthoud Industrial to the Town of Berthoud and Zoning the Property Industrial, and Approving an Associated Annexation Agreement

Whereas, Peak Investments, LLC ("Developer") is the owner of the real property located in unincorporated Larimer County and more particularly described in **Exhibit A**, attached hereto and incorporated herein by this reference (the "Property");

Whereas, on April 18, 2026, Developer filed with the Town Clerk a petition for annexation of the Property to the Town (the "Petition");

Whereas, on April 28, 2026, the Board of Trustees reviewed the Petition and various documents in support of the Petition;

Whereas, by Resolution 2026-13, the Board of Trustees determined that the Petition was in substantial compliance with applicable provisions of the Colorado Constitution and the Municipal Annexation Act of 1965, C.R.S. § 31-12-101, *et seq*., and scheduled a public hearing on the annexation of the Property to be held on June 9, 2026;

Whereas, on May 14, 2026, the Planning Commission held a properly-noticed public hearing on the proposed annexation, and recommended that the Board of Trustees approve the annexation;

Whereas, on June 9, 2026, the Board of Trustees conducted a properly-noticed public hearing and adopted a resolution finding that the applicable provisions of § 30 of Article II of the Colorado Constitution and C.R.S. §§ 31-12-104 and -105 have been met and that the Property is eligible for annexation to the Town;

Whereas, the Board of Trustees finds that it is desirable and necessary that the Property be annexed to the Town;

Whereas, also on April 18, 2026, Developer filed an application to zone the Industrial (M2) (the "Zoning Application");

Whereas, also on May 14, 2026, the Planning Commission held a properly-noticed public hearing on the Zoning Application, and recommend that the Board of Trustees approve the Zoning Application;

Whereas, also on June 9, 2026, the Board of Trustees conducted a properly-noticed public hearing on the Zoning Application; and

Whereas, also on June 9, 2026, the Board of Trustees considered an associated annexation agreement for the Property.

Now Therefore be it Ordained by the Board of Trustees of the Town of Berthoud as follows:

Section 1. Annexation.

a. Following completion of the filings required by Section 1.b., the Property is hereby annexed to the Town. For purposes of general taxation, the annexation of the Property shall become effective on January 1st of the next succeeding year following the passage of this Ordinance.

b. The Town Clerk shall file for recording 3 certified copies of this Ordinance and 3 copies of the Annexation Map with the Larimer County Clerk and Recorder, and shall keep one copy of the Annexation Map and the original of this Ordinance in the Town Clerk's office. Upon filing with the Larimer County Clerk and Recorder, the Town Clerk shall request that the Larimer County Clerk and Recorder file one certified copy of this Ordinance and one copy of the Annexation Map with the Division of Local Government of the Department of Local Affairs and the same with the Colorado Department of Revenue.

Section 2. Zoning.

a. Upon consideration of the Zoning Application, the recommendation of the Planning Commission, and the statements of Town staff and the public, the Board of Trustees finds and determines that the Zoning Application meets the applicable criteria set forth in Chapter 30 of the Berthoud Municipal Code.

b. Based on the foregoing, as of the effective date of the annexation, the Property is hereby zoned as Industrial (M2), as shown on the map attached hereto as **Exhibit B** and incorporated herein by this reference. The Town's zoning map shall be updated accordingly.

Section 3. Annexation Agreement. The annexation agreement between Developer and the Town is hereby approved in substantially the form attached hereto as **Exhibit C** and incorporated herein by this reference.

Section 4. Severability. If any provision of this Ordinance is determined to be invalid for any reason, such determination shall not affect the validity of the remaining provisions of this Ordinance, and the Board of Trustees hereby declares that it would have passed this Ordinance and each provision thereof irrespective of the fact that any one or more provisions may be declared invalid.

Section 5. Repeal. Existing ordinances or provisions thereof inconsistent with the provisions of this Ordinance are hereby repealed, except that this repeal shall not affect or prevent the prosecution or punishment of any person for any act done or committed in violation of any ordinance hereby repealed prior to the effective date of this Ordinance.

Section 6. Effective Date. This Ordinance shall take effect 30 days after publication following adoption.

Introduced, approved and adopted this 9th day of June, 2026.

Town of Berthoud

_____

William Karspeck, Mayor

Attest

_____

Christian R. Samora, CMC, Town Clerk

Exhibit A
Legal Description

Parcel 9411000034

THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

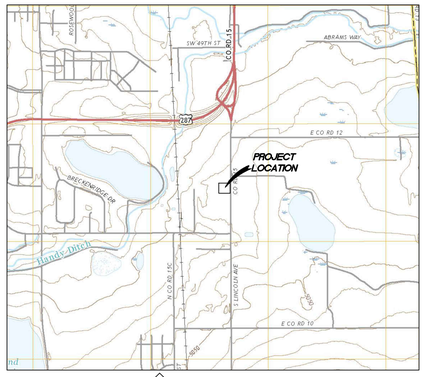
THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49 FEET; THENCE S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 52' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

SAID PARCEL CONTAINS 86,588 SQ. FT. OR 1.988 ACRES, MORE OR LESS.

ZONING AMENDMENT MAP
BERTHOUD INDUSTRIAL

TO THE TOWN OF BERTHOUD, COLORADO
PARCEL 1, BUCKNER NORTH EXEMPTION, BEING A PART OF THE NORTHEAST 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M. TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO
1.988 ACRES



VICINITY MAP
1" = 2000'

STATEMENT OF OWNERSHIP AND SUBDIVISION:

PROPOSED M2 INDUSTRIAL ZONING:

KNOWN ALL MEN BY THESE PRESENTS: THAT THE UNDERSIGNED, BEING THE OWNERS OF PARCEL 1, BUCKNER NORTH EXEMPTION, RECORDED AT REC. NO. 20120055489, BEING A PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49 FEET; THENCE S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 52' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

SAID PARCEL CONTAINS 86,588 SQ. FT. OR 1.988 ACRES, MORE OR LESS

OWNER: PEAK INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY

_____
OWNER

_____
TITLE

STATE OF COLORADO)
)SS
COUNTY OF LARIMER)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY _____

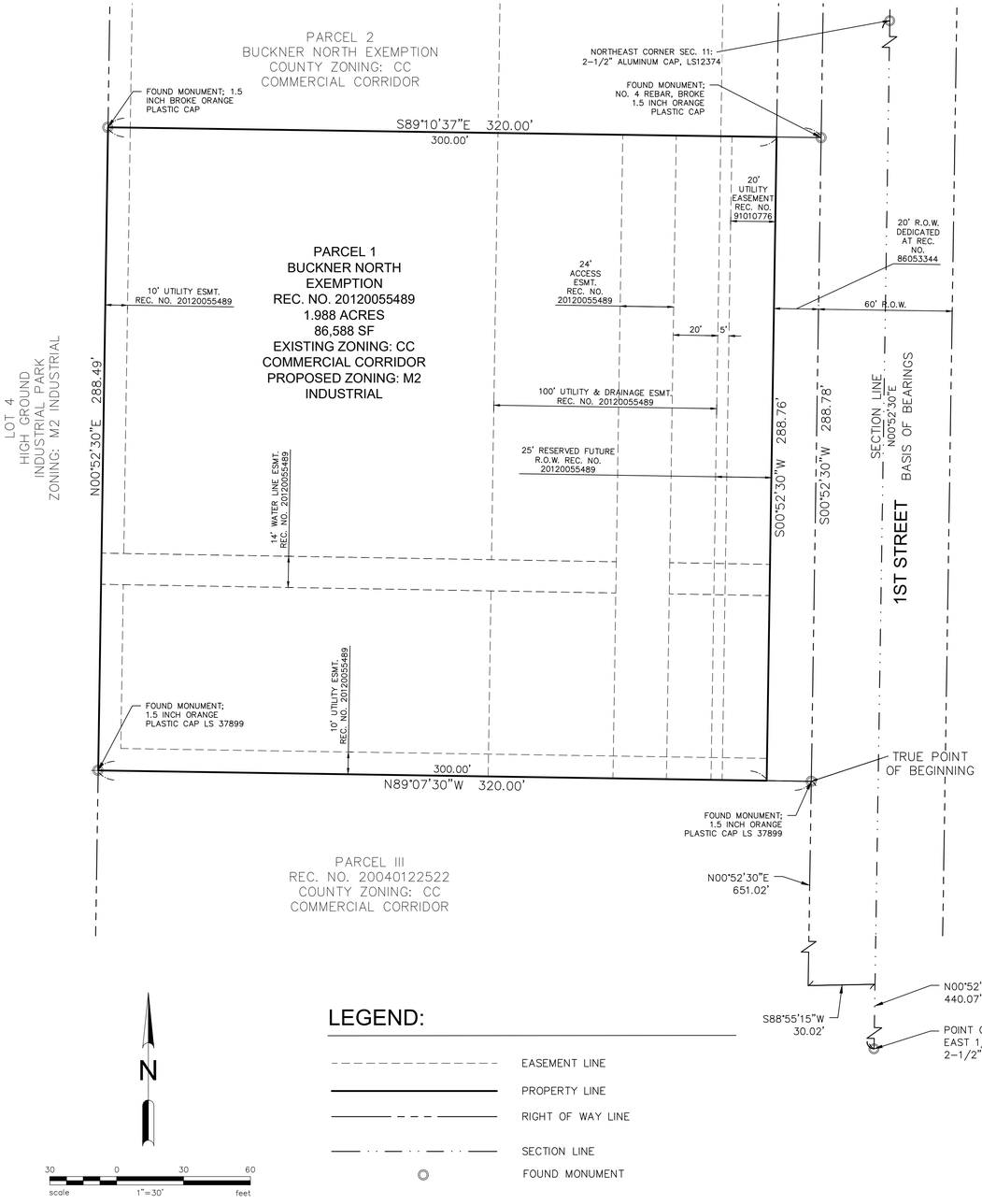
THIS _____ DAY OF _____, 20_____.

MY COMMISSION EXPIRES: _____

_____
NOTARY PUBLIC

SURVEYOR'S NOTES:

1. THIS ZONING AMENDMENT MAP DOES NOT CONSTITUTE A TITLE SEARCH BY RIDGETOP ENGINEERING AND SURVEYING. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY, OR TITLE OF RECORD, RIDGETOP ENGINEERING AND SURVEYING RELIED ON THE TITLE INSURANCE COMMITMENT FILE NO: 383-F07558-24, AMENDMENT NO. 3, ISSUED BY LAND TITLE GUARANTEE COMPANY, EFFECTIVE JULY 22, 2025 AT 8:00 A.M.
2. THE LINEAL UNIT USED IN THE PREPARATION OF THIS ZONING MAP IS THE U.S. SURVEY FOOT AS DEFINED BY THE UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.
3. BASIS OF BEARINGS: CONSIDERING THE EAST LINE OF THE NORTHEAST 1/4 SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST AS BEARING NORTH 00°52'30" EAST, MONUMENTED BY A 2-1/2" ALUMINUM CAP, LS12374 AT THE EAST 1/4 CORNER OF SAID SECTION 11 AND BY A 2-1/2" ALUMINUM CAP, LS12374 AT THE NORTHEAST CORNER OF SAID SECTION 11.



LEGEND:

- EASEMENT LINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- SECTION LINE
- FOUND MONUMENT

APPROVAL CERTIFICATE:

APPROVED BY THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____ 2026.

_____
MAYOR, WILLIAM KARSPECK

THE FOREGOING ZONING AMENDMENT MAP IS APPROVED FOR FILING AND ACCEPTED BY THE TOWN OF BERTHOUD, COLORADO THIS _____ DAY OF _____ 2026.

ATTEST: _____
TOWN CLERK, CHRISTIAN R. SAMORA

SURVEYOR'S CERTIFICATE:

I, MICHAEL MASSEY, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE ZONING AMENDMENT MAP OF BERTHOUD INDUSTRIAL WAS PREPARED UNDER MY PERSONAL SUPERVISION, THAT THE FOREGOING MAP IS AN ACCURATE REPRESENTATION THEREOF, AND IS IN COMPLIANCE WITH THE DEVELOPMENT REGULATIONS OF THE TOWN OF BERTHOUD, ALL THIS TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

DRAFT
04/21/2026

_____
MICHAEL MASSEY, #38346
COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR

LARIMER COUNTY CLERK AND RECORDER CERTIFICATE:

THE FOREGOING ZONING AMENDMENT MAP IS APPROVED FOR FILING AND ACCEPTED BY THE COUNTY OF LARIMER COUNTY, COLORADO, THIS _____ DAY OF _____, 2026.

ATTEST: _____
LARIMER COUNTY CLERK AND RECORDER

DATE	REQUEST BY	REVISED	CHECK

Project: 21-163-001
Drawing: ZONING MAP
Drafted By: BSA
Date: 10/10/2026
Rev. Date: MM
Check By: MM

ZONING AMENDMENT MAP BERTHOUD INDUSTRIAL
TO THE TOWN OF BERTHOUD, COLORADO
PARCEL 1, BUCKNER NORTH EXEMPTION, BEING A PART OF THE NORTHEAST 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M.
TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO

RIDGETOP ENGINEERING & SURVEYING
541 E. GARDEN DRIVE
UNIT N
WINDSOR, CO 80550
970-663-4552

Sheet: 1 / 1

DRAWING FILENAME: V:\Projects\21-163-001 Berthoud Lot Split\Working Files\SWG\Zoning Map.dwg LAYOUT NAME: 24x36 Landscape DATE: Apr 21, 2026 - 12:08pm

Annexation Agreement
(Berthoud Industrial Annexation)

This Annexation Agreement (the "Agreement") is made and entered into this _____ day of _____, 2026 (the "Effective Date"), by and between the Town of Berthoud, a Colorado municipal corporation with an address of 807 Mountain Avenue, Berthoud, CO 80513 (the "Town"), and Peak Investments, LLC a Colorado limited liability company with an address of _____ ("Owner") (each a "Party" and collectively the "Parties").

Whereas, Owner desires to annex to the Town of Berthoud the property more particularly described in **Exhibit A**, attached hereto and incorporated herein by this reference (the "Property");

Whereas, the Town wishes to control its growth in a planned and orderly fashion, maintaining and improving quality of life and the Town's ability to provide residential development and housing options, and connectivity to local and regional amenities; and

Whereas, Owner wishes to use the Property in a manner compatible with the vision and objectives contained in the 2021 Comprehensive Plan, and consistent with the Berthoud Municipal Code and the Town's Design and Construction Standards.

Now, therefore, for the consideration hereinafter set forth, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows

1. Intent. The intent of this Agreement is to set forth the basic requirements for annexation and use or development of the Property. Owner acknowledges that this Agreement shall not preclude the need for a later development agreement in the Town's standard form at the time of Final Plat (the "Development Agreement"). Nothing in this Agreement shall constitute a limitation of the legislative, governmental, or police powers to promote and protect the health, safety and welfare of the Town and its inhabitants, nor shall this Agreement prohibit the enactment or increase by the Town of any tax or fee.

2. Term and Termination. This Agreement shall commence on the Effective Date, and shall terminate upon execution of the Development Agreement. If the annexation of the Property is not completed for any reason on or before December 31, 2026, this Agreement shall automatically terminate without further action of the Parties.

3. Development.

a. *Zoning*. Owner has requested that the Property be zoned Industrial (M2) in accordance with Chapter 30 of the Berthoud Municipal Code (the "Code"). The Parties recognize that it is the intent and desire of Owner to continue to use and develop the Property in a manner generally consistent with the zoning requested and that the granting of such zoning by the Town is a condition to annexing the Property.

b. *Land Use*. All new construction will be subject to the types and intensities of land use permitted pursuant to the Code, and shall be approved through the subdivision and land use processes set forth in the Code.

c. *Public Improvements*. Owner shall design, construct, install and warranty at its sole cost and expense, in accordance with Town standards and specifications, any necessary public improvements within or adjacent to the Property, including without limitation water distribution, sanitary sewer, utilities, lighting, streets, curb, gutter, sidewalks, trails, storm sewer, storm drainage, fire hydrants, landscaping and parks. The public improvements shall be constructed in accordance with the Development Agreement.

d. *Impact Fees*. Owner acknowledges that the development of the Property will be subject to all then-current impact fees set forth in the Code.

e. *Conveyance Requirements*. Owner acknowledges that the need for conveyances and dedication of certain property, including without limitation rights-of-way and easements, as contemplated in this Agreement, is directly related to and generated by the current and intended uses of the Property, and that no taking thereby will occur requiring any compensation.

f. *Special Districts*. If there are special districts serving the Property, Owner shall be responsible for any associated taxes, special assessments and other fees imposed by such districts.

4. Municipal Services. Upon annexation, the Town agrees to provide the Property municipal services in accordance with this Agreement and the ordinances and policies of the Town, including without limitation general government administration, police protection, water services, sanitary sewer services. Owner acknowledges that the Town does not currently provide electricity, natural gas services, telecommunications, or fire protection services in the area of the Property. If any portion of the Property is disconnected from the Town at Owner's request, the Town shall have no obligation to serve the disconnected portion of the Property.

5. Water Rights. On or before the preconstruction meeting for the first phase of any development of the property, Owner shall dedicate to Town any and all shares of water historically used for irrigation of the Property (collectively the "Water Rights"). Dedication shall occur prior to recording the Final Plat free and clear from all encumbrances.

6. Potable Water Service.

a. *Extension*. Owner shall design, engineer, install and warranty at its sole cost and expense all water lines, facilities and appurtenances necessary to provide service from the Town's system to the Property, and all water lines and appurtenances within the Property. As further described in the Development Agreement, water mains within public rights-of-way shall be conveyed to Town.

b. *Water Tap Fees*. Owner shall pay all water tap fees required for common areas to the Town prior to installation of irrigation meters and taps. Owner shall be responsible to ensure that each builder shall pay all water tap fees associated with construction on individual lots at or prior to the time of building permit issuance.

c. *Water Plant Investment Fees*. Owner shall pay Water Plant Investment Fees to the Town at the time of building permit issuance.

7. Sanitary Sewer Service. Owner shall design, install and warranty at its sole cost and expense all the sanitary sewer lines necessary to provide service from the Town's system to the Property, and all sanitary sewer lines and appurtenances within the Property. Sanitary sewer mains within public rights-of-way shall be conveyed to Town after construction and warranty.

8. Stormwater. Owner shall design, install and warranty at its sole cost and expense all the stormwater drainage and water quality facilities and appurtenances necessary to provide stormwater management within the Property. Owner shall demonstrate at the time of Preliminary Plat how stormwater will be managed, inclusive of master planning all future development. Stormwater management shall not negatively impact surrounding properties. Owner acknowledges that the Town will require a stormwater drainage easement for private use, on the Town's standard form. Owner shall dedicate easement(s) required for all existing stormwater infrastructure located onsite, including but not limited to the stormwater pipe running east-west through the approximate middle of the property. Dedication of these easement(s) shall occur prior to or concurrent with any required future land use application.

9. Trails, Parks and Connectivity.

a. *Trails*. Owner shall provide for connectivity within Property to the Town's trail network and the trail network in adjacent developments and along East Berthoud Parkway in accordance with the Berthoud Trails Master Plan and Design Standards.

b. *Connectivity*. Owner shall provide for connectivity between the Property and the Town and other regional and neighborhood parks and open space networks.

10. Three Mile Plan. The Parties acknowledge that the Town of Berthoud 2021 Comprehensive Plan constitutes the plan required by C.R.S. § 31-12-105(1)(e).

11. Indemnification. Owner agrees to indemnify and hold harmless the Town and its officers, insurers, volunteers, representative, agents, employees, heirs and assigns from and against all claims, liability, damages, losses, expenses and demands, including reasonable attorney fees, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this Agreement if such injury, loss, or damage is caused in whole or in part by, the omission, error, professional error, mistake, negligence, or other fault of Owner or any officer, employee, representative, or agent of Owner, or which arise out of a worker's compensation claim of any employee of Owner.

12. Miscellaneous.

a. *Governing Law and Venue*. This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in Larimer County, Colorado.

b. *No Waiver*. Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the Town shall not constitute a waiver of any of the other terms or obligation of this Agreement.

c. *Integration*. This Agreement constitutes the entire agreement between the Parties, superseding all prior oral or written communications.

d. *Third Parties*. There are no intended third-party beneficiaries to this Agreement.

e. *Notice*. Any notice under this Agreement shall be in writing, and shall be deemed sufficient when directly presented or sent pre-paid, first class U.S. Mail to the Party at the address set forth on the first page of this Agreement.

f. *Severability*. If any provision of this Agreement is found by a court of competent jurisdiction to be unlawful or unenforceable for any reason, the remaining provisions hereof shall remain in full force and effect.

g. *Modification*. This Agreement may only be modified upon written agreement of the Parties.

h. *Assignment*. Neither this Agreement nor any of the rights or obligations of the Parties shall be assigned by either Party without the written consent of the other.

i. *Governmental Immunity*. The Town and its officers, attorneys and employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities or protections provided by the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, *et seq.*, as amended, or otherwise available to the Town and its officers, attorneys or employees.

j. *Subject to Annual Appropriation*. Consistent with Article X, § 20 of the Colorado Constitution, any financial obligation of the Town not performed during the current fiscal year is subject to annual appropriation, shall extend only to monies currently appropriated, and shall not constitute a mandatory charge, requirement, debt or liability beyond the current fiscal year.

k. *Binding Effect*. This Agreement shall be recorded against the Property with the Larimer County Clerk and Recorder. This Agreement shall be binding upon and inure to the benefit of the Parties and their successors in interest, including all developers, purchasers and subsequent owners of any lots or parcels within the Property, and shall constitute a covenant running with the land.

l. *Reimbursement*. Owner shall reimburse the Town for any third party costs necessary for the orderly and proper development of the Property, including without limitation consultant fees for planning and engineering and attorney fees for legal services.

m. *Electronic Signatures*. The Parties intend that this Agreement be governed by the Uniform Electronic Transactions Act, C.R.S. § 24-71.3-101, *et seq*.

In Witness Whereof, the Parties have executed this Agreement as of the Effective Date.

Town of Berthoud, Colorado

_____
Chris Kirk, Town Administrator

Attest:

_____
Christian R. Samora, CMC, Town Clerk

Owner

By: _____

State of Colorado)
) ss.
County of _____)

The foregoing instrument was subscribed, sworn to and acknowledged before me this ___ day of June, 2026, by _____ as _____ of Peak Investments, LLC.

My commission expires:

(Seal)

_____
Notary Public

Exhibit A
Legal Description

Parcel 9411000034
Legal Description:
THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6 TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOL LOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E
AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET ; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49; THENC E S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 5 2' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

Resolution No. 15
Series 2026

A Resolution of the Town of Berthoud Making Certain Findings of Fact Regarding the Proposed Annexation to the Town of the Real Property Known as Berthoud Industrial

Whereas, Peak Investments, LLC ("Developer") is the owner of the real property located in unincorporated Larimer County and more particularly described in **Exhibit A**, attached hereto and incorporated herein by this reference (the "Property");

Whereas, on April 18, 2026, Developer filed with the Town Clerk a petition for annexation of the Property to the Town (the "Petition");

Whereas, by Resolution 2026-13, the Board of Trustees determined that the Petition was in substantial compliance with applicable provisions of the Colorado Constitution and the Municipal Annexation Act of 1965, C.R.S. § 31-12-101, *et seq*., and scheduled a public hearing on the annexation of the Property to be held on April 14, 2026; and

Whereas, on June 9, 2026, the Board of Trustees held a properly-noticed public hearing on the annexation of the Property.

Now Therefore be it Resolved by the Board of Trustees of the Town of Berthoud as follows:

Section 1. The applicable provisions of Section 30 of Article 2 of the Colorado Constitution and C.R.S. § 31-12-104 have been met, in that not less than 1/6 of the perimeter of the Property is contiguous with the existing boundaries of the Town; and therefore, because of such contiguity, a community of interest exists between the Property and the Town; the Property is urban or will be urbanized in the near future, and the Property is integrated or is capable of being integrated with the Town.

Section 2. The applicable provisions of C.R.S. § 31-12-105 have been met, in that no land held in identical ownership has been divided or included without written consent of the owner thereof; that no annexation proceedings have been commenced by another municipality; the annexation will not result in the detachment of area from a school district; that the annexation will not result in the extension of a Town boundary more than 3 miles; the Town has in place a plan for said 3-mile area; and, in establishing the boundaries of the Property, the entire width of any street or alley is included within the Property.

Section 3. An annexation election is not required under C.R.S. § 31-12-107(2) and no additional terms or conditions are to be imposed upon the area to be annexed other than as contained in the associated annexation agreement between the Town and Developer, which will be considered and approved by separate action.

Section 4. The Property is eligible for annexation to the Town, and all requirements of law have been met, including the requirements of C.R.S. §§ 31-12-104 and 31-12-105.

Section 5. An ordinance annexing the Property to the Town will be considered by the Board of Trustees pursuant to C.R.S. § 31-12-111.

Introduced, approved and adopted this 9th day of June, 2026.

Town of Berthoud

_____
William Karspeck, Mayor

Attest

_____
Christian R. Samora, CMC, Town Clerk

Exhibit A
Legal Description

Parcel 9411000034

THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49 FEET; THENCE S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 52' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

SAID PARCEL CONTAINS 86,588 SQ. FT. OR 1.988 ACRES, MORE OR LESS.

Resolution No. 13
Series 2026

A Resolution of the Town of Berthoud Accepting a Petition for Annexation Filed by Peak Investments, LLC and Setting a Public Hearing on the Annexation

Whereas, Peak Investments, LLC ("Petitioner") is the owner of the real property located in unincorporated Larimer County and more particularly described in **Exhibit A**, attached hereto and incorporated herein by this reference (the "Property");

Whereas, on April 18, 2026, Petitioner filed with the Town Clerk a petition for annexation of the Property to the Town (the "Petition"); and

Whereas, on April 28, 2026 the Board of Trustees reviewed the Petition and various documents in support of the Petition.

Now Therefore be it Resolved by the Board of Trustees of the Town of Berthoud as follows:

Section 1. *Findings*. The Board of Trustees hereby finds that the Petition substantially complies with C.R.S. § 31-12-107(1), and that a public hearing should be held to determine whether the Property is eligible for annexation, whether the annexation complies with C.R.S. §§ 31-12-104 and 31-12-105, and whether the Property should be annexed to the Town.

Section 2. *Public Hearing*. The public hearing on the annexation shall be set for June 9, 2026 beginning at 6:30 P.M., or as soon thereafter as the matter may be heard, at the Board of Trustees Chambers, 807 Mountain Avenue, Berthoud, Colorado. The purpose of such hearing shall be to consider the Petition to determine whether the Property is eligible for annexation, whether the annexation complies with C.R.S. §§ 31-12-104 and 31-12-105, and whether the Property should be annexed to the Town. Any person living within the area proposed to be annexed, any landowner of lands thereof, any resident of the Town, any municipality located within one mile of the proposed annexation, or the Board of County Commissioners of Larimer County may appear at such hearing and present evidence upon any matter to be determined by the Board of Trustees.

Introduced, approved and adopted this 28th day of April, 2026.

Town of Berthoud

William Karspeck, Mayor

Attest

Christian Samora, Town Clerk

Exhibit A
Legal Description

Parcel 9411000034

THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49 FEET; THENCE S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 52' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

SAID PARCEL CONTAINS 86,588 SQ. FT. OR 1.988 ACRES, MORE OR LESS

November 10th, 2025

Berthoud Industrial – Parcel I Buckner North Exemption;
Annexation and Zoning Amendment

Rationale
The subject property has been recommended to be annexed into the Town of Berthoud. This zoning amendment allows the property to be revised from Larimer County zoning to the Town of Berthoud zoning classifications immediately following annexation. This project proposes to be annexed by the town to be congruous with the adjacent development zoning and annexations. The project annexation will also allow further development and business opportunities with the Town of Berthoud.

Impacts
The property is currently vacant and lies within the County's CC (Commercial Corridor) zoning. The properties to the north and south remain in the county, zoned CC, with the adjacent west property already annexed and in the Town's M2 (Industrial) zone. It is proposed to rezone the property into the Town's M2 zone, aligning with zone and use of the properties surrounding the area.

Access and Traffic Patterns
This property is proposed to have its own single access to the 1st Street right of way. The access location will be designed and finalized during the site plan review.

Utilities
Existing utilities are directly adjacent, or within the limits of the property boundaries. The Town's sewer is located 20 feet to the west of the western property line and runs north to south. A LTWD water main exists within 1st street right of way, abutting the eastern property boundary. Electric, gas, and communications are all existing along the eastern property boundary within 1st street right of way.

Public Facilities
This rezone will have minimum impacts to the existing public facilities of the area. The property is currently located within the Berthoud's fire district and will have not change. No parks, trails, or schools are adjacent to the property and will not be affected by the zoning amendment. Water and Sanitation are currently in place to accept the new utility connections.

Comprehensive Plan
The comprehensive plan shows this area as preferred "Innovation District." This property is proposed to be zoned similar to the properties to the west (M2), with an industrial, multi-tenant use. Industrial uses are supported within the Innovation District designation. The proposed zoning will allow the light industrial and technology focused businesses that the Innovation District proposes for the comprehensive plan.

Public Benefits
The lot currently sits vacant, with bare dirt/gravel access and various weeds and native grasses. With the annexation and rezoning to the Town of Berthoud, this property will be able to develop to provide employment opportunities to the community to what would otherwise be a baren lot. Grasses, shrubs, and trees will be provided to bring the landscape to life in lieu of the weeds and dirt.

Annexation Assessment
This annexation is expected to bring additional employment opportunities to the Town of Berthoud. No school impact is anticipated with this annexation. The adjacent utilities and future utilities have adequate capacity for the proposed zoning. This property will also provide improvements to the adjacent right-of-way with development of sidewalks and curb and gutter upon future development. No negative impact is anticipated to fire and emergency services, libraries, public health, or recreation. No variances are proposed from the Berthoud Comprehensive Plan. The proposed zoning matches adjacent sites, aligning with the area.

ZEREN
LAND SERVICES
OIL AND GAS TITLE

P.O. Box 336337
Greeley, CO 80633

Phone (970) 351-0733
Fax (970) 351-0867

LIST OF MINERAL OWNERS AND MINERAL LESSEES for NOTIFICATION
(Peak Investments, LLC Property)

Subject Property:

Township 4 North, Range 69 West, 6th P.M., Larimer County, CO
Section 11: That Portion of the NE 1/4, more particularly described as follows: Considering the East line of the NE 1/4 of said Section 11 as bearing N 0 Degrees 52' 30" E and with all bearings contained herein relative thereto: Beginning at the E 1/4 Corner of said Section 11; thence along the East line of said Section 11, N 0 Degrees 52' 30" E, 440.07 feet; thence S 88 Degrees 55' 15" W, 30.02 feet; thence parallel with the East line of the NE 1/4 of said Section 11, N 0 Degrees 52' 30" E, 651.02 feet to the True Point of Beginning; Thence N 89 Degrees 07' 30" W, 320.00 feet; thence N 0 Degrees 52' 30" E, 288.49 feet; thence S 89 Degrees 10' 37" E, 320.00 feet, more or less, to a line which bears S 0 Degrees 52' 30" W, and passes through the True Point of Beginning; thence along said line, S 0 Degrees 52' 30" W, 288.78 feet to the True Point of Beginning,

Except that portion thereof dedicated to the Public for Public Highway in Deed of Dedication recorded September 17, 1986 at Reception No. 86053344

Zeren Land Services, an oil and gas title research company, states that to the best of its knowledge the following is a true and accurate list of the names and addresses of the mineral owners and mineral leasehold owners entitled to notice under the Surface Development Notification Act, Colorado Revised Statutes §24-65.5-101, et seq. in the Subject Property based upon the records of the Larimer County Assessor and Clerk Recorder as of January 20, 2026 at 7:45 a.m.:

Mineral Owners:

None (entitled to notice)

Mineral Leasehold Owners:

Extraction Oil & Gas LLC
555 17th St., Suite 3700
Denver, CO 80202

Dated this 28th day of January, 2026.

ZEREN LAND SERVICES

By: Cynthia A. E. Zeren, CPL
Certified Professional Landman #4044

At the request **Peak Investments, LLC** ("Client"), Zeren Land Services, an independent land consulting firm, has prepared the foregoing list of mineral estate owners entitled to notice under the Surface Development Notification Act, Colorado Revised Statutes §24-65.5-101, et seq.

Zeren Land Services, searched (i) the records of the Larimer County Assessor relating to the Subject Property for persons identified therein as mineral estate owners, and (ii) the records of the Larimer County Clerk and Recorder relating to the Subject Property for recorded requests for notification in the form specified in the Surface Development Notification Act. The results of these searches are set forth above in this List of Mineral Owners Entitled to Notice. At the date of the search, the records of the Assessor and the Clerk and Recorder were posted through January 20, 2026 at 7:45 A.M.

Zeren Land Services, agreed to prepare this listing for the Client only if the Client agreed that the liability of Zeren Land Services, would be strictly limited to the amount paid by the Client for such services. Zeren Land Services, makes no warranty, express, implied or statutory, in connection with the accuracy, completeness or sufficiency of such listing of mineral estate owners. In the event the listing proves to be inaccurate, incomplete, insufficient or otherwise defective in any way whatsoever or for any reason whatsoever, **the liability of Zeren Land Services, shall never exceed the actual amount paid by Client to Zeren Land Services**, for the listing.

In order to induce Zeren Land Services, to provide such services, **Client further agreed to indemnify and hold Zeren Land Services, its managers, members and employees, harmless from and against all claims by all persons (including, but not limited to Client) of whatever kind or character arising out of the preparation and use of each such listing of mineral estate owners, to the extent that such claims exceed the actual amount paid to Client by Zeren Land Services, for such listing.** Client specifically intends that both the foregoing limitation on liability and foregoing indemnification shall be binding and effective without regard to the cause of the claim, inaccuracy or defect, including, but not limited to, breach of representation, warranty or duty, any theory of tort or of breach of contract, or the fault or negligence of any party (including Zeren Land Services) of any kind or character (regardless of whether the fault or negligence is sole, joint, concurrent, simple or gross). **Client's use of this listing evidences Client's acceptance of, and agreement with, this limitation on liability and the indemnification.**

ZEREN LAND SERVICES

Date: January 28, 2026

By: _____
Cynthia A. E. Zeren, as President

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for an Annexation and Zoning near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

2123 NORTH HIGHWAY 287 LLC
5000 NORTHPARK DR
COLORADO SPRINGS CO 809183822

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

WALTON COLORADO LLC ETAL
8800 N GAINEY CENTER DR STE 345
SCOTTSDALE AZ 852582124

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

PEAK INVESTMENTS LLC
5805 MANGROVE CT
LOVELAND CO 805381240

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

2123 NORTH HIGHWAY 287 LLC
5000 NORTHPARK DR
COLORADO SPRINGS CO 809183822

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for an Annexation and Zoning near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

WEIBEL ENTERPRISES LLC
14388 N 95TH ST
LONGMONT CO 805048007

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

BERTHOUD INTERNATIONAL LLC
120 BUNYAN AVE STE 200
BERTHOUD CO 80513

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

SG TRUST
2257 1ST ST
BERTHOUD CO 805132811

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

CONTAINER STORAGE AND
3787 BRIDLE RIDGE CIR
SEVERANCE CO 805248608

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for an Annexation and Zoning near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

NOTICE OF PUBLIC HEARING

Dear Property Owner: This is to inform you that the Town of Berthoud will hold Public Hearings for a Preliminary Plat near your property.

Scheduled Hearings: All hearings will take place at Berthoud Town Hall, 807 Mountain Avenue, Berthoud CO 80513
Town Planning Commission:
May 14, 2026, at 6:30 p.m.
Town Board of Trustees:
June 9, 2026, at 6:30 p.m.
For more information on this project visit the Town Planning Dept. website at www.berthoud.org/planning
Under the *Current Development Review Projects* tab, scroll to find the project and click on the project name to view the project materials.
Project Planner: Bella Manzo, Planner
Email: bmanzo@berthoud.org
To comment on the project, submit written comments via email to the Project Planner.

PROJECT NAME:
Berthoud Industrial Annexation

PROJECT LOCATION:
North of W County Road 10E, East of Clayton Pl, West of 1st St.

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

WHITFIELD DENNIS W/NANCY A
2128 1ST ST
BERTHOUD CO 80513

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

ARMSTRONG GERALD R
110 16TH ST STE 505
DENVER CO 802025202

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

Town of Berthoud
807 Mountain Ave.
P.O. Box 1229
Berthoud, CO 80513

TOWN OF BERTHOUD, COLORADO
NOTICE OF PUBLIC HEARING FOR A PROJECT
Berthoud Industrial Annexation and Zoning

PUBLIC NOTICE IS HEREBY GIVEN of a public hearing before the Berthoud Planning Commission on May 14, 2026, at the following time and place:

6:00 P.M. Planning Commission
Berthoud Town Hall
807 Mountain Avenue
Berthoud, Colorado 80513

This hearing is for the purpose of taking applicant testimony and public comment on a proposed annexation and zoning of 1.988 acres to M2 Industrial regarding the property described below and for determining the eligibility of such property for annexation to the Town and the advisability of such an annexation, all as governed by the Berthoud Development Code.

PARCEL DESCRIPTION

PARCEL 9411000034

A PARCEL OF LAND BEING THAT PORTION OF THE NE 1/4 OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

CONSIDERING THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11 AS BEARING N 0 DEGREES 52' 30" E AND WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO:

BEGINNING AT THE E 1/4 CORNER OF SAID SECTION 11; THENCE ALONG THE EAST LINE OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 440.07 FEET; THENCE S 88 DEGREES 55' 15" W, 30.02 FEET; THENCE PARALLEL WITH THE EAST LINE OF THE NE 1/4 OF SAID SECTION 11, N 0 DEGREES 52' 30" E, 651.02 FEET TO THE TRUE POINT OF BEGINNING;

THENCE N 89 DEGREES 07' 30" W, 320.00 FEET; THENCE N 0 DEGREES 52' 30" E, 288.49 FEET; THENCE S 89 DEGREES 10' 37" E, 320.00 FEET, MORE OR LESS, TO A LINE WHICH BEARS S 0 DEGREES 52' 30" W, AND PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE ALONG SAID LINE, S 0 DEGREES 52' 30" W, 288.78 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION THEREOF DEDICATED TO THE PUBLIC FOR PUBLIC HIGHWAY IN DEED OF DEDICATION RECORDED SEPTEMBER 17, 1986 AT RECEPTION NO. 86053344.

SAID PARCEL CONTAINS 86,588 SQ. FT. OR 1.988 ACRES, MORE OR LESS

2.12 ACRES
LAND FOR SALE
REAL ESTATE group
commercial
AVAILABLE
(970)667-7000
lcrealestategroup.com
RICO DEVLIN - 970.413.1182
NATHAN KLEIN - 970.222.2473

DEVELOPMENT
PROPOSAL
NOTICE
CONTACT
TOWN OF BERTHOUD
970-532-2643

Outlook

Buckner North Notice Sign

From Alex Griess <alex@g2built.com>
Date Thu 4/23/2026 4:45 PM
To Bella Manzo <bmanzo@berthoud.org>; Derek Griess <derek@g2built.com>

2 attachments (14 MB)
IMG_0487.jpeg; IMG_0486.jpeg;

You don't often get email from alex@g2built.com. Learn why this is important

Hey Bella,

Attached are some pictures of the sign posted on the property on 4/23/2026.

For Reference
Project Name: Buckner North (Berthoud Industrial)
Project Type: Annexation and Rezone, 3rd Submittal (02/03/2026)
Parcel: Parcel #9411000034 (1.988 acres)
Location: North of W County Road 10E, east of Larimer County Road 15/1st Street
Project Applicant: Derek Greiss, Peak Investments LLC, represented by Mike Beach, Ridgetop Engineering & Surveying

Thanks, Alex Griess



Alex Griess

G2 Construction LLC
Cell: (970) 744-6678
Web: g2built.com

Town Board of Trustees Public Hearing
June 9, 2026







Land Use Planning Process: Overview

1. PRE-APPLICATION

Discussions with staff
Pre-Application meetings
Staff input and direction
Application preparation

2. APPLICATION SUBMITTAL

Application materials received
Completeness review performed
Referral notification and comments
Staff review and comments
Schedule and notice public meetings/hearings

3. MEETING

Staff presentation
Discussion and vote

4. POST-APPROVAL ACTIONS

Record documents
Prepare materials for future land use processes
Development/Annexation Agreement

Development Tool Kit: Public Hearing Process

1. STAFF PRESENTATION

The agenda item is introduced by Town Staff, including details of the official request, location, and how the project satisfies the Development Code and Comprehensive Plan

2. APPLICANT PRESENTATION



The applicant presents their proposal and makes their case for approval.

3. PUBLIC COMMENT

- **One at a time, citizens have an opportunity to speak for up to 3 minutes about the proposed project.** This time is used to ask questions, provide concerns, and offer approval or disapproval of the proposal.
- Public comments are testimony. The Applicant, Staff and Town Board will not respond to the comments until all testimony has been received and the public hearing is closed.
- Once all who wish to speak have done so, the Mayor will officially close the Public Comment period.

4. DISCUSSION & VOTE

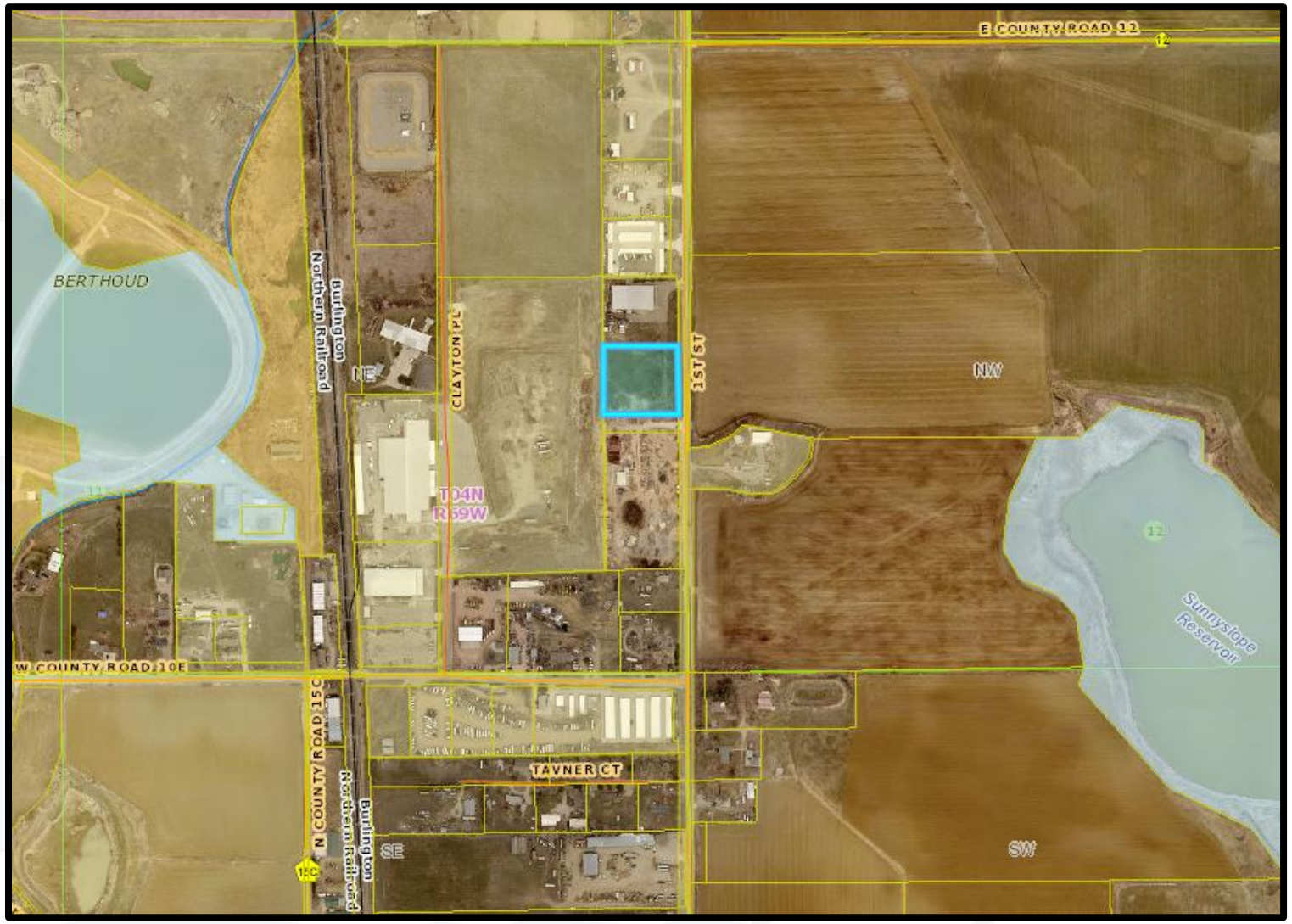
- The Applicant has the opportunity to address public testimony.
- The Trustees confer and have an opportunity to ask the applicant or staff questions that arose during the public hearing period or questions of their own.
- A motion must be made on an item, and if a motion is seconded, a vote is called; a majority must be found for any issue to pass (tie votes do not result in the passage of the item).
- If any citizen disagrees with the decision, they have 30 days to file an appeal with the Town.



Development Tool Kit: Procedures Land Division

Step 1	Step 2	Step 3	Step 4	Step 5
4 – 6	12 - 18	8 - 12	6 - 8	1+
Time in months				
Annexation	Neighborhood Master Plan	Final Plat	Pre-Construction	Building Permits
Change of Zone	Preliminary Plat	Development Agreement	Inspections	Or for Commercial
			Development Agreement Adherence	Use by Special Review or Site Plan
			Inspections	

Berthoud Industrial - Annexation



PROJECT: Berthoud Industrial Annexation and Zoning (formerly known as Buckner North Annexation).

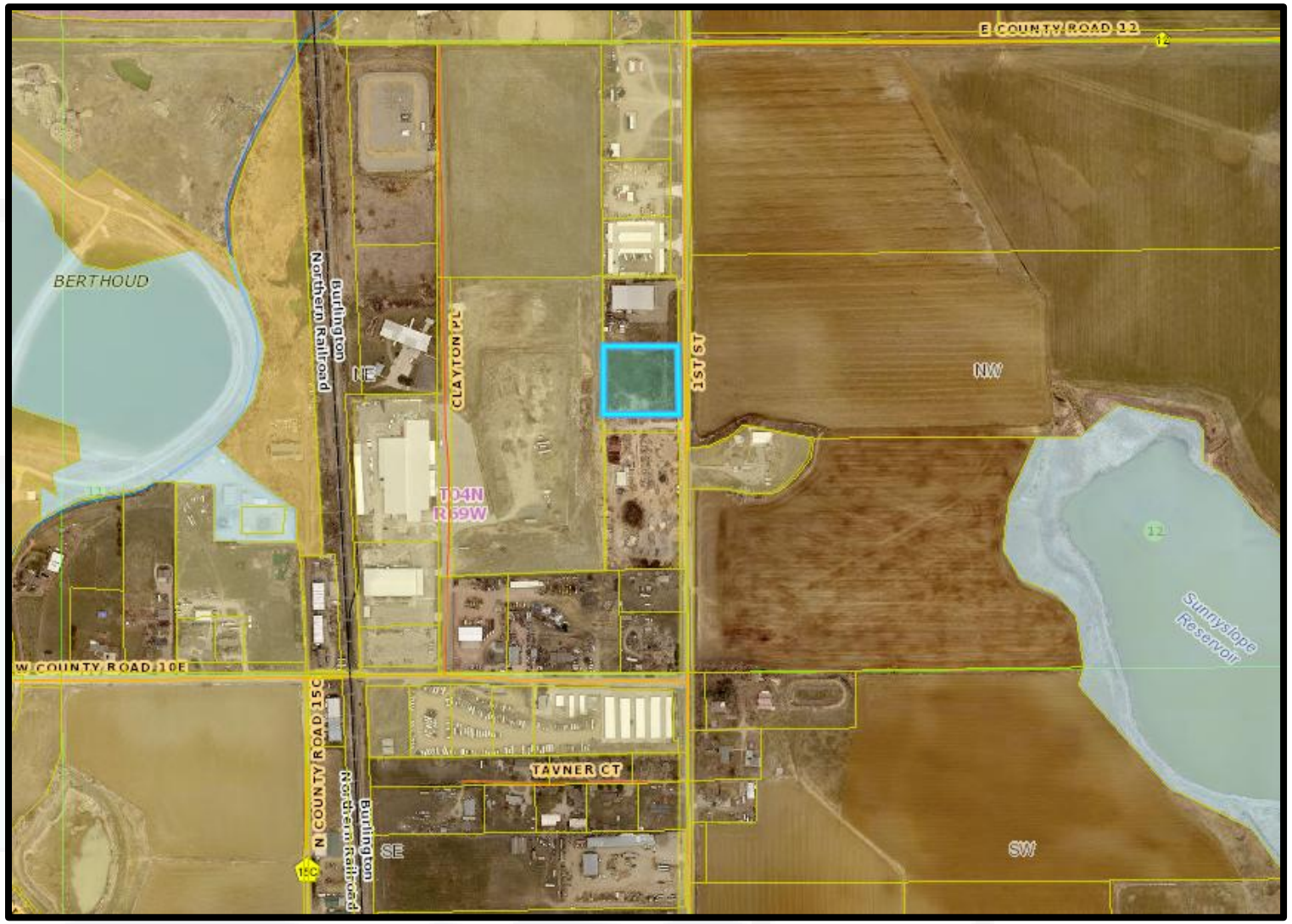
Larimer County Parcel #9411000034

APPLICANT: Peak Investments, LLC. Represented by Derek Griess.

LOCATION: The parcel is located west of and adjacent to 1st Street, East of Clayton Place, North of W County Road 10E, South of E County Road 12.

SIZE: 1.988 acres +/-

Berthoud Industrial - Zoning



PROJECT: Berthoud Industrial Annexation and Zoning (formerly known as Buckner North Annexation).

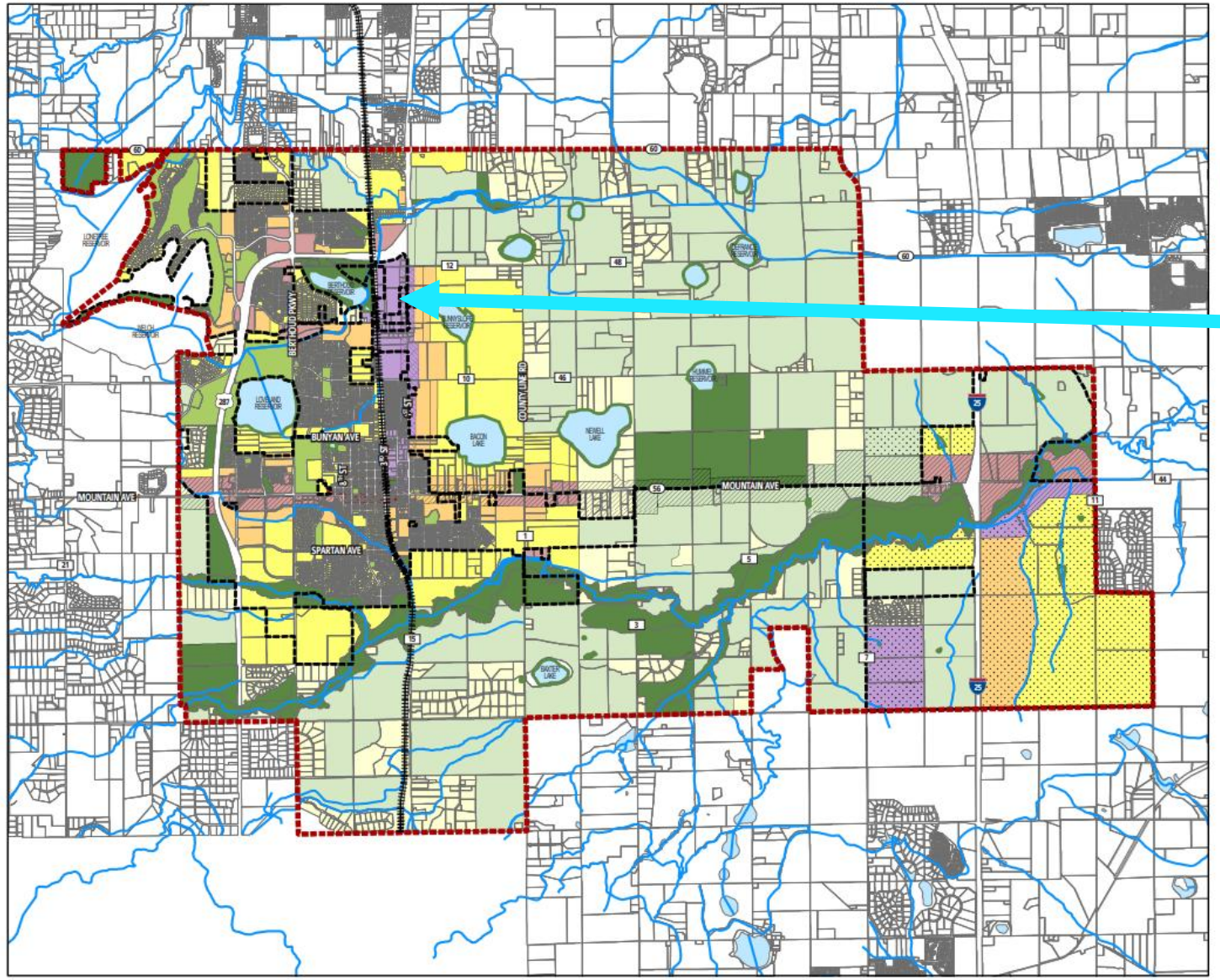
Larimer County Parcel #9411000034

CURRENT ZONING: Larimer County CC – Commercial Corridor

PROPOSED ZONING: M2 – Industrial

REQUEST: Rezone to M2 – Industrial from Larimer County CC – Commercial Corridor in conjunction with the Annexation Request.

Future Land Use Map



FUTURE LAND USE PLAN MAP
BERTHOUD COMPREHENSIVE PLAN

Last Revised: September 9, 2021

- Growth Management Area

Place Type: Natural Areas
- Environmentally Sensitive Area
- Open Space
- Parks, Recreation & Trails
- Ditch/Canal - Potential Trail Connections

Place Type: Rural Areas
- Agricultural
- Rural Residential

Place Type: Suburban Areas
- Suburban Residential
- Suburban Business

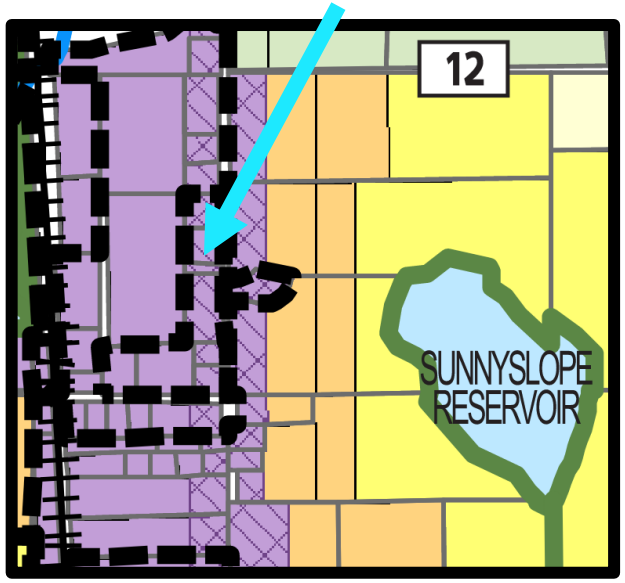
Place Type: General Urban Areas
- Urban Residential
- Innovation District

Place Type: Urban Center
- Old Town Residential
- Downtown

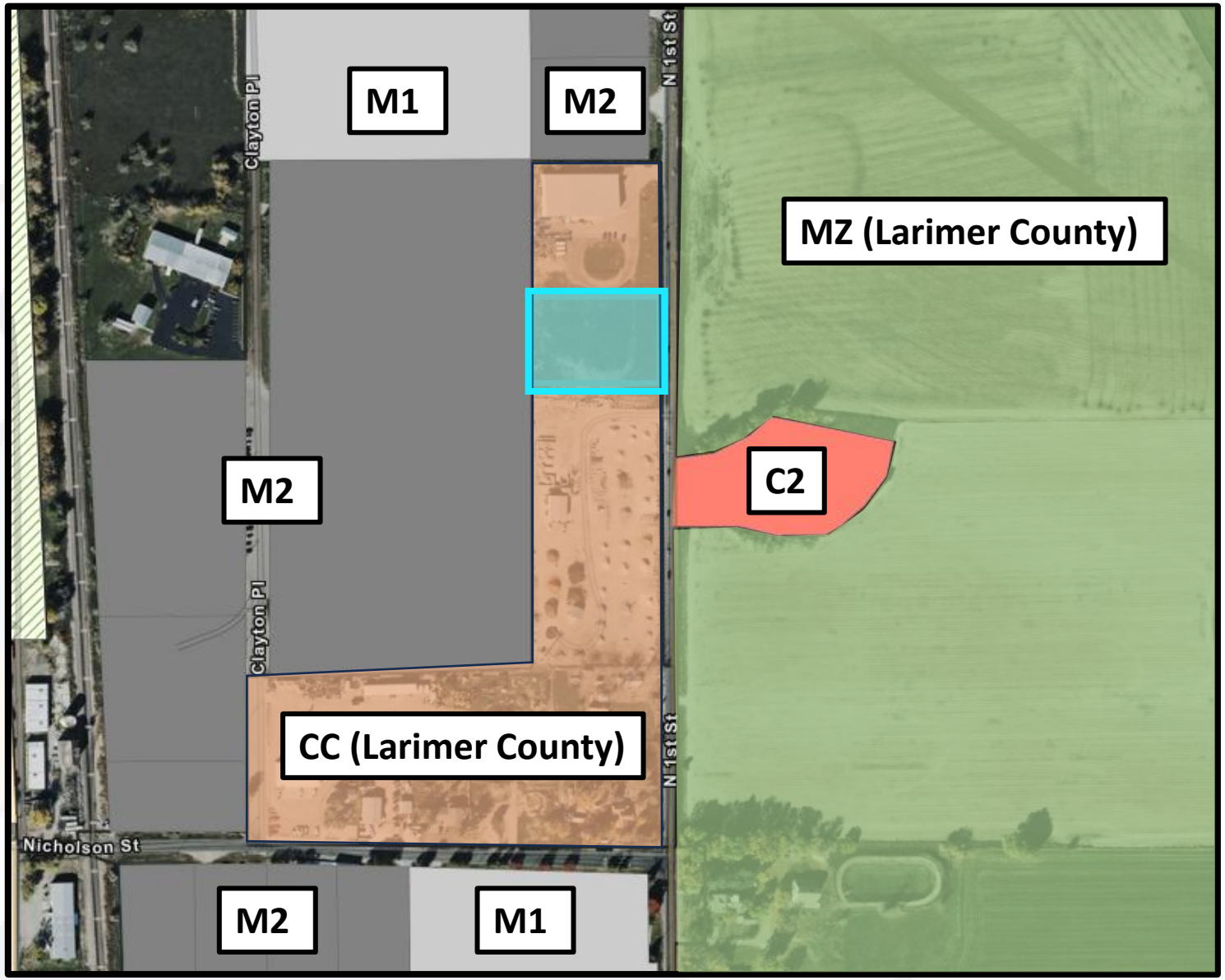
Place Type: Special Districts
- New Berthoud
- 1st Street Corridor
- Mountain Avenue Corridor

0 0.5 1 2 Miles

Site



Adjacent zoning



CURRENT ZONING: Larimer County CC – Commercial Corridor

PROPOSED ZONING: M2 – Industrial

Surrounding property zoning includes:

Larimer County CC – Commercial Corridor

Larimer County MZ – Mixed Zone

M2 – Industrial

M1 – Light Industrial

Referral Agency Review

This application was reviewed by the following Town Departments and external referral agencies.

- Berthoud Development Review Engineer
- Berthoud Water Utilities
- Berthoud Public Works
- Berthoud Town Forester
- Baseline Surveyor
- Baseline Engineer
- Berthoud Fire Protection District
- Little Thompson Water District
- Colorado Parks and Wildlife
- Larimer County Planning
- Larimer County Engineering
- Larimer County Assessor
- Larimer County Health
- Lightgig
- Poudre Valley REA
- Xcel
- Comcast
- Century Link/Lumen
- US Post Office
- Little Thompson Observatory
- CDOT

The following referral agencies provided response during this development review application and comments were addressed by the applicant to the satisfaction of these agencies

Annexation Review Criteria

Section 30-8-102 of the Town Development Code states It shall be the general policy of the Town with respect to annexations, the annexation application, and the consideration of annexation petitions that:

1. *Annexation is a discretionary act*. With the exception of a petition initiated by the Town for the annexation of an enclave, the Town Board shall exercise its sole discretion in the annexation of territory to the Town.

2. The land to be annexed and the uses proposed for the land shall conform to the goals, policies and strategies of the Town of Berthoud Comprehensive Plan and to the land uses depicted on the Preferred Land Use Map, as amended. Furthermore, all annexation proceedings shall comply with the Colorado Municipal Annexation Act of 1965, as amended.

3. At the time development occurs, certain public facilities and amenities are necessary and must be constructed as part of any territory annexed to and developed within the Town in order that the public needs may be served by such facilities. These facilities include, but are not limited to, arterial streets, bridges, public parks and recreation areas, water and sanitary sewer facilities, school sites, fire and police station sites, and storm drainage facilities. Typically, the annexation of lands to the Town shall be shown not to create any additional cost or burden on the then-existing residents of the Town to provide such public facilities in any newly annexed area.

4. Typically, the petitioner for annexation shall be responsible for paying application fees and the Town's full cost for processing the annexation applications and petition; from initial discussion with Town Staff before submittal of the petition, through the approval and recording of the final annexation documents.

5. Annexed areas will not typically divide tracts of land to prevent further annexation of adjoining parcels. (For example, leaving a "gap" or a "strip" of land between property to be annexed and the adjoining property.)

6. The property owner shall comply with the Annexation Application requirements of this Chapter prior to submitting an annexation petition.

Zoning Review Criteria

Section 30-3-110(D) states for the purpose of establishing and maintaining sound, stable and desirable development within the Town, the Zoning Map shall not be amended except when it addresses one or more of the following criteria:

1. To correct a manifest error in an ordinance establishing the zoning for a specific property; or
2. To rezone an area or extend the boundary of an existing district because of changed or changing conditions in a particular area or in the Town generally; or
3. The land to be rezoned was zoned in error and as presently zoned is inconsistent with the policies and goals of the Town Comprehensive Plan; or
4. The proposed rezoning is necessary to provide land for a community-related use that was not anticipated at the time of the adoption of the Town Comprehensive Plan, and the rezoning will be consistent with the policies and goals of the Comprehensive Plan; or
5. The area requested for rezoning has changed or is changing to such a degree that it is in the public interest to encourage development or redevelopment of the area.

Berthoud Industrial– Planning Commission Findings

FINDINGS AND RECOMMENDATIONS

Planning Commission makes a motion to recommend approval of the Berthoud Industrial Annexation and Change of Zone to the Town Board of Trustees.

Town Board of Trustees Public Hearing
June 9, 2026







Board of Trustees Information

Community Development Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Introduction: Amendment to Landscape Guidelines in consideration of the newly adopted Colorado Wildfire Resiliency Code - Ordinance 1383**
Type of Item:	**Regular Item**
Purpose:	**Presentation to the Town Board of Trustees to amend the Landscape Design Guidelines, specifically the Wildland Urban Interface (WUI) section and Master Plant Lists, in consideration of the newly adopted Colorado Wildfire Resiliency Code**
Presented by:	**Tawn Hillenbrand**

Attachments:

1. 01 Landscape Design Guidelines Amendment Ordinance
2. Appendix A_Amended Landscape Design Guidelines
3. Draft PC Meeting Minutes 2026 05 14
4. Public Notice - Berthoud - Landscape Guidelines for WUI

Background:

In 2023, the Town Trustees adopted the Landscape Design Guidelines to implement the vision and values expressed in the 2021 update to the Comprehensive Plan, including strengthening the Town's sense of place, enhancing community identity, supporting community resiliency and sustainability touchstones.

The Code presentation before you includes the following relatively minor changes to the Wildland Urban Interface (WUI) section of the guidelines (page 21) and the Master Plant Lists (pages 22-32):

1. Updating the defensible space zones already provided in the guidelines to be consistent with the newly adopted Colorado Wildfire Resiliency Code; and
2. Incorporating a new symbol on the existing Master Plant Lists for 'Firewise' plants. The new symbol is intended to help developers and residents determine which plants may be most suitable when updating or providing new landscaping on their properties.

Update/Next Steps:

The Planning Commission heard the proposed Code Amendments at their May 14, 2026 meeting, and is recommending approval of the proposed amendment to the Landscape Design Guidelines to the Town Board of Trustee's introduction hearing on June 9, 2026 and at the public hearing on June 23, 2026.

Fiscal Impact and Fund Source:
There is no negative fiscal impact to the Town in amending the Landscape Design Guidelines.

Community Touchstones:
Consideration of the amendment request does not negatively impact community touchstones. Consideration of approval of the request does provide support for protecting the life, safety, and general welfare of current and future residents of Berthoud, thereby providing support to strengthen the Town's sustainability and resiliency goals.

Recommended Action(s):
Planning Commission recommends the Town Board of Trustees approve the proposed amendments to the Landscape Design Guidelines contained in the attached Ordinance with all attached Ordinance Appendices.

Ordinance No. 1383
Series 2026

An Ordinance of the Town of Berthoud Amending the Landscape Design Guidelines in consideration of the newly adopted 2025 Colorado Wildfire Resiliency Code

Whereas, the State of Colorado established the Colorado Wildfire Resiliency Code Board by Senate Bill 23-166 in 2023 in order to develop a statewide model code for wildfire resilience;

Whereas, the Colorado Wildfire Resilience Code Board adopted the 2025 Colorado Wildfire Resiliency Code and the Fire Intensity Classification Map;

Whereas, Colorado communities, counties and special districts are required to adopt the 2025 Colorado Wildfire Resiliency Code before April 1, 2026;

Whereas, upon adoption of the Wildlife Resiliency Code and Map by the Town, the Berthoud Fire Protection District will adopt the same code; and

Whereas, the Board of Trustees does hereby find and determine that it is in the best interests of the Town of Berthoud to amend the Landscape Design Guidelines in consideration of the 2025 Colorado Wildfire Resiliency Code for the protection of life, safety and the general welfare of the current and future residents of Berthoud.

Now Therefore, be it Ordained by the Board of Trustees of the Town of Berthoud as follows:

Section 1. That the Landscape Design Guidelines amendments contained in Exhibit A herein have been adopted.

Section 3. Interpretation. This Ordinance shall be so interpreted and construed to effectuate its general purpose.

Section 4. Severability. If any provision of this Ordinance is determined to be invalid for any reason, such determination shall not affect the validity of the remaining provisions of this Ordinance, and the Board of Trustees hereby declares that it would have passed this Ordinance and each provision thereof irrespective of the fact that any one or more provisions may be declared invalid.

Section 5. Repeal. Existing ordinances or provisions thereof inconsistent with the provisions of this Ordinance are hereby repealed, except that this repeal shall not affect or prevent the prosecution or punishment of any person for any act done or committed in violation of any ordinance hereby repealed prior to the effective date of this Ordinance.

Section 6. Effective Date. The provisions of this Ordinance shall take effect thirty (30) days after publication as required by law.

Introduced this 9th day of June, 2026.

Town of Berthoud

_____

William Karspeck, Mayor

Attest

_____

Christian Samora, Town Clerk

Approved and adopted this 23rd day of June, 2026.

Town of Berthoud

_____

William Karspeck, Mayor

Attest

_____

Christian Samora, Town Clerk

LANDSCAPE DESIGN GUIDELINES

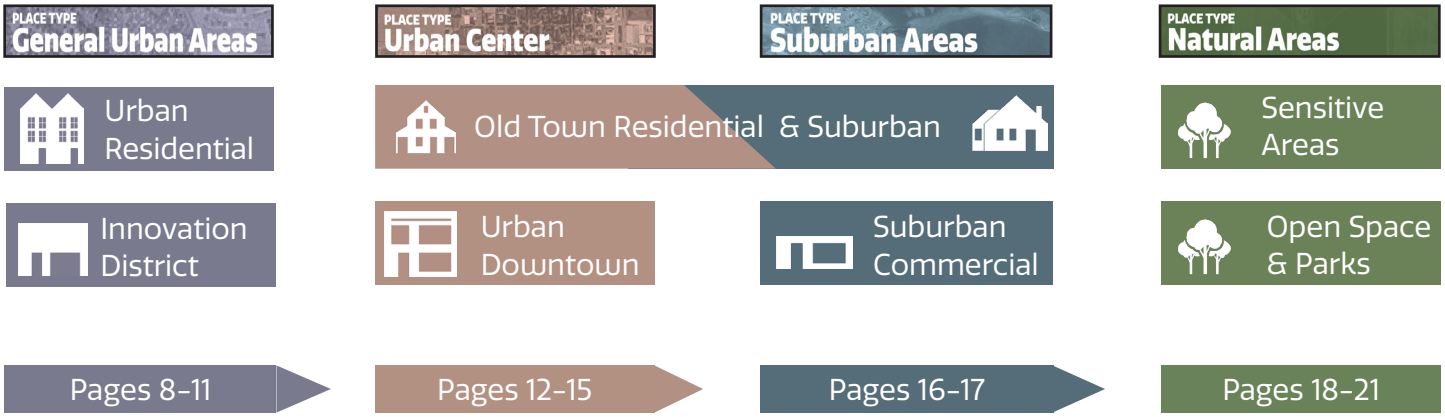
PLACE TYPES

TOWN OF BERTHOUD DESIGN GUIDELINES



INTRODUCTION

These guidelines provide expectations regarding landscaped spaces in new development as well as information for use in the renovation of existing landscaped areas. These guidelines are organized to communicate town-wide requirements for plant selection and maintenance. Additional specific guidelines for the following character districts found in the Berthoud Comprehensive Plan update are included.



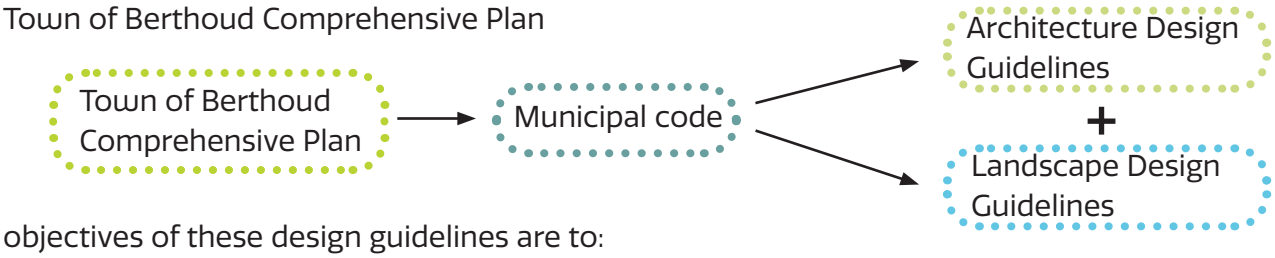
Organization:
Within each section are a number of design principles and measures that address the different elements of landscape design and environmental sensitivity based on land use. Each section of the town wide Design Guidelines will cover over arching objectives (e.g., planting, maintenance, water use etc) based on place types.

Guidelines that promote water wise and sustainable practices are designated by the water wise leaf symbol.

How To Use the Guidelines:
Property owners, developers, designers, and contractors proposing new development in Berthoud should first review the zoning of the property being developed and familiarize themselves with the Berthoud Municipal Code. They should then proceed to the most recent **Berthoud Comprehensive Plan Update**, the **Berthoud Municipal Code (Landscape Design 30-2-112)**, adopted master plans affecting the property, and finally, these **Landscape Design Guidelines**. The provisions set forth in this document identify the desired level of planting and design quality for all development; however, flexibility is necessary and encouraged to achieve excellent design. Each application for development should demonstrate to what extent it incorporates these guidelines. Applications that do not meet specific guidelines applicable to that project should provide rationale for the design and explain how the project will meet the **intent** of the Comprehensive Plan, the Municipal Code, and these Guidelines. Whether the design intent is justified will be determined through Planning Department review. Appeals to Planning Department decisions will be made to the Planning Commission.

How the Guidelines are Applied:

The Landscape Guidelines are intended for the Planning Department, as well as other town agencies and department staff, developers, architects, engineers, and community members to use in processing and evaluating project designs and applications together with relevant policies from the **Berthoud Comprehensive Plan as amended,** the **Berthoud Municipal Code (Landscape Design 30-2-112)**, and finally, these **Landscape Design Guidelines**. To achieve the stated purpose, the Guidelines will apply to all new construction and substantial building alterations that require approval by the Town of Berthoud Community Development staff in the Planning Department and Building Department. Incorporating these guidelines into a project's design will result in aesthetically pleasing and compatible landscaping in new developments, with plantings appropriate to the Colorado Front Range region's climate, soil, and environmental conditions.



The objectives of these design guidelines are to:

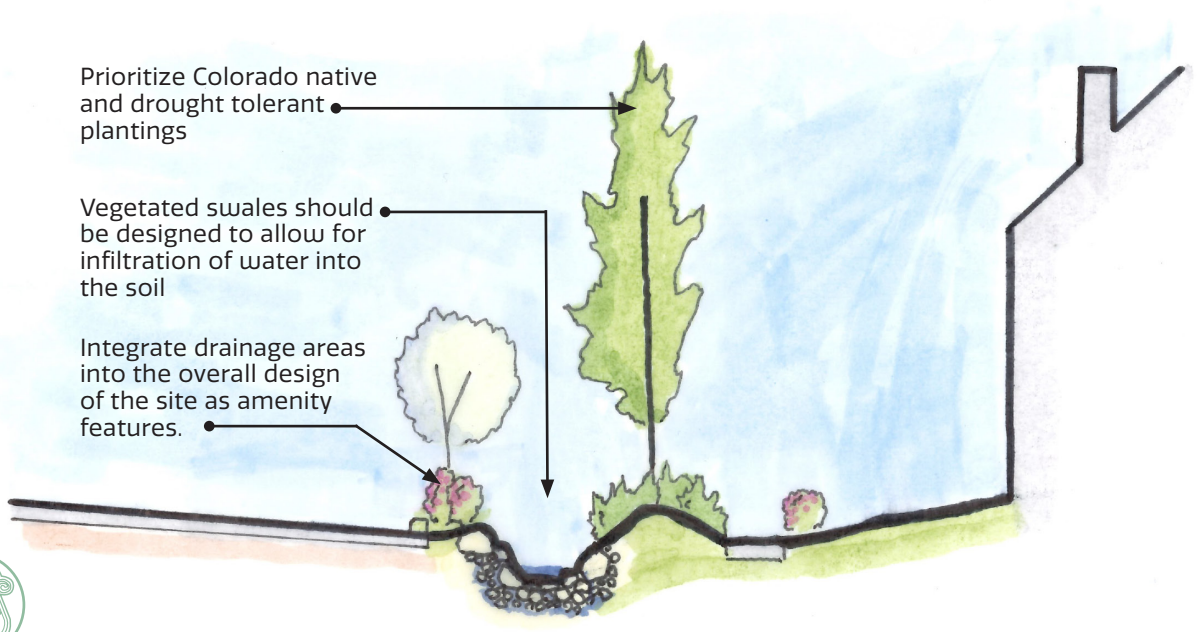
a. Reflect the vision and policies set forth in the Town of Berthoud Comprehensive Plan.
b. Supplement landscape development standards found in the Town of Berthoud Municipal Code.
c. Maintain or improve property values.
d. Enhance the town's natural beauty, visual character, and climate resilience.
e. Encourage high-quality landscapes.
f. Facilitate a high level of resource conservation.
g. Provide designers and decision makers with a tool that is reflective of the town's Colorado climate landscape character and sense of place as the 'Garden Spot of Colorado'.



This section will incorporate overall landscape strategies to be implemented in all place types.

An ecology based stormwater management system is the baseline for creating a resilient and sustainable city. The core principles of these guidelines are to enhance landscape biodiversity, maximize water infiltration, and create a distributed network for stormwater management that is redundant and well connected.

1. Impervious surfaces should be kept to a minimum when not required by town.
2. Infiltration of water into the soil should be promoted by best practice grading and drainage design.
3. Permeable paving materials should be used to the extent practical in hardscaping areas like driveways and parking lots to recharge groundwater and reduce stormwater runoff.
4. Vegetated swales should be designed to allow for infiltration of water into the soil. Where practical, swales should be located along the edges of streets and along parkways.
5. Stormwater runoff should be diverted from impervious roofs and paths into permeable landscaping areas to increase water infiltration into the ground.
6. In areas with poor drainage, subsurface water storage or bioswales should be provided.
7. Drainage systems should be decentralized, to distribute storm water across the site instead of channelizing it.
8. Consider using multiple stormwater strategies (bioswales, permeable pavers, rain gardens) that cleanse water and increase infiltration.
9. Landscape designs should slow, spread and soak stormwater, allowing plants to filter stormwater instead of piping directly to retention ponds.



TOWN OF BERTHOUD

PLANT SELECTION DESIGN GUIDELINES

1. Plant selection should be specific to Berthoud's climate, in addition to site conditions such as location on site/exposure, light intensity, soil types, site drainage, and irrigation.
2. Plant selection should enhance the plants likelihood of becoming established and reduce potential disease, death, or maintenance.
3. Colorado native and drought tolerant species should be prioritized as much as possible.
4. Select plants that are beneficial to native pollinators and incorporate landscape features that provide habitat for native pollinators.
5. Plants and trees for a new development project should meet the following criteria:
   - 1.5" – 2" caliper or larger (for trees)
   - Shrubs should be in 5 gallon containers
   - Vines and Espaliers should come in 1 gallon containers or larger
   - Perennials and ornamental grasses should come in 1 gallon containers or larger
   - Ground cover should be in quart sized containers or larger
6. Street trees of the same species along the same street should be the same size and shape, and meet the following size criteria at the time of planting:
   - 1.5" – 2" caliper preferred, up to 5" maximum (for healthy establishment)
7. When replacing dead or dying trees, the size of the replacement tree should closely match the size of the trees next to it up to a 5" caliper.
8. The target percentage of low water use plants is eighty percent (80%). See master plant list.
9. Select plants that will contribute to winter color, texture, and form when possible to provide visual interest year round.
10. When using hardscape mulch (rock, gravel, cobble), design for seventy five percent (75%) living plant cover (full growth) for any planter or landscape area (includes tree lawns).



Town of Berthoud Facts –

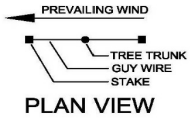
- *Berthoud has been a part of the **Tree City USA** program since 1990*
- *Berthoud is nicknamed the **'Garden Spot of Colorado'** because of its abundance of trees, open space and sweeping mountain views*
- *In 2020, Berthoud passed resolution2020-01 with the sole purpose of protecting and supporting pollinators in town.*

1. Street side landscaping should present a unified design that adds to the built environment. The design should accentuate development entries with planting, monument signs, and lighting. (As needed in accordance with Berthoud's Dark Sky requirements.)
2. Landscape structures and features, hardscape, and site furnishings and fixtures should be designed as integral parts of the overall landscape concept, and they should be consistent or compatible with the neighborhood architectural style, scale, material, and finishes.
3. Where irrigation systems and/or plant materials can cause damage to sensitive building materials, a two- (2') to three- (3') foot space should be left between the outside building wall and adjacent landscaping elements to minimize damage to the building structure. This space should be filled with decorative hardscape materials.
4. Monoculture and/or plant palettes including five (5) or less species are discouraged.
5. Regionally sourced or manufactured landscape consruction materials, such as lumber, mulches, pavers, trees, shrubs, groundcover, and quarried gravel/cobbles/rocks or other hardscape materials, should be utilized where practical.
6. Permeable paving materials should be used where feasible.
7. Select street trees that are appropriate to their intended location and function.
8. Select drought tolerant, native landscaping to limit irrigation needs to conserve water, reduce storm-water runoff, and increase the capacity for groundwater recharge.
9. Use perennials, annuals, ornamental trees and ornamental grasses to accentuate gateway locations and special sites in town.
10. Hardscape materials and installation should meet the standard of care for all applicable professionals and should not result in an unsafe condition.
11. Enhanced paving materials should be provided at key focal points such as points of entry, pedestrian crossings, plazas, and other locations that warrant special visual emphasis.
12. Trees and shrubs should be located and spaced to allow for mature and long-term growth.
13. Trees should be selected on a performance basis with the objective of minimizing water use, providing shade, minimizing root intrusion, and providing color and contrast (see Master Plant List).

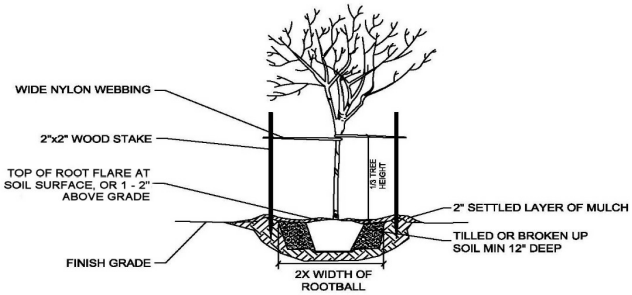
***Sustainability Tip** – A gas powered leaf blower emits nearly 300 times the amount of air pollution as a pick up truck. Replace your two stroke lawn equipment with battery powered options and reduce air pollution and help ozone levels.*

By following an ecology based strategy for landscape design, maintenance costs and effort can be reduced. When a landscape design mimics the naturally occurring ecosystem, the need for pest control and new planting is reduced.

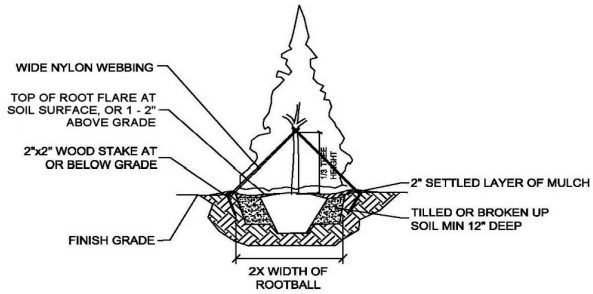
1. Yard waste from landscaping maintenance should be collected and composted where possible. Organic materials that enter landfill contribute to climate change by releasing greenhouse gasses when decomposing in the anoxic conditions of a landfill. Conversely, organic material that is reincorporated into the soil increases soil carbon and nutrients available to plants.
2. When turf grass is used in landscaping, do not collect grass clippings and leaves that fall on the lawn. Instead, allow the organic material to break down and "feed" the soil. This will decrease the need for inorganic fertilizers and also recycle carbon as mentioned above.
3. All common area landscaping and trees will be maintained to keep plants in good condition.
4. Conduct soil analysis to determine if soil has poor organic or physical properties. Amend soil if necessary using compost or other renewable organic materials.
5. Stabilize stockpiled topsoil with native grass seed like buffalo grass during construction to prevent erosion, reduce dust, and protect microbial life.
6. Properly mulch newly planted trees and plantings and ensure they are adequately irrigated until established. Commitment to survival between 1–3 years, depending on the planting.
5. Property owners, HOA's, Metro Districts to replace dead, dying, damaged or diseased plant materials during the same growing season as the removal.
7. Diversity of plantings will decrease the cost and need for maintenance by leveraging beneficial ecosytem services like beneficial birds and insects as well as nutrient cycling.
8. When located within the pedestrian realm, always trim tree limbs and plantings to maintain pedestrian circulation. Locate rock mulch away from the pedestrian realm or contain within landscape to prevent spillage into pedestrian traffic.



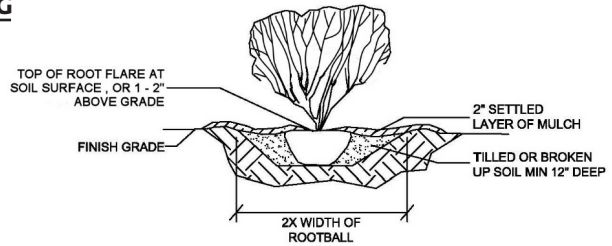
PLAN VIEW



SMALL TREE PLANTING



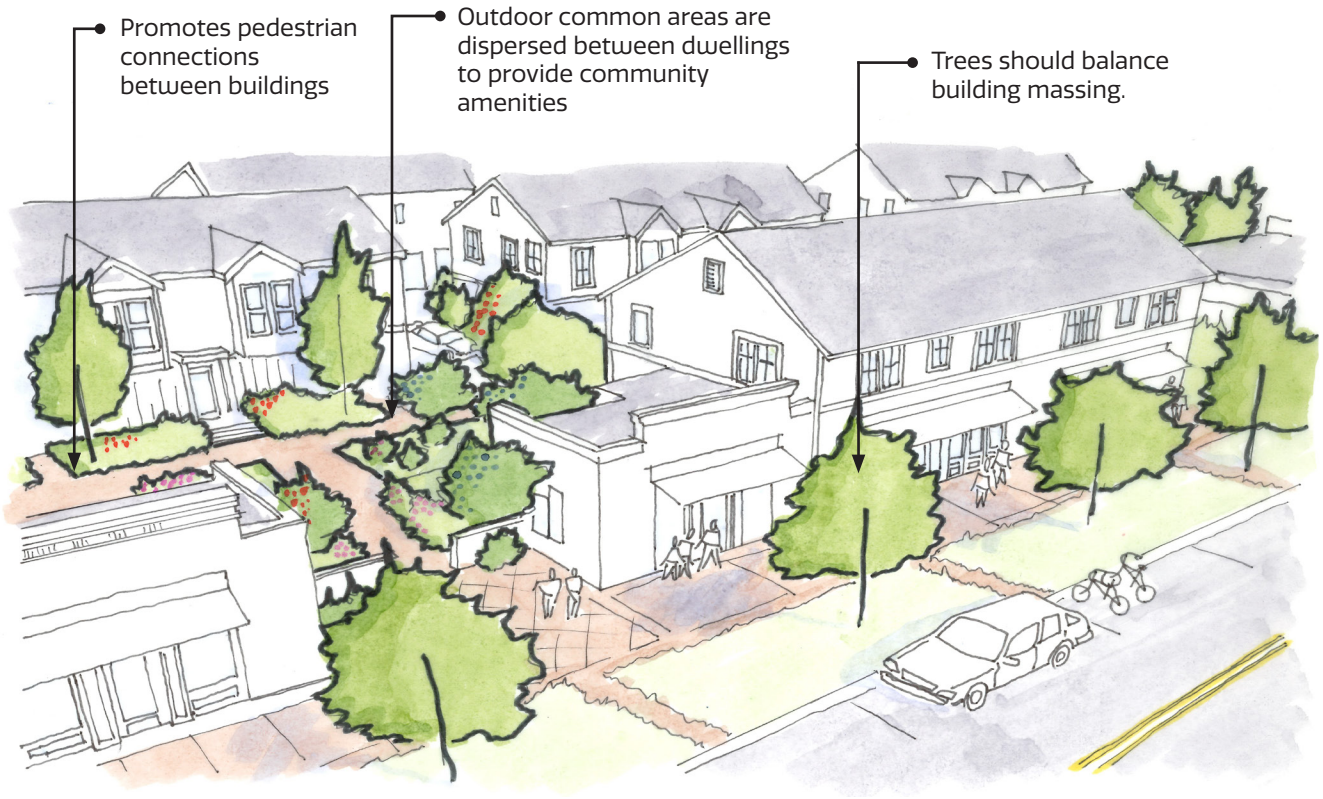
EVERGREEN TREE PLANTING

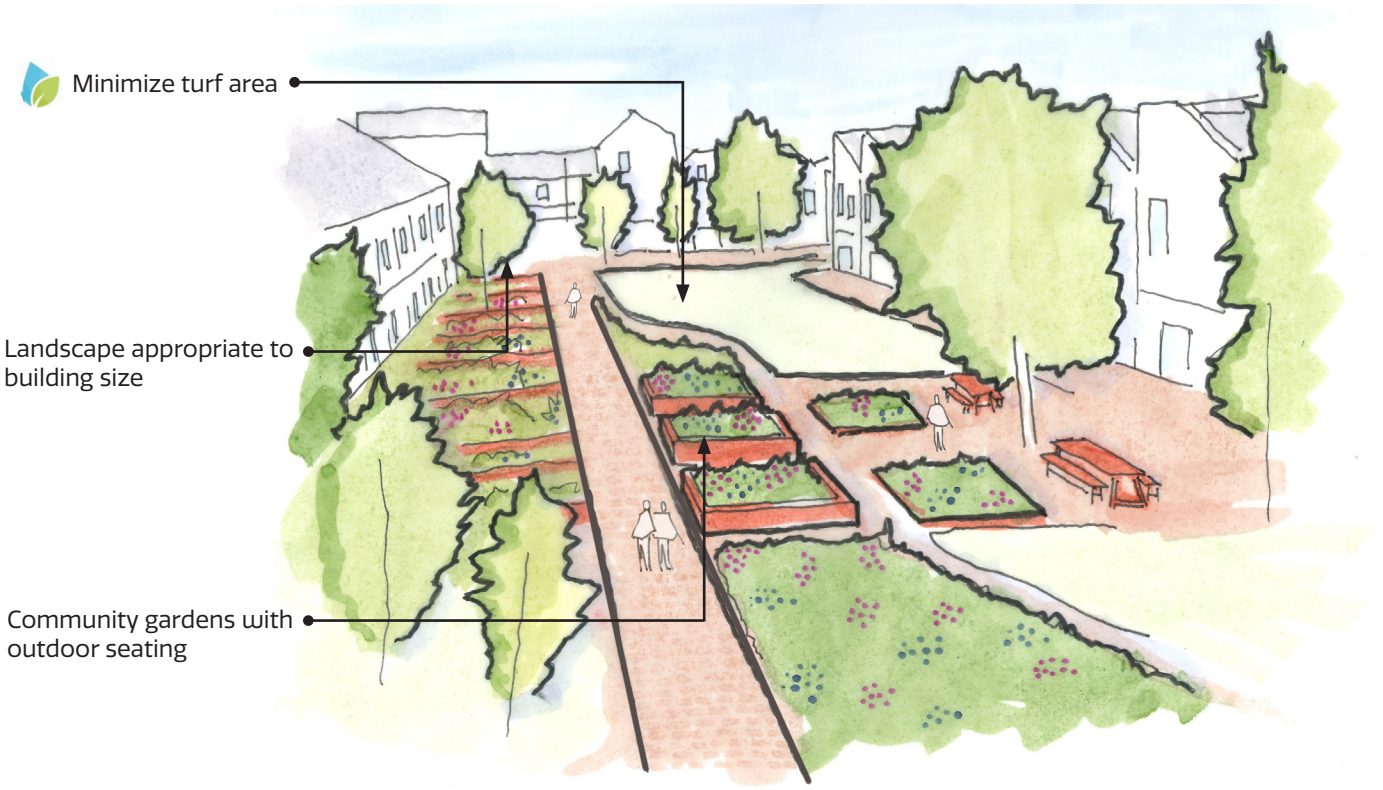


TYP. SHRUB PLANTING

The urban residential Landscape Design Guidelines apply to all new projects within the Urban Residential Character district.

1. Landscape plans shall be prepared by a Colorado Licensed Landscape Architect for new development.
2. All landscaping in public and common use areas should be maintained to attractive conditions by the owner, HOA, or Metro District (whichever applies).
3. Landscaping should be provided in common use areas associated with urban residential development.
4. Trees should be selected with consideration to their size at maturity to balance building massing.
5. Landscape design should be pedestrian-centric, focusing on designing safe pedestrian-friendly, and comfortable environments with strong connectivity and sense of place.

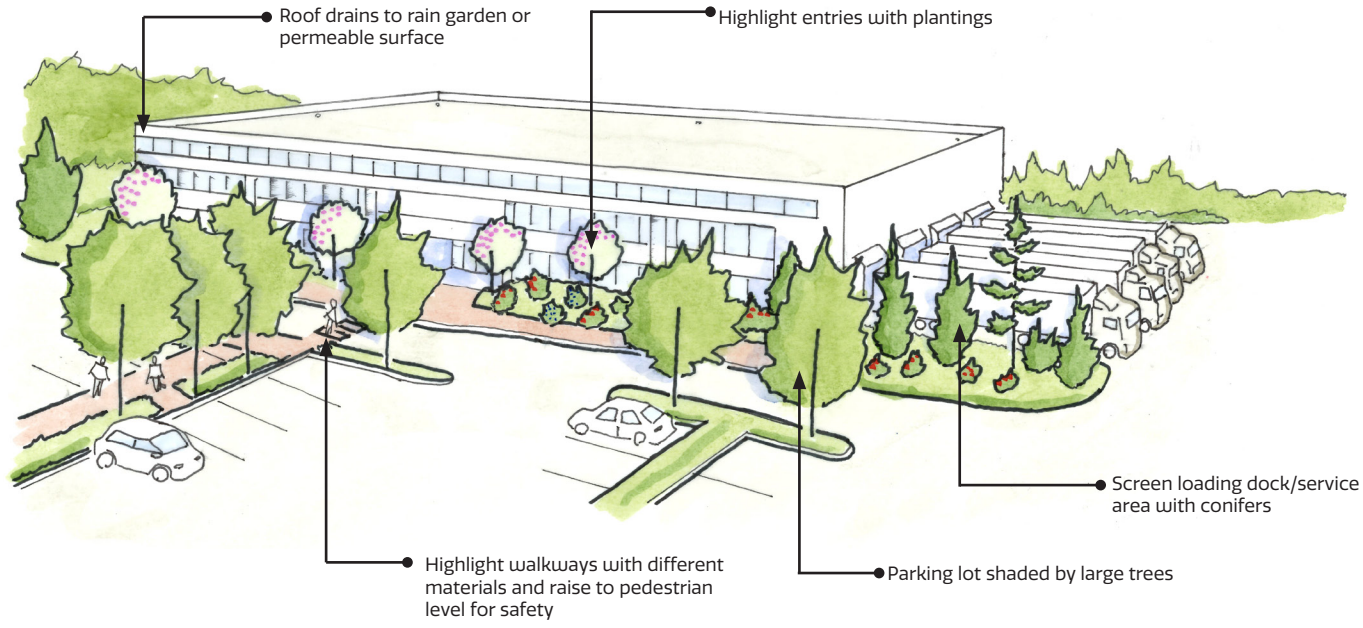




6. Urban residential developments in which the majority of the dwelling units do not have ground level garden space, should set aside land for a community garden (or other community open space) sized at 1/8 acre per 50 dwellings.
7. Thoughtfully developed hardscape design should be integrated into the overall landscaping and may include decorative pedestrian pavements, site furnishings, and landscape features like sculptures, decorative planters, garden ornaments, arbors, trellises, screens, gazebos. These landscape elements should be compatible with the architectural character of the surrounding neighborhood.
8. Design common spaces to provide a sense of security derived from visibility from residential dwellings.
9. Common spaces should have clearly defined separation from vehicular areas to ensure pedestrian safety.
10. Turfgrass lawns should be limited for spaces for active and passive recreation for activities such as sports, games, and group events.

The following urban industrial landscape design guidelines apply to all new projects within the Urban Industrial Character District.

1. Landscape plans shall be prepared by a Colorado Licensed Landscape Architect for new development.
2. Landscaping should create an environment that softens the expanses of buildings and parking spaces. Landscaping elements include trees, shrubs, and ground cover at the base of buildings and to emphasize key architectural features.
3. Landscaping should be used to focus attention on entrances to buildings, shade parking lots, and screen loading and service areas.
4. Landscaping should be in scale with adjacent buildings and be of an appropriate size to accomplish its intended goals.
5. Vines and potted plants should be used, when necessary, to provide wall, column, and post texture and color, as well as to accentuate entryways, courtyards, and sidewalks.

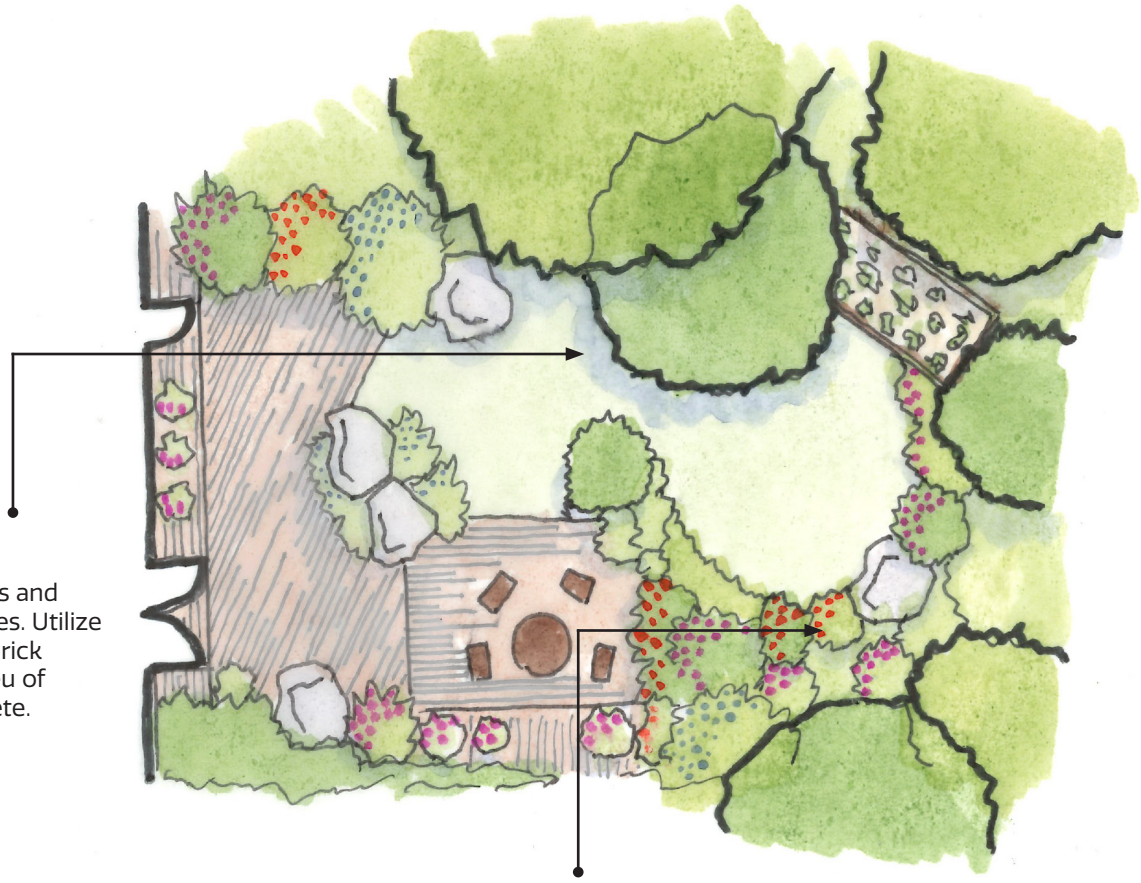


6. Vertical landscape materials should be used to visibly reduce the size of large walls.



The following suburban and old town residential landscape design guidelines apply to all new projects within the Suburban Residential Character District and the Old Town Residential Character District.

1. All new land development applications except building permits for individual single family home residences should retain a licensed landscape architect to prepare landscape plans.
2. Residential homeowners are encouraged to retain a licensed landscape architect or licensed landscape contractor to prepare landscape plans.
3. Landscaping should include a variety of plant, tree, and groundcover species.
4. Front yard landscaping should visually integrate the adjacent natural landscape where possible.
5. Artificial turf should only be used in private backyards or for sports fields.





6. Dwellings should incorporate landscaping features to soften the transition between the home and the street.
7. Locate trees away from utility lines extending to the residence.
8. Turfgrass lawns are discouraged within single-family landscape areas except where adjacent to outdoor living areas such as patios.
9. Residential driveway pavement incorporating decorative material (e.g., pavers, bricks, and colored concrete) to break up and accentuate the surface is encouraged.
10. Permeable paving materials should be used where feasible.
11. Whenever possible, each front yard should have at least two ornamental trees on the property. Front yard trees should have mature sizes in scale with the massing and height of the residence. One tree should be located between 4'-5' of attached sidewalks, and within the tree lawn at detached side walks.



Correct ratio living plant material in rock beds



Incorrect ratio of living plant material within rock bed

The following urban downtown landscape design guidelines apply to all new projects within the Urban Downtown Character District.

1. Landscape plans shall be prepared by a Colorado Licensed Landscape Architect for new development.
2. Keep in mind that the conditions of various planting sites in the downtown area will vary and should be evaluated for individual landscape objectives and suitability to the specific street on which they are to be planted. The following guidelines should be followed:

- Large trees should be located along wide right-of-way streets, and principal access streets such as along Mountain Ave.
- Large trees should also be used to highlight corners, to provide cover for large plazas, or as accents against the skyline.
- Ornamental trees should be used to provide seasonal color and a visual focal point for special locations such as a building entrance, corner areas, sitting areas, bus stops, or other significant areas or view corridors.
- Use of streetscape elements that define the urban palette are encouraged, including tree grates within sidewalk zone, benches and planters with durable materials, decorative paving to define special areas.
- Where tree grates are used they should be sized to accommodate tree growth, minimum 6' x 8'.
- When appropriate, use native grasses, paved areas, and ground covers within the design of a tree lawn.
- Street trees should be properly planted and maintained for health and growth. Replace diseased, damaged or dying trees immediately.



Correct placement and care of successful street tree



Incorrect upkeep of street tree replacement and maintenance

A. Buffer zone: plant street trees and use planters to protect the pedestrian path and separate walkways from the street.

B. Pedestrian walkway: provide adequate space for pedestrians and do not block with outdoor seating.

C. Storefront zone: activate storefront zone with plantings and seating



1. Landscaping must be incorporated in the design of pedestrian areas along the building fronts. Plantings for pedestrian areas should be designed with attention to color, texture and form. Use a variety of trees, shrubs, perennials, and ground covers. Provide seasonal plantings in planters, pots, hanging pots and beds to add color, beauty and variation.
2. New developments should provide for opportunities for the installation of art in landscaped areas and in front of buildings.
3. Do not use gravel or loose stone in place of ground cover in the curb zone
4. Consider maintenance with any improvement made within the right of way.



The following suburban commercial landscape design guidelines apply to all new projects within the Suburban Commercial District.

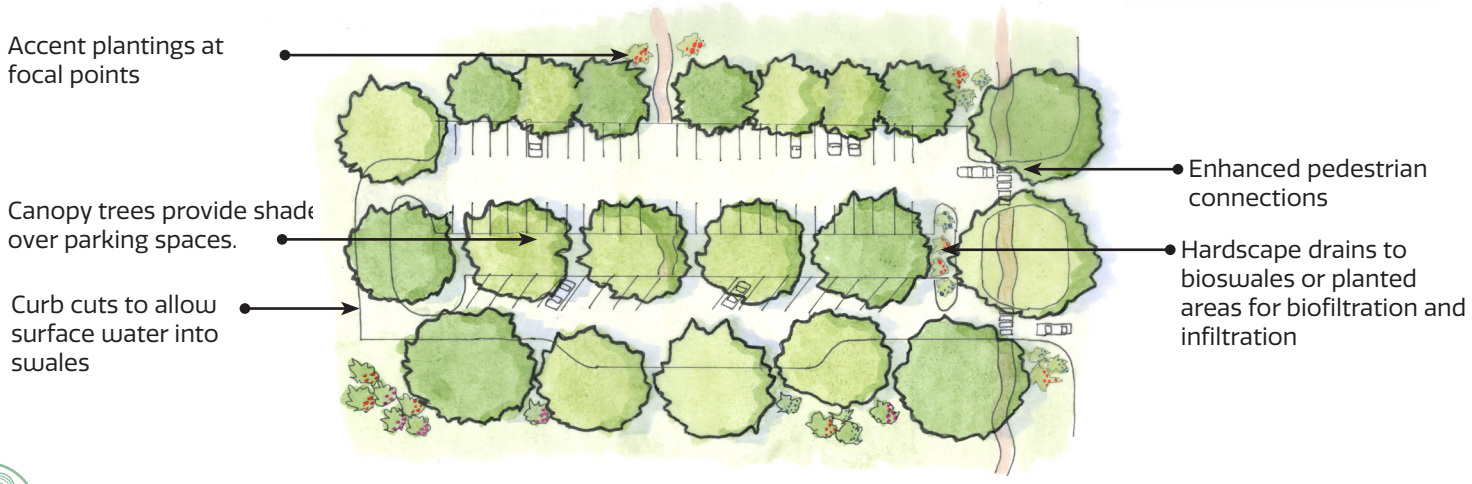
1. Landscape plans shall be prepared by a Colorado Licensed Landscape Architect for new development.
2. Landscapes should be designed to be low maintenance and compatible with the purpose of the facility.
3. Pedestrian connections should be utilized to create an open network of walkways, sidewalks, and trails throughout the commercial development.
4. The use of shade trees and shade structures may be used to diminish heat by providing shade in summer and allowing solar gain in winter to reduce dust, provide visual screening, and wind breaks.
5. Accent planting should be used around entryways and key focal points.
6. Vines and potted plants should be used to provide wall, column, and post texture and color, in addition to accentuating entryways, courtyards, and sidewalks.
7. Canopy trees should be used in parking lots to ensure shading of paved areas. Shade cover at maturity should meet or exceed fifteen percent (15%) of parking stall paved surfaces.
8. Pedestrian walkways should be provided in all parking areas.

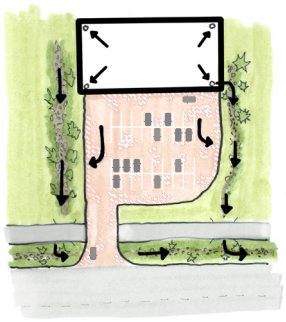


Parking Lot Landscape with Berms

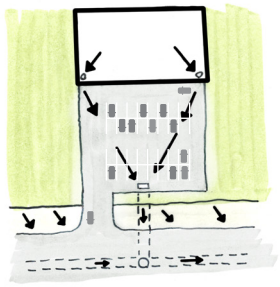


Parking Lot Landscape with Shrubs



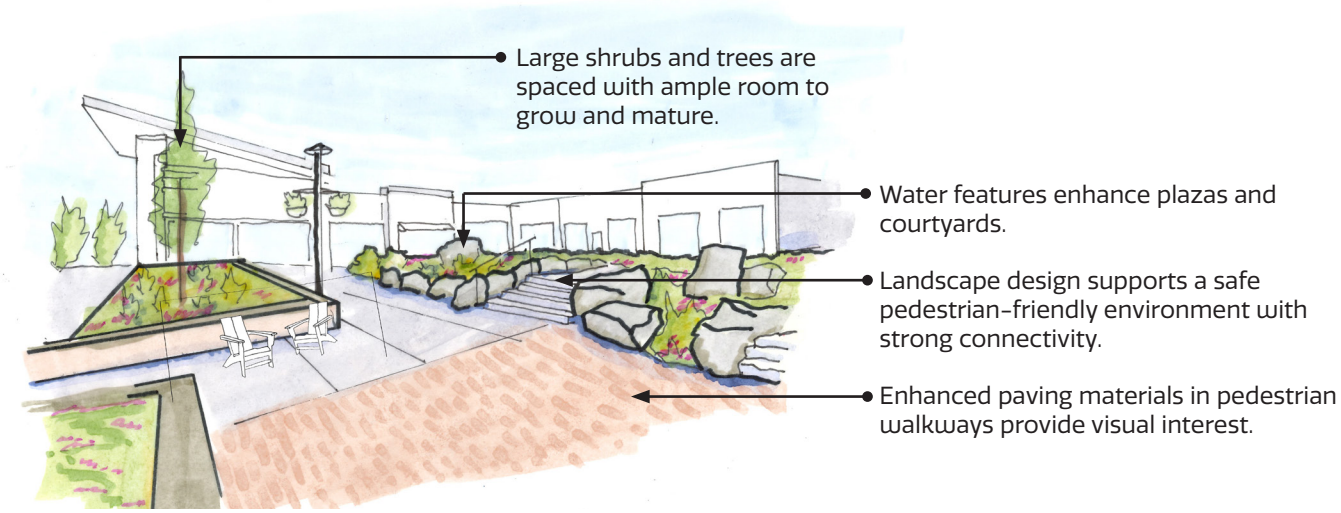


SURFACE DRAINS TO LANDSCAPE



SURFACE DRAINS TO INLET ONLY

9. Landscape design should be placed to support a safe pedestrian-friendly environment with strong connectivity.
10. The use of hardscape elements such as textured pavers, large ornamental flower pots, decorative walls, and water fountains are encouraged.
11. Water features may be considered with plantings and natural materials in courtyards and plazas.
12. Direct Water from parking lots, roof drains and other areas into landscape areas that could benefit from additional water and /or improve the quality of stormwater.



ENVIRONMENTALLY SENSITIVE AREAS

1. Provide a buffer zone from all environmentally sensitive areas adjacent development. Buffer to be maintained by the HOA or Metro District.
2. Identified environmentally sensitive areas and their buffers should be protected from disturbance unless necessary based on the following circumstances:

- Landscape improvements would protect and mitigate effects from adjacent development.
- Restoration of area is necessary based on existing conditions.
- Improvements are needed for public safety.
- Improvements are necessary and cannot be located elsewhere.
- Improvements include trails and public use areas designed to be compatible and complementary with the sensitive natural area.



Restoration of environmentally sensitive areas with compatible passive uses



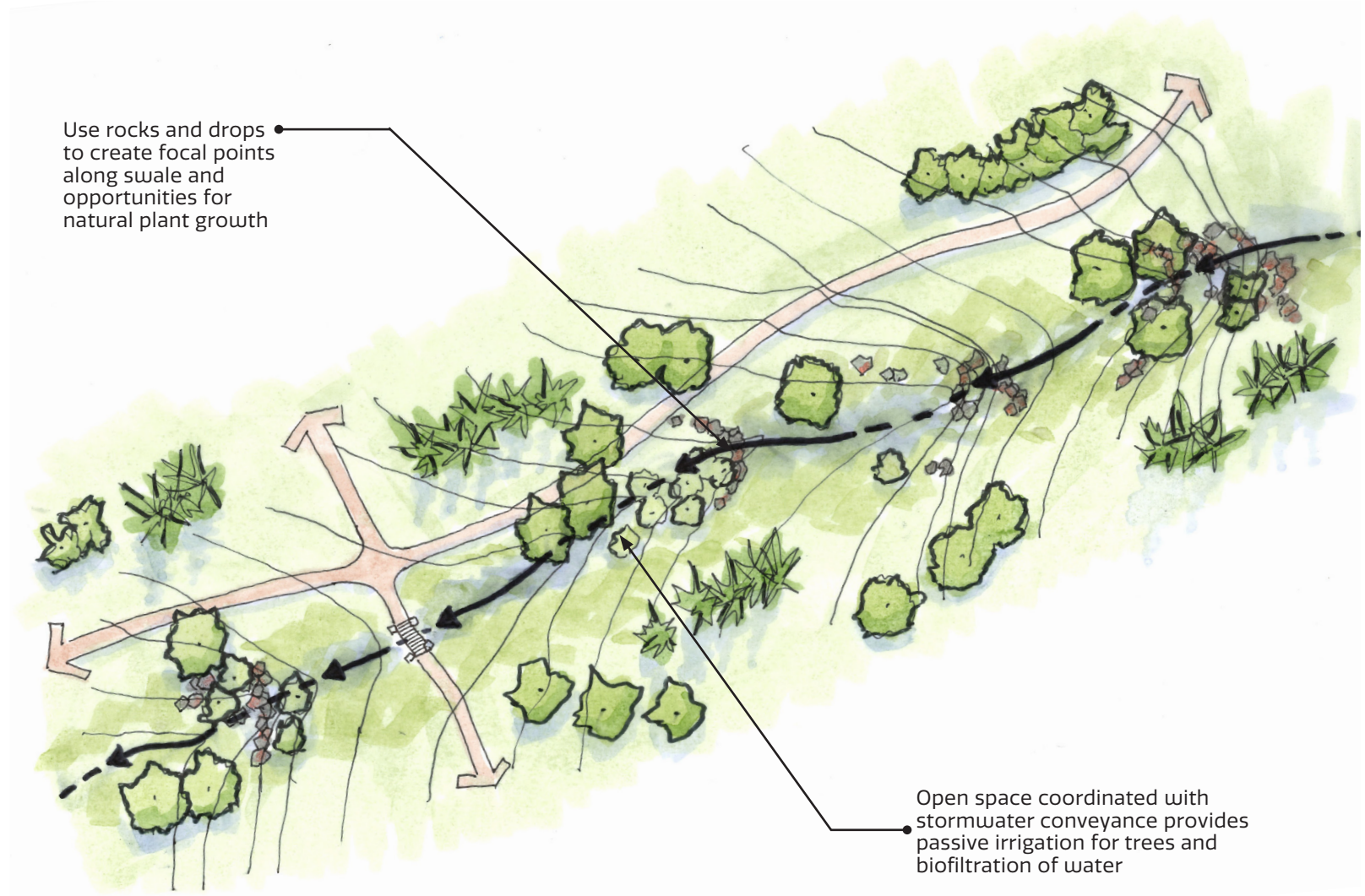
Wetland area with needed improvements to existing conditions

Water Saving Tips

- ***Don't water between 10 am and 6 pm. Instead, aim for watering at dawn or dusk to reduce evaporation and maximize water absorbed by plantings.***
- ***Set your lawnmower to the highest setting. Longer grass will keep the ground cooler and retain more water.***
- ***Minimize runoff by allowing for soak-time between short water cycles. For instance, water for 5 minutes, wait an hour, then water for 5 more minutes.***
- ***Consider looking into a rainwater collection system for lawn and garden watering, which not only cuts down on your costs but cuts out the energy cost associated with water from the treatment plant.***

OPEN SPACE

1. Provide open space as a transition between development parcels and natural areas.
2. Provide open space at trail corridors, drainage areas and as a relief from the built environment.
3. Plan open space areas with native or regionally adapted plant materials, primarily unirrigated after being established.
4. Trees, shrubs and grasses that are not expected to receive enough water through natural precipitation to be irrigated temporarily for the establishment of plant growth for up to 3 years. Once established, water as necessary based on seasonal conditions.
5. Coordinate open space with the design of storm water conveyance and water quality systems and allow for passive irrigation of plantings when possible.



PARKS, RECREATION AND TRAILS

1. Design parks to serve the active and passive needs of people on-site and on nearby properties.
2. Amenities such as picnic shelters, playgrounds,amphitheaters, gardens, etc. should be appropriate to the project.
3. Reserve Irrigated turf grass for areas of parks subject to human activity.
4. Parks in residential areas:

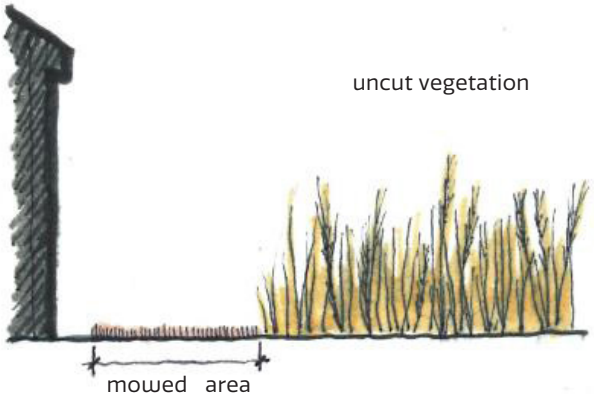
- Provide more than 50% street frontage.
- At the discretion of the town staff, visibility and access from public trails or public properties (e.g. schools, civic buildings, etc.) may be an alternative to the street frontage requirement
- Types and locations of parks will be based upon accessibility to all residents; needs according to the Town of Berthoud; and classification according to who the park serves (e.g., Community Park, Neighborhood Park, Pocket Park, etc.).

5. Parks in commercial and mixed-use areas:

- Provide more than 25% street frontage.
- At the discretion of the town, visibility and access from public trails maybe an alternative to the street frontage requirements.
- Provide natural area transitions in parks where parks abut natural open space areas.



The Wildland Urban Interface (WUI) is the area where homes and the urban environment press against the wildland. Berthoud is included in the WUI for the Front Range of Colorado. Property owners are encouraged to protect their property and their community from wildfire. More resources can be found at https://csfs.colostate.edu/wildfire-mitigation





Multi-use path as fire break

LANDSCAPE WILDFIRE PREVENTION METHODS

1. Keep trees pruned and away from structures. Install hardscape at the base of trees.
2. Use fire-resistant plantings where possible to prevent spread. Firewise plantings are carefully spaced, low-growing and free of resins, oils and waxes that burn easily.
3. Practice good mowing techniques. Mow properties regularly, according to land use. Create fuel breaks from grassland open space areas to adjacent structures/communities by keeping a 10' boundary mowed from tall grasses. Use multiuse paths within open space areas as fire breaks by mowing each side to create the 10' firebreak.
4. Report overgrown vegetation in open space land to the Town of Berthoud Neighborhood Services Manager.
5. Establish defensible space zones around structures

- Zone 1 - Ember resistant zone (0-5 feet away from building and structures)
- Zone 2 - Lean clean and green zone (5-30 feet away from building and structures)
- Zone 3 - Fuel zone (30-100 feet away from buildings)



Well maintained landscape to prevent fire spread



Poorly maintained landscape for fire spread

PLANT SELECTION

The Master Plant List is a general guide to the plant species suitable for landscape use along the Front Range. In general, the Master Plant List is not intended to be a fixed and limiting list. Plants not found in the Master Plant List may be approved for use provided that they meet the criteria noted below. The licensed landscape architect will provide guidance material affirming compliance when selecting plants not on the list.

Due to the ever changing nature of the nursery trade, some plants on the Master Plant List will become unavailable and new species, cultivars, and hybrids will be introduced. New plants and other plants with desirable characteristics may be adopted, provided that they meet the criteria described above. Plant species may need to be erased from the Master Plant List in the future if they become susceptible to serious diseases and pests that are not currently known. An alternate up to date resource for plant selection can be found at https://plantselect.org/ and the town forestry website. Please contact the town forester to review suitability of trees not found within the given resources.

MASTER PLANT LIST

= Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Cacti and Succulents				
Coryphantha (Escobaria) missouriensis	Yellow Nipple Cactus	Full sun	Low	
Coryphantha (E.) vivipara	Pink Nipple Cactus	Full sun	Low	
Opuntia macrorhiza	Prickly Pear	Full sun	Low	
Yucca glauca	Plains Yucca	Full sun	Medium	

Plains Yucca, AKA Soapweed

- This plant is a very draught tolerant native species.
- It is the only host plant for the yucca moth.
- Plant Yuccas away from paths and walkways, as it's blue green leaves are very sharp
- In mid to late summer, it produces stalks of bell-shaped greenish white flowers.



MASTER PLANT LIST = Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Groundcovers				
Antennaria parvifolia	Pussytoes (perennial)	Full sun	Low	
Callirhoe involucrata	Wine Cups (perennial)	Full sun	Low	
Erigeron divergens	Spreading Daisy (perennial)	Full sun	Low	
Eriogonum umbellatum	Sulphur Flower (perennial)	Full sun	Low	
Berberis repens (Mahonia repens)	Creeping Mahonia (shrub)	Full sun	Low	
Rhus trilobata 'Gro-Low'	Gro-Low Fragrant Sumac (shrub)	Partial Sun	Medium	
Arctostaphylos uva-ursi	Kinnikinnick	Full sun	Low	

Rabbitbrush

- This globe-shaped shrub is typically 2-6 feet wide, with silvery leaves and clusters of yellow flowers.
- It's deep root system allows this plant to thrive in dry climates.
- Consider planting with companion plants like russian sage, puple aster, or blue mist spirea.
- In the winter, Rabbitbrush sports fluffy seed clusters which add interest and texture to landscapes in the winter.



Shrubs				
Amelanchier alnifolia	Serviceberry	Sun/part shade	Low-med	
Amorpha canescens	Silvery Leadplant	Sun/part shade	Low	
Cercocarpus montanus	Mountain Mahogany	Sun/part shade	Low	
Ericameria nauseosa	Rubber Rabbitbrush	Sun	Low	
Fallugia paradoxa	Apache Plume	Sun/part shade	Low	

MASTER PLANT LIST = Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Shrubs				
Prunus besseyi	Western Sandcherry	Sun/part shade	Low	
Ribes aureum	Golden Currant	Sun	Medium	
Ribes cereum	Wax Currant	Sun	Low	
Rhus glabra	Smooth Sumac	Sun/part shade	Low-med	
Rhus trilobata	Skunkbush Sumac	Sun	Low	
Rosa woodsii	Western Wild Rose	Sun/part shade	Low-med	
Symphoricarpos occidentalis	Snowberry	Sun/part shade	Low-med	

Jointfir AKA Mormon Tea

- This plant is extremely draught tolerant, and does not need aditional watering after it is established. This is due to it's tiny leaves, resulting in very little water lost through evapotraspiration.
- Jointfir keeps it's blue-green color through the winter, making it a great addition for year round visual interest.
- At maturity, this plant grows to 4-6ft high and 3-8ft wide.



Chamaebatiaria millefolium	Fernbush	Full sun	Low	
Chrysothamnus viscidiflorus	Yellow Rabbitbrush	Full sun	Low	
Cornus sericea	Redosier / Red Twig Dogwood	Full sun	Medium	
Crataegus phaenopyrum	Washington Hawthorn	Full sun	Medium	
Ephedra americana	Jointfir	Full sun	Low	

MASTER PLANT LIST

= Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Philadelphus lewisii	Mock Orange	Full sun	Low	
Physocarpus opulifolius	Ninebark	Full sun	Low	
Rhus trilobata	Three-leaf Sumac	Full sun	Low	

Swamp Milkweed

- As it's name implies, this milkweed thrives in wet environments. Look to this plant for the wet spot in your yard, or in a rain garden
- Like other milkweeds in Colorado, the flowers will attract various species of native bees and butterflies, and is a host plant for monarch butterfly caterpillars.
- At maturity, this plant grows to 3-5ft high



Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Perennials				
Achillea lanulosa	Woolly Yarrow	Full sun	Low	
Adenolinum (linum) lewisii	Blue Flax	Full sun	Low	
Agastache cana	Double Bubblemint	Full sun	Low	
Amsonia jonesii	Jones' Bluestar	Full sun	Low	
Aquilegia chrysantha	Golden Columbine	Full sun	Low	
Artemisia frigida	Fringed Sagebrush	Full sun	Low	
Artemisia ludoviciana	Prairie Sage	Full sun	Low	
Asclepias incamata	Swamp Milkweed	Full sun	Medium	
Aster alpinus 'Goliath'	Goliath Alpine Aster	Full sun	Low	
Aster ascendens	Western Aster	Full sun	Low	
Aster ericoides	Many-fLowered Aster	Full sun	Medium	

MASTER PLANT LIST = Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Aster falcatus	Rough white aster	Full sun	Medium	
Aster hesperius	Western Aster; Violet Aster	Full sun	High	
Aster porteri	Porter's Aster	Full sun	Low	
Baptisia australis	Blue Wild Indigo	Full sun	Low	
Berlandiera lyrata	Chocolate Flower	Full sun	Low	
Callirhoe involucrata	Poppy Mallow	Full sun	Low	
Centranthus ruber	Red Valerian	Full sun	Low	

Sunflower

- There are 5 sunflowers native to Colorado: common sunflower, Maximilian sunflower, Nuttall's sunflower, prairie sunflower, and the bush sunflower
- Sunflowers are among the easiest flowers to grow in Colorado, because they are tough and draught tolerant.
- The common sunflower can grow to 9ft tall.



Ceratostigma plumbaginoides	Plumbago	Full sun	Low	
Digitalis obscura	Sunset Foxglove	Full sun	Medium	
Engelmannia peristenia	Englemann Daisy	Full sun	Low	
Erigeron speciosus	Aspen Daisy	Full sun	Low	
Eriogonum umbellatum	Sulfur FLower	Full sun	Low	
Gaillardia aristata	Blanket FLower	Full sun	Low	
Gaura lindheimeri	Beeblossom	Full sun	Low	
Helianthus annuus	Annual SunfLower	Full sun	Low	

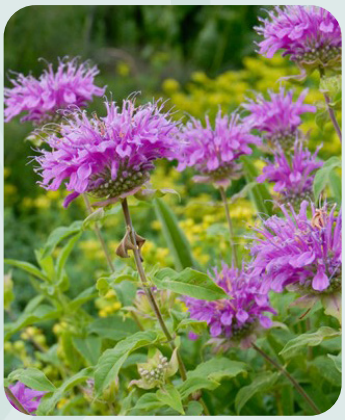
MASTER PLANT LIST

= Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Hesperaloe parviflora	Red Yucca	Full sun	Low	
Lavandula angustifolia	English Lavender	Full sun	Low	
Liatris pycnostachya	Prairie Blazing Star	Full sun	Medium	
Liatris spicata	Prairie Gayfeather	Full sun	Low	
Lonicera spp.	Vining Honeysuckles	Full sun	Low	
Mirabilis multiflora	Four O'Clock	Full sun	Low	
Monarda fistulosa	Wild Bergamot	Full sun	Low	
Oenethera caespitosa	White Stemless Evening Primrose	Full sun	Low	
Oenothera macrocarpa	Evening Primrose	Full sun	Low	

Wild Bergamot AKA Native Lavender Bee Balm

- Wild bergamot is less colorful and showy than other cultivars of bee balm, but is more tolerant of dry conditions.
- In fall, its leaf color can be gold, red and yellow.
- This native perennial flower attracts bees and butterflies



Penstemon eatonii	Firecracker Beardtongue	Full sun	Low	
Penstemon grandiflorus	Large Beardtongue	Full sun	Low	
Penstemon pinifolius	Pine-leaf Beardtongue	Full sun	Low	
Penstemon	Desert Beardtongue	Full sun	Low	
Penstemon secundiflorus	One-sided Penstemon	Full sun	Low	

MASTER PLANT LIST

= Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Penstemon strictus	Rocky Mountain Penstemon	Partial Sun	Low	
Penstemon virens	Greenleaf Penstemon	Full sun	Low	
Penstemon virgatus	Tall One-Sided Penstemon	Partial Sun	Low	
Ratibida columnifera	Prairie ConefLower	Full sun	Low	
Ratibida pinnata	Pinnate Prairie ConefLower	Full sun	Low	
Rudbeckia hirta	Blackeyed Susan	Full sun	Medium	
Rudbeckia maxima	Great ConefLower	Full sun	Low	
Rudbeckia triloba	Brown-Eyed Susan	Full sun	Medium	
Salvia azurea var. grandiflora	Pitcher Sage	Full sun	Low	
Zauschneria latifolia var. arizonica	Hardy Hummingbird Trumpet	Full sun	Low	
Sphaeralcea coccinea	Scarlet Globemallow	Full sun	Low	
Salvia azurea	Pitcher Sage	Partial Sun	Low	
Monarda fistulosa	Bee Balm/ Horsemint	Full sun	Low	
Helianthus pumilus	Bush Sunflower	Full sun	Low	
Dalea purpurea	Purple Prairie Clover	Full sun	Low	
Solidago canadensis	Canada Goldenrod	Full sun	Medium	

Prairie Coneflower

- Prairie coneflower is a native, drought-tolerant wildflower of the Great Plains.
- This short-lived plant reseeds readily. Since it normally grows in open patches in grasslands and mountain foothills, it is a great choice for mixing with native grasses or a naturalistic landscape.



MASTER PLANT LIST

= Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Grasses				
Bouteloua gracilis	Blue Grama	Full sun	Low	
Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Blue Grama	Full sun	Low	
Muhlenbergia reverchonii	Undaunted Ruby Muhly Grass	Full sun	Low	
Orzyopsis hymenoides	Indian Ricegrass	Full sun	Low	
Bouteloua curtipendula	Side-Oats Grama	Full sun	Low	

Blue Grama

- The official state grass of Colorado, this grass has distinctive seed heads which make it easy to identify.
- Blue Grama can be used as a lawn, but does not tolerate heavy foot traffic well. It uses about 1/3 of the water required by traditional turf, making it a water wise alternative alrenative.
- This grass is critical to the shortgrass prairie ecosystem encompasing Berthoud due to it's extensive root network that hold down soil.



Trees				
Crataegus crus-galli 'Inermis'	Inermis' Cockspur Hawthorn	Full sun	Low	
Crataegus x mordenensis 'Toba'	Toba Hawthorn	Full sun	Low	
Gleditsia triacanthos f. inermis 'Imperial'	Imperial Honeylocust	Full sun	Low	
Gleditsia triacanthos f. inermis 'Skyline'	Skyline Honeylocust	Full sun	Low	
Juniperus chinensis	Chinese Juniper	Full sun	Low	
Juniperus scopulorum	Rocky Mountain Juniper	Partial Sun	Low	

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Picea pungens	Colorado Spruce	Full sun	Medium	
Quercus alba	White Oak	Full sun	Medium	
Quercus bicolor	Swamp White Oak	Full sun	Medium	
Quercus rubra	Red Oak	Full sun	Medium	
Quercus shumardii	Shumard Oak	Full sun	Low	
Quercus macrocarpa	Bur Oak	Full sun	Low	
Quercus muehlenbergii	Chinkapin Oak	Full sun	Low	
Quercus robur	English Oak	Full sun	Medium	
Quercus shumardii	Shumard Oak	Full sun	Low	
Quercus gambelii	Gambel Oak	Partial Sun	Low	
Sophora japonica	Japanese Pagoda Tree	Full sun	Medium	
Tilia cordata	Littleleaf Linden	Full sun	Medium	
Syringa reticulata	Japanese Tree Lilac	Full sun	Low	
Pinus · edulis · flexis · heldreichii · mugo · nigra · strobiformis	 · 'Pinyon pine' · 'Limber pine' · 'Bosnian pine' · 'Mugo pine' · 'Austrian pine'	 · Full sun · Full sun · Full sun · Full sun · Full sun · Full sun	 Low-Med Low-Med Medium Low-Med Medium Low-Med	

Ponderosa Pine

- This majestic tree is well adapted to high temperatures and low moisture and is highly resistant to low-intensity fire.
- A long taproot helps the drought-resistant pine obtain adequate moisture and also decreases its chances of being uprooted by strong winds.
- Scientists don't know why, but older ponderosa pines smell like butterscotch!



Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Tilia americana	American Basswood	Full sun	Medium	
Tilia amurensis	Linden	Full sun	Low	
Tilia tomentosa	Silver Linden	Full sun	Medium	
Tilia x flavescens 'Glenleven'	Glenleven Linden	Full sun	High	
Prunus virginiana 'Shubert'	Canada Red Chokecherry	Full sun	Low	
Pinus ponderosa	Ponderosa Pine	Full Sun	Low	
Acer glabrum	Rocky Mountain Maple	Full sun	Medium	
Populus Deltoides Monilifera	Plains Cottonwood	Full Sun	High	

Plains Cottonwood

- Adapted to Colorado's eastern plains, this is the largest native broadleaf tree in the state.
- One of the most ecologically and culturally significant trees in Colorado, it thrives in riperian zones.
- Cottonwoods reduce erosion, capture and filter sediment, and increase water infiltration.

*** Appropriate in natural corridors and private open space, requires approval from town forester.**



MASTER PLANT LIST

= Firewise = Colorado Native Plant = Pollinator Friendly = Street Tree Approved

Scientific Name	Common Name	Sun/Shade	Moisture Needs	Notes
Acer tataricum	Tartarian Maple	Full sun	Low-Med	
Acer grandidentatum	Big Tooth Maple	Full sun	Low-Med	
Aesculus arguta	Texas Buckeye	Full sun	Low-Med	
Aesculus glabra	Ohio Buckeye	Full sun	Medium	
Amelanchier alnifolia	Saskatoon Serviceberry	Full sun	Low-Med	
Amelanchier canadensis	Shadblow Serviceberry	Full sun/ Light shade	Low-Med	
Catalpa Sp.	Catalpa	Full sun	Low-Med	
Celtis occidentalis	Hackberry	Full sun	Low-Med	
Cercis canadensis	Eastern redbud		High	
Crataegus · ambigua · phaenopyrum · viridis	 · Russian · Washington · Green	 · Full sun · Full sun · Full sun	 · Low · Med · Low-Med	
Ginko biloba (Male trees)	Ginko tree	Full sun	Med	
Gymnocladus dioicus	Kentucky Coffeetree	Full sun	Low-Med	
Malus 'Spring Snow'	Spring snow crabapple	Full sun	Low-Med	
Prunus padus	European Birdcherry	Full sun	Medium	
Prunus virginiana	Sucker Punch Canada Red	Full sun	Low-Med	
Pyrus calleryana	'Chanticleer', 'Cleveland Select', 'Capital', 'Redspire'	Full sun	Low-Med	
Ulmus · americana · davidiana	· "ValleyForge-Triumph" · David Elm	 · Full sun · Full sun	Low-Med	
Abies concolor	White fir	Full sun	Med	

PROHIBITED LIST

Trees Prohibited in Town of Berthoud right of ways or on public lands.

Scientific Name	Common Name
Fraxinus spp.	Any Ash species- Due to EAB presence in northern front range
Populus spp.	Any Poplar species- Cottonwood, Aspen, Silver Poplar, Lombardy Poplar
Salix spp.	Any Willow species
Acer negundo	Box Elder Tree *does not include Sensation Boxelder
Ulmus pumila	Siberian (Chinese) Elm
Robinia pseudoacacia	Purple Locust/ Black Locust
Morus alba	Mulberry
Pyrus calleryana 'Bradford'	Bradford Pear
Juglans nigra	Black Walnut
Elaeagnus angustifolia	Russian Olive
Ailanthus altissima	Tree of Heaven
Tamarix spp.	Tamarisk (Salt Cedar)
Acer Rubrum	Red Maple
Acer saccharinum	Silver Maple
Acer x freemanii	Freeman Maple (Autumn Blaze Maple)
Betula spp.	Birch
Any weeping or pendulous tree type eg., Weeping birch	
Any shrub or hedge which by its habit of growth would obstruct, restrict, or conflict with necessary and safe use of the public rights-of-way.	
Conifers or evergreens which would eventually grow over the sidewalks or streets.	
Pod producing Honeylocust	

Colorado Noxious Weeds

Noxious weeds threaten valuable wildlife habitat and natural resources, cause economic hardships to agricultural producers, and are a nuisance for recreational activities. The Noxious Weed Act requires all Colorado residents to control noxious weeds using integrated methods to manage noxious weeds if the same is likely to be materially damaging to the land of neighboring landowners.

Find a list of Colorado Noxious Weeds here : Noxious Weed List

or go to https://ag.colorado.gov/conservation/noxious-weeds/species-id

APPENDIX

MAINTENANCE PLANS

All property owners/occupants of residential, mixed use, commercial, or industrial property with a site-specific development plan such as a Site Plan or Use by Special Review are responsible for the maintenance and replacement of landscaping as shown on that approved plan. The below maintenance checklist should be used to establish a landscape maintenance plan, to be submitted to the Town of Berthoud for review.

Introduction

- Provide a description of the development and the area of coverage.
- Provide contact information for specific questions or concerns (names, phone numbers and hours of operation).

Plant Material

- Provide direction on pruning and trimming of plant material.
- Provide direction for establishment of native grasses and seeded areas. Include information about mowing frequency based on season. If shrub beds are within seeded areas, provide direction to mow and trim to maintain visibility. If grasses are within areas used for fire breaks, provide direction on height and frequency of mowing.
- Provide direction for watering in irrigated areas throughout the year. Use season specific standards for winter watering and growing season watering to ensure that plants get the proper amount of water throughout the year.
- Provide direction on fertilization of trees and shrubs. Include information about when to fertilize and the fertilization process.

Mulch

- Provide direction on maintenance for all mulch beds to ensure that the standard depth remains constant and per specifications.
- Provide direction on water required to establish native grasses

Irrigation Systems

- Provide information on monitoring and repairs to irrigation systems. Inlcude start up (spring start up procedures) and shut down (winterization procedures) as well as weekly, monthly and yearly maintenance instructions. Include contact for reporting all problems with system and maintenance of the systems.

Landscape Maintenace Schedule

- Provide a general monthly checklist for landscape maintenance for each month of the year.

APPENDIX

SAMPLE MAINTENANCE PLAN

Project Name
Maintenance Manual

TABLE OF CONTENTS

INTRODUCTION.....

PLANT MATERIAL.....

WOOD MULCH.....

AUTOMATIC IRRIGATION SYSTEM.....

GENERAL MONTHLY CHECKLIST.....

LANDSCAPE MAINTENANCE SCHEDULE .....

APPENDIX

SAMPLE MAINTENANCE PLAN

PLANT MATERIAL

Pruning/Trimming:

1) In general, prune or trim shrubs and trees just after their flowering period and only as necessary. No shearing is allowed. Remove any dead or dying branches. Notify Contact Name of any tree pruning needs observed during regular maintenance. Tree pruning will be done by either the _____or by a certified arborist employed by _____ , under the direction of and with prior consent from _____. Pruning of all shrubs will be completed by_____ , at appropriate times determined by them.
2) Make all cuts clean; keep saws and pruners sharp.
3) Pruning will take place as needed to prune all dead, diseased, or injured branches.

Native Grass Seeded Areas:

1) Native grass areas will be mowed 2 times per growing season or as needed to help control weeds. All bare areas will be touch up seeded in spring or fall seeding windows.
2) For shrub beds within native seed area, mow or trim as necessary to maintain visibility of shrubs and keep grass from overshadowing view of shrubs.
3) Irrigate native seeded areas for 2 years (or until established). Once established, water as necessary based on seasonal conditions.

Watering in Irrigated Areas during Winter Months:

1) Winter watering is extremely important and should take place monthly or more when there are periods of dry, warm weather or heavy winds. Deep root watering on all trees is also a good practice. Trees planted on the project shall be watered once per month or more at the rate of 30 gallons per tree for the months of November through April until the Landscape Establishment period ends. Shrubs planted on the project shall be watered at the rate of 10 gallons per shrub for the months of November through April. Winter watering will be completed for both years of the maintenance plan requirement.
2) It is better to water heavily a fewer number of times than to water lightly a greater number of times. Over-watering is a major cause of problems in plant material and is much more difficult to correct than under-watering.
3) Check soil moisture as often as possible, specifically during periods of prolonged dry/windy weather and especially when there is no snow cover, to determine water needs of the plant. The soil should be moist, not wet.
4) Winter watering frequency shall be adjusted based upon amount of snowfall and frozen conditions/ warm, windy conditions.

Watering Irrigated Areas during Growing Season Months:

1) Do not over-water plantings. Drip systems should be left on for enough time to saturate the root zone. Avoid multiple start times with Drip system. Do not allow run-off from the Drip system. The trees will need to receive 30-40 gallons of water per week where as shrubs will receive 6-10 gallons per week.

APPENDIX

SAMPLE MAINTENANCE PLAN

Fertilizing Trees and Shrubs:

1) All plant material should be fertilized each spring with a well-balanced, slow release synthetic or organic fertilizer in early spring.
2) Granular slow release fertilization will be of 5-5-5 formulation or similar, applied per label directions. Hand water immediately after fertilizing to force fertilizer into soil and wash any fertilizer from plant surfaces.

Weed, Insect and Disease Management:

An Integrated Pest Management (IPM), approach will be used to control pests, weeds, insects and diseases. The IPM program coordinates long-term prevention or suppression of pest problems to minimize impacts to human health, the environment, and non-target organisms.

Pesticides are to be used as a last resort after exhausting all other options. If pesticides are used they must be chosen from the list of products that have been reviewed, evaluated and approved by the IPM Subcommittee.

Weeds in planting beds will be removed on a weekly basis as the weeds emerge. Dispose of all weeds off site. Regular maintenance of the mulch layer will help minimize weeds in the planting beds. If herbicides must be used, they are to be chosen from the list approved by the IPM subcommittee. Use the least toxic herbicide available and spot apply on weeds.

Plant material deemed dead or irreparably damaged will be removed and replaced each month and within 30 days of notification with healthy, like plant materials.

Warranty plants shall not be installed during the summer months (June, July and August)

General IPM Steps and Methods:

1) Prevention first: Follow accepted maintenance practices (correct watering, mulching, pruning, etc).
2) Indentify the pest life cycle and characteristics.
3) Set action thresholds – tolerate minimum damage.
4) Monitor regularly and include any findings in project log.
5) When pests exceed threshold, use control methods with the least non-target impacts. "Know the Pest" by treating it when it is in its most vulnerable state and when its natural enemies are in their least susceptible state.
6) Keep records in the project log of control methods and results.

APPENDIX

SAMPLE MAINTENANCE PLAN

Wrapping/Staking:

1) All deciduous trees should be wrapped by November 1st – 15th of the year they are planted. Specific tree wrap will be cut in a continuous strip of sufficient length to wrap tree. Wrap from soil surface to the first branch of each tree. Wrap with over-lapping wraps of 1.5". Secure wrapping with wrapping tape and do not use electrical tape or string. Deciduous trees should be wrapped for the first four to five years after planting. Wrapping shall be removed between April 1st – 15th of the following spring.
2) Remove stakes after the second full growing season, depending on the type of tree, root growth and wind at the site.

WOOD MULCH

Check the depth of Wood Mulch during maintenance activities. Add additional mulch in areas that have decayed or have thinned out over time. All mulch beds will be kept at the depth specified in the specifications.

AUTOMATIC IRRIGATION SYSTEM

Start-up, Shut-down and weekly operations will be coordinated with _____ . If a problem has been identified with the irrigation system notify _____ and will proceed in troubleshooting and fixing the problem.

Monitor the moisture levels around all ~~plant mate~~rial. Report problems, including browning or oversaturation, to _____ . Recommend necessary adjustments and then coordinate with the owner rep to alleviate the problem. Control all irrigation systems, including clock settings. Fix any leaks or other problems with the material installed on this project. Any repair work to be coordinated with owner rep.

Provide the following maintenance items/extra stock to the owner rep prior to final acceptance:

1) 2 sets of special tools required for removing, disassembling and adjusting each type of sprinkler head and valve supplied on this project.
2) Two 6-foot valve keys for operation of gate valves or stop and waste valves (if applicable).
3) 2 keys for each automatic controller.
4) 2 quick coupler keys and 2 matching hose swivels for each type of quick coupling valve installed.
5) 2 aluminum drain valve keys of sufficient length for operation of drain valves.
6) 4 Rotor heads of each type used.
7) 100' of Inline Emitter Tubing of each type used.

APPENDIX

SAMPLE MAINTENANCE PLAN

Spring Start-up Procedures: Coordinate with owner rep at site to be on hand during start-up procedures.

1) Run through the zones attached to the project to test for any winter damage.
2) Set programs for watering frequency and duration of the project zones in coordination with the owner rep. Run through clock to ensure a working system.
3) Verify that all drip emitters are functioning properly. Repair if needed.

Weekly Maintenance:

1) Inspect valves and Drip system weekly for any damage or leaks. Any repairs made shall be made with materials of the same manufacturer and model as the original equipment.
2) Check for dry or oversaturation of planting areas and coordinate with owner rep to make changes.
3) Clean up: Continuous clean up operations will be performed throughout the duration of the work. Remove rubbish from site on at least a weekly basis, or when on site for other maintenance tasks.
4) Trench settling will be repaired and re-seeded if it occurs.

Monthly Maintenance:

1) All weekly procedures.
2) Coordinate with owner rep to adjust times on controller to compensate for different temperatures and precipitation each month.
3) Run through controller to assure proper working condition for project zones.

Yearly Maintenance:

1) All monthly procedures.
2) Inspect all components (valves, Drip pipe, etc.) to assure proper working condition.
3) Flush Drip pipes once per year to remove any possible sediment.
4) "Start-up" and "winterize" system (see detailed explanations below). Coordinate with owner rep.

APPENDIX

SAMPLE MAINTENANCE PLAN

Winterization Procedures: Coordinate with owner rep at site to be on hand during winterization procedures.

1) Close the main supply.
2) Connect air compressor to the service tee located on the vacuum breaker.
3) Turn controller to station #1 and start compressor.
4) Force air through station #1 until all water has been blown out. Continue process through stations #2, #3, etc., until all stations have been blown out completely (a minimum of 3 minutes).
5) Open all drain valves and petcocks on the vacuum breaker.
6) Turn off controller, but allow to run so that lubricants stay on clock motors.

General Notes:

1) It is important to repair any malfunctioning equipment as soon as possible especially during the hot mid-summer months.
2) Check for spots that appear to be dry. The sooner these are corrected, the less damage there will be.
3) Time of year and conditions will affect watering times. A base time of 35 to 50 minutes shall be used for Drip zones. The trees require 30 to 40 gallons of water per week where as shrubs will require 6-10 gallons of water per week. These times are averages only and will vary depending on time of season, plant material type, wind conditions and soil conditions.

APPENDIX

SAMPLE MAINTENANCE PLAN

GENERAL MONTHLY CHECKLIST

As Needed Items

- Tree pruning needs for dead or damaged limbs.
- Trash removal

January

- Winter water

February

- Winter water

March

- Winter water

April

- Remove tree wrap
- Activate and troubleshoot sprinkler system
- Remove weeds as needed
- Re-mulch beds as needed
- Remove weeds

May

- Fertilize trees and shrubs
- Re-mulch beds as needed
- Inspect sprinkler system operation/adjust timing as needed
- Prune trees and shrubs as needed
- Remove weeds

June

- Check all trees and shrubs for insect pests
- Inspect sprinkler system operations/adjust timing as needed
- Remove weeds
- Re-mulch beds as needed

July

- Inspect sprinkler system operation/adjust timing as needed
- Remove weeds
- Re-mulch beds as needed

August

- Inspect sprinkler system operation/adjust timing as needed
- Remove weeds
- Re-mulch beds as needed

September

- Inspect sprinkler system operation/adjust timing as needed
- Remove weeds
- Re-mulch beds as needed

October

- Adjust staking of new trees
- Reduce watering times on sprinkler system
- Remove weeds

November

- Wrap trees
- Winterize irrigation sprinkler system
- Winter water

December

- Winter water

APPENDIX

SAMPLE MAINTENANCE PLAN

LANDSCAPE MAINTENANCE SCHEDULE

Routine – Quantities Based On Times Per 1 Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tot For 2 Yr Maint Period
Shrub Monitoring	0	0	1	1	1	1	1	1	1	1	0	0	16
Tree Monitoring	0	0	1	1	1	1	1	1	1	1	0	0	16
Weed Beds	0	0	2	2	2	2	2	2	2	2	0	0	32
Trash Removal	2	2	2	2	2	2	2	2	2	2	2	2	48
Irrigation Inspection	0	0	4	4	4	4	4	4	4	4	0	0	64
Spring/Fall													
Spring Clean-up	0	0	0	1	0	0	0	0	0	0	0	0	2
Fall Clean-up	0	0	0	0	0	0	0	0	0	1	0	0	2
Irrigation Start-up	0	0	0	1	0	0	0	0	0	0	0	0	2
Winterization	0	0	0	0	0	0	0	0	0	1	0	0	2
Check Stake Guys	0	0	0	0	0	0	0	0	0	1	0	0	2
Plant Material Care													
Pruning (as needed)													
Tree Wrap	0	0	0	0	0	0	0	0	0	1	0	0	2
Wrap Removal	0	0	0	1	0	0	0	0	0	0	0	0	2
Fertilization	0	0	0	1	0	0	0	0	0	0	0	0	2
Herbicide/Pesticide as needed													
Winter Services													
Winter Water	1	1	1	0	0	0	0	0	0	0	1	1	10
Winter Watering could increase or decrease due to weather conditions													

Town of Berthoud Planning Commission
Town Hall
Board Room
807 Mountain Avenue, Berthoud, CO 80513
May 14, 2026 at 6:00 p.m.

1. Meeting called to order – Vice Chair Semedalas at 6:11 p.m.

2. Pledge of Allegiance

3. Roll Call
   The following Planning Commission members were present:
   Nick Semedalas, Vice Chair
   Bryce Filho, Secretary
   Mark Hofmans, Commissioner
   David Pond, Commissioner
   Marleene Buttice, Commissioner
   Brandon Terrazas, Commissioner

   The following Planning Commission members were absent:
   Stacy Sigman, Chair

   The following staff members were present:
   Anne Johnson, Community Development Director
   Tawn Hillenbrand, Planning Manager
   Bella Manzo, Planner

4. Work Session
   a. Technology Setup for Planning Commissioner eNotebooks and Email Addresses
      i. This work session was removed from the agenda by Vice Chair Semedalas due to the absence of IT Specialist Bryan Fister.

5. Approval of Minutes from April 9, 2026, were moved for approval by Commissioner Pond and a second to the motion was made by Commissioner Hofmans.

6. Public Hearing: Berthoud Industrial Annexation and Zoning
   A Public Hearing to consider a request for an Annexation and Zoning of a property, known as Berthoud Industrial, located west of and adjacent to 1st Street, east of Clayton Place, north of W County Road 10E and south of E County Road 12.
   a. Planner Bella Manzo provided a staff presentation at 6:18 p.m.
   b. The applicant was represented by Derek Griess. They provided a presentation at 6:26 p.m.
   c. Public testimony opened at 6:31 p.m. and closed at 6:31 p.m. No members of the public provided testimony.
   d. Planning Commissioners deliberated and discussed the proposed Annexation. Discussion opened at 6:31 p.m. and closed at 6:37 p.m.

e. Commissioner Pond moved to send a recommendation of approval to the Town Board of Trustees of the Annexation as proposed. A second to this motion was made by Commissioner Hofmans.
f. Planning Commissioners deliberated and discussed the proposed Zoning. Discussion opened at 6:39 p.m. and closed at 6:39 p.m.
g. Commissioner Buttice moved to send a recommendation of approval to the Town Board of Trustees of the Zoning as proposed. A second to this motion was made by Commissioner Hofmans.
h. The public hearing closed at 6:40 p.m.

7. Public Hearing: Landscape Design Guidelines Amendment
   Public Hearing to review the proposed amendment to the Landscape Design Guidelines, specifically the Wildland Urban Interface (WUI) section and Master Plant Lists, in consideration of the newly adopted Colorado Wildfire Resiliency Code.
   a. Planning Manager Tawn Hillenbrand provided a staff presentation at 6:41 p.m.
   b. Public testimony opened at 6:45 p.m. and closed at 6:45 p.m.
   c. Planning Commissioners deliberated and discussed the proposed amendment. Discussion opened at 6:45 p.m. and closed at 6:46 p.m.
   d. Commissioner Hofmans moved to send a recommendation of approval to the Town Trustees of the amendment as proposed. A second to this motion was made by Commissioner Buttice.
   e. The public hearing closed at 6:47 p.m.

8. Report by Staff:
   a. Planner Bella Manzo provided information on items presented during the May 12 Town Board of Trustees Meeting. The Historic Preservation Advisory Committee Chairperson, Leslie Moore, provided the Committee's 2025 Annual Report. May 2026 was proclaimed to be Historic Preservation Month in Berthoud. The Town of Berthoud Historic Preservation Plan, created in collaboration with stakeholder groups, the public at large, Town Staff, the HPAC, and consultants Chronicle Heritage was presented by consultant John Schuttler. The Town Board of Trustees approved the adoption of the Historic Preservation Plan.
   b. Planning Manager Tawn Hillenbrand provided an update on the Public Art Master plan currently in progress. The community-wide public survey is set to close on May 15. So far, approximately 130 responses have been received. Consultants NineDOTArts are expected to begin work on the first draft of the Public Art Master Plan.
   c. Community Development Director Anne Johnson provided an update on the addition of a Strategic Growth element in the Comprehensive Plan. The State of Colorado requires the Strategic Growth element to be implemented by December 31, 2026.
   d. An update on the Mountain Vista Park (Richardson Park) project was provided by Community Development Director Anne Johnson in response to a question by Commissioner Pond regarding the project status.

9. Adjourn
   The meeting was adjourned by Motion of Commissioner Terrazas and seconded by Commissioner Pond at 7:06 p.m.

_____ _____

Chairperson Secretary

TOWN OF BERTHOUD, COLORADO

NOTICE OF PUBLIC HEARING
Amendments to the Berthoud Landscape Guidelines

PUBLIC NOTICE IS HEREBY GIVEN of public hearings before the Planning Commission on May 14, 2026 at 6 p.m. and the Town Board on both June 9 and June 23, 2026 at 6:30 p.m. All public hearings will be to consider amendments to the Berthoud Landscape Guidelines including a symbol on the plat list indicating firewise plant material and referencing statewide resources for wildfire mitigation. The public hearings will be held at Town Hall 807 Mountain Avenue in Berthoud 80513.

Given and posted on this ____ day of April, 2026.

Given and posted on this ___ day of May, 2026.

Given and posted on this _____ day of June, 2026

Published: Berthoud Surveyor, June____, 2026

Board of Trustees Information

Public Safety Department

Meeting Date:	**June 9, 2026**
Agenda Title/Subject:	**Amendment to Chapter 17 of Berthoud Municipal Code Regarding Off Highway Vehicles - Ordinance 1385**
Type of Item:	**Regular Item**
Purpose:	**To Amend Chapter 17 Regarding Off-Highway Vehicles**
Presented by:	**Sergeant Williamson**

Attachments:

1. Existing 17.19 Code Language Regarding Off Highway Vehicles
2. Ordinance 1385 Regarding Off Highway Vehicles

Background:

The proposed Ordinance 1385 amends Chapter 17.19 of the Berthoud Municipal Code to clarify the operation of off-highway vehicles and toy vehicles within the Town of Berthoud. The proposed amendment clarifies and expands the existing code to prohibit operation of off-highway vehicles on public streets, sidewalks, trails, parks, rights-of-way, Town-owned property, and other publicly accessible areas. Operation of off-highway vehicles inconsistent with these provisions would constitute a public nuisance unless specifically exempted. The ordinance also incorporates new definitions that are consistent with Colorado Revised Statutes for consistency and establishes limited exceptions for crossing Town streets between county roads where such vehicles are otherwise permitted, during declared emergencies when authorized by the Town, and for agricultural operations. These amendments are intended to improve public safety, reduce conflicts between recreational vehicle use and other public uses, and provide clear enforcement standards.

Update/Next Steps:

If approved, there are no additional steps needed.

Fiscal Impact and Fund Source:

There will not be a fiscal impact related to the addition of this code amendment.

Community Touchstones:

This proposed amendment to Chapter 17 supports the Town's Community Identity, Resiliency, and Sustainability touchstones by promoting the safe and appropriate use of public spaces, reducing potential conflicts between recreational vehicle operations and other community uses. The proposed amendment establishes clear regulations that help preserve the quality of life for residents and support the character of the Berthoud community.

Recommended Action(s):

A Board member may move to adopt Ordinance 1385, an Ordinance of the Town of Berthoud Amending Section 17.19 of the Berthoud Municipal Code Prohibiting the Operation of Certain Vehicles Within the Town of Berthoud and Clarifying Permitted Uses. Followed by a second and a roll call vote.

17.19 Off Highway Vehicles

The operation anywhere within the Town on any sidewalk or parking lot open to the public of any off-highway vehicle, motorbike, scooter, minibike or other such motorized vehicles not designed and equipped for operation on a public street or highway, is hereby declared and deemed a public nuisance, and it shall be unlawful for a person to cause or maintain such public nuisance, except in the following instances:

A. Exemptions:

1. On private property when authorized by the owner of such private property;
2. When crossing streets or when crossing roads, highways, or railroad tracks at an angle of approximately 90 degrees to the direction of the road, highway or railroad tracks at a place where no obstruction prevents a quick and safe crossing.
3. When traversing a bridge or culvert.
4. During emergency conditions declared by the proper state or local authority.
5. When using off-highway vehicle for agricultural purposes.

Ordinance No. 1385
Series 2026

An Ordinance of the Town of Berthoud Amending Section 17.19 of the Berthoud Municipal Code Prohibiting the Operation of Certain Vehicles Within the Town of Berthoud and Clarifying Permitted Uses

Whereas, the Berthoud Municipal Code currently regulates the operation of off-highway vehicles within the Town of Berthoud; and

Whereas, the Town Board finds it necessary to clarify where and under what conditions off-highway and toy vehicles may be operated and under what circumstances such operation shall be deemed a nuisance.

Now Therefore be it Ordained by the Board of Trustees of the Town of Berthoud as follows:

Section 1. Chapter 17.19 of the Berthoud Municipal Code is hereby amended as follows:

Section 17.19 - Off Highway Vehicles

A. Definitions. For the purposes of this Chapter 17.19, the following terms shall have the following meanings:

Off-Highway Vehicle: the same meaning as set forth by C.R.S. § 33-14.5-101(3), as amended.

Toy Vehicle: the same meaning as set forth by C.R.S. § 42-1-102(103.5), as amended.

B. It is unlawful and shall be a public nuisance to operate an off-highway vehicle or toy vehicle on the public street, road, highway, sidewalk, trail, park, parking lot open to the public, Town-owned property, or right of way, except in the following cases:

1. When crossing a Town street to go from one County road to another County road, if off-highway and toy vehicles are permitted on County roads, and only when such across is at an angle of approximately 90 degrees to the direction of the road and at a place where no obstruction prevents a quick and safe crossing.

2. During emergency conditions declared by Town when the use of OHVs or toy vehicles is expressly permitted by the Town in its emergency declaration; and

3. When using off-highway vehicles for agricultural purposes.

Section 2. Severability. If any provision of this Ordinance is determined to be invalid for any reason, such determination shall not affect the validity of the remaining provisions of this Ordinance, and the Board of Trustees hereby declares that it would have passed this Ordinance and each provision thereof irrespective of the fact that any one or more provisions may be declared invalid.

Section 3. Repeal. Existing ordinances or provisions thereof inconsistent with the provisions of this Ordinance are hereby repealed, except that this repeal shall not affect or prevent the prosecution or punishment of any person for any act done or committed in violation of any ordinance hereby repealed prior to the effective date of this Ordinance.

Introduced, approved and adopted this ___ day of _____, 2026.

Town of Berthoud

_____
William Karspeck, Mayor

Attest

_____
Christian R. Samora, CMC, Town Clerk