



Garden Spot of Colorado

MEETING OF THE PLANNING COMMISSION

Town Board Room
807 Mountain Avenue
Town of Berthoud, Colorado
Thursday, January 8, 2026, 6:00 p.m.

This is an IN-PERSON meeting at the location and time noted above.

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

1. Call Meeting To Order
2. Pledge Of Allegiance
3. Roll Call
4. Approval Of Meeting Minutes

Documents:

[2025 12 11 MINUTES PC.PDF](#)

5. Public Hearing: Fickel Farms 5th Filing Preliminary Plat

A Public Hearing to consider a request for a Preliminary Plat, known as Fickel Farm 5th Filing, located south of Mountain Avenue at Pyramid Peak Street.

Documents:

[00 FF5TH PRELIMINARY PLAT PC INFORMATION FORM.PDF](#)
[01 FF5TH PRELIMINARY PLAT PC STAFF REPORT.PDF](#)
[01.1 FF5TH COMBINED STAFF REPORT ATTACHMENTS.PDF](#)
[02 FF5TH PRELIMINARY PLAT RESOLUTION XX 2025.PDF](#)

6. Work Session: Annual Review Of Ordinance 1241 And Member Terms

Annual Review of Ordinance 1241, Membership in the Town of Berthoud Planning Commission; Terms and membership

Documents:

**01 PC INFO FORM ORD 1241.PDF
02 ORDINANCE 1241 RULES REGARDING PLANNING COMMISSION
MEMBERSHIP.PDF**

7. Work Session: Berthoud Municipal Code, Chapter 30, Section 5: Subdivision And Land Use

Review of Section 5, Subdivision and Land Use as a result of Ordinance 1376, repeal and replacement of the Berthoud Land Use Code, Chapter 30 of the Municipal Code

Documents:

**03 PC INFO FORM ORD 1367.PDF
04 SECTION 5 SUBDIVISION AND LAND USE.PDF**

8. Report By Staff

9. Adjourn

Individuals needing special accommodation may request assistance by contacting the Town Clerk at 807 Mountain Avenue, Berthoud, Colorado 80513, 970-532-2643 at least 24 hours in advance.



Garden Spot of Colorado

**Town of Berthoud Planning Commission
Town Hall
Board Room
807 Mountain Avenue, Berthoud, CO 80513
December 11, 2025 at 6:30 p.m.**

1. Meeting called to order – Chairperson Anderson at 6:31 p.m.
2. Pledge of Allegiance
3. Roll Call

The following Planning Commission members were present:

Karen Anderson, Chair
Abigail Smith, Vice Chair
Marc Hofmans, Commissioner
Nick Semedalas, Commissioner
Bryce Filho, Commissioner
David Pond, Commissioner
Stacy Sigman, Commissioner

The following staff members were present:

Anne Johnson, Community Development Director
Tawn Hillenbrand, Planning Manager
Bella Manzo, Planner

4. Approval of Minutes from November 13, 2025, were moved for approval by Commissioner Sigman and a second to the motion was made by Commissioner Semedalas.
5. Public Hearing: Gateway Apartments
The Public Hearing to consider the request for the Gateway Apartments Neighborhood Master Plan and Rezone was cancelled at the request of the applicant in order to return to development review. The Public Hearing before the Planning Commission will be rescheduled after additional development review.
6. Report by Staff:
 - a. The Town Board of Trustees heard the second reading of the 2024 I-Codes and Fire Code and approved the adoption of both codes at their meeting on November 25, 2025.
 - b. The Town Board of Trustees heard and approved a historic alterations request for the property at 315 Mountain Ave at their meeting on November 25, 2025.
 - c. The Town Board of Trustees heard the second reading of updates to the Town of Berthoud Three-Mile Plan and Engineering and Infrastructure Design Standards and Construction Specifications, and approved these updates at their meeting on December 9, 2025. These updates will appear by reference in Section 30-6-102 of the Berthoud Municipal Code, and as an insert in the 2021 Comprehensive Plan.

d. There will be a public hearing for a land use matter at the meeting of the Planning Commission on January 8, 2026.

7. Adjourn

The meeting was adjourned by Motion of Commissioner Semedalas and seconded by Commissioner Hofmans at 6:57 p.m.

Chairperson

Secretary

PLANNING COMMISSION INFORMATION

COMMUNITY DEVELOPMENT DEPARTMENT



Meeting Date:	January 8, 2026
Agenda Title/Subject:	Public Hearing to consider a request for a Preliminary Plat, known as Fickel Farm 5 th Filing, located south of Mountain Avenue at Pyramid Peak Street.
Type of Item:	Public Hearing
Purpose:	Request for approval of a Preliminary Plat to create a residential development consisting of 104 townhome lots and 50 paired home (duplex) lots.
Presented by:	Tawn Hillenbrand, Planning Manager

ATTACHMENTS:

- Staff Report with application materials
- Resolution ## (Series 2026)

BACKGROUND:

Fickel Farm 5th Filing received Neighborhood Master Plan and Rezone approval in November 2024. The currently undeveloped property, consisting of two parcels, is approximately 14.52 acres and is currently zoned Urban Residential. The proposed Preliminary Plat is in substantial compliance with the Neighborhood Master Plan approved in November 2024. The road network, lot configuration, and proposed open space areas are aligned with the previously approved plan. Minor modifications have been made to one stormwater detention area, and the overall density has been reduced from the approved Neighborhood Master Plan. The modification to the stormwater detention area and the reduction in density are not considered substantial changes, and therefore, are consistent with the approved Neighborhood Master Plan.

Preliminary Plat is the next phase of the overall land use approval process for a subdivision following Neighborhood Master Plan and Rezone approval.

This is the applicant's second application for the Fickel Farm 5th Filing Preliminary Plat. The first application was withdrawn by the Applicant following the November 13, 2025, Planning Commission meeting and prior to the Board of Trustees hearing.

UPDATE/NEXT STEPS:

Tonight, the Planning Commission will hear one request of the applicant. The purpose of the Preliminary Plat is to provide the Town with an overall plat and the associated engineering for the proposed development.

Following the Planning Commission public meeting, the Town Board of Trustees will hear

the request at their regularly scheduled hearing on February 10, 2026. The applicant will be required to record the Preliminary Plat if approved by the Town Board of Trustees, and any Conditions of Approval will need to be addressed prior to submitting an application for the final process. The final planning process step would be a public hearing before the Planning Commission for a Final Plat. The Final Plat phase includes review of the Construction Documents (100% completeness), referral agency review, analysis of the utilities and infrastructure planned for the project, off-site and on-site improvements, for example. Both the Preliminary and Final platting must adhere to the Neighborhood Master Plan.

Referral agencies such as the school district, fire protection district, utility and infrastructure providers, for example, have reviewed the Preliminary Plat applications. Referral agency comments at this phase are incorporated into the Staff Report and are used by the applicant when they are preparing their next land use application materials for review. Sanitary sewer and water main engineering designs, the need for water dedication, and school bus stop locations, if needed, for example are reviewed at the Preliminary Plat and Final Plat stages. The developer has provided Construction Documents with this phase and will be required to update with the next or final phase of development, and these will be reviewed by the Town Engineer and supportive agencies.

FISCAL IMPACT AND FUND SOURCE:

There is no negative impact to the Town in consideration of this request for Preliminary Plat. Public notice is funded through fees paid by the applicant. Development review is funded through fees paid by the applicant.

COMMUNITY TOUCHSTONES:

Consideration of this request does not negatively impact community touchstones and in fact is supportive of the 2021 Comprehensive Plan. The proposed Preliminary Plat is consistent with the previously approved Neighborhood Master Plan which aligns with the vision of the Comprehensive Plan.

RECOMMENDED ACTION(S):

Staff recommends approval of the request. See suggested motions in the Staff Report.



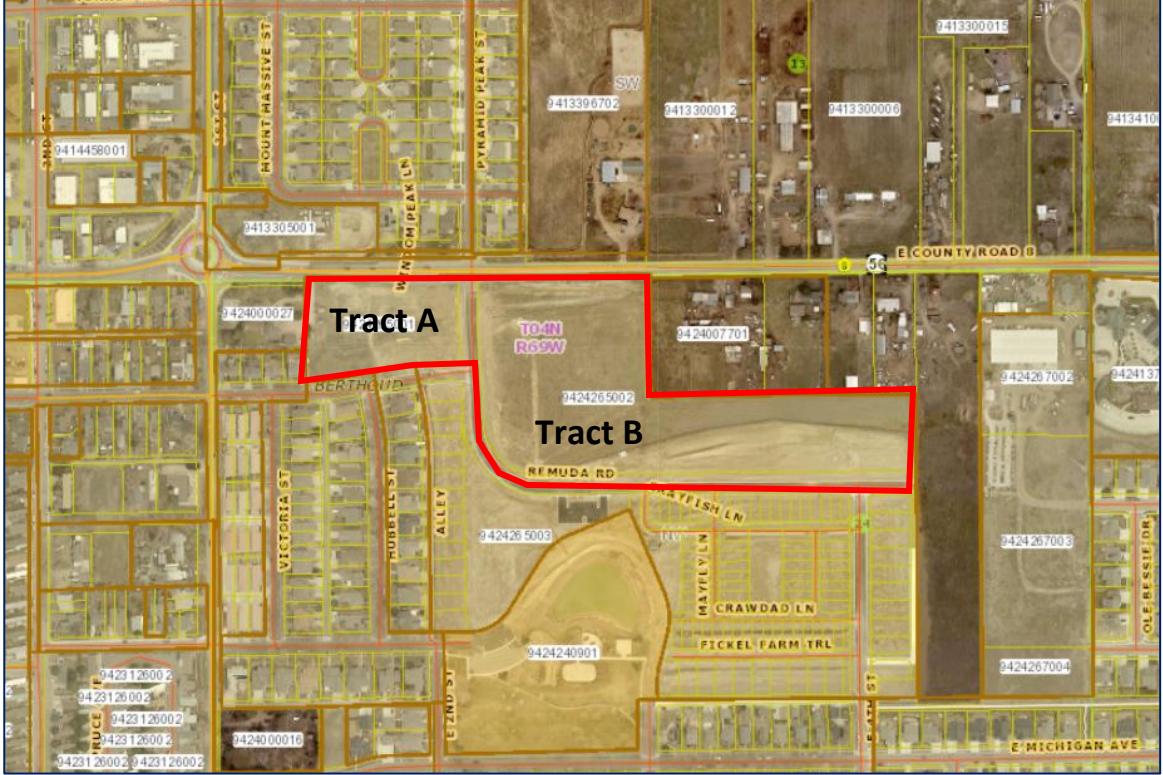
Garden Spot of Colorado

807 Mountain Avenue | PO Box 1229 | Berthoud, CO 80513 | O: 970.532.2643 | F: 970.532.0640 | Berthoud.org

STAFF REPORT: FICKEL FARM 5TH FILING PRELIMINARY PLAT

DATE: January 8, 2026

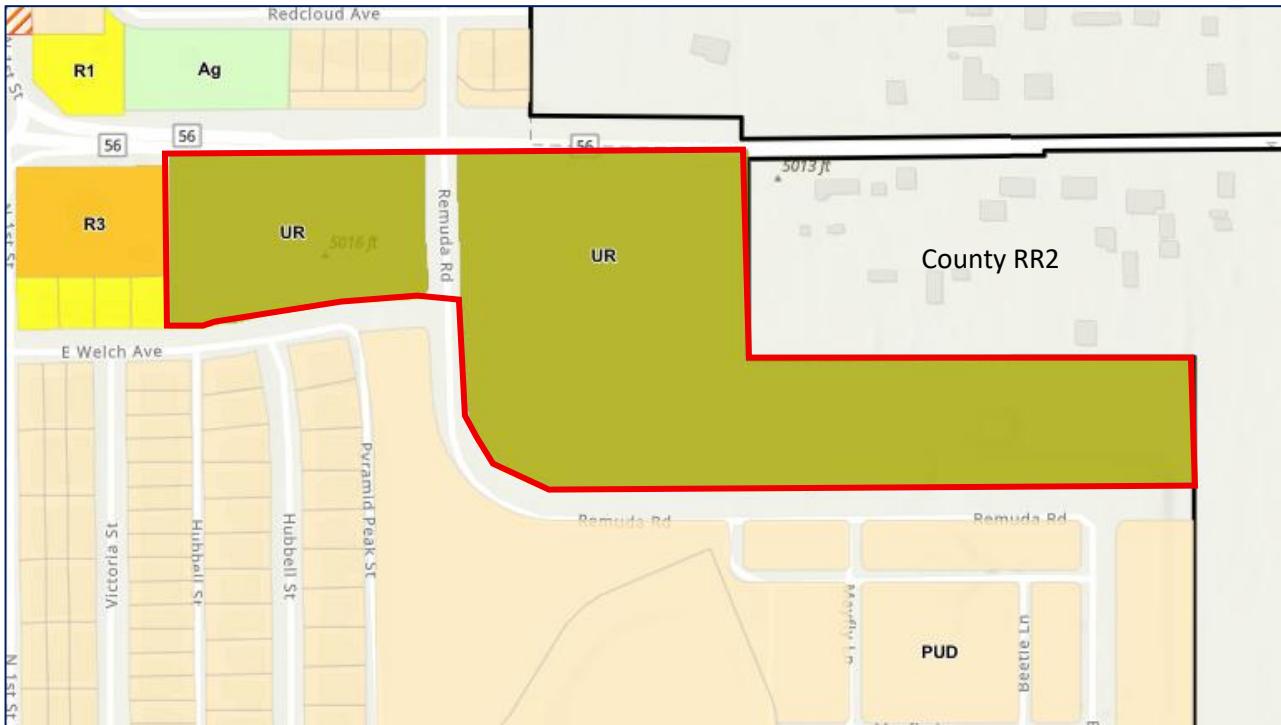
GENERAL INFORMATION

Applicant:	Kurt Jones – TruMark Homes Kristin Turner – TB Group	Size: 14.52 acres
Site Location:	<p>Tract A: parcel #9424265001 and Tract B: parcel #9424265002. The two subject parcels are located south of Mountain Avenue at the intersection of Pyramid Peak Street.</p>  <p>Subject property is outlined in red.</p>	
Applicant's Request:	<p>The Applicant is requesting Preliminary Plat approval to create a residential development consisting of 104 townhome lots and 50 paired home (duplex) lots.</p>	
Current Zoning:	<p>UR – Urban Residential</p>	
ZONING DISTRICT INFORMATION		
	<u>UR (Townhome)</u>	<u>UR (Paired Home)</u>
Max Density	Defined by approved NMP	Defined by approved NMP
Min. Lot Width	16'	20'
Front Setback	8'-12'	8'-12'
Side Setback	5' / 10' corner side (0' attached)	5' / 10' corner side (0' attached)
Rear Setback	5' rear loaded garage	5' rear loaded garage
Max Building Height:	30'	30'

SURROUNDING ZONING, LAND USE AND REQUIRED BUFFERS

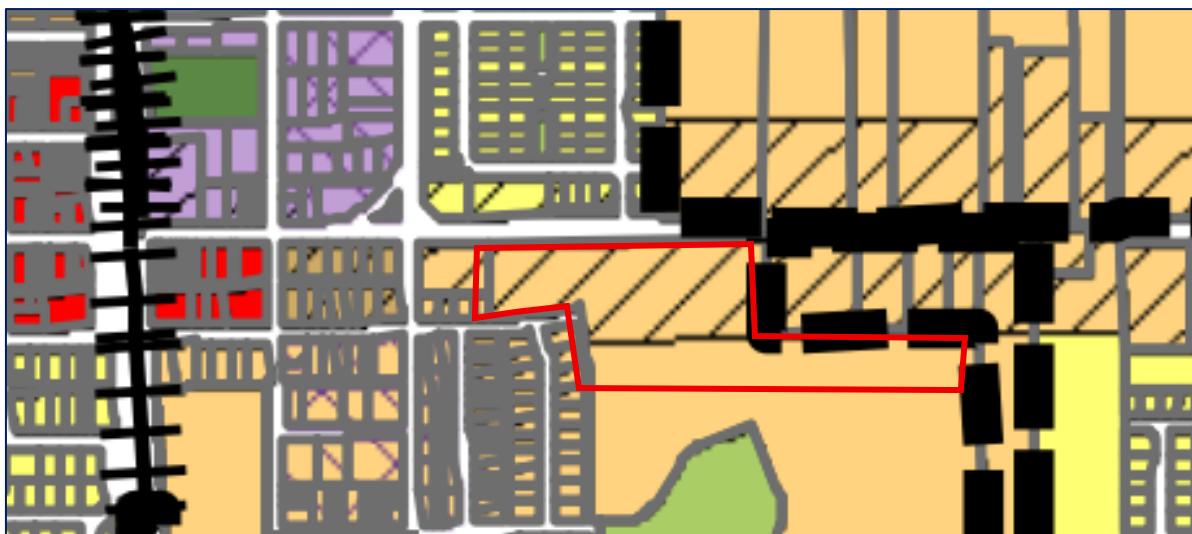
	<u>Adjacent Zoning</u>	<u>Adjacent Land Uses</u>	<u>Setbacks for Adjacent Zoning</u>
North	AG, PUD, County RR2	Single Family, Single Family/Ag	N/A
South	PUD	Single Family, Paired Homes (Duplex)	N/A
East	County RR2	Single Family/Ag	N/A
West	R3, R1, PUD	Single Family	N/A

Town Zoning Map:



BERTHOUD COMPREHENSIVE PLAN AND MASTER PLANS

Berthoud Comprehensive Plan - Future Land Use Map:



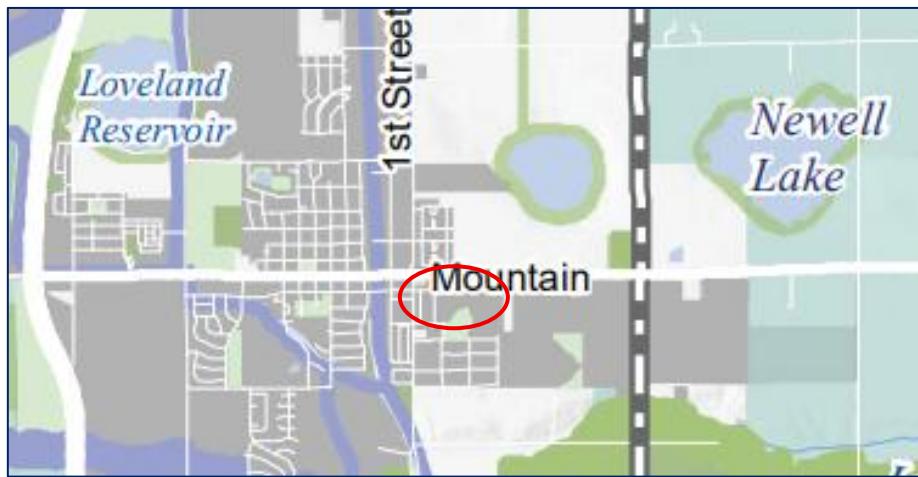
Urban Residential Character District (area in orange) and Mountain Avenue Corridor (area in hatch)

Berthoud Trails Master Plan:



Proposed Regional Trail (purple line) and Planned Neighborhood (orange line)

Berthoud Open Space Plan:



Proposal

The applicant proposes Preliminary Plat approval to create 104 paired home (duplex) lots and 50 townhome lots. The proposed Preliminary Plat is in substantial compliance with the approved Neighborhood Master Plan approved in November 2024. The Preliminary Plat, if approved, would allow the applicant to apply for a Final Plat that would formally subdivide the lots.

Background

The currently undeveloped property is approximately 14.52 acres and is currently zoned Urban Residential. Fickel Farm 5th Filing received Neighborhood Master Plan and Rezone approval in November 2024. The approved Neighborhood Master Plan includes 115 townhome lots and 50 paired home (duplex) lots.

The proposed Preliminary Plat is consistent with the approved Neighborhood Master Plan with two minor modifications:

1. The first minor modification is the size of the stormwater detention area located at the curve of Pyramid Peak Street and Remuda Road. This detention area was expanded as result of the Preliminary Drainage Study to accommodate stormwater flows.
2. The second minor modification is a reduction in the overall density of the development. The approved Neighborhood Master Plan proposed 115 townhome lots and 50 paired home lots, while this Preliminary Plat request proposes 104 townhome lots and 50 paired home lots. The overall density has been reduced from 165 total lots to 154 total lots.

These modifications do not change the overall layout of the development, road network, or lot configuration. And while the density has changed, a reduction in density is not considered a substantial change. Therefore, the Preliminary Plat is considered to be consistent with the approved Neighborhood Master Plan.

This is the applicant's second application for the Fickel Farm 5th Filing Preliminary Plat. The first application was withdrawn by the Applicant following the November 13, 2025, Planning Commission meeting and prior to the Board of Trustees hearing.

Preliminary Plat Review Criteria (Intent Statements)

In addition to all provisions of this Code, the Town shall use the following Intent Statements to evaluate the applicant's request:

30-5-101 Intent	Finding	Rationale
A. Complement the Town's historic development patterns and fit into the context of the existing and planned development on surrounding properties.	Meets the Intent	<p>The preliminary plat is a functional system of land use. The road network, lot configuration, density, and proposed open space areas are aligned with the previously approved Neighborhood Master Plan, and thereby the historic development patterns of the existing and planned development on surrounding properties.</p> <p>Those residential lots being created with this plat meet the standards of the UR – Urban Residential zone district and are consistent with the lots developed in the Fickel Farm 4th Filing.</p>
B. Adhere to the vision established in the Comprehensive Plan, Land Development Code, Overlay Districts and Master Plans covering the property.	Meets the Intent	<p>The plan is consistent with the approved Neighborhood Master Plan (2024) which was found to be in alignment with the Comprehensive Plan, Land Development Code, Overlay Districts and Master Plans.</p> <p>The Future Land Use Map envisions this area as Urban Residential. The approved Neighborhood Master Plan is consistent with the Future Land Use Map, and the Preliminary Plat is consistent with the approved Neighborhood Master Plan.</p>

		<p>The creation of townhome and paired home lots conforms to Berthoud's Development Code for the UR – Urban Residential district.</p> <p>The project provides adequate public sidewalks, trails, and pedestrian connections to allow walkability within the project area and well beyond. Once developed, the project will be well connected to the neighboring residential areas.</p>
30-5-101 Intent	Finding	Rationale
C. Ensure there is sufficient provision for public utilities, services and facilities. The development shall be designed with consideration of the future needs as well as adequately managing the impact of the proposed development on the surrounding area and Town in general. Hazardous conditions on- and off-site shall not be created by the proposal.	Meets the Intent	<p>As part of the Preliminary Plat application, the applicant provided a Preliminary Traffic Impact Study (TIS), Preliminary Utility Report, and Preliminary Construction Documents. Additionally, the required dry utility easement locations are included on the Plat. The plans were reviewed by Town Staff as well as outside referral agencies. Staff and referral agencies find that the applicant has provided adequate plans for utilities and transportation designs for Preliminary Plat. Final versions of these reports/plans, at 100% completeness, will be required at Final Plat submittal.</p> <p>The proposed project does not appear to create hazardous conditions on- or off-site.</p>
D. Mitigate negative impacts of the development on the surrounding property.	Meets the Intent	<p>The applicant provided the following required preliminary plans and reports which were reviewed by Town Staff and referral agencies specializing in specific areas of study:</p> <ul style="list-style-type: none"> - Preliminary Drainage Plan - Preliminary Utility Report - Soils Report (Geotechnical Report) - Preliminary Landscape Plan - Preliminary Traffic Impact Study (TIS) <p>Staff and referral agencies found that the reports and plans identify and satisfactorily mitigate impacts to surrounding property.</p>
E. Addresses a need or desirability within Berthoud and the development proposal will help achieve a balance of land use, create a specific sense of place through place-making in each distinct neighborhood, provide a variety of housing types, meet architectural diversity standards, and integrate meaningful neighborhood identity features into the development according to Town goals.	Meets the Intent	<p>The Future Land Use Map envisions this area as Urban Residential. Additionally, the portion of the property located adjacent to Mountain Avenue is in the Mountain Avenue Overlay District, specifically Berthoud East Character District.</p> <p>The Comprehensive Plan states that the dominant land use in the Urban Residential Character District will be a mix of residential housing types with non-residential uses to support the neighborhoods. Housing types should include single-family detached homes, single-family attached homes (paired homes), townhomes, and multi-family options. Urban Residential areas should generally maintain moderate to high density.</p> <p>The proposed Fickel Farm 5th Filing Preliminary Plat proposes alley loaded Townhomes along Mountain Avenue transitioning to Paired Homes (duplexes) further</p>

		<p>into the development along Pyramid Peak Street, adjacent to the recently constructed paired homes in Fickel Farm 4th Filing. The proposed product type (townhomes and paired homes) address changes in the housing market including a desire for smaller homes at different price points. The proposed project meets the housing diversity standards intended for the Urban Residential Character District while also potentially providing more attainable housing options. The proposed density would be consistent with the intent of the Urban Residential Character District.</p> <p>The Mountain Avenue Overlay District envisions this area as Berthoud East Character District with the primary use being residential with mix-use commercial as the secondary use. The plan states that mixed-use commercial should be located near County Line Road 1, away from existing residential neighborhoods; appropriate transitions from existing residential neighborhoods are critical. The Fickel Farm 5th Filing NMP does not include a commercial component, which supports the concept plan for the Berthoud East Character District.</p>
30-5-101 Intent	Finding	Rationale
F. Meet all applicable local, state and federal permits have been or will be obtained.	NA	Local, state and federal permits are not required at the Preliminary Plat phase. The Applicant/Developer will be required to obtain all required permits following Final Plat.
G. Address such other matters as the Town may deem necessary in order to protect the best interest of the public.	NA	The approved Neighborhood Master Plan did not contain conditions that needed to be addressed with the Preliminary Plat.

PUBLIC NOTICE AND COMMENT

Notice of the Planning Commission Public Hearing and Town Board of Trustees hearing has been mailed to property owners within 500 feet of the subject property on December 22, 2025, a legal ad published on December 21, 2025, and the property was posted as required by the Development Code on December 22, 2025.

As of the drafting of this report (December 30, 2025), Staff have received zero (0) public comment emails regarding the proposed request.

The Fickel Farm 5th Filing Preliminary Plat application completed one (1) round of referral agency and staff review in the following sequence:

Submittal Number	Review documents submitted by Applicant on:	Staff and Referral Agency comments provided to Applicant on:
1st and final	December 15, 2025	December 29, 2025

FINDINGS AND RECOMMENDATIONS

Staff find that the proposed Fickel Farm 5th Preliminary Plat meets the intent statements as provided in Section 30-5-101 of the Berthoud Development Code. Therefore, Staff recommends Planning Commission make a motion to recommend approval of the Fickel Farm 5th Filing Preliminary Plat to the Town Board of Trustees.

Attachments

1. Application form
2. Preliminary Plat
3. Preliminary Landscape Plan
4. Approved Neighborhood Master Plan (for reference only)
5. Preliminary Traffic Analysis



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

DEVELOPMENT REVIEW APPLICATION

All required information must be provided before submittal will be accepted and deemed complete.

To be complete, the application must include all items identified on the submittal checklist.

Please complete both sides of application form.

Parcel Number(s): 9424265001 & 9424265002		
Site Address: SE side of Intersection of Mountain Avenue & Pyramid Peak Street		
Project Name: Fickel Farms 5th Filing		
Brief description of project: A residential subdivision which will consist of a combination townhomes and duplex products.		
APPLICATION TYPE (Check as appropriate):		
<input type="checkbox"/> Annexation	<input checked="" type="checkbox"/> Preliminary Subdivision Plat	<input type="checkbox"/> Final Site Plan
<input type="checkbox"/> Rezoning	<input type="checkbox"/> Final Subdivision Plat	<input type="checkbox"/> PUD Amendment
<input type="checkbox"/> Concept Plan	<input type="checkbox"/> Plat Amendment	<input type="checkbox"/> PUD Preliminary Development Plan
<input type="checkbox"/> Minor Subdivision	<input type="checkbox"/> Oil and Gas	<input type="checkbox"/> PUD Final Development Plan
<input type="checkbox"/> Special Use Review	<input type="checkbox"/> ROW Vacation	<input type="checkbox"/> Other _____
APPLICANT		
Name: TruMark Homes (Kurt Jones)		
E-mail: kjones@trumarkco.com	Mailing Address: 8350 E. Crescent Pkwy, Ste. #450	
Phone: 720-346-2800	City/State/Zip: Greenwood Village, CO 80111	
CONTACT PERSON (will receive correspondence from Town Staff/Referral Agencies)		
Name: Kristin Turner		
E-mail: kristin@tbgroup.us	Mailing Address: 444 Mountain Ave.	
Phone: 970-532-5891	City/State/Zip: Berthoud, CO 80513	
OWNER(S) (If different than applicant)		
Name: Edwards Development (Will Edwards)		
E-mail: will@edwardsdevelopment.com	Mailing Address: 506 Shoshoni St, Cheyenne, WY 82009	
Phone: (949) 413-4711	City/State/Zip: 506 Shoshoni St, Cheyenne, WY 82009	
CONSULTANT (Engineer, Surveyor, or Planner)		
Name: Kristin Turner		
E-mail: kristin@tbgroup.us	Mailing Address: 444 Mountain Ave.	
Phone: 970-532-5891	City/State/Zip: Berthoud, CO 80513	

LAND USE INFORMATION		
Existing Use: Vacant		
Proposed Use: Residential		
Existing Zoning: UR	Adjacent zoning / land use:	
Proposed Zoning: (if applicable):		
Number of acres: 14.52 AC	East Side: Larimer County RR2	North Side: Larimer County RR2/HWY 56
Proposed Access: Mountain Ave, Welch Av	West Side: Residential R1	South Side: Residential PUD
UTILITY SERVICE INFORMATION		
Water: Town of Berthoud	Sewer: Town of Berthoud	
PROJECT INFORMATION		
Number of proposed units: 165	Non-Residential Building Area (Sq. Ft.) Proposed: N/A	
Number of phases: TBD	Non-Residential Construction Floor Area Ratio Proposed: N/A	
Number of Units per phase: TBD	Total Number of Parking Spaces: N/A	
Number of lots proposed: 165	<u>Acreage of Site:</u> a. Gross: 14.52	
Lot size minimum: 25x70	b. Right-of-Way: 3.01	
Lot size maximum: 28x71	c. Net (a-b) 11.51	
Lot size average: 26.5 x70.5	Type of Housing Proposed (please check):	
Gross density (units/acre): 11.3	<input type="checkbox"/> Future Single Family	<input checked="" type="checkbox"/> Townhouse
Net density (units/acre): 14.3	<input checked="" type="checkbox"/> Duplex	<input type="checkbox"/> Condominium
Area and percent open space: 2.70 OS	<input type="checkbox"/> Multi-family	(# of units:)

Signatures are required for ALL Property Owners and the Applicant

I hereby certify that I am the lawful owner of the parcel(s) of land that this application concerns and consent to the action. I hereby permit Town of Berthoud staff to enter upon the property for the purposes of inspection relating to the application. Building Permits will not be accepted while this application is in process.

Signed by:

 Will Edwards
 D9F34FECDF0E4DD...

Date: 12/8/2025

Property Owner(s): _____ Date: _____

Property Owner(s): _____ Date: _____

In submitting the application materials and signing this application agreement, I acknowledge and agree that the application is subject to the applicable processing and public hearing requirements set forth in the Development Code.

Signed by:

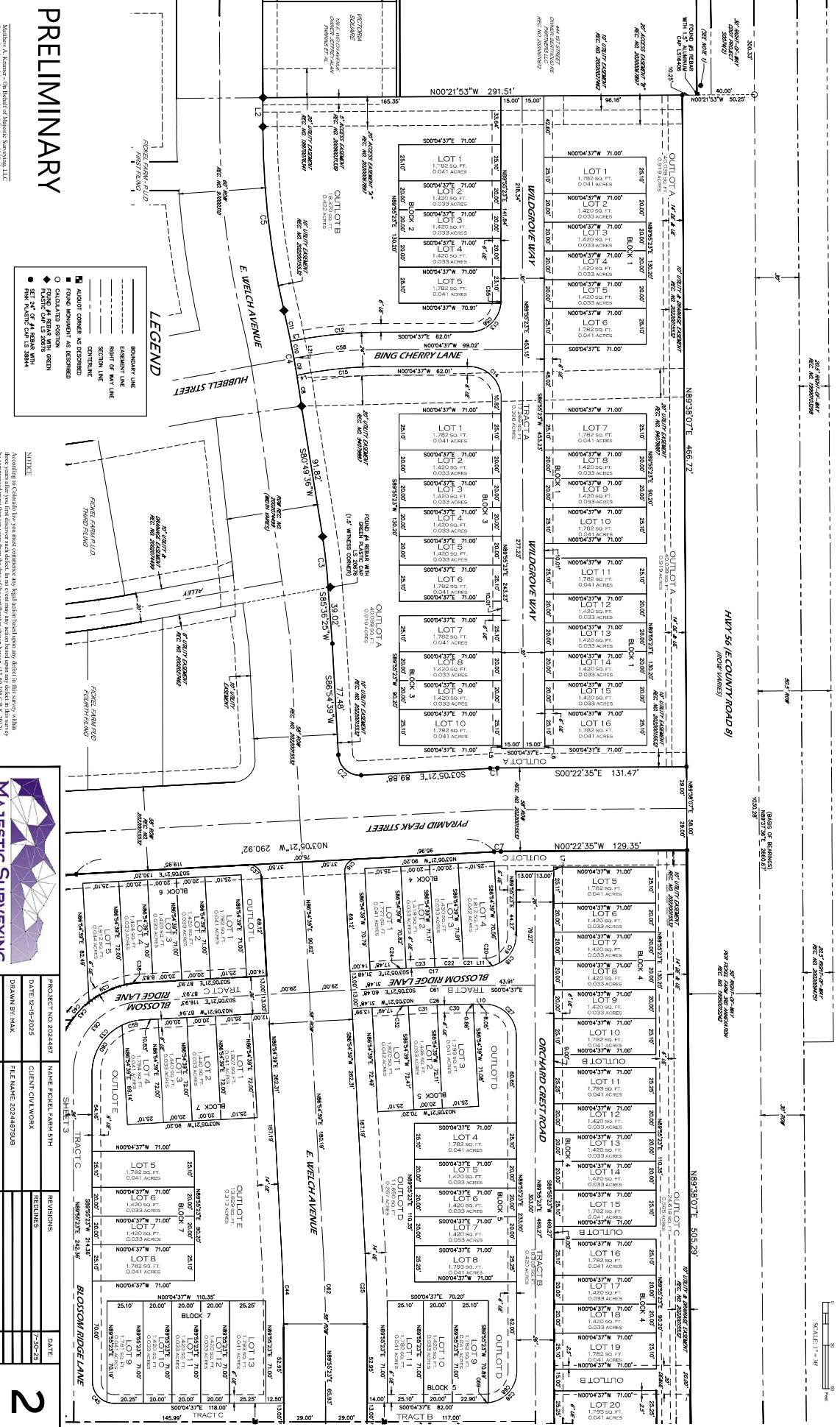
 Kurt Jones
 FDE59AE10FFF412...

Date: 12/8/2025

FOR OFFICE USE ONLY	Received By:	Date:
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FICKEL FARM FIFTH FILING

BEING A REPLAT OF TRACTS 1 & 2, FICKEL FARM PUD FOURTH FILING SITUATE IN THE NW QUARTER OF SECTION 24, TOWNSHIP 4 NORTH, RANGE 69 WEST OF THE 6TH P.M., TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO



Hwy-56 (E, County Road 8)
(Roundabout)

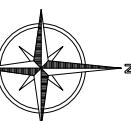
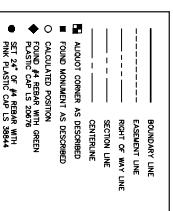
Av. 56' Paved
Rte. 802
Rte. 802
Rte. 802
Rte. 802
Rte. 802

Hwy-56 (E, County Road 8)
(Roundabout)

Av. 56' Paved
Rte. 802
Rte. 802
Rte. 802
Rte. 802
Rte. 802

FICKEL FARM FIFTH FILING

BEING A REPLAT OF TRACTS 1 & 2, FICKEL FARM PUD FOURTH FILING
SITUATE IN THE NW QUARTER OF SECTION 24, TOWNSHIP 4 NORTH,
RANGE 69 WEST OF THE 6TH P.M.,
TOWN OF BERTHOUD, COUNTY OF LARIMER, STATE OF COLORADO



LEGEND

MONUMENT

FOUND 4 YEAR
ROUND SLATE
PLATE

1.150 SQ. FT.

1.420 SQ. FT.

1.782 SQ. FT.

2.160 SQ. FT.

2.530 SQ. FT.

3.000 SQ. FT.

3.470 SQ. FT.

3.940 SQ. FT.

4.410 SQ. FT.

4.880 SQ. FT.

5.350 SQ. FT.

5.820 SQ. FT.

6.290 SQ. FT.

6.760 SQ. FT.

7.230 SQ. FT.

7.700 SQ. FT.

8.170 SQ. FT.

8.640 SQ. FT.

9.110 SQ. FT.

9.580 SQ. FT.

10.050 SQ. FT.

10.520 SQ. FT.

11.990 SQ. FT.

12.460 SQ. FT.

12.930 SQ. FT.

13.400 SQ. FT.

13.870 SQ. FT.

14.340 SQ. FT.

14.810 SQ. FT.

15.280 SQ. FT.

15.750 SQ. FT.

16.220 SQ. FT.

16.690 SQ. FT.

17.160 SQ. FT.

17.630 SQ. FT.

18.100 SQ. FT.

18.570 SQ. FT.

19.040 SQ. FT.

19.510 SQ. FT.

20.980 SQ. FT.

21.450 SQ. FT.

21.920 SQ. FT.

22.390 SQ. FT.

22.860 SQ. FT.

23.330 SQ. FT.

23.800 SQ. FT.

24.270 SQ. FT.

24.740 SQ. FT.

25.210 SQ. FT.

25.680 SQ. FT.

26.150 SQ. FT.

26.620 SQ. FT.

27.090 SQ. FT.

27.560 SQ. FT.

28.030 SQ. FT.

28.500 SQ. FT.

28.970 SQ. FT.

29.440 SQ. FT.

29.910 SQ. FT.

30.380 SQ. FT.

30.850 SQ. FT.

31.320 SQ. FT.

31.790 SQ. FT.

32.260 SQ. FT.

32.730 SQ. FT.

33.200 SQ. FT.

33.670 SQ. FT.

34.140 SQ. FT.

34.610 SQ. FT.

35.080 SQ. FT.

35.550 SQ. FT.

36.020 SQ. FT.

36.490 SQ. FT.

36.960 SQ. FT.

37.430 SQ. FT.

37.900 SQ. FT.

38.370 SQ. FT.

38.840 SQ. FT.

39.310 SQ. FT.

39.780 SQ. FT.

40.250 SQ. FT.

40.720 SQ. FT.

41.190 SQ. FT.

41.660 SQ. FT.

42.130 SQ. FT.

42.600 SQ. FT.

43.070 SQ. FT.

43.540 SQ. FT.

44.010 SQ. FT.

44.480 SQ. FT.

44.950 SQ. FT.

45.420 SQ. FT.

45.890 SQ. FT.

46.360 SQ. FT.

46.830 SQ. FT.

47.300 SQ. FT.

47.770 SQ. FT.

48.240 SQ. FT.

48.710 SQ. FT.

49.180 SQ. FT.

49.650 SQ. FT.

50.120 SQ. FT.

50.590 SQ. FT.

51.060 SQ. FT.

51.530 SQ. FT.

51.990 SQ. FT.

52.460 SQ. FT.

52.930 SQ. FT.

53.400 SQ. FT.

53.870 SQ. FT.

54.340 SQ. FT.

54.810 SQ. FT.

55.280 SQ. FT.

55.750 SQ. FT.

56.220 SQ. FT.

56.690 SQ. FT.

57.160 SQ. FT.

57.630 SQ. FT.

58.100 SQ. FT.

58.570 SQ. FT.

59.040 SQ. FT.

59.510 SQ. FT.

60.980 SQ. FT.

61.450 SQ. FT.

61.920 SQ. FT.

62.390 SQ. FT.

62.860 SQ. FT.

63.330 SQ. FT.

63.800 SQ. FT.

64.270 SQ. FT.

64.740 SQ. FT.

65.210 SQ. FT.

65.680 SQ. FT.

66.150 SQ. FT.

66.620 SQ. FT.

67.090 SQ. FT.

67.560 SQ. FT.

68.030 SQ. FT.

68.500 SQ. FT.

68.970 SQ. FT.

69.440 SQ. FT.

69.910 SQ. FT.

70.380 SQ. FT.

70.850 SQ. FT.

71.320 SQ. FT.

71.790 SQ. FT.

72.260 SQ. FT.

72.730 SQ. FT.

73.200 SQ. FT.

73.670 SQ. FT.

74.140 SQ. FT.

74.610 SQ. FT.

75.080 SQ. FT.

75.550 SQ. FT.

76.020 SQ. FT.

76.490 SQ. FT.

76.960 SQ. FT.

77.430 SQ. FT.

77.900 SQ. FT.

78.370 SQ. FT.

78.840 SQ. FT.

79.310 SQ. FT.

79.780 SQ. FT.

80.250 SQ. FT.

80.720 SQ. FT.

81.190 SQ. FT.

81.660 SQ. FT.

82.130 SQ. FT.

82.600 SQ. FT.

83.070 SQ. FT.

83.540 SQ. FT.

84.010 SQ. FT.

84.480 SQ. FT.

84.950 SQ. FT.

85.420 SQ. FT.

85.890 SQ. FT.

86.360 SQ. FT.

86.830 SQ. FT.

87.300 SQ. FT.

87.770 SQ. FT.

88.240 SQ. FT.

88.710 SQ. FT.

89.180 SQ. FT.

89.650 SQ. FT.

90.120 SQ. FT.

90.590 SQ. FT.

91.060 SQ. FT.

91.530 SQ. FT.

92.000 SQ. FT.

92.470 SQ. FT.

92.940 SQ. FT.

93.410 SQ. FT.

93.880 SQ. FT.

94.350 SQ. FT.

94.820 SQ. FT.

95.290 SQ. FT.

95.760 SQ. FT.

96.230 SQ. FT.

96.700 SQ. FT.

97.170 SQ. FT.

97.640 SQ. FT.

98.110 SQ. FT.

98.580 SQ. FT.

99.050 SQ. FT.

99.520 SQ. FT.

100.990 SQ. FT.

101.460 SQ. FT.

101.930 SQ. FT.

102.400 SQ. FT.

102.870 SQ. FT.

103.340 SQ. FT.

103.810 SQ. FT.

104.280 SQ. FT.

104.750 SQ. FT.

105.220 SQ. FT.

105.690 SQ. FT.

106.160 SQ. FT.

106.630 SQ. FT.

107.100 SQ. FT.

107.570 SQ. FT.

108.040 SQ. FT.

108.510 SQ. FT.

108.980 SQ. FT.

109.450 SQ. FT.

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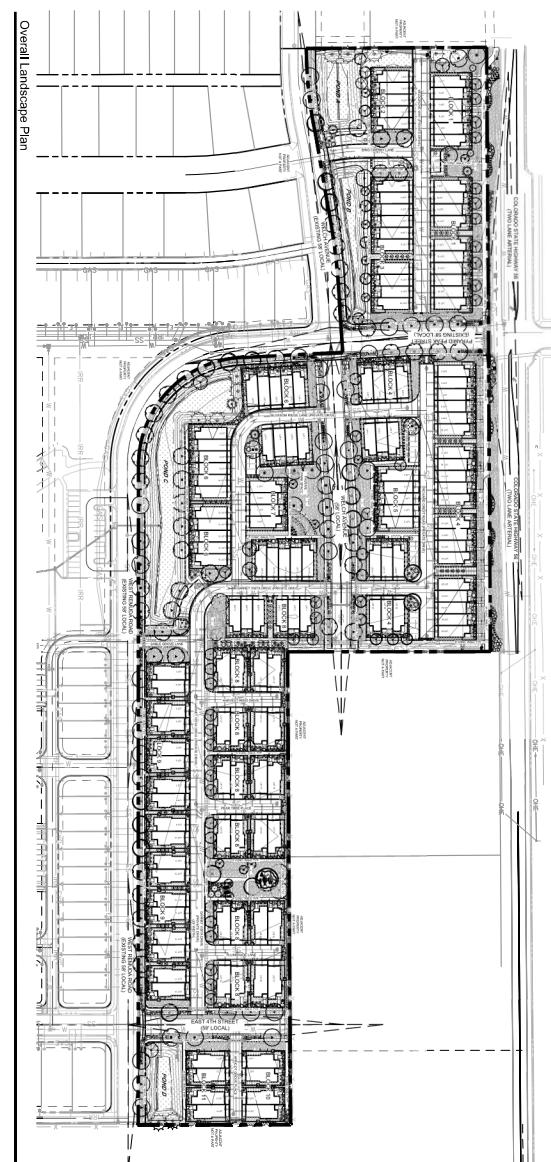
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119.790 SQ. FT.

120.260 SQ. FT.

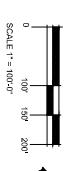
120.730 SQ. FT.

121.200 SQ. FT



Overall Plant Palette

SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	HEIGHT	WIDTH	DIVERSITY	WATER USAGE	REMARKS
DECIDUOUS TREES								
●	16	Catalpa speciosa Western Catalpa	21' cal BB	50'	40'	7%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	17	Ginkgo biloba Western Honeyberry	21' cal BB	60'	50'	7.4%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	25	Gleditsia triacanthos 'Shubert' Honeylocust	21' cal BB	50'	40'	10.5%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	26	Gymnocladus dioicus 'Empress'	21' cal BB	60'	50'	6.5%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	17	Quercus macrocarpa Bur Oak	21' cal BB	80'	70'	74.5%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	6	Fraxinus pennsylvanica 'Reserve' American Linden	21' cal BB	50'	40'	2.6%	Medium	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	18	Ulmus americana 'Pinnifolia' American Elm	21' cal BB	40'	30'	7.5%	Medium	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
EVERGREEN TREES								
○	4	Pinus strobus	8' BB	30'	20'	1.7%	Very Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	5	Braemore Pine	8' BB	25'	12'	2.2%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	1	Pinus strobus 'Franklin'	8' BB	60'	40'	0.4%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	12	Pinus strobus 'Zlatoust'	8' BB	20'	7'	5.2%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	10	Pinus strobus	6' BB	80'	40'	4.3%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
ORNAMENTAL TREES								
○	34	Acers palmatum 'Garnet'	15' cal BB	20'	15'	14.8%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	12	Acers palmatum 'Autumn Gold'	15' cal BB	25'	20'	5.2%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	6	Koelreuteria paniculata Golden Rain Tree	15' cal BB	25'	25'	2.8%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	17	Prunus x 'Okame'	15' cal BB	25'	20'	7.5%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
○	15	Sorbus aucuparia 'Aurea'	15' cal BB	20'	15'	6.5%	Low	WELL BRANCHED WI STRAIGHT TRUNK & CENTRAL LEADER
DECIDUOUS SHRUBS								
○	107	Amelanchier alnifolia	5' cal	10'	8'	Very Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	25	Aronia melanocarpa 'Regal'	5' cal	15'	5'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	95	Physocarpus opulifolius	5' cal	15'	5'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	45	Rubus spectabilis	5' cal	5'	5'	Very Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	61	Euonymus americanus	5' cal	3'	3'	Very Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	17	Aucuba Japonica	5' cal	5'	5'	Very Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	35	Fragaria ananassa 'Champagne'	5' cal	12'	3'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	34	Kolkwitzia amabilis	5' cal	3'	2'	Very Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	167	Wintersweet	5' cal	3'	3'	Very Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	33	Philadelphus coronarius	5' cal	3'	3'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	79	Liquidambar styraciflua 'Lace Leaf'	5' cal	4'	4'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	61	Pentstemon 'Freckles'	5' cal	3'	3'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	58	Prunus 'Tango' Pampas	5' cal	3'	3'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	53	Prunus 'Kurohime'	5' cal	5'	5'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	61	Prunus 'Bessie' 'James' Burn'	5' cal	2.5'	6'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	137	Prunus 'Bella' Sand Cherry	5' cal	1.5'	1.5'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	66	Rubus 'Gurnard' Rosebay	5' cal	3'	3'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	64	Thunbergia 'Coral Cascade'	5' cal	2'	3'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	35	Spirea 'Bridal Veil'	5' cal	15'	3'	Very Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	33	Spirea 'Bloomerang'	5' cal	5'	6'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	19	Vaccinium vitis-idaea 'Moorland Minnow'	5' cal	6'	6'	Low	24'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
EVERGREEN SHRUBS								
○	84	Acers palmatum 'Red Dragon'	5' cal	3'	4'	Low	12'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	33	Skimmia 'Big Bang'	5' cal	5'	6'	Low	12'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
○	47	Thuya 'Gilt Edge'	5' cal	2'	8'	Low	12'(H) FULL SPECIMEN EVENLY SPACED	WELL BRANCHED EVENLY EVENLY SPACED
GRASSES								
○	243	Bromus 'Aureo-Variegatus'	1' gal	2'	2'	Very Low	WELL ROOTED AND ESTABLISHED	WELL ROOTED AND ESTABLISHED
○	81	Calystegia sepium	1' gal	3'	2'	Low	WELL ROOTED AND ESTABLISHED	WELL ROOTED AND ESTABLISHED
○	17	Hordeum 'Meadow Gold'	1' gal	2'	2'	Low	WELL ROOTED AND ESTABLISHED	WELL ROOTED AND ESTABLISHED
○	123	Imperata cylindrica 'Giant Silver'	1' gal	5'	3'	Low	WELL ROOTED AND ESTABLISHED	WELL ROOTED AND ESTABLISHED



SCALE: 1" = 100' 0"

150' 200'

NORTH

2

Sheet Number:

Or: 7

**FICKEL FARM
5TH FILING**

LANDSCAPE PLAN

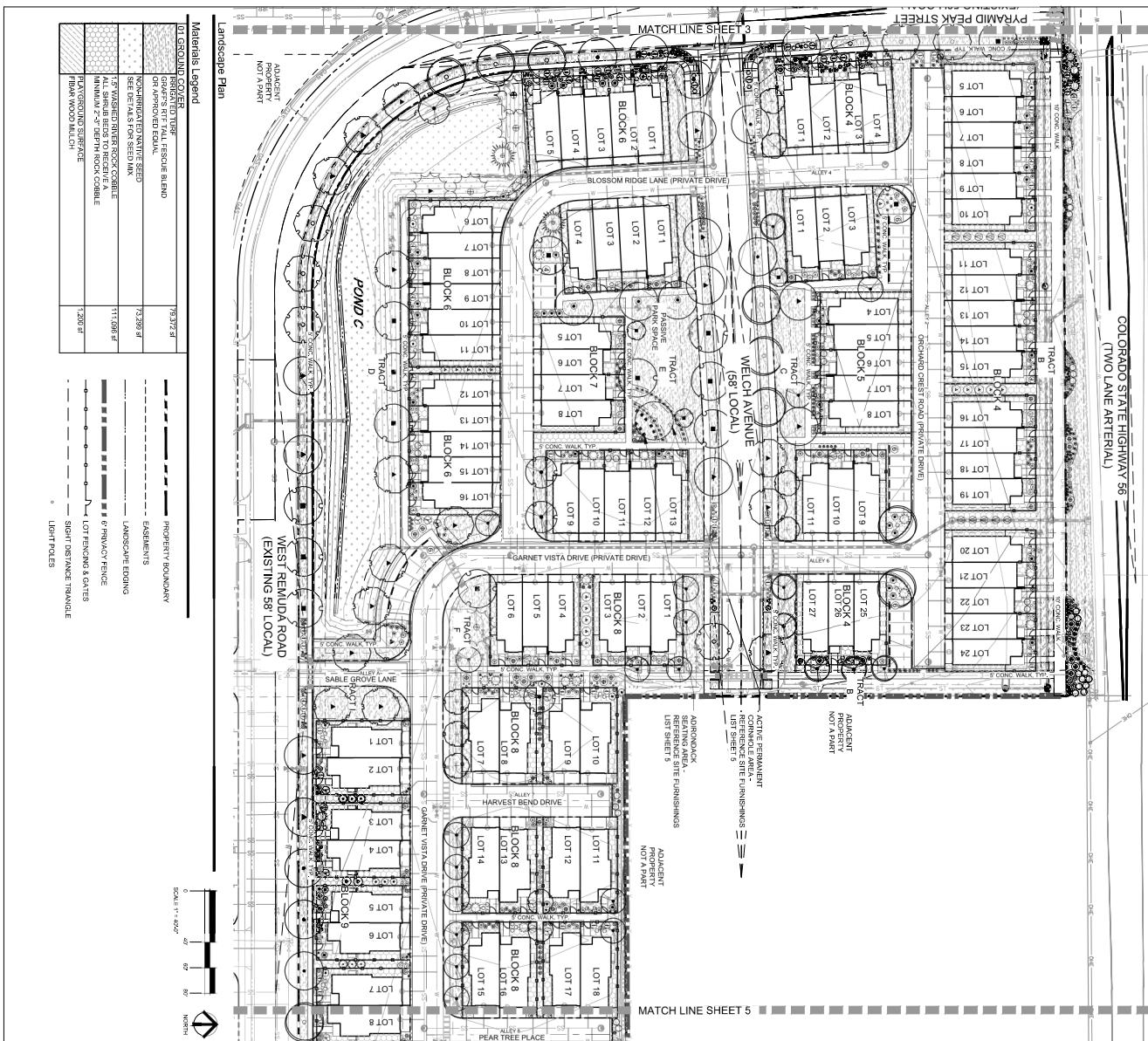
OWNER: TRUMARK

DESIGNER: DATE: December 15, 2005

8350 E Crescent Pkwy.
Suite 450
Glenwood Village, CO
80111

PROFESSIONAL LIAISON: **TRUMARK**
4444 N. Colorado Blvd., Ste. 100
Boulder, CO 80301 Tel: 303-449-1800
Fax: 303-449-1801

SEAL



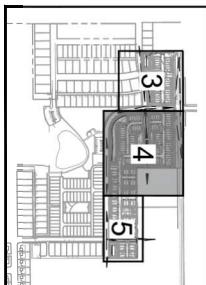
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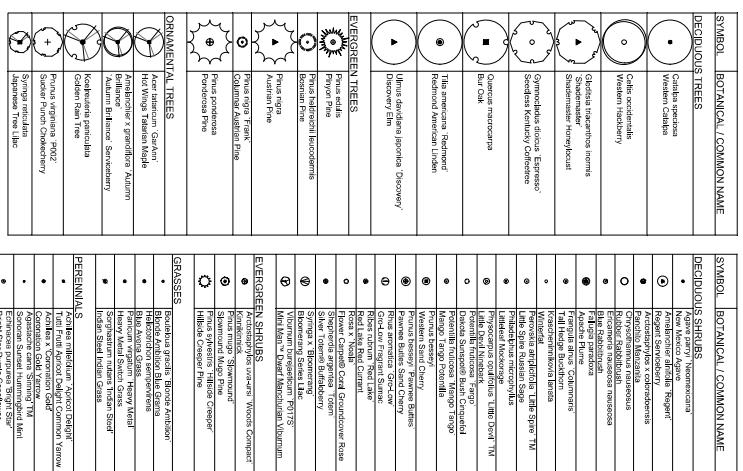
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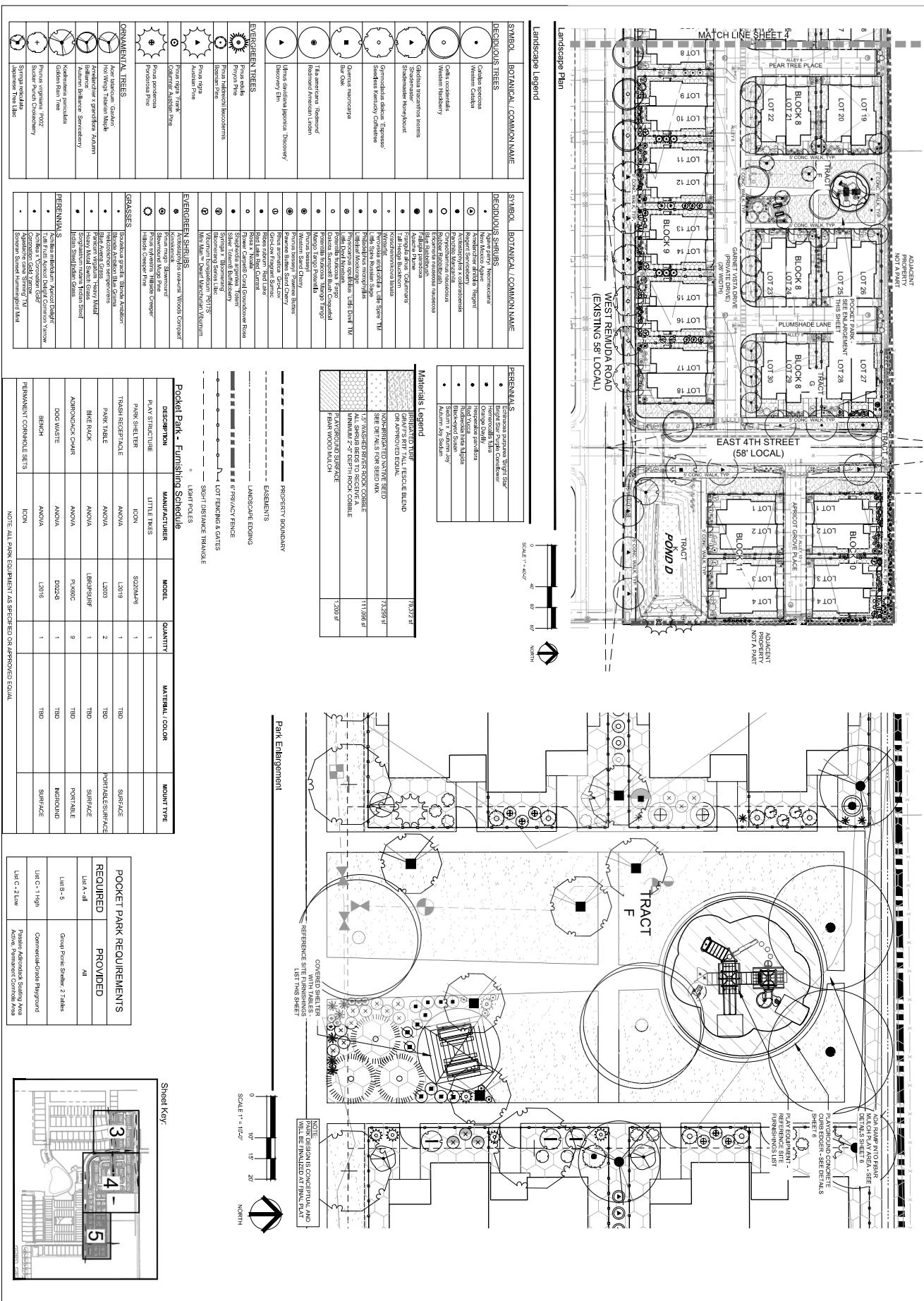
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Sheet Ke



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PROJECT TITLE:		LANDSCAPE PLAN	
SUBMISSION DATE:		THE DRAWINGS	
DRAWER:		OWNER:	
SHEET NUMBER:		TRUMARK	
DATE:		8350 E. Crescent Pkwy. Suite 150 Steamwood Village, CO 80111	
SHEET TITLE:		LANDSCAPE PLAN	
LANDSCAPE PLAN			
Sheet Number: 4			





LOT FENCING AND GATE EXAMPLE

MANUFACTURER: ARBOR FENCING 4' BLACK METAL, OR APPROVED EQUAL.
PER MANUFACTURER SPECIFICATIONS

THE GROUP

THE GROUP
INCORPORATED 1991
4444 Northgate Lane, #100
Brentwood, CA 94513 | Tel: 707.458.0118

STYL

FICKEL FARM
5TH FILING

LANDSCAPE PLAN

TRUMARK

OWNER:

8350 E Crescent Pkwy.
Suite 450
Glenwood Village, CO
80111

REVISIONS: _____ DATE: _____

DATE: _____

December 15, 2025

SHRIMP

LANDSCAPE NOTES

& DETAILS

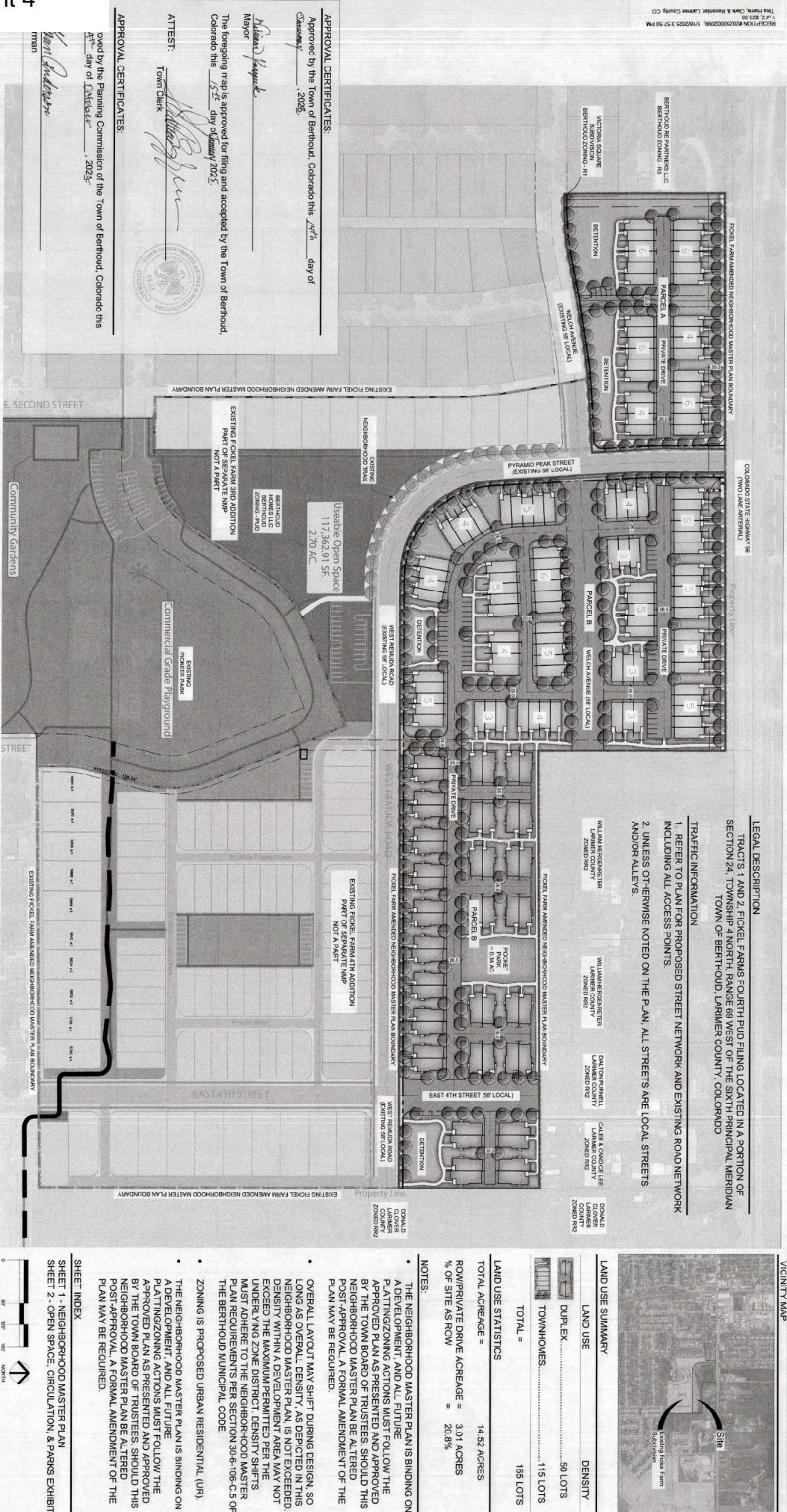
THE GROUP INCORPORATED 1991

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Of: 7

FICKEL FARM PROPERTY SEPTEMBER 2024

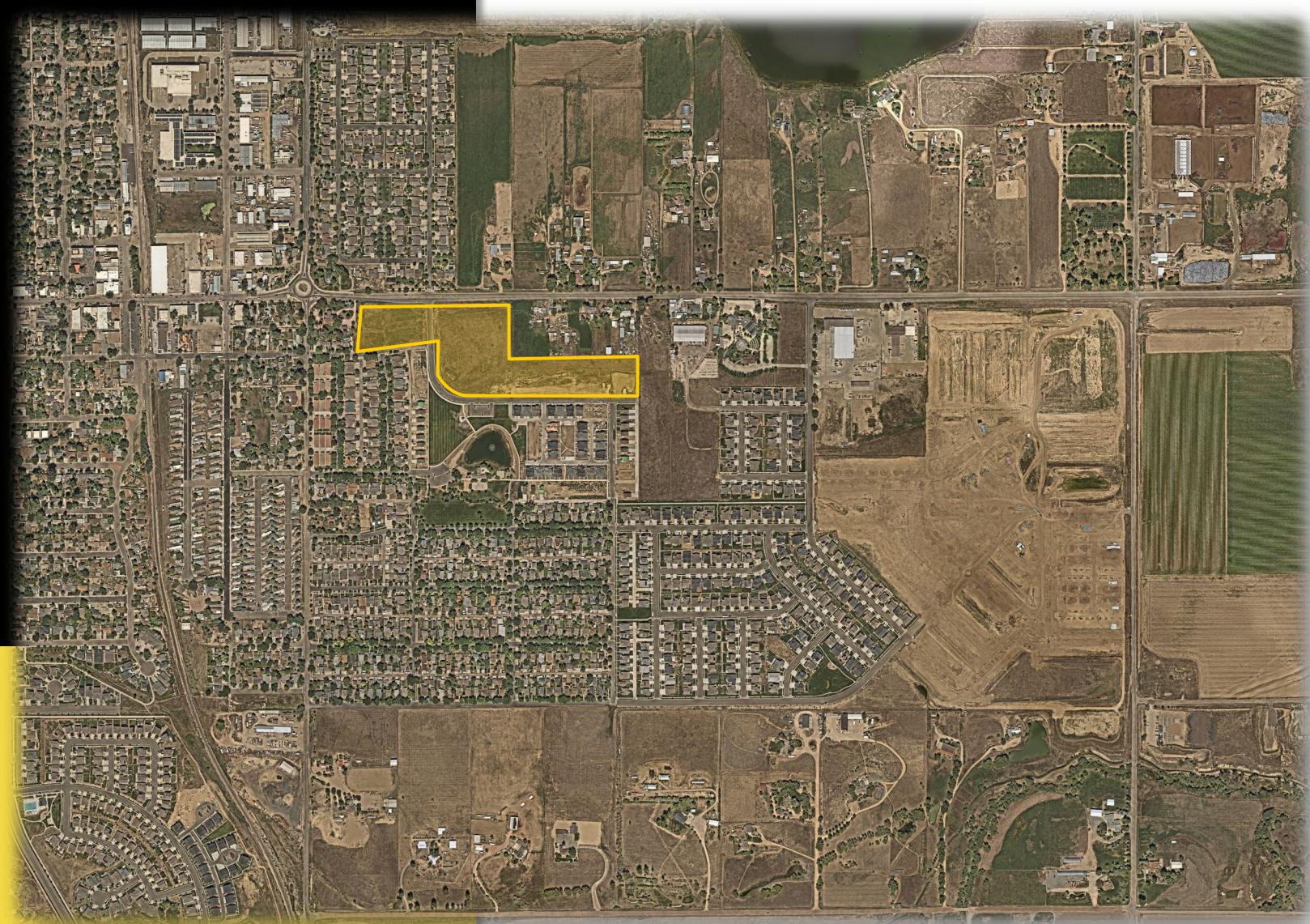
Attachment 4

GHBORHOOD MASTER PLAN



Fickel Farm

Traffic Impact Study



1st Submittal Date: January 14, 2025

Revised: December 15, 2025

Submitted To:
Trumark Homes
8350 E Crescent Parkway, Suite 450
Greenwood Village, CO 80111

Submitted By:
Fox Tuttle Transportation Group, LLC
1580 Logan Street, Suite 600-PMB 0604
Denver, CO 80203

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APPENDIX

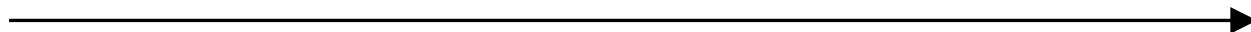
Level of Service Definitions

Existing Traffic Data

Intersection Capacity Worksheets

Background Documentation





FICKEL FARM TRAFFIC IMPACT STUDY

1.0 Introduction

The Fox Tuttle Transportation Group has prepared this traffic impact study update for the Fickel Farm residential development project. The project site is comprised of vacant property and is located in the Town of Berthoud, Colorado south of State Highway 56 along Pyramid Peak Street and Remuda Road. It is understood that the entire Fickel Farm development is being developed in two (2) phases and at completion will include a total of up to 35 single-family detached homes and 231 single-family attached homes. Note that the current land use proposal for the second phase is for 154 units. The internal roadway network is proposed to connect to Pyramid Peak Street, Remuda Road, 4th Street, and Welch Avenue. Adjacent land uses are comprised of residential neighborhoods and agricultural sites. **Figure 1** provides a vicinity map for the proposed project.

Phase 1 is currently under construction. Phase 2 is still in design, and the proposed number and type of dwelling units has been changed from the original study. This study focuses on Phase 2 of the Fickel Farm project and assumes all Phase 1 development to be completed and occupied in the near-term background.

The purpose of this study is to assist in identifying potential traffic impacts within the study area as a result of Phase 2 of the Fickel Farm project. The traffic study addresses existing, short-term, and long-term peak hour intersection conditions in the study area with and without the project-generated traffic. The information contained in this study is anticipated to be used by the Town of Berthoud staff in identifying any intersection or roadway deficiencies and potential improvements for the build-out condition and long-term future scenarios. This study focused on the weekday AM and PM peak hours which represent the periods of highest trip generation for the proposed use and adjacent street traffic.

2.0 Project Description

The overall Fickel Farm project plans to develop vacant land with up to 35 single-family detached homes and 231 single-family attached homes over the course of two (2) phases. Phase 2 will include up to 165 single-family attached dwelling units (note that the latest site plan is for 154 units and thus the analysis provided in this study is slightly conservative). The project proposes to construct an internal roadway



network that will connect to State Highway 56, Pyramid Peak Street, Remuda Road, 4th Street, and Welch Avenue. For the purpose of this traffic study, it was assumed that Phase 1 of the project will be completed by Year 2028 and is added into the background scenarios as it was previously approved and is currently under construction. It was assumed Phase 2 will also be completed by Year 2028 and will be analyzed as part of this study. **Figure 2** shows the Phase 2 site plan and proposed access locations.

3.0 Study Considerations

3.1 Data Collection

Intersection turning movement volumes were collected in November 2024 or July 2025 at five (5) existing intersections during the weekday AM and PM peak hours, including pedestrians and bicyclists.

The study area intersections are shown on **Figure 3**. The existing traffic volumes are illustrated on **Figure 4**. The existing intersection geometry and traffic control are also shown on this figure. Count data sheets are provided in the **Appendix**.

3.2 Evaluation Methodology

The traffic operations analysis addressed the signalized and unsignalized intersection operations using the procedures and methodologies set forth by the *Highway Capacity Manual* (HCM)¹. Existing peak hour factors (PHF) and heavy vehicle percentages by approach and peak hour were applied to the study intersections for Year 2024 and Year 2028 scenarios. For Year 2045 scenarios, the peak hour factors were changed to 0.92 for movements on State Highway 56 and 0.88 for all other movements unless the existing PHF was higher, and heavy vehicle percentages were changed to 2% unless the existing percentage was lower. Study intersections were evaluated using Synchro software (v12).

3.3 Level of Service Capacity Analysis

A Level of Service analysis was conducted to determine the existing and future performance of the study area intersections and accesses to determine the most appropriate intersection traffic controls and auxiliary lanes for future conditions.

¹ [Highway Capacity Manual](#), Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 7th Edition (2022).

To measure and describe the operational status of the study intersections, transportation engineers and planners commonly use a system referred to as “Level of Service” (LOS) that is defined by the HCM. LOS characterizes the operational conditions of an intersection’s traffic flow, ranging from LOS A (indicating free flow operations) and LOS F (indicating congested and sometimes oversaturated conditions). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with traveling through the intersections. The intersection LOS is based on delay in seconds per vehicle for the intersection as a whole and for each movement.

Typically, LOS D overall during peak hours is acceptable. Individual movements may be allowed to fall to LOS E or F at signalized intersections. Minor movements at unsignalized intersections, such as left turns onto a major arterial, may be allowed to fall below LOS D, specifically where there are low volumes and/or no viable alternative. The Town of Berthoud follows Larimer County Urban Area Street Standards, Chapter 4 (LCUASS)² with regard to transportation impact study standards. Table 4-1 in the current version of LCUASS was used to determine acceptable Levels of Service for intersections and individual movements. Criteria contained in the HCM was applied for these analyses in order to determine peak hour LOS for each scenario. A more detailed discussion of LOS methodology is contained in the **Appendix** for reference.

4.0 Existing Conditions

4.1 Roadways

The study area boundaries are based on the amount of traffic to be generated by the project and potential impact to the existing roadway network. The primary public roadways that serve the project site are discussed in the following text and illustrated on **Figure 1**.

State Highway 56 is a two-lane, east-west, arterial roadway that provides access to urban and rural residential neighborhoods near the project site. Regionally, the roadway provides access to US Highway 287, I-25 and Weld County. State Highway 56 extends from Larimer County Road 23 (west) to Weld County Road 23 (east). The roadway is a Colorado Department of Transportation (CDOT) managed roadway classified as NR-B (Non-Rural Arterial) from west of 1st Street to west of County Line Road, where it transitions to NR-A (Non-Rural Principal Highway). In the eastbound

² Larimer County Urban Area Street Standards, Chapter 4. Adopted August, 2021.

direction, State Highway 56 has a posted speed limit of 25 miles per hour (mph) near the 1st Street roundabout, and then transitions to 55 mph to the east, near County line Road. In the westbound direction, State Highway 56 has a posted speed limit of 55 mph just west of the County Line Road intersection, then transitions to 40 mph just east of Pyramid Peak Street, and to 25 mph just west of Pyramid Peak Street approaching the 1st Street roundabout. State Highway 56 serves approximately 7,600 vehicles per day (vpd) west of 1st Street and approximately 7,400 vpd east of County Line Road (CDOT, Year 2023).

1st Street is a two-lane, north-south, roadway that provides access to local residential and commercial neighborhoods within Berthoud. 1st Street is classified as a local roadway north of State Highway 56, and as a major collector roadway south of State Highway 56. The roadway extends from US Highway 287 (north), becomes County Road 15 south of County Road 6C, and extends to East County Line Road (south). South of State Highway 56, 1st Street serves approximately 2,950 vpd (CDOT, Year 2024).

Pyramid Peak Street is a two-lane, unstriped north-south roadway that provides local access to residential neighborhoods and will directly serve the Fickel Farm project from State Highway 56. The roadway extends from Little Bear Avenue (north) to Remuda Road (south).

Nebraska Avenue is a two-lane, east-west roadway that provides access to local residential and rural neighborhoods. The roadway extends from 1st Street (west) to Dorothy Drive (east). As the vacant land to the east develops, Nebraska Avenue will extend to County Line Road (east). Nebraska Avenue will indirectly serve the Fickel Farm project via 4th Street.

Welch Avenue is a two-lane, east-west roadway that provides access to local residential and commercial uses extending from Pyramid Peak Street to Berthoud Parkway. The posted speed limit is 25 mph.

4.2 Intersections

The study area includes five (5) existing intersections that are listed below with the current traffic control and were analyzed for existing and future year traffic operations:

1. State Highway 56 at County Line Road [side-street stop controlled]
2. State Highway 56 at 1st Street [roundabout]
3. 1st Street at Nebraska Avenue [side-street stop controlled]

- 4. State Highway 56 at Pyramid Peak Street [side-street stop controlled]
- 5. 1st Street at Welch Avenue [side-street stop controlled]

The existing lane configuration at each of the study locations is illustrated on **Figure 3**.

4.3 Pedestrian and Bicycle

Currently, there are no sidewalks along State Highway 56 east of 1st Street. 1st Street has intermittent and inconsistent sidewalks within the study area. Nebraska Avenue has sidewalks on the north side of the roadway. Pyramid Peak Street has sidewalks on both sides of the roadway north of State Highway 56, and sidewalks adjacent to developed frontage south of State Highway 56.

There are no on-street bike facilities within the project study area. Bikes are permitted to travel within the travel lanes of the study roadways.

4.4 Transit

The Town of Berthoud works with other agencies to provide public transportation to residents. Berthoud also operates the Berthoud Area Transportation Service (BATS), which provides door-to-door transit services within Berthoud or to Loveland. Berthoud is also serviced by the Transfort FLEX route, which provides regional services between Fort Collins, Loveland, Longmont and Boulder. Stops for the FLEX route in Berthoud are located at Mountain Avenue and 2nd Street, and Mountain Avenue and 3rd Street. These stops are approximately 1/3 mile west of the State Highway 56 and Pyramid Peak Street intersection.

4.5 Year 2024 Existing Intersection Capacity Analysis

The existing volumes, lane configuration, and traffic control are illustrated on **Figure 3**. The details of LOS for each movement are provided in **Table 1** and the 95th percentile queues are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**. **Currently, a majority of the study intersections operate overall at LOS A in both peak hours, with most individual movements operating at LOS D or better in both peak hours.** All 95th percentile queues were estimated to be contained within existing storage.

The intersection of State Highway 56 and County Line Road currently operates at LOS B in the AM peak hour and LOS F in the PM peak hour. The northbound approach operates at LOS F in both peak hours, and the southbound approach operates at LOS F in the PM peak hour. This is due to the heavy northbound traffic volume and conflicting eastbound and westbound volumes. Per discussion with Town staff, this

intersection is planned to be converted to a single-lane roundabout as part of the adjacent Farmstead development project. A roundabout is anticipated to effectively mitigate these existing delays.

5.0 Future Conditions

5.1 Annual Growth Factor and Future Volume Methodology

In order to forecast the future peak hour traffic volumes, background traffic growth assumptions were estimated based the CDOT growth rates and other traffic studies performed for the town.

Based on CDOT historic data and forecasts, the 20-year growth factor for State Highway 56 is estimated to be 1.3. This equates to an annual growth rate of **1.32%**, however does not account for the projected volume of traffic to be generated by the Farmstead development to the east. The following steps were taken to develop background traffic volumes:

- Estimated traffic volumes associated with Fickel Farm Phase 1 were added to existing volumes to develop background volumes for movements in and out of the south approach of Pyramid Peak Street at State Highway 56. No additional background growth was applied to these movements.
- Estimated traffic volumes associated with the Farmstead project were added to existing volumes to develop background volumes per the *Farmstead Traffic Impact Study*³. Farmstead Phase 1 volumes were used to develop Year 2028 Background volumes, and Farmstead full buildup volumes were used to develop Year 2045 Background volumes. Farmstead project-generated traffic volumes figures are in the **Appendix**. To account for any additional background growth, an annual growth rate of 1.0% was applied to the movements serving the Farmstead project.
- An annual growth rate of 1.32% was applied to existing volumes for all movements not serving the Fickel Farm or Farmstead projects.

Using these assumptions and steps, the Year 2028 background traffic is summarized on **Figure 4** and the Year 2045 background traffic is summarized on **Figure 5**.

³ *Farmstead Traffic Impact Study*. Delich Associates. March, 2024.

5.2 Year 2028 Anticipated Transportation Network

This study assumes the construction of a single-lane roundabout at the intersection of State Highway 56 and County Line Road per Town staff and the Farmstead Traffic Impact Study.

This study assumes that the speed limit on State Highway 56 will be lowered to 35 mph maximum between the roundabouts at 1st Street and County Line Road. Roundabout entry speeds are typically 25 mph or lower, and it is advisable to have no more than a 10 mph differential between speed limit and entry speed.

5.3 Year 2028 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the Year 2028 background scenario and to identify any capacity constraints associated with background traffic (refer to **Section 5.1** for growth assumptions). It was assumed that the improvements listed in **Section 5.2** will be implemented by Year 2028 background. The background volumes, lane configuration, and traffic control are illustrated on **Figure 4**.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the short-term background volumes. The details of LOS for each movement are provided in **Table 1** and the 95th percentile queues are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**.

In summary, all of the study intersections were estimated to operate overall at LOS C or better, with most movements operating at LOS D or better. All 95th percentile queues were estimated to be contained within existing storage. At the intersection of State Highway 56 and Pyramid Peak Street, the following movements were estimated to operate below LOS D in one or more peak hours:

- Northbound left-turn + through operates at LOS E in the AM peak hour and LOS F in the PM peak hour. This is due to the high volume of eastbound and westbound traffic on State Highway 56. The 95th percentile queue was calculated to be 28 feet in the AM peak hour and 33 feet in the PM peak hour.
- Southbound left-turn + through + right-turn operates at LOS E in the PM peak hour. This is due to the high volume of eastbound and westbound traffic on State Highway 56. The 95th percentile queue was calculated to be 10 feet in the PM peak hour.

Recommendation: No mitigation measures are recommended. LCUASS Table 4-1 allows for movements at minor intersections to operate at LOS F.

5.4 Year 2045 Anticipated Transportation Network

Based on the projected 20-year background growth assumptions to include the Farmstead-added traffic growth, it is anticipated that the roundabout at State Highway 56 and County Line Road would need to be widened to include two (2) lanes on State Highway 56 eastbound and westbound through the roundabout. The projected 20-year volumes are above the capacity of single-lane roundabout entries for these approaches. For the 2045 scenarios, it is assumed that this widening would be in place.

Based on 20-year growth projections, the eastbound approach at the State Highway 56 and 1st Street roundabout would exceed single-lane entry capacity. To mitigate this long-term capacity deficiency, an eastbound right-turn bypass lane would be needed and is assumed to be in place for the long-term scenarios. The Year 2045 Background lane geometry is shown on **Figure 5**.

5.5 Year 2045 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the Year 2045 background scenario and to identify any capacity constraints associated with background traffic in the long-term scenario (refer to **Section 5.1** for growth assumptions). The long-term background volumes, lane configuration, and traffic control are illustrated on **Figure 5**.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the long-term background volumes. The details of LOS for each movement are provided in **Table 1** and the 95th percentile queues are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**.

In summary, all four (4) of the study intersections operate at LOS D or better in both peak periods, with most movements operating at LOS D or better. The following intersections have movements which operate below LOS D in one or more peak hours:

State Highway 56 at Pyramid Peak Street was estimated to operate at LOS A in both peak hours.

- Northbound left-turn + through was estimated to operate at LOS F in both peak hours. The 95th percentile queue was estimated to be up to 60 feet.
- Southbound left-turn + through + right-turn was estimated to operate at LOS E in the AM peak hour and LOS F in the PM peak hour. The 95th percentile queue was estimated to be up to 40 feet.

Recommendation: No mitigation measures are recommended. LCUASS Table 4-1 allows for movements at minor intersections to operate at LOS F.

6.0 Future Conditions with the Development

The Fickel Farm project will be comprised of 35 single-family detached homes and 231 single-family attached homes, constructed over two (2) phases. Phase 1 of the project is constructing 35 single-family detached homes and 66 single-family attached homes. Phase 2 proposes to construct up to 165 single-family attached homes. This study assumed that both phases will be completed by Year 2028. As Phase 1 was previously approved and is currently under construction, the traffic associated with Phase 1 has been added to the background traffic volumes for this study. The project proposes to connect its internal roadway network to State Highway 56, Pyramid Peak Street, Remuda Road, 4th Street, and Welch Avenue. **Figure 2** shows the site plan and proposed roadway connections.

6.1 Trip Generation

A trip generation estimate was performed to determine the traffic characteristics for Phase 2 of the proposed development. The trip rates contained in the Institute of Transportation Engineers (ITE) Trip Generation Handbook and Manual⁴ were applied to estimate the traffic for the dwelling units. This study applied the trip rates for “Single-Family Attached Housing” [ITE #215] to determine Phase 2 trips.

Phase 2 of the Fickel Farm project was estimated to generate approximately 1,188 daily trips with 79 trips in the AM peak hour and 94 trips in the PM peak hour. Trip generation is described on **Table 3**.

6.2 Trip Distribution and Assignment

The estimated trip volumes were distributed onto the study area street network based on existing traffic characteristics, land uses, and traffic patterns in the area. The existing volumes were utilized to determine where vehicles are coming from and going to within the study area.

The following overall distributions were assumed for this project and are shown on **Figure 6**:

- North via 1st Street: 20%

⁴ Trip Generation Handbook and Manual, 11th Edition, Institute of Transportation Engineers, 2021.

- South via 1st Street: 5%
- East via State Highway 56: 35%
- West via State Highway 56: 20%
- West via Welch Avenue 5%
- North via County Line Road: 5%
- South via County Line Road: 10%

Using the distribution assumptions, the projected site traffic was assigned to the study area roadway network for the weekday AM and PM peak hour periods. Project-generated trips are shown on **Figure 7**.

6.3 Year 2028 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the addition of the project trips in the Year 2028 scenario. The site-generated volumes were added to the Year 2028 background volumes and are illustrated on **Figure 8**. This figure also illustrates the necessary traffic control and lane configurations for the study intersections. The recommended improvements in the Year 2028 background scenario were assumed to be implemented.

The study intersections are anticipated to operate similarly to the Year 2028 background conditions with the addition of project trips. All of the overall intersection and most of the individual movement Levels of Service remain the same. At the intersection of State Highway 56 and Pyramid Peak Street, the northbound left-turn + through (AM peak hour) and southbound left-turn + through + right-turn (PM peak hour) fall from LOS E in the background scenario to LOS F when project trips are added.

Recommendation: No mitigation measures are recommended. LCUASS Table 4-1 allows for movements at minor intersections to operate at LOS F. Additionally, as the northbound approach reaches capacity, it is likely vehicles will use alternative routes, such as Welch Avenue to get to 1st Street.

The details of LOS for each movement are provided in **Table 1** and the 95th percentile queues are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**.

6.4 Year 2045 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the addition of project trips in the Year 2045 scenario. The site-generated volumes were added to the Year 2045 background volumes and are illustrated on **Figure**

14. This figure also illustrates the necessary traffic control and lane configurations for all of the study intersections.

The recommended improvements identified for the Year 2045 Background scenario were assumed to be implemented for this scenario.

The study intersections are anticipated to operate similarly to the Year 2045 background conditions with the addition of project trips. All of the overall intersection and most of the individual movement Levels of Service remain the same. The following intersections have movements which are more significantly impacted by the addition of project traffic:

State Highway 56 at 1st Street continues to operate overall at LOS D in the AM peak hour and LOS E in the PM peak hour.

- The eastbound approach falls from LOS D to LOS E in the PM peak hour. 95th percentile queues are estimated to be up to 325 feet
- The westbound approach falls from LOS D to LOS E in the both peak hours. 95th percentile queues are estimated to be up to 400 feet.
- The southbound approach falls from LOS D to LOS E in the PM peak hour. 95th percentile queues were estimated to be up to 48 feet.

Recommendation: No mitigation measures are recommended. LCUASS Table 4-1 allows for movements at major intersections to operate at LOS E.

State Highway 56 at Pyramid Peak Street continues to operate overall at LOS A in both peak hours.

- The southbound left-turn + through + right-turn movement falls from LOS E to LOS F in the AM peak hour. 95th percentile queues are estimated to be up to 48 feet.

Recommendation: No mitigation measures are recommended. LCUASS Table 4-1 allows for movements at minor intersections to operate at LOS F.

The details of LOS for each movement are provided in **Table 1** and the 95th percentile queues are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**.

7.0 Queuing Analysis

A queuing analysis was performed to determine if the 95th percentile queues would be accommodated by the existing storage length, to determine the storage lengths for future auxiliary lanes, and if any of the queues would impact an upstream intersection/access. **Table 2** provides the existing storage lengths, as well as the 95th percentile queues for each existing and future scenario as calculated by Synchro (assuming each vehicle utilizes 25 feet of space). It should be noted that the 95th percentile queue length is a theoretical queue that is 1.65 standard deviations above the average queue length. In theory, the 95th percentile queue would be exceeded 5% of the time based on the average queue length, but it is also possible that a queue this long may not occur.

As shown in **Table 2**, the estimated queues are shorter than the existing storage length at the side-street stop-controlled intersections in all scenarios. The project trips have minimal impact on queues at the existing study intersections. At the roundabout controlled intersections, queues may begin to impact existing or future upstream intersections and should be monitored.

The westbound approach on State Highway 56 at Pyramid Peak Street includes a westbound left-turn deceleration lane consisting of approximately 60 feet of storage plus a 130-foot taper. The State Highway Access Code prescribes that a left-turn deceleration lane at a 40-mph posted speed should include storage (at 50 feet per 60 vehicles per hour) and a 12:1 taper. At 35 mph, the taper is shortened to 10:1. Since the existing westbound deceleration lane striping exceeds the State Highway Access Code requirement for storage plus taper for 35 mph (which is the recommended speed limit once the intersection is between two roundabouts on State Highway 56), no changes to the existing lane striping on State Highway 56 is proposed for this project.

8.0 Conclusions

The Fickel Farm project plans to develop vacant land with 35 single-family detached homes and 231 single-family attached homes over the course of two (2) phases. Phase 1 was previously approved and is currently under construction. Phase 1 consists of 35 single-family detached homes and 66 single-family attached homes. Phase 2 was evaluated through this study and proposes to construct up to 165 single-family attached homes. The project proposes to construct an internal roadway network that will connect to State Highway 56, Pyramid Peak Street, Remuda Road, 4th Street, and Welch Avenue. For the purpose of this traffic study, it was assumed that both phases will be completed by Year 2028.

The Fickel Farm Phase 2 project is estimated to generate approximately 1,188 daily trips with 79 trips occurring in the AM peak hour and 94 trips occurring in the PM peak hour. **It was determined that the proposed roadway system can adequately accommodate the projected traffic volumes with recommended improvements.**

Existing/Background Conditions (Non-Project Related):

- **State Highway 56 at County line Road**
 - Construct single-lane roundabout at the intersection. *[Implemented prior to Year 2028 Background based on Farmstead Traffic Impact Study found in the Appendix]*
 - Widen roundabout to two lanes for eastbound and westbound traffic. *[Year 2045 Background]*
- **State Highway 56 from 1st Street to County Line Road**
 - Reduce speed to 35 mph maximum. *[Year 2028 Background]*
- **State Highway 56 at 1st Street**
 - Construct eastbound right-turn bypass lane at roundabout. *[Year 2045 Background]*

Note that the traffic study provides technical information and evaluates the need for transportation mitigation as traffic grows, but it does not address infrastructure commitments or obligations of the Fickel Farm project.

Tables and Figures:

Table 1 – Peak Hour Intersection Level of Service Summary

Table 2 – Peak Hour Estimated Queues and Proposed Auxiliary Lanes

Table 3 –Trip Generation Summary

Figure 1 – Vicinity Map

Figure 2 – Conceptual Site Plan

Figure 3 – Year 2024 Existing Traffic Volumes

Figure 4 – Year 2028 Background Traffic Volumes

Figure 5 – Year 2045 Background Traffic Volumes

Figure 6 – Site Trip Distribution

Figure 7 – Site-Generated Traffic Volumes

Figure 8 – Year 2028 Background + Project Traffic Volumes

Figure 9 – Year 2045 Background + Project Traffic Volumes

Table 1 - Peak Hour Intersection Level of Service Summary

Intersections and Lane Groups	Year 2024 Existing		Year 2028 Background		Year 2028 with Project		Year 2045 Background		Year 2045 with Project	
	AM Peak Delay	PM Peak LOS	AM Peak Delay	PM Peak LOS	AM Peak Delay	PM Peak LOS	AM Peak Delay	PM Peak LOS	AM Peak Delay	PM Peak LOS
STOP SIGN CONTROL										
1. State Highway 56 at County Line Road	13	B	62	F						
Eastbound Left + Through + Right	8	A	8	A	<i>Analyzed as Roundabout</i>		<i>Analyzed as Roundabout</i>		<i>Analyzed as Roundabout</i>	
Westbound Left + Through + Right	9	A	9	A						
Northbound Left + Through + Right	85	F	>120	F						
Southbound Left + Through + Right	26	D	52	F						
3. 1st Street at Nebraska Avenue	3	A	2	A	3	A	2	A	3	A
Westbound Left + Right	9	A	10	A	10	B	10	A	11	B
Northbound Through + Right	0	A	0	A	0	A	0	A	0	A
Southbound Left + Through	7	A	8	A	8	A	8	A	8	A
4. State Highway 56 at Pyramid Peak Street	1	A	1	A	2	A	4	A	3	A
Eastbound Left	8	A	9	A	9	A	9	A	10	A
Eastbound Through	0	A	0	A	0	A	0	A	0	A
Eastbound Right	0	A	0	A	0	A	0	A	0	A
Westbound Left	9	A	9	A	10	A	9	A	11	B
Westbound Through + Right	0	A	0	A	0	A	0	A	0	A
Northbound Left + Through	23	C	29	D	48	E	72	F	66	F
Northbound Right	12	B	12	B	14	B	15	B	15	C
Southbound Left + Through + Right	16	C	22	C	26	D	42	E	29	D
5. 1st Street at Welch Avenue	2	A	3	A	2	A	3	A	3	A
Eastbound Left + Through + Right	12	B	14	B	12	B	14	B	14	B
Westbound Left + Through + Right	11	B	16	C	11	B	16	C	13	B
Northbound Left + Through + Right	8	A	8	A	8	A	8	A	8	A
Southbound Left + Through + Right	8	A	8	A	8	A	8	A	8	A
ROUNABOUT CONTROL										
1. State Highway 56 at County Line Road			16	C	17	C	17	C	18	C
Eastbound Left + Through + Right	<i>Analyzed as Stop Control</i>		13	B	14	B	14	B	14	B
Eastbound Left + Through									7	A
Eastbound Through + Right			19	C	23	C	20	C	26	D
Westbound Left + Through + Right									8	A
Westbound Left + Through									10	A
Westbound Through + Right									11	B
Northbound Left + Through + Right			18	C	13	B	19	C	13	B
Southbound Left + Through + Right			9	A	10	A	9	A	10	A
2. State Highway 56 at 1st Street	9	A	9	A	13	B	15	C	14	B
Eastbound Left + Through + Right	9	A	10	B	13	B	19	C	13	B
Eastbound Left + Through									14	B
Eastbound Right									3	A
Westbound Left + Through + Right	9	A	9	A	15	C	14	B	17	C
Northbound Left + Through	7	A	8	A	10	A	12	B	13	B
Northbound Right	0	A	0	A	0	A	0	A	0	A
Southbound Left + Through + Right	9	A	10	A	14	B	16	C	14	B

Fickel Farm Traffic Impact Study

Table 2 - Peak Hour Estimated Queues

Intersections and Lane Groups	2024 Existing		2028 Background		2028 with Project		2045 Background		2045 with Project		Max. Queue	Existing Storage
	95th% Queue AM	95th% Queue PM										
1. State Highway 56 at County Line Road	<i>Stop Control</i>		<i>Roundabout</i>		<i>Roundabout</i>		<i>Roundabout</i>		<i>Roundabout</i>			
Eastbound Left + Through + Right	0'	0'	125'	125'	150'	150'			50'	75'	50'	75'
Eastbound Left + Through							50'	75'	50'	75'	75'	-
Eastbound Through + Right									50'	75'	75'	-
Westbound Left + Through + Right	10'	18'	175'	250'	175'	275'			50'	75'	50'	75'
Westbound Left + Through							75'	100'	75'	100'	75'	-
Westbound Through + Right									75'	100'	100'	-
Northbound Left + Through + Right	170'	423'	125'	100'	150'	100'	275'	200'	300'	225'	423'	-
Southbound Left + Through + Right	13'	28'	0'	0'	0'	25'	0'	25'	25'	25'	28'	-
2. State Highway 56 at 1st Street	<i>Roundabout</i>											
Eastbound Left + Through + Right	50'	75'	100'	175'	100'	200'			125'	300'	125'	325'
Eastbound Left + Through							0'	0'	0'	0'	0'	-
Eastbound Right									0'	0'	0'	-
Westbound Left + Through + Right	75'	75'	150'	125'	175'	150'	350'	325'	400'	350'	400'	-
Northbound Left + Through	25'	25'	25'	25'	25'	50'	25'	75'	50'	75'	75'	-
Northbound Right	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	50'
Southbound Left + Through + Right	50'	50'	100'	125'	100'	150'	175'	275'	175'	300'	300'	-
3. 1st Street at Nebraska Avenue	<i>Stop Control</i>											
Westbound Left + Right	5'	5'	8'	8'	8'	8'	8'	8'	10'	8'	10'	-
Northbound Through + Right	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	-
Southbound Left + Through	0'	3'	0'	3'	0'	3'	0'	3'	0'	3'	3'	-
4. State Highway 56 at Pyramid Peak Street	<i>Stop Control</i>											
Eastbound Left	0'	0'	0'	0'	0'	0'	0'	3'	0'	3'	3'	35'
Eastbound Through	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	-
Eastbound Right	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	160'
Westbound Left	0'	0'	3'	5'	3'	8'	3'	5'	3'	8'	8'	60'
Westbound Through + Right	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	-
Northbound Left + Through	5'	8'	28'	33'	58'	65'	50'	60'	90'	100'	100'	-
Northbound Right	3'	3'	8'	8'	18'	15'	8'	10'	15'	18'	18'	100'
Southbound Left + Through + Right	8'	5'	15'	10'	18'	10'	28'	40'	33'	48'	48'	-
5. 1st Street at Welch Avenue	<i>Stop Control</i>											
Eastbound Left + Through + Right	10'	15'	10'	18'	10'	18'	18'	38'	20'	40'	40'	-
Westbound Left + Through + Right	3'	3'	3'	3'	5'	5'	5'	8'	8'	10'	10'	-
Northbound Left + Through + Right	3'	5'	3'	5'	3'	5'	3'	5'	3'	5'	5'	-
Southbound Left + Through + Right	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	-



Table 3 - Trip Generation

Land Use	Size	Unit	Average Daily				Weekday				PM Peak Hour			
			Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
ITE 215 - Single-Family Attached Housing	165	Dwelling Units	7.20	1188	594	594	0.48	79	20	59	0.57	94	55	39
			<i>Total</i>	1188	594	594		79	20	59		94	55	39

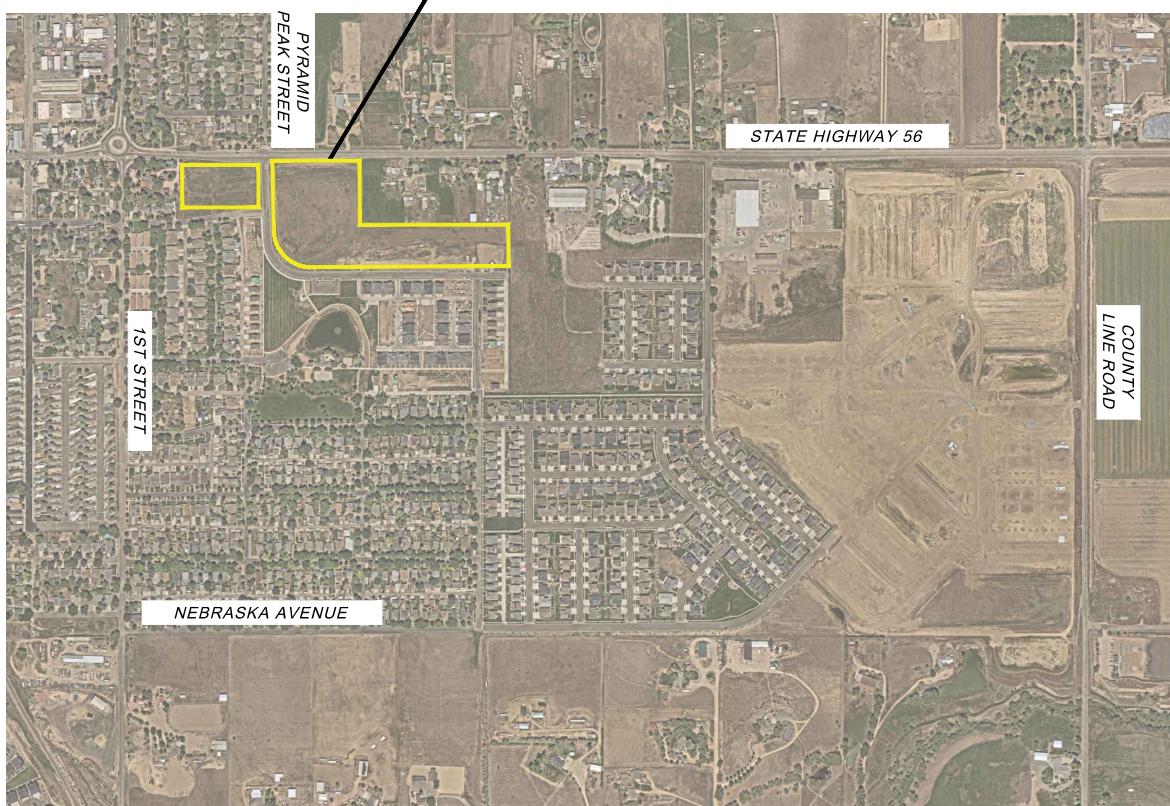
Sources : ITE Trip Generation 11th Edition, 2021.

Area Map



Location within Berthoud

PROJECT SITE



FOX TUTTLE
TRANSPORTATION GROUP

FICKEL FARM TRAFFIC IMPACT STUDY
VICINITY MAP

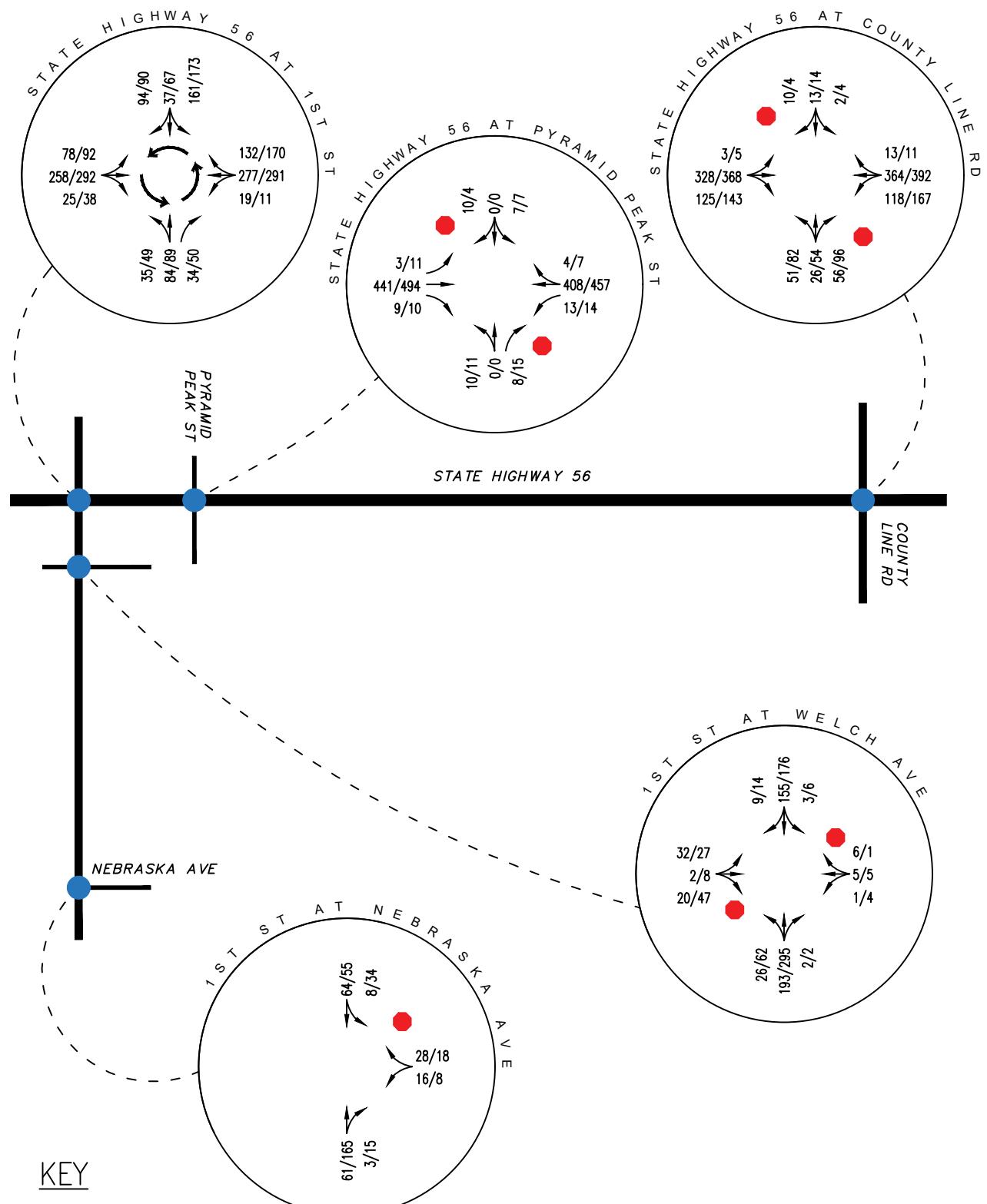
Project #	24095	Original Scale	NTS	Date	12/12/2024	Drawn by	CAF	Figure #	1
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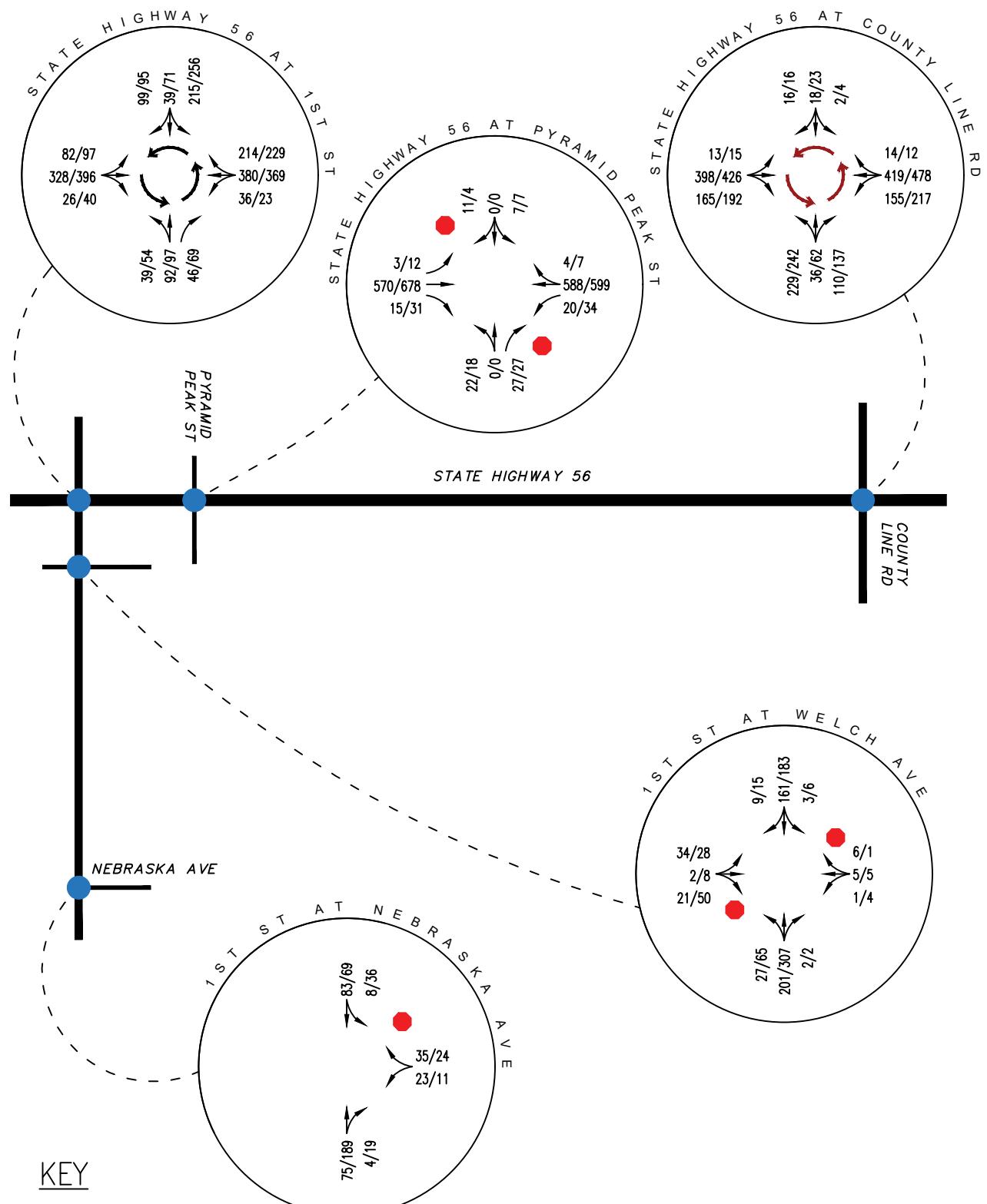
Proposed Connection
to State Highway 56 via Pyramid Peak Street
Full Movement
Side-Street Stop Controlled

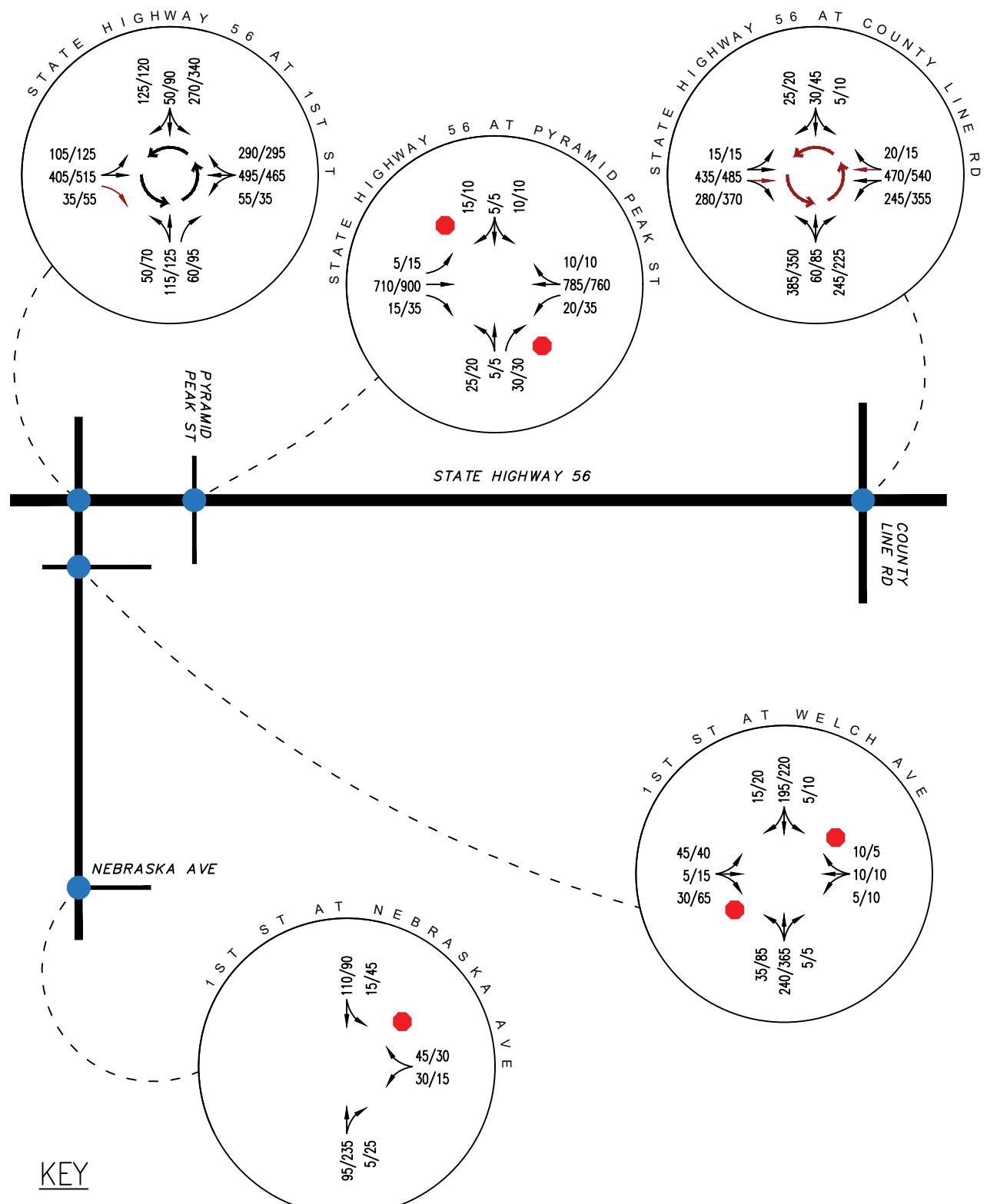


Proposed Connection
to 1st Street via 4th Street and Nebraska Avenue
Full Movement
Side-Street Stop Controlled



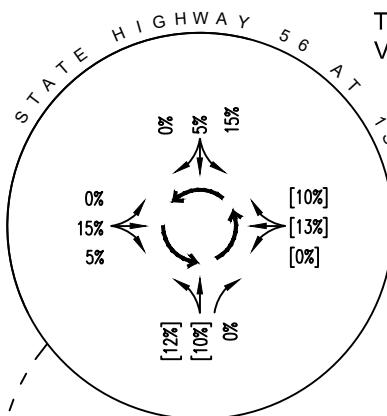






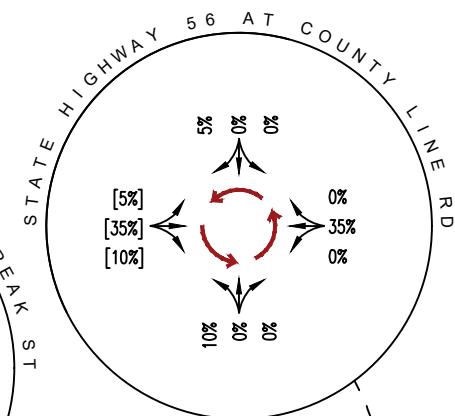
20%

To/From North
Via 1st Street



5%

To/From North
Via County
Line Road



25%

To/From West
Via Highway 56,
Welch Ave



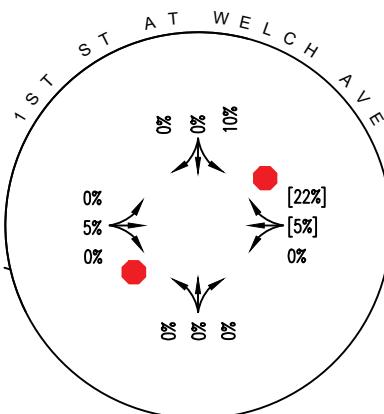
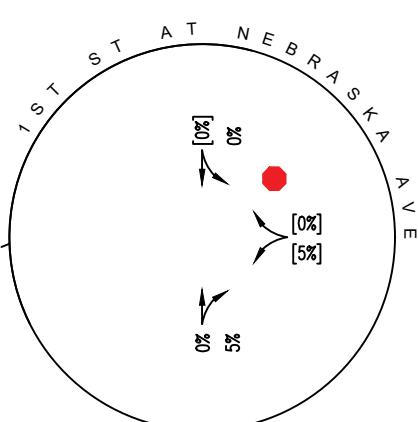
35%

To/From East
Via Highway 56

5%

To/From South
Via 1st Street

NEBRASKA AVE



10%

To/From South
Via County
Line Road

KEY

XX% [XX%] IN [OUT] SITE TRIP DISTRIBUTION

— EXISTING LANE CONFIGURATION

— PROPOSED FUTURE LANE



FOX TUTTLE

TRANSPORTATION GROUP

FICKEL FARM TRAFFIC IMPACT STUDY
SITE TRIP DISTRIBUTION

Project #

24095

Original Scale

NTS

Date

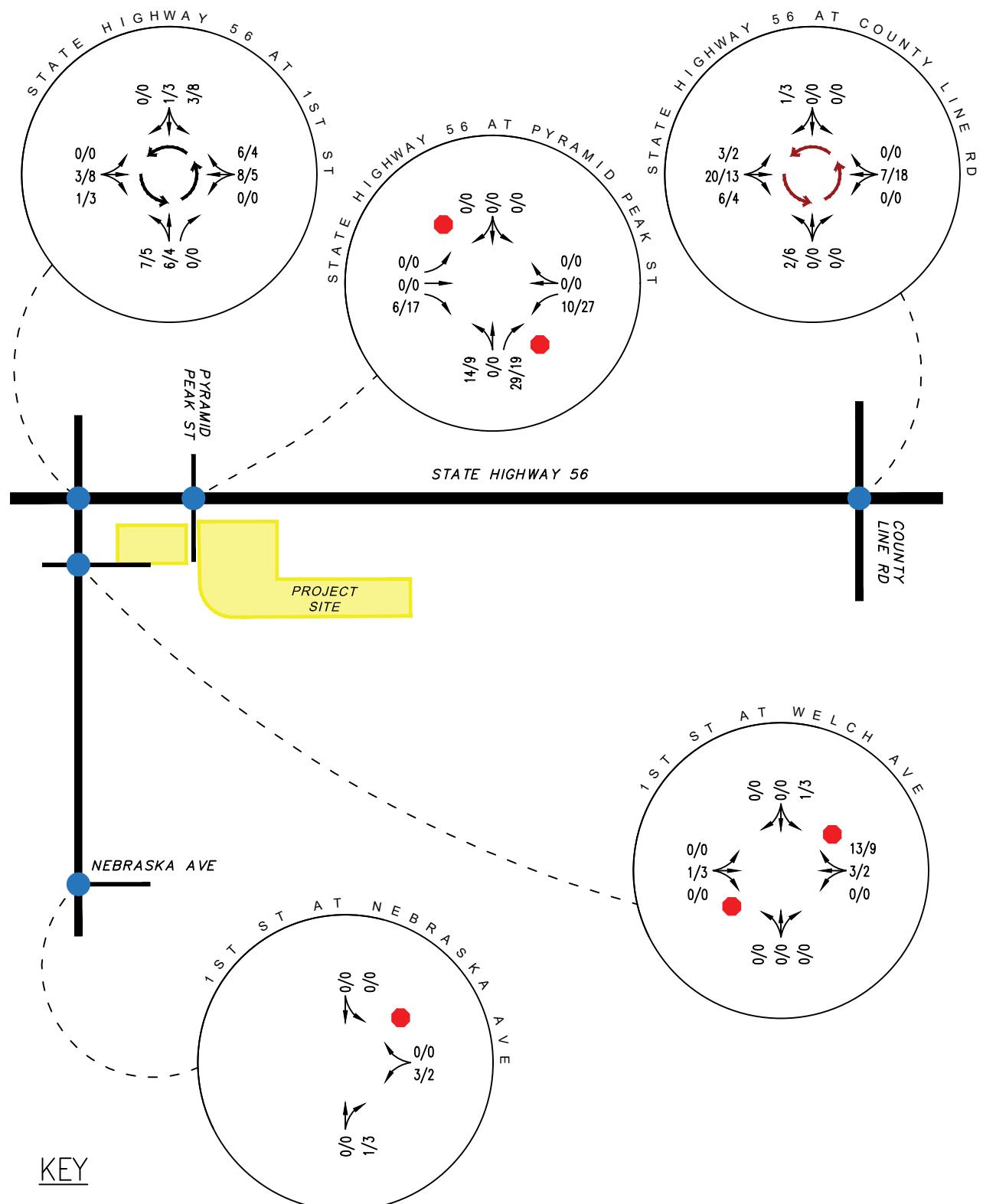
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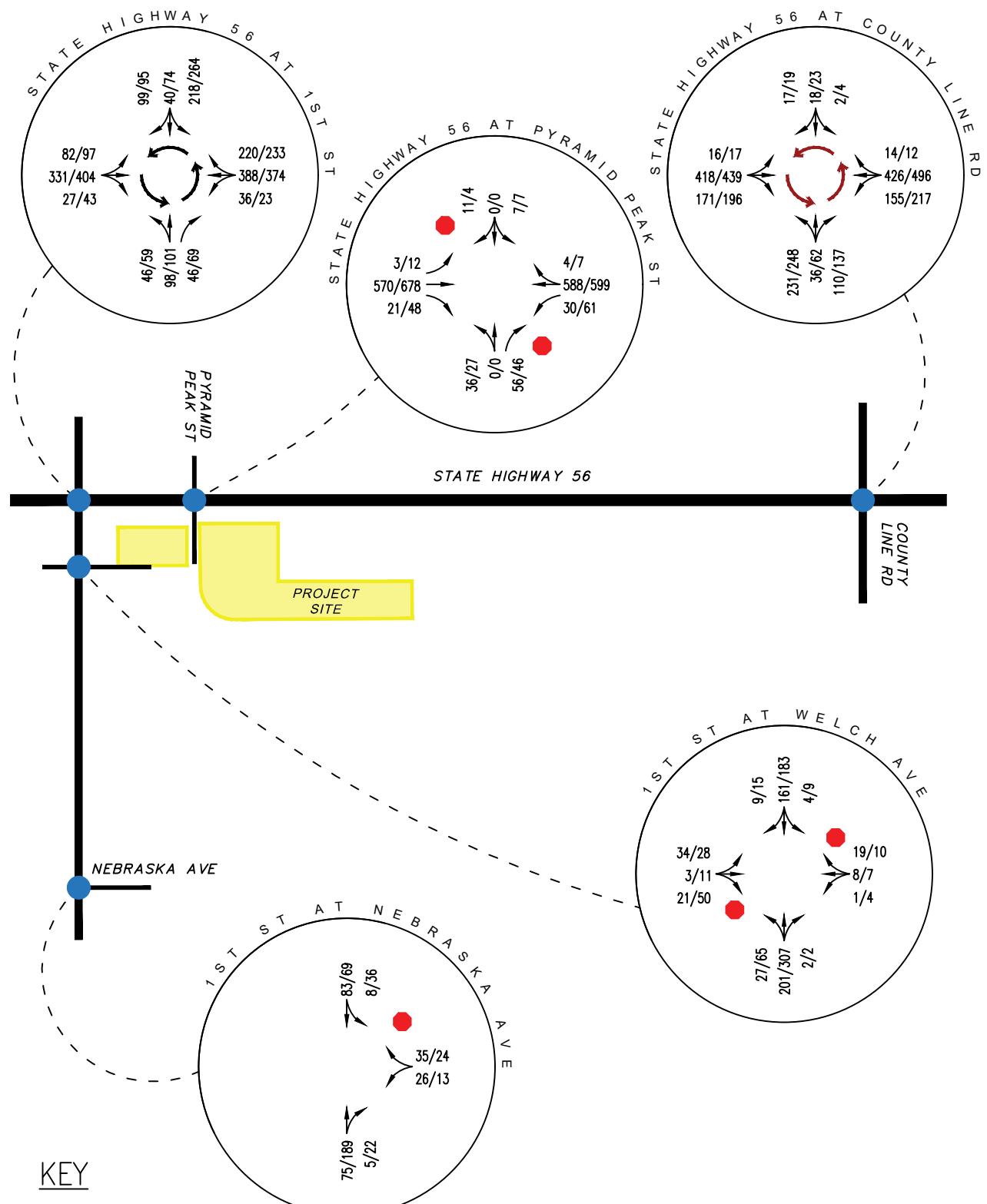
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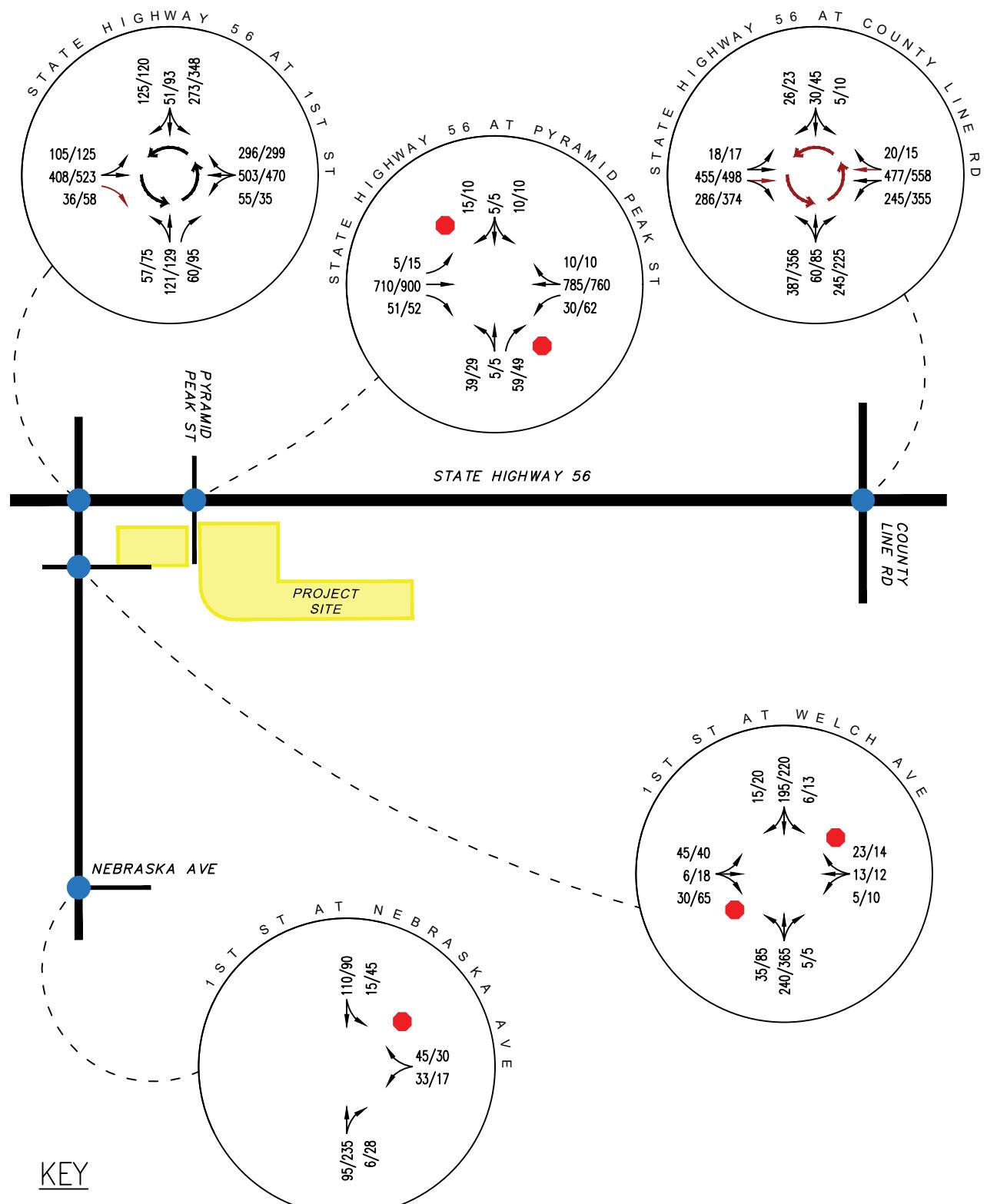
CAF

Figure #

6







Appendix:

Level of Service Definitions

Existing Traffic Data

Intersection Capacity Worksheets

Background Documentation



Level of Service Definitions

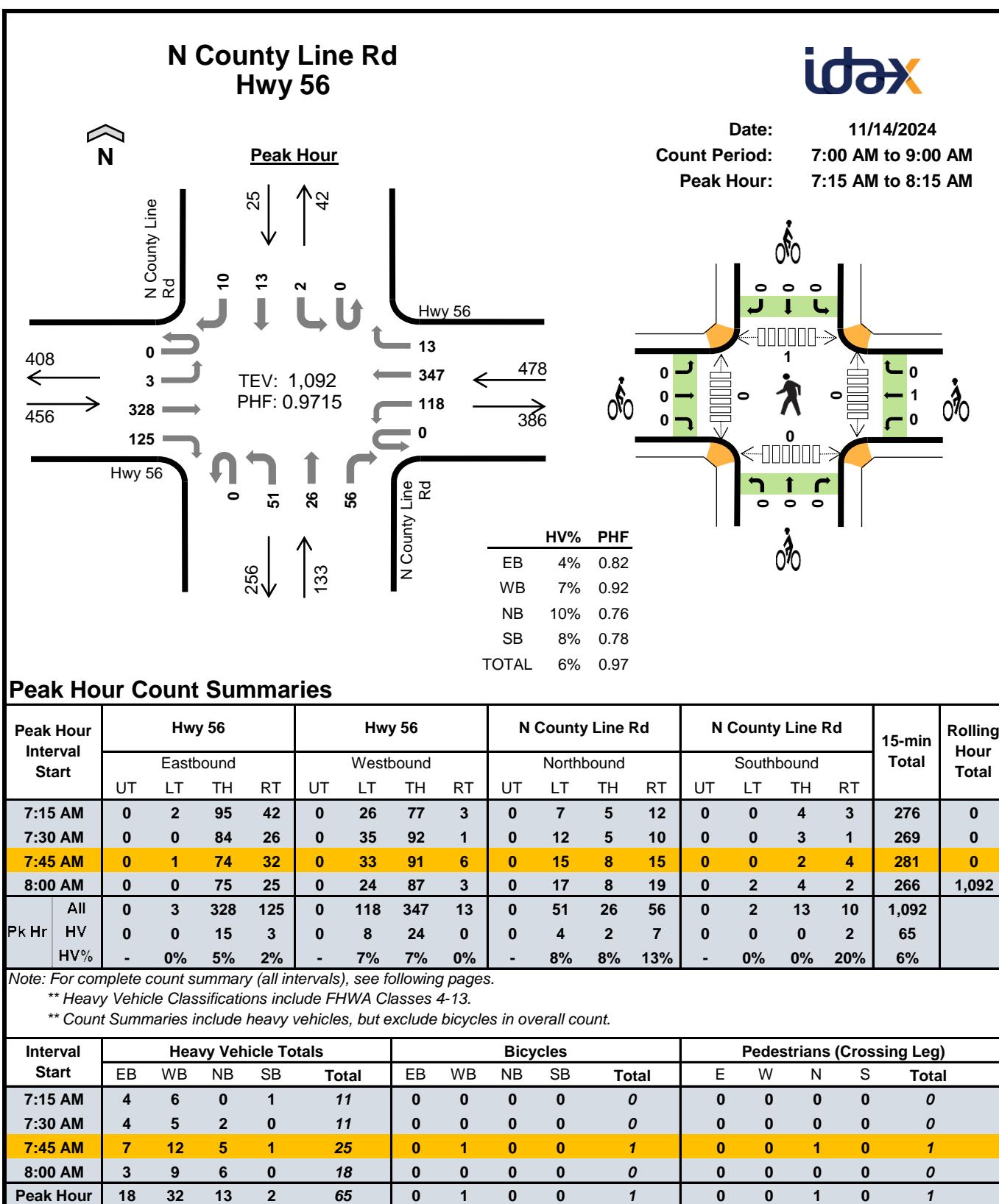
LEVEL OF SERVICE DEFINITIONS

In rating roadway and intersection operating conditions with existing or future traffic volumes, “Levels of Service” (LOS) A through F are used, with LOS A indicating very good operation and LOS F indicating poor operation. Levels of service at signalized and unsignalized intersections are closely associated with vehicle delays experienced in seconds per vehicle. More complete level of service definitions and delay data for signal and stop sign controlled intersections are contained in the following table for reference.

Level of Service Rating	Delay in seconds per vehicle (a)		Definition
	Signalized	Unsignalized	
A	0.0 to 10.0	0.0 to 10.0	Low vehicular traffic volumes; primarily free flow operations. Density is low and vehicles can freely maneuver within the traffic stream. Drivers are able to maintain their desired speeds with little or no delay.
B	10.1 to 20.0	10.1 to 15.0	Stable vehicular traffic volume flow with potential for some restriction of operating speeds due to traffic conditions. Vehicle maneuvering is only slightly restricted. The stopped delays are not bothersome and drivers are not subject to appreciable tension.
C	20.1 to 35.0	15.1 to 25.0	Stable traffic operations, however the ability for vehicles to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signal coordination or longer vehicle queues cause delays along the corridor.
D	35.1 to 55.0	25.1 to 35.0	Approaching unstable vehicular traffic flow where small increases in volume could cause substantial delays. Most drivers are restricted in ability to maneuver and selection of travel speeds due to congestion. Driver comfort and convenience are low, but tolerable.
E	55.1 to 80.0	35.1 to 50.0	Traffic operations characterized by significant approach delays and average travel speeds of one-half to one-third the free flow speed. Vehicular flow is unstable and there is potential for stoppages of brief duration. High signal density, extensive vehicle queuing, or corridor signal progression/timing are the typical causes of vehicle delays at signalized corridors.
F	> 80.0	> 50.0	Forced vehicular traffic flow and operations with high approach delays at critical intersections. Vehicle speeds are reduced substantially, and stoppages may occur for short or long periods of time because of downstream congestion.

(a) Delay ranges based on Highway Capacity Manual (6th Edition, 2016) criteria.

Existing Traffic Data



Count Summaries - All Vehicles																				
Interval Start	Hwy 56				Hwy 56				N County Line Rd				N County Line Rd				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	1	93	29	0	30	71	2	0	10	8	9	0	0	1	1	255	0		
7:15 AM	0	2	95	42	0	26	77	3	0	7	5	12	0	0	4	3	276	0		
7:30 AM	0	0	84	26	0	35	92	1	0	12	5	10	0	0	3	1	269	0		
7:45 AM	0	1	74	32	0	33	91	6	0	15	8	15	0	0	2	4	281	1,081		
8:00 AM	0	0	75	25	0	24	87	3	0	17	8	19	0	2	4	2	266	1,092		
8:15 AM	0	2	60	26	0	24	99	1	0	10	3	8	0	1	2	1	237	1,053		
8:30 AM	0	0	72	19	0	17	68	4	0	10	3	8	0	1	2	1	205	989		
8:45 AM	0	1	52	19	0	20	70	3	0	11	3	11	0	1	1	1	193	901		
Count Total	0	7	605	218	0	209	655	23	0	92	43	92	0	5	19	14	1,982			
Pk Hr	All	0	3	328	125	0	118	347	13	0	51	26	56	0	2	13	10	1,092		
	HV	0	0	15	3	0	8	24	0	0	4	2	7	0	0	0	2	65		
	HV%	-	0%	5%	2%	-	7%	7%	0%	-	8%	8%	13%	-	0%	0%	20%	6%		

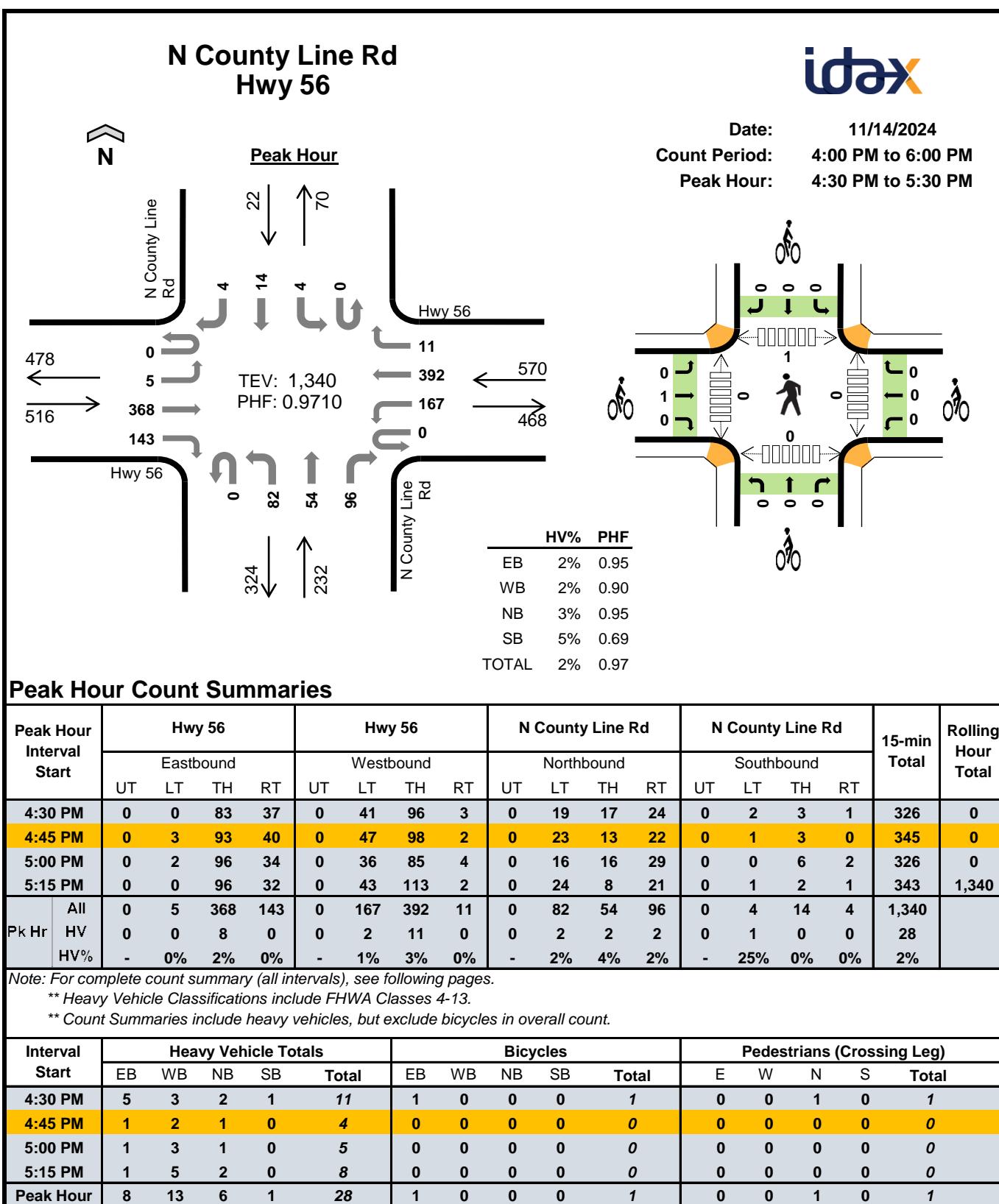
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	5	7	0	0	12	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	6	0	1	11	0	0	0	0	0	0	0	0	0	0
7:30 AM	4	5	2	0	11	0	0	0	0	0	0	0	0	0	0
7:45 AM	7	12	5	1	25	0	1	0	0	1	0	0	1	0	1
8:00 AM	3	9	6	0	18	0	0	0	0	0	0	0	0	0	0
8:15 AM	6	2	1	0	9	0	0	0	0	0	0	0	0	0	0
8:30 AM	3	8	2	0	13	0	0	0	0	0	0	0	0	0	0
8:45 AM	5	11	3	0	19	0	0	0	0	0	0	0	0	0	0
Count Total	37	60	19	2	118	0	1	0	0	1	0	0	1	0	1
Peak Hour	18	32	13	2	65	0	1	0	0	1	0	0	1	0	1

Count Summaries - Heavy Vehicles

Interval Start	Hwy 56				Hwy 56				N County Line Rd				N County Line Rd				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	1	3	1	0	0	7	0	0	0	0	0	0	0	0	0	12	0		
7:15 AM	0	0	2	2	0	0	6	0	0	0	0	0	0	0	0	1	11	0		
7:30 AM	0	0	4	0	0	1	4	0	0	1	0	1	0	0	0	0	11	0		
7:45 AM	0	0	6	1	0	7	5	0	0	1	1	3	0	0	0	1	25	59		
8:00 AM	0	0	3	0	0	0	9	0	0	2	1	3	0	0	0	0	18	65		
8:15 AM	0	0	6	0	0	1	1	0	0	1	0	0	0	0	0	0	9	63		
8:30 AM	0	0	3	0	0	4	4	0	0	0	0	2	0	0	0	0	13	65		
8:45 AM	0	0	2	3	0	6	5	0	0	1	0	2	0	0	0	0	19	59		
Count Total	0	1	29	7	0	19	41	0	0	6	2	11	0	0	0	2	118			
Pk Hr Heavy	0	0	15	3	0	8	24	0	0	4	2	7	0	0	0	2	65			

Count Summaries - Bikes

Interval Start	Hwy 56				Hwy 56				N County Line Rd				N County Line Rd				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1			
Pk Hr Bike	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1			



Count Summaries - All Vehicles																				
Interval Start	Hwy 56				Hwy 56				N County Line Rd				N County Line Rd				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	1	87	19	0	43	76	1	0	23	11	8	0	0	1	5	275	0		
4:15 PM	0	0	87	30	0	32	92	0	0	23	11	24	0	0	3	2	304	0		
4:30 PM	0	0	83	37	0	41	96	3	0	19	17	24	0	2	3	1	326	0		
4:45 PM	0	3	93	40	0	47	98	2	0	23	13	22	0	1	3	0	345	1,250		
5:00 PM	0	2	96	34	0	36	85	4	0	16	16	29	0	0	6	2	326	1,301		
5:15 PM	0	0	96	32	0	43	113	2	0	24	8	21	0	1	2	1	343	1,340		
5:30 PM	0	0	80	24	0	43	96	2	0	21	6	24	0	0	0	1	297	1,311		
5:45 PM	0	0	75	24	0	45	105	1	0	26	10	30	0	0	1	0	317	1,283		
Count Total	0	6	697	240	0	330	761	15	0	175	92	182	0	4	19	12	2,533			
Pk Hr	All	0	5	368	143	0	167	392	11	0	82	54	96	0	4	14	4	1,340		
	HV	0	0	8	0	0	2	11	0	0	2	2	2	0	1	0	0	28		
	HV%	-	0%	2%	0%	-	1%	3%	0%	-	2%	4%	2%	-	25%	0%	0%	2%		

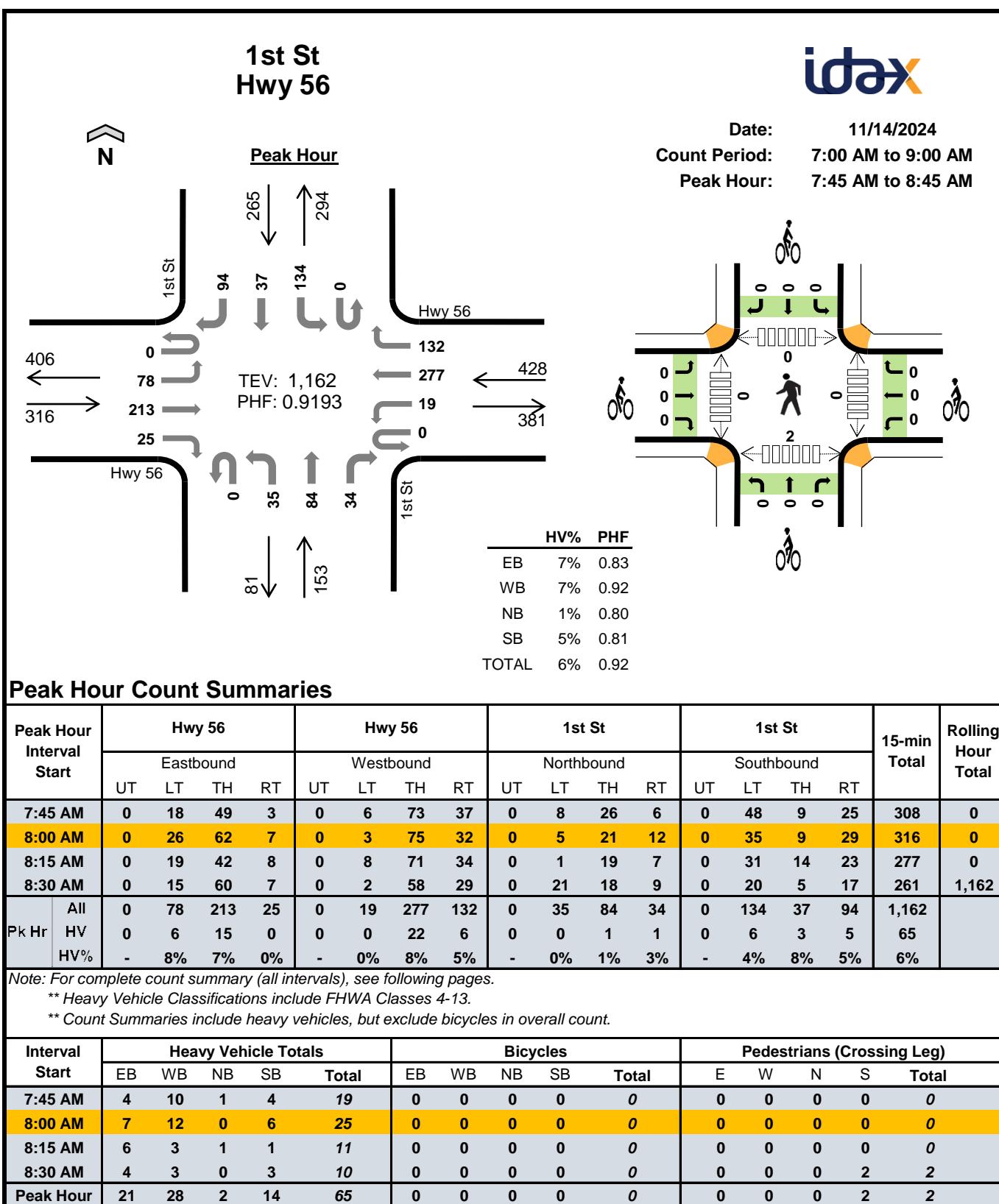
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	5	5	0	0	10	0	0	0	0	0	0	0	0	0	0
4:15 PM	8	4	1	0	13	0	0	0	0	0	0	0	0	0	0
4:30 PM	5	3	2	1	11	1	0	0	0	1	0	0	1	0	1
4:45 PM	1	2	1	0	4	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	5	2	0	8	0	0	0	0	0	0	0	0	0	0
5:30 PM	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0
Count Total	24	33	7	1	65	1	0	0	0	1	0	0	1	0	1
Peak Hour	8	13	6	1	28	1	0	0	0	1	0	0	1	0	1

Count Summaries - Heavy Vehicles

Interval Start	Hwy 56				Hwy 56				N County Line Rd				N County Line Rd				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	4	1	0	3	2	0	0	0	0	0	0	0	0	0	10	0		
4:15 PM	0	0	5	3	0	0	4	0	0	0	0	1	0	0	0	0	13	0		
4:30 PM	0	0	5	0	0	0	3	0	0	1	1	0	0	1	0	0	11	0		
4:45 PM	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	4	38		
5:00 PM	0	0	1	0	0	0	3	0	0	0	1	0	0	0	0	0	5	33		
5:15 PM	0	0	1	0	0	1	4	0	0	1	0	1	0	0	0	0	8	28		
5:30 PM	0	0	2	0	0	1	3	0	0	0	0	0	0	0	0	0	6	23		
5:45 PM	0	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	8	27		
Count Total	0	0	20	4	0	6	27	0	0	2	2	3	0	1	0	0	65			
Pk Hr Heavy	0	0	8	0	0	2	11	0	0	2	2	2	0	1	0	0	28			

Count Summaries - Bikes

Interval Start	Hwy 56				Hwy 56				N County Line Rd				N County Line Rd				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
Pk Hr Bike	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			

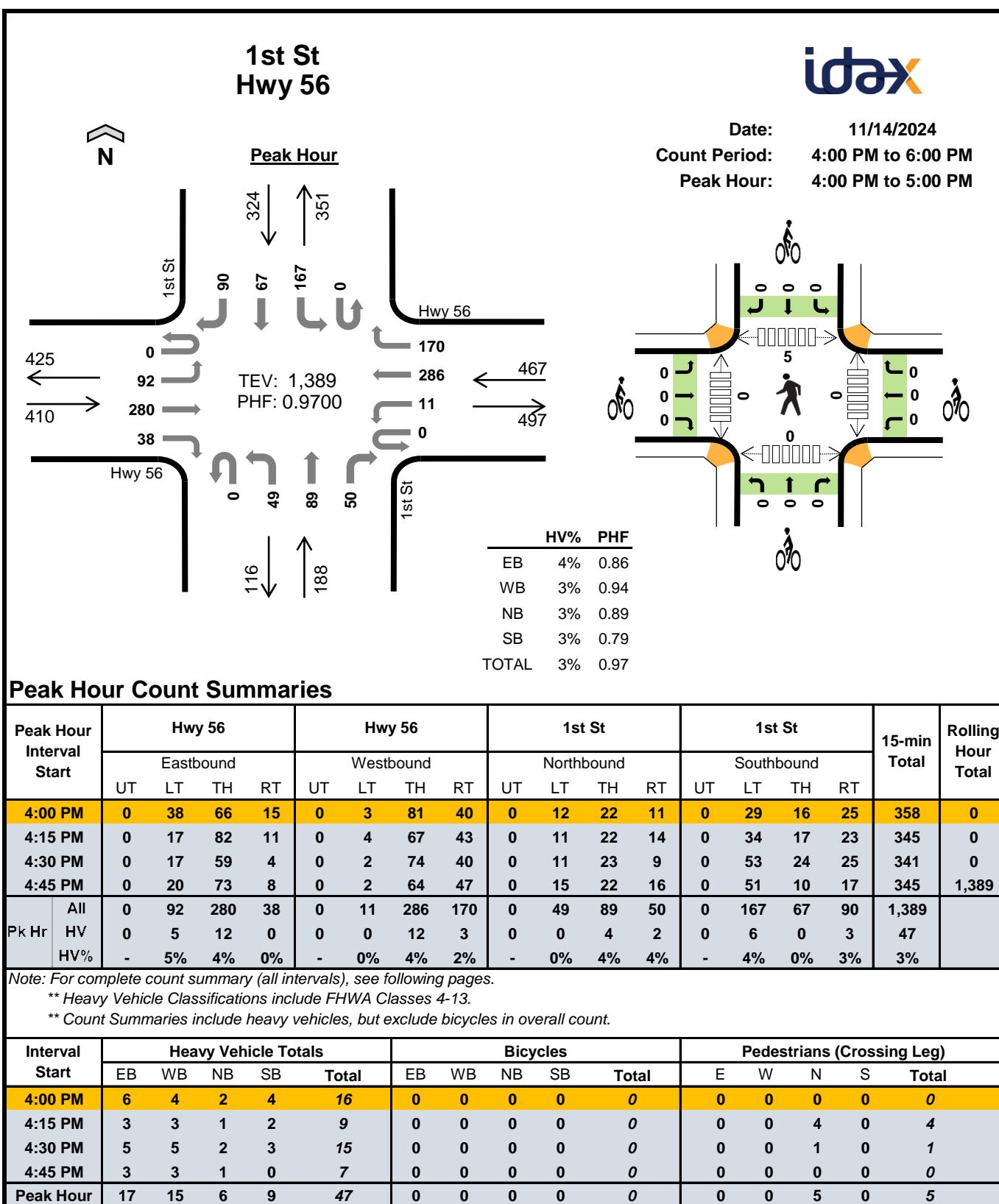


Count Summaries - All Vehicles																				
Interval Start	Hwy 56				Hwy 56				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	19	63	2	0	5	48	35	0	6	15	12	0	45	3	15	268	0		
7:15 AM	0	16	51	1	0	5	52	30	0	6	23	14	0	57	8	15	278	0		
7:30 AM	0	16	37	1	0	5	56	43	0	5	17	14	0	49	3	10	256	0		
7:45 AM	0	18	49	3	0	6	73	37	0	8	26	6	0	48	9	25	308	1,110		
8:00 AM	0	26	62	7	0	3	75	32	0	5	21	12	0	35	9	29	316	1,158		
8:15 AM	0	19	42	8	0	8	71	34	0	1	19	7	0	31	14	23	277	1,157		
8:30 AM	0	15	60	7	0	2	58	29	0	21	18	9	0	20	5	17	261	1,162		
8:45 AM	0	19	43	6	0	2	36	40	0	13	23	15	0	24	11	19	251	1,105		
Count Total	0	148	407	35	0	36	469	280	0	65	162	89	0	309	62	153	2,215			
Pk Hr	All	0	78	213	25	0	19	277	132	0	35	84	34	0	134	37	94	1,162		
	HV	0	6	15	0	0	0	22	6	0	0	1	1	0	6	3	5	65		
	HV%	-	8%	7%	0%	-	0%	8%	5%	-	0%	1%	3%	-	4%	8%	5%	6%		

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	1	7	3	1	12	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	7	0	1	12	0	0	0	0	0	0	0	0	0	0
7:30 AM	2	4	2	1	9	0	0	0	0	0	0	0	0	2	2
7:45 AM	4	10	1	4	19	0	0	0	0	0	0	0	0	0	0
8:00 AM	7	12	0	6	25	0	0	0	0	0	0	0	0	0	0
8:15 AM	6	3	1	1	11	0	0	0	0	0	0	0	0	0	0
8:30 AM	4	3	0	3	10	0	0	0	0	0	0	0	0	2	2
8:45 AM	4	4	0	4	12	0	0	0	0	0	0	0	0	0	0
Count Total	32	50	7	21	110	0	0	0	0	0	0	0	0	4	4
Peak Hour	21	28	2	14	65	0	0	0	0	0	0	0	0	2	2

Count Summaries - Heavy Vehicles																				
Interval Start	Hwy 56				Hwy 56				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	1	0	0	0	7	0	0	1	1	1	0	0	0	1	12	0		
7:15 AM	0	0	3	1	0	1	5	1	0	0	0	0	0	1	0	0	12	0		
7:30 AM	0	0	2	0	0	1	2	1	0	0	0	2	0	1	0	0	9	0		
7:45 AM	0	2	2	0	0	0	6	4	0	0	1	0	0	3	1	0	19	52		
8:00 AM	0	2	5	0	0	0	10	2	0	0	0	0	0	3	1	2	25	65		
8:15 AM	0	1	5	0	0	0	3	0	0	0	0	1	0	0	1	0	11	64		
8:30 AM	0	1	3	0	0	0	3	0	0	0	0	0	0	0	0	3	10	65		
8:45 AM	0	1	3	0	0	0	2	2	0	0	0	0	0	2	1	1	12	58		
Count Total	0	7	24	1	0	2	38	10	0	1	2	4	0	10	4	7	110			
Pk Hr Heavy	0	6	15	0	0	0	22	6	0	0	1	1	0	6	3	5	65			

Count Summaries - Bikes																				
Interval Start	Hwy 56				Hwy 56				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

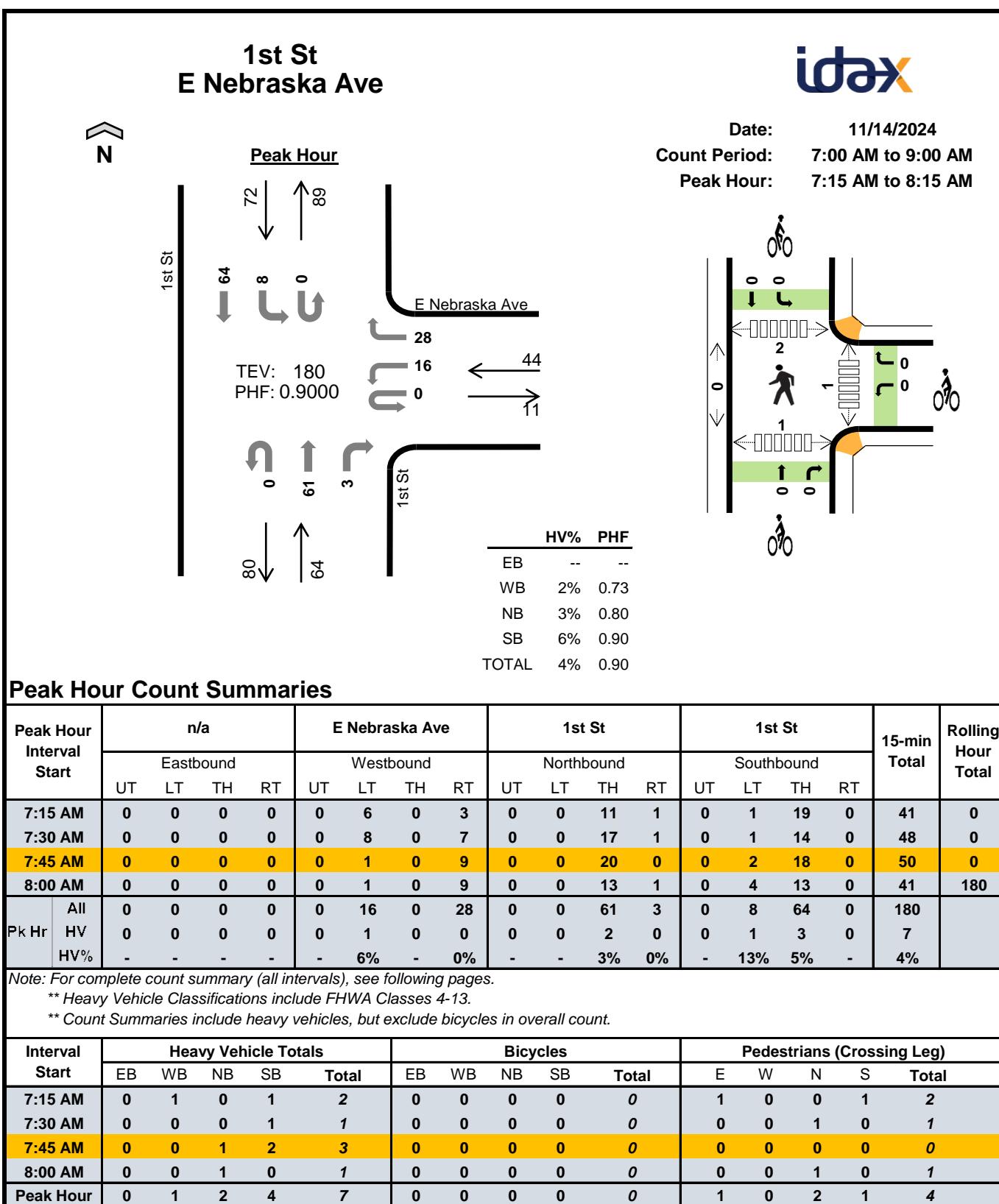


Count Summaries - All Vehicles																				
Interval Start	Hwy 56				Hwy 56				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	38	66	15	0	3	81	40	0	12	22	11	0	29	16	25	358	0		
4:15 PM	0	17	82	11	0	4	67	43	0	11	22	14	0	34	17	23	345	0		
4:30 PM	0	17	59	4	0	2	74	40	0	11	23	9	0	53	24	25	341	0		
4:45 PM	0	20	73	8	0	2	64	47	0	15	22	16	0	51	10	17	345	1,389		
5:00 PM	0	17	57	12	0	3	56	33	0	14	29	16	0	50	22	38	347	1,378		
5:15 PM	0	18	67	4	0	1	81	55	0	4	20	18	0	37	18	32	355	1,388		
5:30 PM	0	21	58	4	0	3	79	32	0	8	24	18	0	30	21	11	309	1,356		
5:45 PM	0	14	53	8	0	2	76	48	0	6	18	9	0	25	10	22	291	1,302		
Count Total	0	162	515	66	0	20	578	338	0	81	180	111	0	309	138	193	2,691			
Pk Hr	All	0	92	280	38	0	11	286	170	0	49	89	50	0	167	67	90	1,389		
	HV	0	5	12	0	0	0	12	3	0	0	4	2	0	6	0	3	47		
	HV%	-	5%	4%	0%	-	0%	4%	2%	-	0%	4%	4%	-	4%	0%	3%	3%		

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	6	4	2	4	16	0	0	0	0	0	0	0	0	0	0
4:15 PM	3	3	1	2	9	0	0	0	0	0	0	0	0	4	0
4:30 PM	5	5	2	3	15	0	0	0	0	0	0	0	0	1	0
4:45 PM	3	3	1	0	7	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	3	0	1	4	0	0	0	0	0	0	0	0	0	0
5:15 PM	3	3	0	3	9	0	0	0	0	0	0	0	0	0	0
5:30 PM	3	2	1	0	6	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0
Count Total	24	26	8	13	71	0	0	0	0	0	0	0	0	5	0
Peak Hour	17	15	6	9	47	0	0	0	0	0	0	0	0	5	0

Count Summaries - Heavy Vehicles																				
Interval Start	Hwy 56				Hwy 56				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	3	3	0	0	0	4	0	0	0	1	1	0	2	0	2	16	0		
4:15 PM	0	0	3	0	0	0	2	1	0	0	0	1	0	2	0	0	9	0		
4:30 PM	0	1	4	0	0	0	4	1	0	0	2	0	0	2	0	1	15	0		
4:45 PM	0	1	2	0	0	0	2	1	0	0	1	0	0	0	0	0	7	47		
5:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	4	35		
5:15 PM	0	0	3	0	0	0	2	1	0	0	0	0	0	2	1	0	9	35		
5:30 PM	0	1	2	0	0	0	2	0	0	1	0	0	0	0	0	0	6	26		
5:45 PM	0	0	1	0	0	1	0	2	0	1	0	0	0	0	0	0	5	24		
Count Total	0	6	18	0	0	1	19	6	0	2	4	2	0	8	1	4	71			
Pk Hr Heavy	0	5	12	0	0	0	12	3	0	0	4	2	0	6	0	3	47			

Count Summaries - Bikes																				
Interval Start	Hwy 56				Hwy 56				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

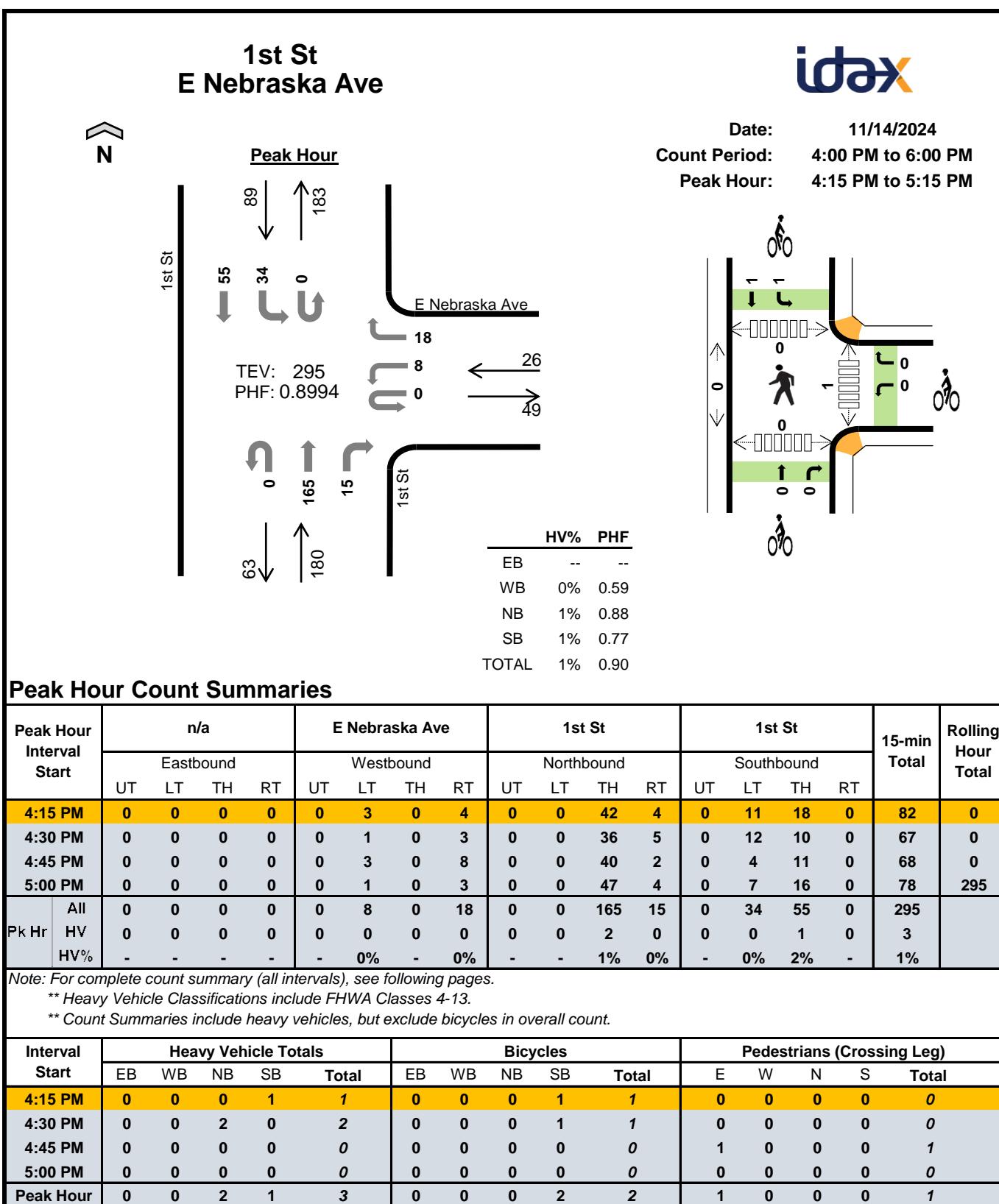


Count Summaries - All Vehicles																				
Interval Start	n/a				E Nebraska Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	5	0	3	0	0	6	1	0	1	14	0	30	0		
7:15 AM	0	0	0	0	0	6	0	3	0	0	11	1	0	1	19	0	41	0		
7:30 AM	0	0	0	0	0	8	0	7	0	0	17	1	0	1	14	0	48	0		
7:45 AM	0	0	0	0	0	1	0	9	0	0	20	0	0	2	18	0	50	169		
8:00 AM	0	0	0	0	0	1	0	9	0	0	13	1	0	4	13	0	41	180		
8:15 AM	0	0	0	0	0	0	0	3	0	0	12	1	0	3	16	0	35	174		
8:30 AM	0	0	0	0	0	5	0	8	0	0	12	0	0	8	9	0	42	168		
8:45 AM	0	0	0	0	0	2	0	9	0	0	11	0	0	5	15	0	42	160		
Count Total	0	0	0	0	0	28	0	51	0	0	102	5	0	25	118	0	329			
Pk Hr	All	0	0	0	0	0	16	0	28	0	0	61	3	0	8	64	0	180		
	HV	0	0	0	0	0	1	0	0	0	0	2	0	0	1	3	0	7		
	HV%	-	-	-	-	-	6%	-	0%	-	-	3%	0%	-	13%	5%	-	4%		

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1
7:15 AM	0	1	0	1	2	0	0	0	0	0	1	0	0	1	2
7:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
8:15 AM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0
Count Total	0	1	6	7	14	0	0	0	0	0	2	0	2	1	5
Peak Hour	0	1	2	4	7	0	0	0	0	0	1	0	2	1	4

Count Summaries - Heavy Vehicles																				
Interval Start	n/a				E Nebraska Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0		
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	7		
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7		
8:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	8		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7		
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	7		
Count Total	0	0	0	0	0	1	0	0	0	0	6	0	0	1	6	0	14			
Pk Hr Heavy	0	0	0	0	0	1	0	0	0	0	2	0	0	1	3	0	7			

Count Summaries - Bikes																				
Interval Start	n/a				E Nebraska Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			



Count Summaries - All Vehicles																				
Interval Start	n/a				E Nebraska Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	2	0	3	0	0	39	1	0	4	14	0	63	0		
4:15 PM	0	0	0	0	0	3	0	4	0	0	42	4	0	11	18	0	82	0		
4:30 PM	0	0	0	0	0	1	0	3	0	0	36	5	0	12	10	0	67	0		
4:45 PM	0	0	0	0	0	3	0	8	0	0	40	2	0	4	11	0	68	280		
5:00 PM	0	0	0	0	0	1	0	3	0	0	47	4	0	7	16	0	78	295		
5:15 PM	0	0	0	0	0	1	0	2	0	0	50	7	0	7	4	0	71	284		
5:30 PM	0	0	0	0	0	2	0	2	0	0	36	5	0	8	13	0	66	283		
5:45 PM	0	0	0	0	0	0	0	1	0	0	30	5	0	6	5	0	47	262		
Count Total	0	0	0	0	0	13	0	26	0	0	320	33	0	59	91	0	542			
Pk Hr	All	0	0	0	0	0	8	0	18	0	0	165	15	0	34	55	0	295		
	HV	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3		
	HV%	-	-	-	-	-	0%	-	0%	-	-	1%	0%	-	0%	2%	-	1%		

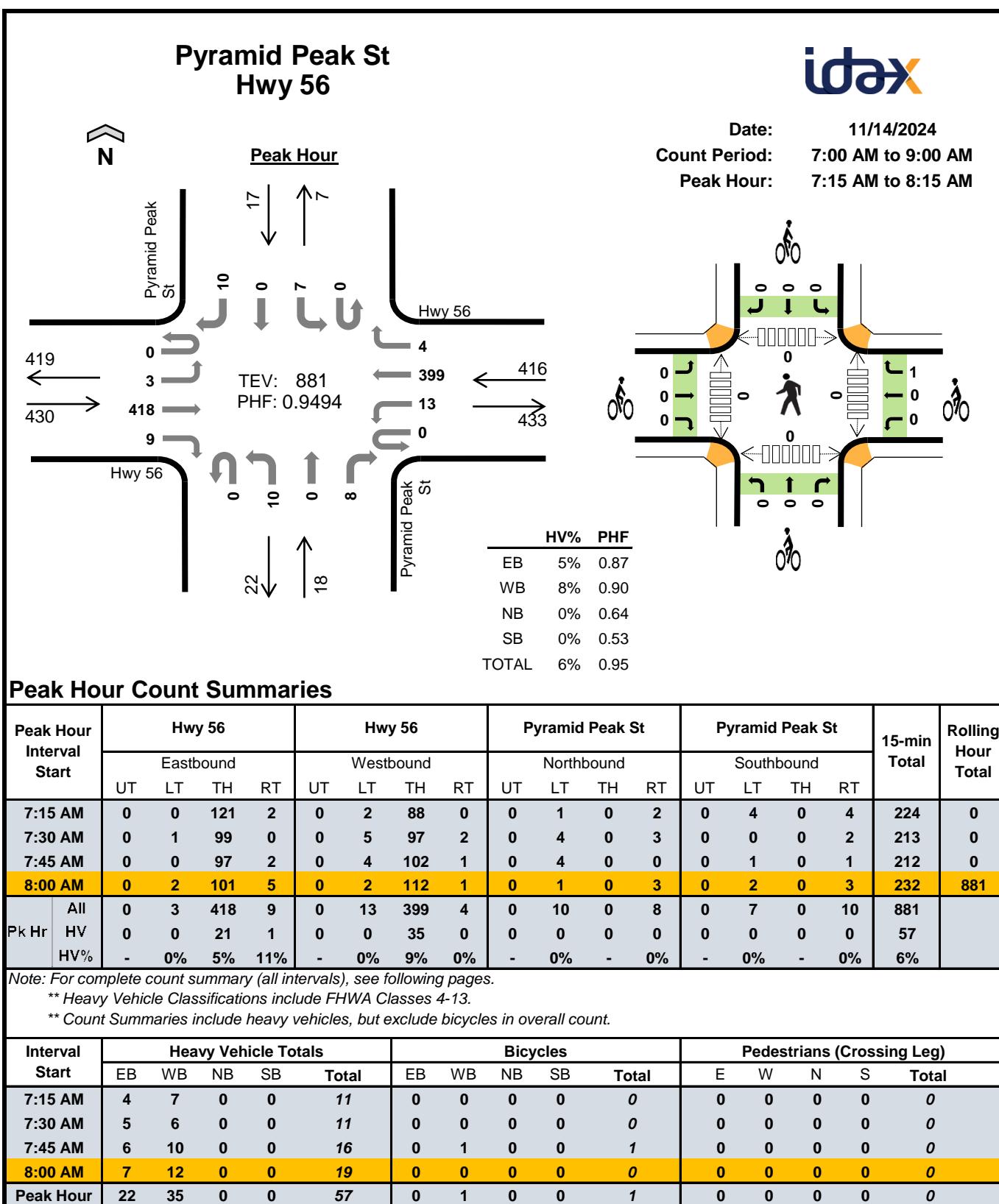
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1
4:15 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
4:30 PM	0	0	2	0	2	0	0	0	1	1	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	3	2	5	0	0	1	2	3	1	1	2	0	4
Peak Hour	0	0	2	1	3	0	0	0	2	2	1	0	0	0	1

Count Summaries - Heavy Vehicles

Interval Start	n/a				E Nebraska Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Count Total	0	0	0	0	0	0	0	0	0	0	3	0	0	1	1	0	5			
Pk Hr Heavy	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3			

Count Summaries - Bikes

Interval Start	n/a				E Nebraska Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	3			
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2			

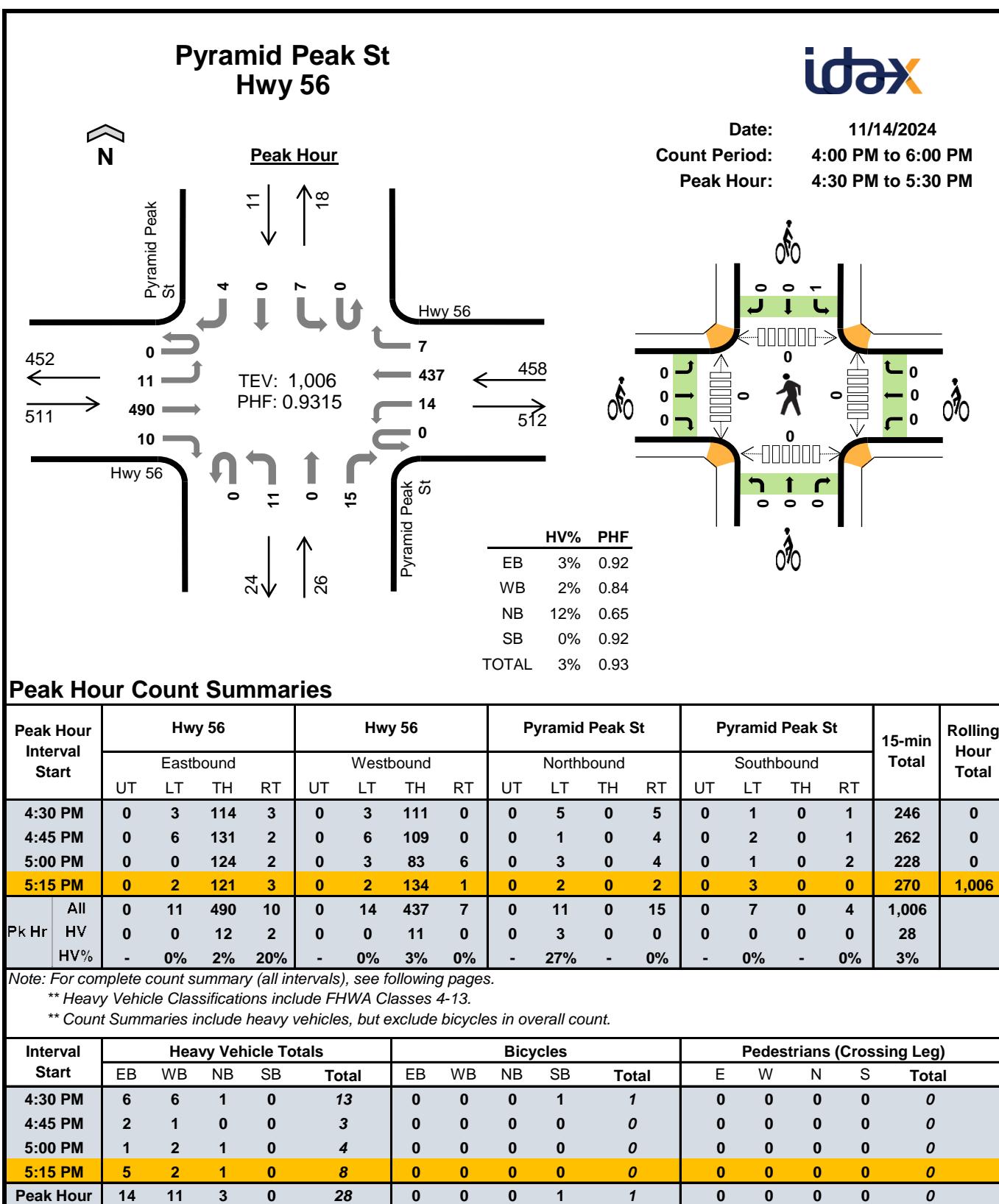


Count Summaries - All Vehicles																				
Interval Start	Hwy 56				Hwy 56				Pyramid Peak St				Pyramid Peak St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	118	2	0	1	82	0	0	1	0	1	0	2	0	3	210	0		
7:15 AM	0	0	121	2	0	2	88	0	0	1	0	2	0	4	0	4	224	0		
7:30 AM	0	1	99	0	0	5	97	2	0	4	0	3	0	0	0	2	213	0		
7:45 AM	0	0	97	2	0	4	102	1	0	4	0	0	0	1	0	1	212	859		
8:00 AM	0	2	101	5	0	2	112	1	0	1	0	3	0	2	0	3	232	881		
8:15 AM	0	2	75	2	0	2	99	1	0	4	1	2	0	1	0	4	193	850		
8:30 AM	0	2	85	1	0	1	89	1	0	0	0	1	0	1	0	3	184	821		
8:45 AM	0	1	76	1	0	4	68	0	0	4	0	1	0	0	0	1	156	765		
Count Total	0	8	772	15	0	21	737	6	0	19	1	13	0	11	0	21	1,624			
Pk Hr	All	0	3	418	9	0	13	399	4	0	10	0	8	0	7	0	10	881		
	HV	0	0	21	1	0	0	35	0	0	0	0	0	0	0	0	0	57		
	HV%	-	0%	5%	11%	-	0%	9%	0%	-	0%	-	0%	-	0%	-	0%	6%		

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	2	7	0	0	9	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	7	0	0	11	0	0	0	0	0	0	0	0	0	0
7:30 AM	5	6	0	0	11	0	0	0	0	0	0	0	0	0	0
7:45 AM	6	10	0	0	16	0	1	0	0	1	0	0	0	0	0
8:00 AM	7	12	0	0	19	0	0	0	0	0	0	0	0	0	0
8:15 AM	6	2	0	0	8	0	0	0	0	0	0	0	0	0	0
8:30 AM	3	2	0	0	5	0	0	0	0	0	0	0	0	0	0
8:45 AM	6	4	0	0	10	0	0	0	0	0	0	0	0	0	0
Count Total	39	50	0	0	89	0	1	0	0	1	0	0	0	0	0
Peak Hour	22	35	0	0	57	0	1	0	0	1	0	0	0	0	0

Count Summaries - Heavy Vehicles																				
Interval Start	Hwy 56				Hwy 56				Pyramid Peak St				Pyramid Peak St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	2	0	0	0	7	0	0	0	0	0	0	0	0	0	9	0		
7:15 AM	0	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0	11	0		
7:30 AM	0	0	5	0	0	0	6	0	0	0	0	0	0	0	0	0	11	0		
7:45 AM	0	0	5	1	0	0	10	0	0	0	0	0	0	0	0	0	16	47		
8:00 AM	0	0	7	0	0	0	12	0	0	0	0	0	0	0	0	0	19	57		
8:15 AM	0	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0	8	54		
8:30 AM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	48		
8:45 AM	0	0	6	0	0	0	4	0	0	0	0	0	0	0	0	0	10	42		
Count Total	0	0	38	1	0	0	50	0	0	0	0	0	0	0	0	0	89			
Pk Hr Heavy	0	0	21	1	0	0	35	0	0	0	0	0	0	0	0	0	57			

Count Summaries - Bikes																				
Interval Start	Hwy 56				Hwy 56				Pyramid Peak St				Pyramid Peak St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1			
Pk Hr Bike	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1			



Count Summaries - All Vehicles																				
Interval Start	Hwy 56				Hwy 56				Pyramid Peak St				Pyramid Peak St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	1	107	3	0	4	111	1	0	5	0	3	0	1	0	2	238	0		
4:15 PM	0	5	126	3	0	2	108	3	0	0	0	7	0	2	0	1	257	0		
4:30 PM	0	3	114	3	0	3	111	0	0	5	0	5	0	1	0	1	246	0		
4:45 PM	0	6	131	2	0	6	109	0	0	1	0	4	0	2	0	1	262	1,003		
5:00 PM	0	0	124	2	0	3	83	6	0	3	0	4	0	1	0	2	228	993		
5:15 PM	0	2	121	3	0	2	134	1	0	2	0	2	0	3	0	0	270	1,006		
5:30 PM	0	0	99	1	0	2	112	1	0	2	0	0	0	2	0	1	220	980		
5:45 PM	0	0	85	1	0	2	132	3	0	3	0	1	0	1	0	1	229	947		
Count Total	0	17	907	18	0	24	900	15	0	21	0	26	0	13	0	9	1,950			
Pk Hr	All	0	11	490	10	0	14	437	7	0	11	0	15	0	7	0	4	1,006		
	HV	0	0	12	2	0	0	11	0	0	3	0	0	0	0	0	0	28		
	HV%	-	0%	2%	20%	-	0%	3%	0%	-	27%	-	0%	-	0%	-	0%	3%		

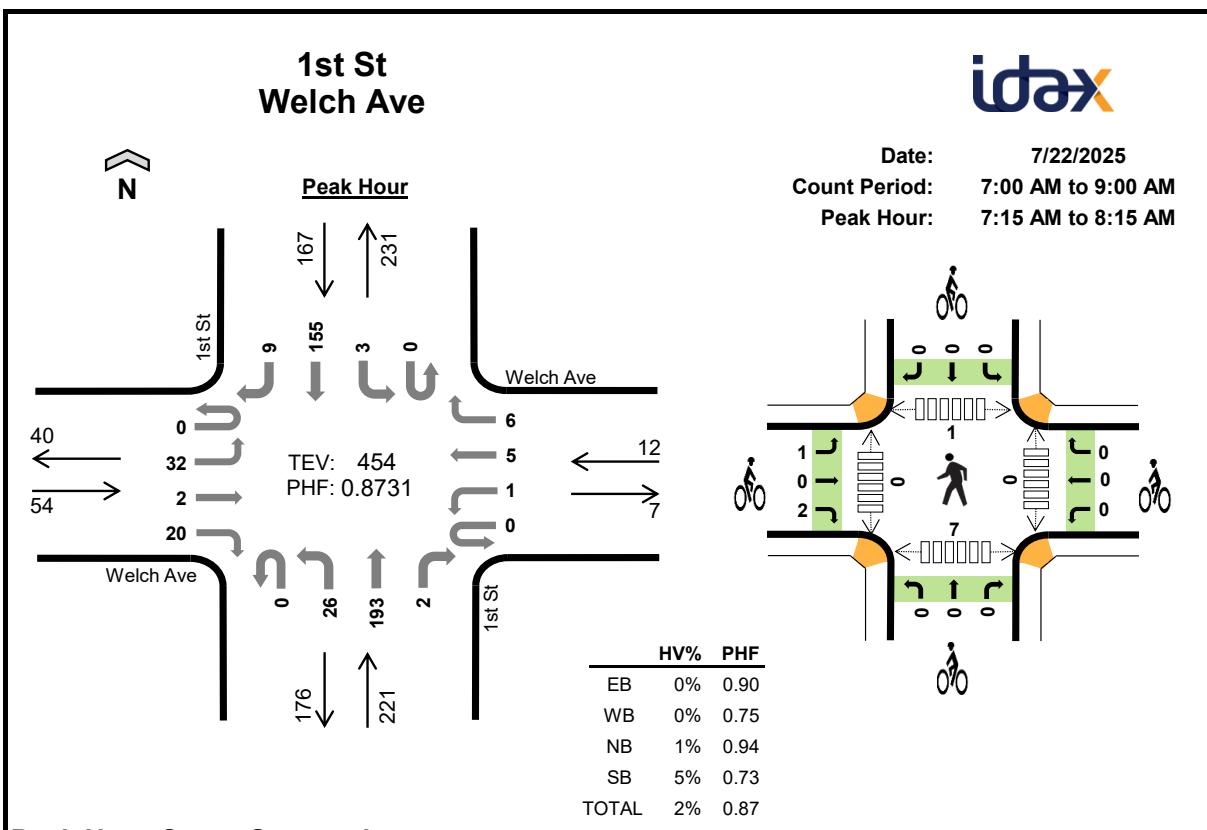
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	6	5	1	0	12	0	0	0	0	0	0	0	0	0	0
4:15 PM	6	1	0	0	7	0	0	0	0	0	0	0	0	0	0
4:30 PM	6	6	1	0	13	0	0	0	1	1	0	0	0	0	0
4:45 PM	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	2	1	0	4	0	0	0	0	0	0	0	0	0	0
5:15 PM	5	2	1	0	8	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0
Count Total	28	23	4	0	55	0	0	0	1	1	0	0	0	0	0
Peak Hour	14	11	3	0	28	0	0	0	1	1	0	0	0	0	0

Count Summaries - Heavy Vehicles

Interval Start	Hwy 56				Hwy 56				Pyramid Peak St				Pyramid Peak St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	6	0	0	0	5	0	0	1	0	0	0	0	0	0	12	0		
4:15 PM	0	0	5	1	0	0	1	0	0	0	0	0	0	0	0	0	7	0		
4:30 PM	0	0	6	0	0	0	6	0	0	1	0	0	0	0	0	0	13	0		
4:45 PM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	35		
5:00 PM	0	0	1	0	0	0	2	0	0	1	0	0	0	0	0	0	4	27		
5:15 PM	0	0	4	1	0	0	2	0	0	1	0	0	0	0	0	0	8	28		
5:30 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	18		
5:45 PM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	5	20		
Count Total	0	0	25	3	0	0	23	0	0	4	0	0	0	0	0	0	55			
Pk Hr Heavy	0	0	12	2	0	0	11	0	0	3	0	0	0	0	0	0	28			

Count Summaries - Bikes

Interval Start	Hwy 56				Hwy 56				Pyramid Peak St				Pyramid Peak St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1			
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1			



Peak Hour Count Summaries

Peak Hour Interval Start	Welch Ave				Welch Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:15 AM	0	9	1	5	0	0	0	3	0	4	45	0	0	0	32	3	102	0		
7:30 AM	0	9	0	3	0	0	2	0	0	6	52	1	0	0	56	1	130	0		
7:45 AM	0	8	1	6	0	0	0	3	0	8	48	0	0	1	39	1	115	0		
8:00 AM	0	6	0	6	0	1	3	0	0	8	48	1	0	2	28	4	107	454		
Pk Hr	All	0	32	2	20	0	1	5	6	0	26	193	2	0	3	155	9	454		
	HV	0	0	0	0	0	0	0	0	1	2	0	0	0	8	0	11			
	HV%	-	0%	0%	0%	-	0%	0%	0%	-	4%	1%	0%	-	0%	5%	0%	2%		

Note: For complete count summary (all intervals), see following pages.

**** Heavy Vehicle Classifications include FHWA Classes 4-13.**

**** Count Summaries include heavy vehicles, but exclude bicycles in overall count.**

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	7	8
7:30 AM	0	0	0	3	3	2	0	0	0	2	0	0	0	0	0
7:45 AM	0	0	0	4	4	1	0	0	0	1	0	0	0	0	0
8:00 AM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	3	8	11	3	0	0	0	3	0	0	1	7	8

Count Summaries - All Vehicles

Interval Start	Welch Ave				Welch Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	10	0	6	0	1	1	1	0	4	26	0	0	1	34	0	84	0		
7:15 AM	0	9	1	5	0	0	0	3	0	4	45	0	0	0	32	3	102	0		
7:30 AM	0	9	0	3	0	0	2	0	0	6	52	1	0	0	56	1	130	0		
7:45 AM	0	8	1	6	0	0	0	3	0	8	48	0	0	1	39	1	115	431		
8:00 AM	0	6	0	6	0	1	3	0	0	8	48	1	0	2	28	4	107	454		
8:15 AM	0	2	0	7	0	2	0	3	0	2	37	0	0	0	42	3	98	450		
8:30 AM	0	7	2	4	0	0	2	1	0	7	38	1	0	0	36	1	99	419		
8:45 AM	0	6	0	5	0	0	0	0	0	8	35	0	0	1	25	4	84	388		
Count Total	0	57	4	42	0	4	8	11	0	47	329	3	0	5	292	17	819			
Pk Hr	All	0	32	2	20	0	1	5	6	0	26	193	2	0	3	155	9	454		
	HV	0	0	0	0	0	0	0	0	1	2	0	0	0	8	0	11			
	HV%	-	0%	0%	0%	-	0%	0%	0%	-	4%	1%	0%	-	0%	5%	0%	2%		

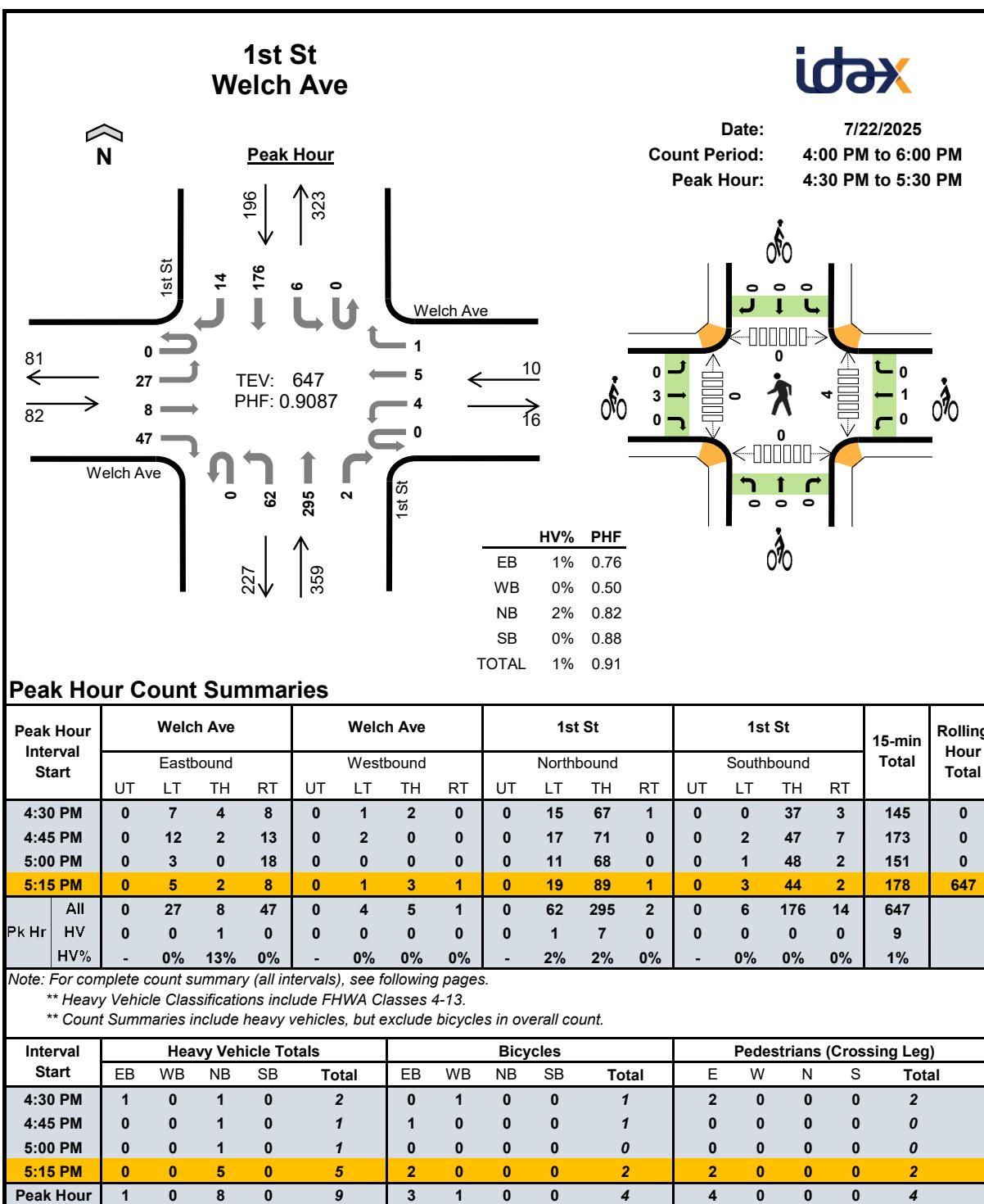
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)					E	W	N	S	Total
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total					
7:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1					
7:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	7	8					
7:30 AM	0	0	0	3	3	2	0	0	0	2	0	0	0	0	0					
7:45 AM	0	0	0	4	4	1	0	0	0	1	0	0	0	0	0					
8:00 AM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0					
8:15 AM	0	0	1	2	3	0	0	1	0	1	0	0	2	2	2					
8:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1					
8:45 AM	0	0	3	2	5	0	0	0	0	0	1	0	0	1	2					
Count Total	0	0	7	13	20	3	0	1	1	5	1	0	1	12	14					
Peak Hour	0	0	3	8	11	3	0	0	0	3	0	0	1	7	8					

Count Summaries - Heavy Vehicles

Interval Start	Welch Ave				Welch Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	8			
8:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3	11		
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	13		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	11		
8:45 AM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	5	12		
Count Total	0	0	0	0	0	0	0	0	0	2	5	0	0	0	13	0	20			
Pk Hr Heavy	0	0	0	0	0	0	0	0	0	1	2	0	0	0	8	0	11			

Count Summaries - Bikes

Interval Start	Welch Ave				Welch Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0		
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Count Total	0	1	0	2	0	0	0	0	0	0	1	0	0	0	1	0	5			
Pk Hr Bike	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3			



Count Summaries - All Vehicles

Interval Start	Welch Ave				Welch Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	7	0	8	0	0	3	1	0	13	54	0	0	1	49	2	138	0		
4:15 PM	0	3	4	15	0	1	0	1	0	9	95	2	0	2	40	2	174	0		
4:30 PM	0	7	4	8	0	1	2	0	0	15	67	1	0	0	37	3	145	0		
4:45 PM	0	12	2	13	0	2	0	0	0	17	71	0	0	2	47	7	173	630		
5:00 PM	0	3	0	18	0	0	0	0	0	11	68	0	0	1	48	2	151	643		
5:15 PM	0	5	2	8	0	1	3	1	0	19	89	1	0	3	44	2	178	647		
5:30 PM	0	7	1	3	0	0	1	0	0	9	79	1	0	0	31	6	138	640		
5:45 PM	0	9	0	8	0	1	2	3	0	6	71	2	0	1	47	3	153	620		
Count Total	0	53	13	81	0	6	11	6	0	99	594	7	0	10	343	27	1,250			
Pk Hr	All	0	27	8	47	0	4	5	1	0	62	295	2	0	6	176	14	647		
	HV	0	0	1	0	0	0	0	0	1	7	0	0	0	0	0	9			
	HV%	-	0%	13%	0%	-	0%	0%	0%	-	2%	2%	0%	-	0%	0%	1%			

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)					E	W	N	S	Total
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total					
4:00 PM	0	0	1	4	5	0	0	0	0	0	0	0	0	0	2	2				
4:15 PM	0	0	3	2	5	0	0	0	0	0	0	0	0	0	0	0				
4:30 PM	1	0	1	0	2	0	1	0	0	1	2	0	0	0	0	2				
4:45 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0				
5:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0				
5:15 PM	0	0	5	0	5	2	0	0	0	2	2	0	0	0	0	2				
5:30 PM	0	0	4	0	4	0	0	0	0	0	1	0	0	0	0	1				
5:45 PM	1	0	3	0	4	0	0	0	0	0	1	0	0	0	0	1				
Count Total	2	0	19	6	27	3	1	0	0	4	6	0	0	2	8					
Peak Hour	1	0	8	0	9	3	1	0	0	4	4	0	0	0	0	4				

Count Summaries - Heavy Vehicles

Interval Start	Welch Ave				Welch Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	5	0		
4:15 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	5	0		
4:30 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	13		
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9		
5:15 PM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	5	9		
5:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	11		
5:45 PM	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	14		
Count Total	0	1	1	0	0	0	0	0	0	2	17	0	0	0	6	0	27			
Pk Hr Heavy	0	0	1	0	0	0	0	0	0	1	7	0	0	0	0	0	9			

Count Summaries - Bikes

Interval Start	Welch Ave				Welch Ave				1st St				1st St				15-min Total	Rolling Hour Total		
	Eastbound				Westbound				Northbound				Southbound							
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0		
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Count Total	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4			
Pk Hr Bike	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4			

***Intersection Capacity Worksheets:
Year 2024 Existing***



Intersection

Int Delay, s/veh 61.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	368	143	167	392	11	82	54	96	4	14	4
Future Vol, veh/h	5	368	143	167	392	11	82	54	96	4	14	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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	90	90	90	95	95	95	69	69	69
Heavy Vehicles, %	2	2	2	2	2	2	3	3	3	5	5	5
Mvmt Flow	5	387	151	186	436	12	86	57	101	6	20	6

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	448	0	0	538	0	0	1290	1292	463	1239	1361	442
Stage 1	-	-	-	-	-	-	473	473	-	813	813	-
Stage 2	-	-	-	-	-	-	817	819	-	426	548	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.13	6.53	6.23	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.15	5.55	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.527	4.027	3.327	3.545	4.045	3.345
Pot Cap-1 Maneuver	1113	-	-	1030	-	-	140	162	597	150	146	609
Stage 1	-	-	-	-	-	-	570	557	-	368	388	-
Stage 2	-	-	-	-	-	-	369	388	-	600	512	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1113	-	-	1030	-	-	89	122	597	57	110	609
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	122	-	57	110	-
Stage 1	-	-	-	-	-	-	566	553	-	280	295	-
Stage 2	-	-	-	-	-	-	259	295	-	444	508	-

Approach	EB	WB		NB		SB		
HCM Ctrl Dly, s/v	0.08	2.71		\$ 351.63		51.81		
HCM LOS				F		F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	153	17	-	-	525	-	-	108
HCM Lane V/C Ratio	1.601	0.005	-	-	0.18	-	-	0.296
HCM Ctrl Dly (s/v)	\$ 351.6	8.3	0	-	9.3	0	-	51.8
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	16.9	0	-	-	0.7	-	-	1.1

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s
+: Computation Not Defined *: All major volume in platoon

Intersection					
Approach	EB	WB	NB	SB	
Entry Lanes	1	1	1	1	
Conflicting Circle Lanes	1	1	1	1	
Adj Approach Flow, veh/h	491	503	211	418	
Demand Flow Rate, veh/h	511	517	218	431	
Vehicles Circulating, veh/h	326	271	691	388	
Vehicles Exiting, veh/h	493	580	146	400	
Ped Vol Crossing Leg, #/h	0	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	1.000	
Approach Delay, s/veh	10.3	9.4	6.1	9.7	
Approach LOS	B	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	511	517	160	58	431
Cap Entry Lane, veh/h	990	1047	682	1957	929
Entry HV Adj Factor	0.962	0.972	0.969	0.971	0.971
Flow Entry, veh/h	491	503	155	56	418
Cap Entry, veh/h	952	1018	661	1900	902
V/C Ratio	0.516	0.494	0.235	0.029	0.464
Control Delay, s/veh	10.3	9.4	8.3	0.0	9.7
LOS	B	A	A	A	A
95th %tile Queue, veh	3	3	1	0	2

Intersection

Int Delay, s/veh 2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations	W	B				
Traffic Vol, veh/h	8	18	165	15	34	55
Future Vol, veh/h	8	18	165	15	34	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	59	59	88	88	77	77
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	14	31	188	17	44	71

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	356	196	0	0	205	0
Stage 1	196	-	-	-	-	-
Stage 2	160	-	-	-	-	-
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	644	848	-	-	1373	-
Stage 1	839	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	623	848	-	-	1373	-
Mov Cap-2 Maneuver	623	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	842	-	-	-	-	-

Approach	WB	NB	SB
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HCM Ctrl Dly, s/v	10.01	0	2.95
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HCM LOS	B
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	763	688	-
HCM Lane V/C Ratio	-	-	0.058	0.032	-
HCM Ctrl Dly (s/v)	-	-	10	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑		↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	11	494	10	14	457	7	11	0	15	7	0	4
Future Vol, veh/h	11	494	10	14	457	7	11	0	15	7	0	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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	84	84	84	65	65	65	92	92	92
Heavy Vehicles, %	3	3	3	2	2	2	12	12	12	1	1	1
Mvmt Flow	12	537	11	17	544	8	17	0	23	8	0	4
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	552	0	0	548	0	0	1138	1147	537	1142	1153	548
Stage 1	-	-	-	-	-	-	561	561	-	582	582	-
Stage 2	-	-	-	-	-	-	577	586	-	561	572	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.22	6.62	6.32	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.608	4.108	3.408	3.509	4.009	3.309
Pot Cap-1 Maneuver	1013	-	-	1022	-	-	171	191	525	178	198	538
Stage 1	-	-	-	-	-	-	495	494	-	501	501	-
Stage 2	-	-	-	-	-	-	485	482	-	514	506	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1013	-	-	1022	-	-	165	185	525	166	193	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	185	-	166	193	-
Stage 1	-	-	-	-	-	-	489	488	-	493	493	-
Stage 2	-	-	-	-	-	-	473	474	-	486	500	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.18			0.25			19.45			22.2		
HCM LOS							C			C		
Minor Lane/Major Mvmt												
Capacity (veh/h)	165	525	1013	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
HCM Lane V/C Ratio	0.103	0.044	0.012	-	-	-	0.016	-	-	0.054		
HCM Ctrl Dly (s/v)	29.4	12.2	8.6	-	-	-	8.6	-	-	22.2		
HCM Lane LOS	D	B	A	-	-	-	A	-	-	C		
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	-	0	-	-	0.2		

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	27	8	47	4	5	1	62	295	2	6	176	14
Future Vol, veh/h	27	8	47	4	5	1	62	295	2	6	176	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									
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	9	52	4	5	1	68	324	2	7	193	15

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	677	677	201	673	684	325	209	0	0	326	0	0
Stage 1	214	214	-	462	462	-	-	-	-	-	-	-
Stage 2	463	463	-	211	222	-	-	-	-	-	-	-
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	366	375	840	369	371	716	1362	-	-	1233	-	-
Stage 1	788	725	-	580	565	-	-	-	-	-	-	-
Stage 2	579	564	-	791	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	336	350	840	316	347	716	1362	-	-	1233	-	-
Mov Cap-2 Maneuver	336	350	-	316	347	-	-	-	-	-	-	-
Stage 1	783	721	-	545	530	-	-	-	-	-	-	-
Stage 2	537	530	-	729	715	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Ctrl Dly, s/v	13.46	15.59			1.34			0.24		
HCM LOS	B	C								
<hr/>										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	310	-	-	515	351	54	-	-		
HCM Lane V/C Ratio	0.05	-	-	0.175	0.031	0.005	-	-		
HCM Ctrl Dly (s/v)	7.8	0	-	13.5	15.6	7.9	0	-		
HCM Lane LOS	A	A	-	B	C	A	A	-		
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.1	0	-	-		

Intersection												
Int Delay, s/veh	13											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	3	328	125	118	364	13	51	26	56	2	13	10
Future Vol, veh/h	3	328	125	118	364	13	51	26	56	2	13	10
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	82	82	82	92	92	92	76	76	76	78	78	78
Heavy Vehicles, %	4	4	4	7	7	7	10	10	10	8	8	8
Mvmt Flow	4	400	152	128	396	14	67	34	74	3	17	13
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	410	0	0	552	0	0	1144	1150	476	1084	1219	403
Stage 1	-	-	-	-	-	-	484	484	-	659	659	-
Stage 2	-	-	-	-	-	-	661	666	-	424	560	-
Critical Hdwy	4.14	-	-	4.17	-	-	7.2	6.6	6.3	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.18	5.58	-
Follow-up Hdwy	2.236	-	-	2.263	-	-	3.59	4.09	3.39	3.572	4.072	3.372
Pot Cap-1 Maneuver	1138	-	-	993	-	-	171	192	573	189	176	635
Stage 1	-	-	-	-	-	-	550	539	-	443	451	-
Stage 2	-	-	-	-	-	-	439	445	-	596	501	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1138	-	-	993	-	-	125	159	573	111	145	635
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	159	-	111	145	-
Stage 1	-	-	-	-	-	-	547	537	-	369	376	-
Stage 2	-	-	-	-	-	-	342	371	-	484	499	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.05			2.18			85.2			26.02		
HCM LOS							F			D		
Minor Lane/Major Mvmt												
NBLn1		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	199	11	-	-	426	-	-	203				
HCM Lane V/C Ratio	0.881	0.003	-	-	0.129	-	-	0.158				
HCM Ctrl Dly (s/v)	85.2	8.2	0	-	9.2	0	-	26				
HCM Lane LOS	F	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	6.8	0	-	-	0.4	-	-	0.5				

Intersection					
Approach	EB	WB	NB	SB	
Entry Lanes	1	1	1	1	
Conflicting Circle Lanes	1	1	1	1	
Adj Approach Flow, veh/h	435	465	191	361	
Demand Flow Rate, veh/h	466	497	192	379	
Vehicles Circulating, veh/h	279	251	643	388	
Vehicles Exiting, veh/h	488	542	102	360	
Ped Vol Crossing Leg, #/h	0	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	1.000	
Approach Delay, s/veh	8.9	9.0	5.8	8.9	
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	466	497	150	42	379
Cap Entry Lane, veh/h	1038	1068	716	1919	929
Entry HV Adj Factor	0.934	0.935	0.993	0.990	0.952
Flow Entry, veh/h	435	465	149	42	361
Cap Entry, veh/h	970	999	711	1900	884
V/C Ratio	0.449	0.465	0.209	0.022	0.408
Control Delay, s/veh	8.9	9.0	7.4	0.0	8.9
LOS	A	A	A	A	A
95th %tile Queue, veh	2	3	1	0	2

Intersection

Int Delay, s/veh 2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B			W
Traffic Vol, veh/h	16	28	61	3	8	64
Future Vol, veh/h	16	28	61	3	8	64
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	73	73	80	80	90	90
Heavy Vehicles, %	2	2	3	3	6	6
Mvmt Flow	22	38	76	4	9	71

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	167	78	0	0	80
Stage 1	78	-	-	-	-
Stage 2	89	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254
Pot Cap-1 Maneuver	823	983	-	-	1493
Stage 1	945	-	-	-	-
Stage 2	935	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	818	983	-	-	1493
Mov Cap-2 Maneuver	818	-	-	-	-
Stage 1	945	-	-	-	-
Stage 2	929	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.21	0	0.83
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	916	200	-
HCM Lane V/C Ratio	-	-	0.066	0.006	-
HCM Ctrl Dly (s/v)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	3	441	9	13	408	4	10	0	8	7	0	10
Future Vol, veh/h	3	441	9	13	408	4	10	0	8	7	0	10
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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	90	90	90	64	64	64	53	53	53
Heavy Vehicles, %	5	5	5	8	8	8	1	1	1	1	1	1
Mvmt Flow	3	507	10	14	453	4	16	0	13	13	0	19
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	458	0	0	517	0	0	996	1000	507	998	1009	456
Stage 1	-	-	-	-	-	-	514	514	-	484	484	-
Stage 2	-	-	-	-	-	-	482	487	-	514	524	-
Critical Hdwy	4.15	-	-	4.18	-	-	7.11	6.51	6.21	7.11	6.51	6.21
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	2.245	-	-	2.272	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1087	-	-	1019	-	-	224	244	568	223	241	607
Stage 1	-	-	-	-	-	-	545	537	-	566	554	-
Stage 2	-	-	-	-	-	-	567	552	-	545	531	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1087	-	-	1019	-	-	213	240	568	215	237	607
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	240	-	215	237	-
Stage 1	-	-	-	-	-	-	544	535	-	558	546	-
Stage 2	-	-	-	-	-	-	542	544	-	532	530	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.06			0.26			17.99		17.99	16.45		
HCM LOS							C		C			
Minor Lane/Major Mvmt		NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	213	568	1087	-	-	-	1019	-	-	346		
HCM Lane V/C Ratio	0.073	0.022	0.003	-	-	-	0.014	-	-	0.093		
HCM Ctrl Dly (s/v)	23.2	11.5	8.3	-	-	-	8.6	-	-	16.4		
HCM Lane LOS	C	B	A	-	-	-	A	-	-	C		
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	-	0	-	-	0.3		

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	2	20	1	5	6	26	193	2	3	155	9
Future Vol, veh/h	32	2	20	1	5	6	26	193	2	3	155	9
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	2	23	1	6	7	30	222	2	3	178	10

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	475	474	183	469	478	223	189	0	0	224	0	0
Stage 1	190	190	-	283	283	-	-	-	-	-	-	-
Stage 2	284	284	-	186	195	-	-	-	-	-	-	-
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	500	489	859	505	486	817	1386	-	-	1345	-	-
Stage 1	812	743	-	724	677	-	-	-	-	-	-	-
Stage 2	723	676	-	816	739	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	477	475	859	475	473	817	1386	-	-	1345	-	-
Mov Cap-2 Maneuver	477	475	-	475	473	-	-	-	-	-	-	-
Stage 1	809	741	-	706	661	-	-	-	-	-	-	-
Stage 2	693	660	-	789	737	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Ctrl Dly, s/v	12.08	11.15			0.9			0.14			
HCM LOS	B	B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	211	-	-	571	599	32	-	-			
HCM Lane V/C Ratio	0.022	-	-	0.109	0.023	0.003	-	-			
HCM Ctrl Dly (s/v)	7.7	0	-	12.1	11.1	7.7	0	-			
HCM Lane LOS	A	A	-	B	B	A	A	-			
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-			

Intersection				
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	666	785	464	62
Demand Flow Rate, veh/h	679	801	478	65
Vehicles Circulating, veh/h	287	346	479	1051
Vehicles Exiting, veh/h	829	611	487	96
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.5	23.0	12.7	9.9
Approach LOS	B	C	B	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
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	679	801	478	65
Cap Entry Lane, veh/h	1030	970	847	472
Entry HV Adj Factor	0.981	0.980	0.971	0.959
Flow Entry, veh/h	666	785	464	62
Cap Entry, veh/h	1010	951	822	453
V/C Ratio	0.659	0.826	0.565	0.138
Control Delay, s/veh	13.5	23.0	12.7	9.9
LOS	B	C	B	A
95th %tile Queue, veh	5	10	4	0

Intersection					
Approach	EB	WB	NB	SB	
Entry Lanes	1	1	1	1	
Conflicting Circle Lanes	1	1	1	1	
Adj Approach Flow, veh/h	620	661	248	534	
Demand Flow Rate, veh/h	645	681	255	551	
Vehicles Circulating, veh/h	452	293	930	493	
Vehicles Exiting, veh/h	592	812	167	481	
Ped Vol Crossing Leg, #/h	0	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	1.000	
Approach Delay, s/veh	19.3	13.8	8.2	16.0	
Approach LOS	C	B	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	645	681	175	80	551
Cap Entry Lane, veh/h	870	1023	534	1957	835
Entry HV Adj Factor	0.961	0.971	0.970	0.971	0.970
Flow Entry, veh/h	620	661	170	78	534
Cap Entry, veh/h	836	994	518	1900	809
V/C Ratio	0.741	0.665	0.327	0.041	0.660
Control Delay, s/veh	19.3	13.8	11.9	0.0	16.0
LOS	C	B	B	A	C
95th %tile Queue, veh	7	5	1	0	5

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B			W
Traffic Vol, veh/h	11	24	189	19	36	69
Future Vol, veh/h	11	24	189	19	36	69
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	59	59	88	88	77	77
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	19	41	215	22	47	90
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	409	226	0	0	236	0
Stage 1	226	-	-	-	-	-
Stage 2	183	-	-	-	-	-
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	601	816	-	-	1337	-
Stage 1	814	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	579	816	-	-	1337	-
Mov Cap-2 Maneuver	579	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	10.42	0		2.67		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	723	617	-	
HCM Lane V/C Ratio	-	-	0.082	0.035	-	
HCM Ctrl Dly (s/v)	-	-	10.4	7.8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↖	↖	↑	↖	↖	↑	↖	↖	↖	↖
Traffic Vol, veh/h	12	678	31	34	599	7	18	0	27	7	0	4
Future Vol, veh/h	12	678	31	34	599	7	18	0	27	7	0	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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	84	84	84	65	65	65	92	92	92
Heavy Vehicles, %	3	3	3	2	2	2	12	12	12	1	1	1
Mvmt Flow	13	737	34	40	713	8	28	0	42	8	0	4
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	721	0	0	771	0	0	1557	1565	737	1561	1595	717
Stage 1	-	-	-	-	-	-	763	763	-	798	798	-
Stage 2	-	-	-	-	-	-	794	802	-	763	797	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.22	6.62	6.32	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.608	4.108	3.408	3.509	4.009	3.309
Pot Cap-1 Maneuver	876	-	-	844	-	-	87	106	402	91	107	431
Stage 1	-	-	-	-	-	-	382	399	-	381	399	-
Stage 2	-	-	-	-	-	-	367	382	-	398	400	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	876	-	-	844	-	-	81	99	402	77	101	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	99	-	77	101	-
Stage 1	-	-	-	-	-	-	376	393	-	363	380	-
Stage 2	-	-	-	-	-	-	346	364	-	352	394	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.15			0.5			37.57			41.79		
HCM LOS							E			E		
Minor Lane/Major Mvmt		NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	81	402	876	-	-	-	844	-	-	110		
HCM Lane V/C Ratio	0.344	0.103	0.015	-	-	-	0.048	-	-	0.109		
HCM Ctrl Dly (s/v)	71.5	15	9.2	-	-	-	9.5	-	-	41.8		
HCM Lane LOS	F	B	A	-	-	-	A	-	-	E		
HCM 95th %tile Q(veh)	1.3	0.3	0	-	-	-	0.2	-	-	0.4		

Intersection

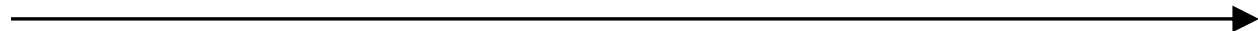
Int Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	8	50	4	5	1	65	307	2	6	183	15
Future Vol, veh/h	28	8	50	4	5	1	65	307	2	6	183	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									
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	9	55	4	5	1	71	337	2	7	201	16

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	705	705	209	700	712	338	218	0	0	340	0	0
Stage 1	223	223	-	481	481	-	-	-	-	-	-	-
Stage 2	483	482	-	219	231	-	-	-	-	-	-	-
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	351	361	831	354	358	704	1352	-	-	1220	-	-
Stage 1	780	719	-	566	554	-	-	-	-	-	-	-
Stage 2	565	553	-	784	713	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	320	335	831	300	332	704	1352	-	-	1220	-	-
Mov Cap-2 Maneuver	320	335	-	300	332	-	-	-	-	-	-	-
Stage 1	775	715	-	529	518	-	-	-	-	-	-	-
Stage 2	522	517	-	718	709	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB		
HCM Ctrl Dly, s/v	13.83	16.1			1.36			0.23		
HCM LOS	B	C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	312	-	-	502	335	52	-	-		
HCM Lane V/C Ratio	0.053	-	-	0.188	0.033	0.005	-	-		
HCM Ctrl Dly (s/v)	7.8	0	-	13.8	16.1	8	0	-		
HCM Lane LOS	A	A	-	B	C	A	A	-		
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.1	0	-	-		

***Intersection Capacity Worksheets:
Year 2028 Background***



Intersection				
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	702	638	493	47
Demand Flow Rate, veh/h	730	683	543	51
Vehicles Circulating, veh/h	208	400	524	998
Vehicles Exiting, veh/h	841	667	414	85
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.7	19.1	17.7	9.2
Approach LOS	B	C	C	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
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	730	683	543	51
Cap Entry Lane, veh/h	1116	918	809	499
Entry HV Adj Factor	0.961	0.934	0.908	0.924
Flow Entry, veh/h	702	638	493	47
Cap Entry, veh/h	1073	857	735	461
V/C Ratio	0.654	0.744	0.672	0.102
Control Delay, s/veh	12.7	19.1	17.7	9.2
LOS	B	C	C	A
95th %tile Queue, veh	5	7	5	0

Intersection					
Approach	EB	WB	NB	SB	
Entry Lanes	1	1	1	1	
Conflicting Circle Lanes	1	1	1	1	
Adj Approach Flow, veh/h	525	685	222	435	
Demand Flow Rate, veh/h	562	733	224	456	
Vehicles Circulating, veh/h	370	271	807	533	
Vehicles Exiting, veh/h	619	701	125	471	
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	15.3	7.1	13.6	
Approach LOS	B	C	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	562	733	165	59	456
Cap Entry Lane, veh/h	946	1047	606	1919	801
Entry HV Adj Factor	0.935	0.935	0.993	0.990	0.953
Flow Entry, veh/h	525	685	164	58	435
Cap Entry, veh/h	884	978	602	1900	764
V/C Ratio	0.594	0.700	0.272	0.031	0.569
Control Delay, s/veh	12.8	15.3	9.6	0.0	13.6
LOS	B	C	A	A	B
95th %tile Queue, veh	4	6	1	0	4

Intersection

Int Delay, s/veh 2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations	W	B	N			
Traffic Vol, veh/h	23	35	75	4	8	83
Future Vol, veh/h	23	35	75	4	8	83
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	73	73	80	80	90	90
Heavy Vehicles, %	2	2	3	3	6	6
Mvmt Flow	32	48	94	5	9	92

Major/Minor	Minor1	Major1	Major2
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Conflicting Flow All	206	96	0	0	99	0
Stage 1	96	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	782	960	-	-	1469	-
Stage 1	928	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	777	960	-	-	1469	-
Mov Cap-2 Maneuver	777	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
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HCM Ctrl Dly, s/v	9.51	0	0.66
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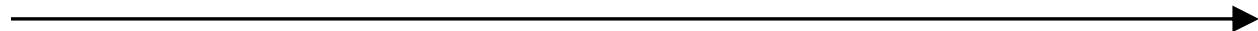
HCM LOS	A
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Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	878	158	-
HCM Lane V/C Ratio	-	-	0.09	0.006	-
HCM Ctrl Dly (s/v)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑		↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	3	570	15	20	588	4	22	0	27	7	0	11
Future Vol, veh/h	3	570	15	20	588	4	22	0	27	7	0	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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	90	90	90	64	64	64	53	53	53
Heavy Vehicles, %	5	5	5	8	8	8	1	1	1	1	1	1
Mvmt Flow	3	655	17	22	653	4	34	0	42	13	0	21
Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	658	0	0	672	0	0	1360	1364	655	1362	1379	656
Stage 1	-	-	-	-	-	-	662	662	-	700	700	-
Stage 2	-	-	-	-	-	-	698	702	-	662	679	-
Critical Hdwy	4.15	-	-	4.18	-	-	7.11	6.51	6.21	7.11	6.51	6.21
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	2.245	-	-	2.272	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	916	-	-	891	-	-	126	148	468	126	145	468
Stage 1	-	-	-	-	-	-	453	461	-	431	443	-
Stage 2	-	-	-	-	-	-	433	442	-	453	453	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	916	-	-	891	-	-	117	144	468	111	141	468
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	144	-	111	141	-
Stage 1	-	-	-	-	-	-	451	459	-	421	432	-
Stage 2	-	-	-	-	-	-	403	431	-	410	451	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	0.05		0.3		28.97		25.64					
HCM LOS					D		D					
Minor Lane/Major Mvmt	NBLn1		NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	
Capacity (veh/h)	117		468		916	-	-	891	-	-	208	
HCM Lane V/C Ratio	0.293		0.09		0.004	-	-	0.025	-	-	0.163	
HCM Ctrl Dly (s/v)	48		13.5		8.9	-	-	9.1	-	-	25.6	
HCM Lane LOS	E		B		A	-	-	A	-	-	D	
HCM 95th %tile Q(veh)	1.1		0.3		0	-	-	0.1	-	-	0.6	

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	34	2	21	1	5	6	27	201	2	3	161	9
Future Vol, veh/h	34	2	21	1	5	6	27	201	2	3	161	9
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	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	2	24	1	6	7	31	231	2	3	185	10
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	493	493	190	487	497	232	195	0	0	233	0	0
Stage 1	197	197	-	294	294	-	-	-	-	-	-	-
Stage 2	296	295	-	193	202	-	-	-	-	-	-	-
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	486	477	852	491	475	807	1378	-	-	1334	-	-
Stage 1	805	738	-	714	669	-	-	-	-	-	-	-
Stage 2	712	669	-	809	734	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	463	464	852	461	461	807	1378	-	-	1334	-	-
Mov Cap-2 Maneuver	463	464	-	461	461	-	-	-	-	-	-	-
Stage 1	802	736	-	696	652	-	-	-	-	-	-	-
Stage 2	682	651	-	781	732	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	12.33		11.28		0.9		0.13					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	211	-	-	556	587	31	-	-				
HCM Lane V/C Ratio	0.023	-	-	0.118	0.024	0.003	-	-				
HCM Ctrl Dly (s/v)	7.7	0	-	12.3	11.3	7.7	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-				

***Intersection Capacity Worksheets:
Year 2045 Background***



Intersection						
Approach	EB	WB	NB	SB		
Entry Lanes	2	2	1	1		
Conflicting Circle Lanes	1	1	2	2		
Adj Approach Flow, veh/h	793	799	784	68		
Demand Flow Rate, veh/h	808	814	800	70		
Vehicles Circulating, veh/h	312	532	504	1239		
Vehicles Exiting, veh/h	997	772	616	107		
Ped Vol Crossing Leg, #/h	0	0	0	0		
Ped Cap Adj	1.000	1.000	1.000	1.000		
Approach Delay, s/veh	7.4	10.2	27.6	9.4		
Approach LOS	A	B	D	A		
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.328	4.328
A (Intercept)	1420	1420	1420	1420	1420	1420
B (Slope)	9.101e-4	9.101e-4	9.101e-4	9.101e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	380	428	383	431	800	70
Cap Entry Lane, veh/h	1069	1069	875	875	925	495
Entry HV Adj Factor	0.980	0.981	0.980	0.982	0.980	0.976
Flow Entry, veh/h	372	420	375	423	784	68
Cap Entry, veh/h	1048	1049	858	860	906	483
V/C Ratio	0.355	0.400	0.438	0.493	0.865	0.141
Control Delay, s/veh	7.1	7.7	9.6	10.6	27.6	9.4
LOS	A	A	A	B	D	A
95th %tile Queue, veh	2	2	2	3	11	0

Intersection

Intersection Delay, s/veh 22.9

Intersection LOS C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	592	913	256	506
Demand Flow Rate, veh/h	604	931	259	516
Vehicles Circulating, veh/h	432	306	878	668
Vehicles Exiting, veh/h	752	762	119	569
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.5	33.3	8.4	22.3
Approach LOS	B	D	A	C

Lane	Left	Bypass	Left	Left	Bypass	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT		LTR	LT		LTR
RT Channelized		Yield			Free	
Lane Util	1.000		1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609	
Critical Headway, s	4.976	4.976	4.976	4.976	4.976	
A (Intercept)	1380	1380	1380	1380	1380	
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3	
Entry Flow, veh/h	565	39	931	190	69	516
Cap Entry Lane, veh/h	888	1222	1010	564	1919	698
Entry HV Adj Factor	0.981	0.980	0.981	0.988	0.990	0.980
Flow Entry, veh/h	554	38	913	188	68	506
Cap Entry, veh/h	871	1198	991	557	1900	684
V/C Ratio	0.636	0.032	0.922	0.337	0.036	0.739
Control Delay, s/veh	14.2	3.3	33.3	11.4	0.0	22.3
LOS	B	A	D	B	A	C
95th %tile Queue, veh	5	0	14	1	0	7

Intersection

Int Delay, s/veh 2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B			W
Traffic Vol, veh/h	30	45	95	5	15	110
Future Vol, veh/h	30	45	95	5	15	110
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	88	88	88	88	90	90
Heavy Vehicles, %	2	2	3	3	6	6
Mvmt Flow	34	51	108	6	17	122

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	266	111	0	0	114
Stage 1	111	-	-	-	-
Stage 2	156	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254
Pot Cap-1 Maneuver	723	942	-	-	1451
Stage 1	914	-	-	-	-
Stage 2	873	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	714	942	-	-	1451
Mov Cap-2 Maneuver	714	-	-	-	-
Stage 1	914	-	-	-	-
Stage 2	862	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.8	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	835	216	-
HCM Lane V/C Ratio	-	-	0.102	0.011	-
HCM Ctrl Dly (s/v)	-	-	9.8	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	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	5	710	15	20	785	10	25	5	30	10	5	15
Future Vol, veh/h	5	710	15	20	785	10	25	5	30	10	5	15
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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	8	8	8	1	1	1	1	1	1
Mvmt Flow	5	772	16	22	853	11	28	6	34	11	6	17
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	864	0	0	788	0	0	1682	1690	772	1688	1701	859
Stage 1	-	-	-	-	-	-	783	783	-	902	902	-
Stage 2	-	-	-	-	-	-	900	908	-	785	799	-
Critical Hdwy	4.15	-	-	4.18	-	-	7.11	6.51	6.21	7.11	6.51	6.21
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	2.245	-	-	2.272	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	766	-	-	805	-	-	75	94	401	75	92	358
Stage 1	-	-	-	-	-	-	389	406	-	334	358	-
Stage 2	-	-	-	-	-	-	335	356	-	387	399	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	766	-	-	805	-	-	65	91	401	62	89	358
Mov Cap-2 Maneuver	-	-	-	-	-	-	65	91	-	62	89	-
Stage 1	-	-	-	-	-	-	386	403	-	325	348	-
Stage 2	-	-	-	-	-	-	305	346	-	347	396	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.07			0.24			58.34			48.63		
HCM LOS							F			E		
Minor Lane/Major Mvmt												
Capacity (veh/h)	68	401	766	-	-	805	-	-	116			
HCM Lane V/C Ratio	0.5	0.085	0.007	-	-	0.027	-	-	0.295			
HCM Ctrl Dly (s/v)	101.9	14.8	9.7	-	-	9.6	-	-	48.6			
HCM Lane LOS	F	B	A	-	-	A	-	-	E			
HCM 95th %tile Q(veh)	2	0.3	0	-	-	0.1	-	-	1.1			

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+	+	+	+	+	+	+	+	+	+	+	+
Traffic Vol, veh/h	45	5	30	5	10	10	35	240	5	5	195	15
Future Vol, veh/h	45	5	30	5	10	10	35	240	5	5	195	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	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	6	34	6	11	11	40	276	6	6	224	17
Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	606	606	233	598	612	279	241	0	0	282	0	0
Stage 1	244	244	-	359	359	-	-	-	-	-	-	-
Stage 2	362	362	-	239	253	-	-	-	-	-	-	-
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	409	411	806	414	408	760	1325	-	-	1281	-	-
Stage 1	759	704	-	659	627	-	-	-	-	-	-	-
Stage 2	657	625	-	765	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	375	394	806	375	391	760	1325	-	-	1281	-	-
Mov Cap-2 Maneuver	375	394	-	375	391	-	-	-	-	-	-	-
Stage 1	755	700	-	635	604	-	-	-	-	-	-	-
Stage 2	611	603	-	722	694	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	14.49			12.97			0.98			0.18		
HCM LOS	B			B			A			A		
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	224	-	-	471	480	41	-	-				
HCM Lane V/C Ratio	0.03	-	-	0.195	0.06	0.004	-	-				
HCM Ctrl Dly (s/v)	7.8	0	-	14.5	13	7.8	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.2	0	-	-				

Intersection						
Approach	EB	WB	NB	SB		
Entry Lanes	2	2	1	1		
Conflicting Circle Lanes	1	1	2	2		
Adj Approach Flow, veh/h	916	989	694	85		
Demand Flow Rate, veh/h	934	1009	708	86		
Vehicles Circulating, veh/h	457	482	548	1368		
Vehicles Exiting, veh/h	997	774	843	123		
Ped Vol Crossing Leg, #/h	0	0	0	0		
Ped Cap Adj	1.000	1.000	1.000	1.000		
Approach Delay, s/veh	10.3	11.7	21.9	11.1		
Approach LOS	B	B	C	B		
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.328	4.328
A (Intercept)	1420	1420	1420	1420	1420	1420
B (Slope)	9.101e-4	9.101e-4	9.101e-4	9.101e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	439	495	474	535	708	86
Cap Entry Lane, veh/h	937	937	916	916	891	444
Entry HV Adj Factor	0.980	0.981	0.981	0.980	0.981	0.988
Flow Entry, veh/h	430	485	465	524	694	85
Cap Entry, veh/h	919	919	898	898	874	439
V/C Ratio	0.469	0.528	0.518	0.584	0.794	0.194
Control Delay, s/veh	9.7	10.9	10.8	12.4	21.9	11.1
LOS	A	B	B	B	C	B
95th %tile Queue, veh	3	3	3	4	8	1

Intersection

Intersection Delay, s/veh 29.7

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	756	846	326	624
Demand Flow Rate, veh/h	771	863	333	637
Vehicles Circulating, veh/h	536	363	1104	624
Vehicles Exiting, veh/h	725	965	142	602
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	31.3	32.1	12.6	33.6
Approach LOS	D	D	B	D

Lane	Left	Bypass	Left	Left	Bypass	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT		LTR	LT		LTR
RT Channelized		Yield			Free	
Lane Util	1.000		1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609	
Critical Headway, s	4.976	4.976	4.976	4.976	4.976	
A (Intercept)	1380	1380	1380	1380	1380	
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3	
Entry Flow, veh/h	710	61	863	224	109	637
Cap Entry Lane, veh/h	799	1194	953	448	1938	730
Entry HV Adj Factor	0.980	0.980	0.980	0.979	0.980	0.980
Flow Entry, veh/h	696	60	846	219	107	624
Cap Entry, veh/h	783	1170	934	438	1900	715
V/C Ratio	0.889	0.051	0.906	0.500	0.056	0.872
Control Delay, s/veh	33.7	3.5	32.1	18.7	0.0	33.6
LOS	D	A	D	C	A	D
95th %tile Queue, veh	12	0	13	3	0	11

Intersection

Int Delay, s/veh 1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B	B			
Traffic Vol, veh/h	15	30	235	25	45	90
Future Vol, veh/h	15	30	235	25	45	90
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	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	17	34	267	28	51	102

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	486	281	0	0	295
Stage 1	281	-	-	-	-
Stage 2	205	-	-	-	-
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	542	760	-	-	1272
Stage 1	769	-	-	-	-
Stage 2	832	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	519	760	-	-	1272
Mov Cap-2 Maneuver	519	-	-	-	-
Stage 1	769	-	-	-	-
Stage 2	797	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.93	0	2.65
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	658	600	-
HCM Lane V/C Ratio	-	-	0.078	0.04	-
HCM Ctrl Dly (s/v)	-	-	10.9	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection																
Int Delay, s/veh	4.6															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	↖	↑	↖	↖	↑			↖	↖		↖					
Traffic Vol, veh/h	15	900	35	35	760	10	20	5	30	10	5	10				
Future Vol, veh/h	15	900	35	35	760	10	20	5	30	10	5	10				
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	35	-	160	50	-	-	-	-	100	-	-	-				
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-				
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-				
Peak Hour Factor	92	92	92	92	92	92	88	88	88	92	92	92				
Heavy Vehicles, %	3	3	3	2	2	2	12	12	12	1	1	1				
Mvmt Flow	16	978	38	38	826	11	23	6	34	11	5	11				
Major/Minor																
Major1		Major2			Minor1			Minor2								
Conflicting Flow All	837	0	0	1016	0	0	1916	1924	978	1921	1957	832				
Stage 1	-	-	-	-	-	-	1011	1011	-	908	908	-				
Stage 2	-	-	-	-	-	-	905	913	-	1014	1049	-				
Critical Hdwy	4.13	-	-	4.12	-	-	7.22	6.62	6.32	7.11	6.51	6.21				
Critical Hdwy Stg 1	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-				
Critical Hdwy Stg 2	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-				
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.608	4.108	3.408	3.509	4.009	3.309				
Pot Cap-1 Maneuver	793	-	-	683	-	-	48	63	291	51	64	371				
Stage 1	-	-	-	-	-	-	277	305	-	331	356	-				
Stage 2	-	-	-	-	-	-	318	339	-	289	306	-				
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-				
Mov Cap-1 Maneuver	793	-	-	683	-	-	40	58	291	38	59	371				
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	58	-	38	59	-				
Stage 1	-	-	-	-	-	-	271	299	-	313	336	-				
Stage 2	-	-	-	-	-	-	287	320	-	245	299	-				
Approach																
EB			WB			NB			SB							
HCM Ctrl Dly, s/v	0.15		0.46		98.2			92.1								
HCM LOS	F						F									
Minor Lane/Major Mvmt		NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	42	291	793	-	-	-	683	-	-	67						
HCM Lane V/C Ratio	0.672	0.117	0.021	-	-	-	0.056	-	-	0.408						
HCM Ctrl Dly (s/v)	193.2	19	9.6	-	-	-	10.6	-	-	92.1						
HCM Lane LOS	F	C	A	-	-	-	B	-	-	F						
HCM 95th %tile Q(veh)	2.5	0.4	0.1	-	-	-	0.2	-	-	1.6						

Intersection

Int Delay, s/veh 4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	15	65	10	10	5	85	365	5	10	220	20
Future Vol, veh/h	40	15	65	10	10	5	85	365	5	10	220	20
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									
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	16	71	11	11	5	93	401	5	11	242	22

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	868	868	253	863	876	404	264	0	0	407	0	0
Stage 1	275	275	-	591	591	-	-	-	-	-	-	-
Stage 2	593	593	-	272	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	273	290	786	275	287	647	1300	-	-	1152	-	-
Stage 1	731	683	-	493	495	-	-	-	-	-	-	-
Stage 2	492	493	-	734	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	233	260	786	211	258	647	1300	-	-	1152	-	-
Mov Cap-2 Maneuver	233	260	-	211	258	-	-	-	-	-	-	-
Stage 1	723	675	-	448	449	-	-	-	-	-	-	-
Stage 2	431	447	-	644	668	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB				
HCM Ctrl Dly, s/v	19.15	20.06			1.49			0.33				
HCM LOS	C	C										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	335	-	-	385	266	71	-	-				
HCM Lane V/C Ratio	0.072	-	-	0.343	0.103	0.01	-	-				
HCM Ctrl Dly (s/v)	8	0	-	19.2	20.1	8.2	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0.2	-	-	1.5	0.3	0	-	-				

***Intersection Capacity Worksheets:
Year 2028 Background + Project***



Intersection				
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	739	646	496	48
Demand Flow Rate, veh/h	768	691	546	52
Vehicles Circulating, veh/h	208	407	554	1009
Vehicles Exiting, veh/h	853	693	422	89
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.8	20.0	19.3	9.3
Approach LOS	B	C	C	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
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	768	691	546	52
Cap Entry Lane, veh/h	1116	911	784	493
Entry HV Adj Factor	0.962	0.934	0.909	0.926
Flow Entry, veh/h	739	646	496	48
Cap Entry, veh/h	1073	851	713	457
V/C Ratio	0.688	0.758	0.696	0.105
Control Delay, s/veh	13.8	20.0	19.3	9.3
LOS	B	C	C	A
95th %tile Queue, veh	6	7	6	0

Intersection					
Approach	EB	WB	NB	SB	
Entry Lanes	1	1	1	1	
Conflicting Circle Lanes	1	1	1	1	
Adj Approach Flow, veh/h	531	700	238	440	
Demand Flow Rate, veh/h	568	750	241	461	
Vehicles Circulating, veh/h	375	288	815	553	
Vehicles Exiting, veh/h	639	709	128	485	
Ped Vol Crossing Leg, #/h	0	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	1.000	
Approach Delay, s/veh	13.1	16.8	7.7	14.4	
Approach LOS	B	C	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	568	750	182	59	461
Cap Entry Lane, veh/h	941	1029	601	1919	785
Entry HV Adj Factor	0.935	0.934	0.988	0.990	0.954
Flow Entry, veh/h	531	700	180	58	440
Cap Entry, veh/h	880	961	594	1900	749
V/C Ratio	0.603	0.729	0.303	0.031	0.587
Control Delay, s/veh	13.1	16.8	10.2	0.0	14.4
LOS	B	C	B	A	B
95th %tile Queue, veh	4	7	1	0	4

Intersection

Int Delay, s/veh 3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B			W
Traffic Vol, veh/h	26	35	75	5	8	83
Future Vol, veh/h	26	35	75	5	8	83
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	73	73	80	80	90	90
Heavy Vehicles, %	2	2	3	3	6	6
Mvmt Flow	36	48	94	6	9	92

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	207	97	0	0	100
Stage 1	97	-	-	-	-
Stage 2	110	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254
Pot Cap-1 Maneuver	782	959	-	-	1468
Stage 1	927	-	-	-	-
Stage 2	915	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	777	959	-	-	1468
Mov Cap-2 Maneuver	777	-	-	-	-
Stage 1	927	-	-	-	-
Stage 2	909	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.57	0	0.66
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	872	158	-
HCM Lane V/C Ratio	-	-	0.096	0.006	-
HCM Ctrl Dly (s/v)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

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	3	570	21	30	588	4	36	0	56	7	0	11
Future Vol, veh/h	3	570	21	30	588	4	36	0	56	7	0	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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	90	90	90	64	64	64	53	53	53
Heavy Vehicles, %	5	5	5	8	8	8	1	1	1	1	1	1
Mvmt Flow	3	655	24	33	653	4	56	0	88	13	0	21
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	658	0	0	679	0	0	1382	1387	655	1384	1408	656
Stage 1	-	-	-	-	-	-	662	662	-	722	722	-
Stage 2	-	-	-	-	-	-	720	724	-	662	686	-
Critical Hdwy	4.15	-	-	4.18	-	-	7.11	6.51	6.21	7.11	6.51	6.21
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	2.245	-	-	2.272	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	916	-	-	885	-	-	122	144	468	121	139	468
Stage 1	-	-	-	-	-	-	453	461	-	419	433	-
Stage 2	-	-	-	-	-	-	421	432	-	453	449	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	916	-	-	885	-	-	112	138	468	95	134	468
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	138	-	95	134	-
Stage 1	-	-	-	-	-	-	451	459	-	404	416	-
Stage 2	-	-	-	-	-	-	387	415	-	367	448	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.05			0.44			34.72			28.84		
HCM LOS							D			D		
Minor Lane/Major Mvmt		NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	112	468	916	-	-	-	885	-	-	185		
HCM Lane V/C Ratio	0.504	0.187	0.004	-	-	-	0.038	-	-	0.184		
HCM Ctrl Dly (s/v)	66.2	14.5	8.9	-	-	-	9.2	-	-	28.8		
HCM Lane LOS	F	B	A	-	-	-	A	-	-	D		
HCM 95th %tile Q(veh)	2.3	0.7	0	-	-	-	0.1	-	-	0.7		

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	3	21	1	8	19	27	201	2	4	161	9
Future Vol, veh/h	34	3	21	1	8	19	27	201	2	4	161	9
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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	3	24	1	9	22	31	231	2	5	185	10

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	497	495	190	490	499	232	195	0	0	233	0	0
Stage 1	199	199	-	294	294	-	-	-	-	-	-	-
Stage 2	298	295	-	196	205	-	-	-	-	-	-	-
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	483	476	852	488	473	807	1378	-	-	1334	-	-
Stage 1	802	736	-	714	669	-	-	-	-	-	-	-
Stage 2	711	669	-	806	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	447	462	852	457	459	807	1378	-	-	1334	-	-
Mov Cap-2 Maneuver	447	462	-	457	459	-	-	-	-	-	-	-
Stage 1	799	733	-	696	652	-	-	-	-	-	-	-
Stage 2	664	651	-	776	729	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Ctrl Dly, s/v	12.58	10.84			0.9			0.18			
HCM LOS	B	B									
<hr/>											
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	211	-	-	541	649	41	-	-			
HCM Lane V/C Ratio	0.023	-	-	0.123	0.05	0.003	-	-			
HCM Ctrl Dly (s/v)	7.7	0	-	12.6	10.8	7.7	0	-			
HCM Lane LOS	A	A	-	B	B	A	A	-			
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	0	-	-			

Intersection				
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	686	805	470	67
Demand Flow Rate, veh/h	699	821	484	70
Vehicles Circulating, veh/h	287	354	495	1077
Vehicles Exiting, veh/h	860	625	491	98
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	14.1	25.7	13.3	10.4
Approach LOS	B	D	B	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
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	699	821	484	70
Cap Entry Lane, veh/h	1030	962	833	460
Entry HV Adj Factor	0.981	0.980	0.971	0.962
Flow Entry, veh/h	686	805	470	67
Cap Entry, veh/h	1010	943	809	443
V/C Ratio	0.679	0.854	0.581	0.152
Control Delay, s/veh	14.1	25.7	13.3	10.4
LOS	B	D	B	B
95th %tile Queue, veh	6	11	4	1

Intersection					
Approach	EB	WB	NB	SB	
Entry Lanes	1	1	1	1	
Conflicting Circle Lanes	1	1	1	1	
Adj Approach Flow, veh/h	633	670	257	548	
Demand Flow Rate, veh/h	659	690	264	565	
Vehicles Circulating, veh/h	466	302	951	503	
Vehicles Exiting, veh/h	602	833	174	489	
Ped Vol Crossing Leg, #/h	0	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	1.000	
Approach Delay, s/veh	21.1	14.5	8.8	17.0	
Approach LOS	C	B	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	659	690	184	80	565
Cap Entry Lane, veh/h	858	1014	523	1957	826
Entry HV Adj Factor	0.961	0.971	0.971	0.971	0.970
Flow Entry, veh/h	633	670	179	78	548
Cap Entry, veh/h	824	985	508	1900	802
V/C Ratio	0.768	0.680	0.352	0.041	0.684
Control Delay, s/veh	21.1	14.5	12.6	0.0	17.0
LOS	C	B	B	A	C
95th %tile Queue, veh	8	6	2	0	6

Intersection

Int Delay, s/veh 2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B			W
Traffic Vol, veh/h	13	24	189	22	36	69
Future Vol, veh/h	13	24	189	22	36	69
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	59	59	88	88	77	77
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	22	41	215	25	47	90

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	410	227	0	0	240
Stage 1	227	-	-	-	-
Stage 2	183	-	-	-	-
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	599	815	-	-	1333
Stage 1	813	-	-	-	-
Stage 2	851	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	577	815	-	-	1333
Mov Cap-2 Maneuver	577	-	-	-	-
Stage 1	813	-	-	-	-
Stage 2	819	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.55	0	2.67
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	712	617	-
HCM Lane V/C Ratio	-	-	0.088	0.035	-
HCM Ctrl Dly (s/v)	-	-	10.5	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

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	12	678	48	61	599	7	27	0	46	7	0	4
Future Vol, veh/h	12	678	48	61	599	7	27	0	46	7	0	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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	84	84	84	65	65	65	92	92	92
Heavy Vehicles, %	3	3	3	2	2	2	12	12	12	1	1	1
Mvmt Flow	13	737	52	73	713	8	42	0	71	8	0	4
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	721	0	0	789	0	0	1621	1630	737	1626	1678	717
Stage 1	-	-	-	-	-	-	763	763	-	862	862	-
Stage 2	-	-	-	-	-	-	858	867	-	763	815	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.22	6.62	6.32	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.608	4.108	3.408	3.509	4.009	3.309
Pot Cap-1 Maneuver	876	-	-	831	-	-	78	96	402	82	95	431
Stage 1	-	-	-	-	-	-	382	399	-	351	373	-
Stage 2	-	-	-	-	-	-	338	357	-	398	392	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	876	-	-	831	-	-	70	87	402	61	86	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	87	-	61	86	-
Stage 1	-	-	-	-	-	-	376	393	-	320	341	-
Stage 2	-	-	-	-	-	-	305	326	-	323	387	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.15			0.89			52.48		51.73			
HCM LOS							F		F			
Minor Lane/Major Mvmt		NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	70	402	876	-	-	-	831	-	-	89		
HCM Lane V/C Ratio	0.597	0.176	0.015	-	-	-	0.087	-	-	0.135		
HCM Ctrl Dly (s/v)	114.9	15.8	9.2	-	-	-	9.7	-	-	51.7		
HCM Lane LOS	F	C	A	-	-	-	A	-	-	F		
HCM 95th %tile Q(veh)	2.6	0.6	0	-	-	-	0.3	-	-	0.4		

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	28	11	50	4	7	10	65	307	2	9	183	15
Future Vol, veh/h	28	11	50	4	7	10	65	307	2	9	183	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									
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	12	55	4	8	11	71	337	2	10	201	16

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	713	712	209	708	719	338	218	0	0	340	0	0
Stage 1	229	229	-	481	481	-	-	-	-	-	-	-
Stage 2	484	482	-	227	237	-	-	-	-	-	-	-
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	347	358	831	349	354	704	1352	-	-	1220	-	-
Stage 1	774	715	-	566	554	-	-	-	-	-	-	-
Stage 2	564	553	-	776	709	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	309	331	831	292	328	704	1352	-	-	1220	-	-
Mov Cap-2 Maneuver	309	331	-	292	328	-	-	-	-	-	-	-
Stage 1	767	708	-	529	518	-	-	-	-	-	-	-
Stage 2	511	517	-	706	702	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Ctrl Dly, s/v	14.31	13.92			1.36			0.35			
HCM LOS	B	B									
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	312	-	-	484	427	77	-	-			
HCM Lane V/C Ratio	0.053	-	-	0.202	0.054	0.008	-	-			
HCM Ctrl Dly (s/v)	7.8	0	-	14.3	13.9	8	0	-			
HCM Lane LOS	A	A	-	B	B	A	A	-			
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.2	0	-	-			

***Intersection Capacity Worksheets:
Year 2045 Background + Project***



Intersection						
Approach	EB	WB	NB	SB		
Entry Lanes	2	2	1	1		
Conflicting Circle Lanes	1	1	2	2		
Adj Approach Flow, veh/h	826	806	786	70		
Demand Flow Rate, veh/h	842	821	802	72		
Vehicles Circulating, veh/h	312	538	531	1248		
Vehicles Exiting, veh/h	1008	795	623	111		
Ped Vol Crossing Leg, #/h	0	0	0	0		
Ped Cap Adj	1.000	1.000	1.000	1.000		
Approach Delay, s/veh	7.6	10.3	30.7	9.5		
Approach LOS	A	B	D	A		
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.328	4.328
A (Intercept)	1420	1420	1420	1420	1420	1420
B (Slope)	9.101e-4	9.101e-4	9.101e-4	9.101e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	396	446	386	435	802	72
Cap Entry Lane, veh/h	1069	1069	870	870	904	492
Entry HV Adj Factor	0.980	0.982	0.981	0.982	0.980	0.977
Flow Entry, veh/h	388	438	379	427	786	70
Cap Entry, veh/h	1048	1049	854	854	886	480
V/C Ratio	0.370	0.417	0.444	0.500	0.887	0.146
Control Delay, s/veh	7.3	7.9	9.8	10.8	30.7	9.5
LOS	A	A	A	B	D	A
95th %tile Queue, veh	2	2	2	3	12	1

Intersection

Intersection Delay, s/veh 25.6

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	598	929	271	510
Demand Flow Rate, veh/h	610	947	274	520
Vehicles Circulating, veh/h	436	321	888	685
Vehicles Exiting, veh/h	769	772	119	583
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.9	38.9	9.1	23.9
Approach LOS	B	E	A	C

Lane	Left	Bypass	Left	Left	Bypass	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT		LTR	LT		LTR
RT Channelized		Yield			Free	
Lane Util	1.000		1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609	
Critical Headway, s	4.976	4.976	4.976	4.976	4.976	
A (Intercept)	1380	1380	1380	1380	1380	
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3	
Entry Flow, veh/h	571	39	947	205	69	520
Cap Entry Lane, veh/h	885	1222	995	558	1919	686
Entry HV Adj Factor	0.981	0.980	0.981	0.988	0.990	0.981
Flow Entry, veh/h	560	38	929	203	68	510
Cap Entry, veh/h	868	1198	976	551	1900	673
V/C Ratio	0.646	0.032	0.952	0.367	0.036	0.758
Control Delay, s/veh	14.6	3.3	38.9	12.1	0.0	23.9
LOS	B	A	E	B	A	C
95th %tile Queue, veh	5	0	16	2	0	7

Intersection

Int Delay, s/veh 2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B			W
Traffic Vol, veh/h	33	45	95	6	15	110
Future Vol, veh/h	33	45	95	6	15	110
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	88	88	88	88	90	90
Heavy Vehicles, %	2	2	3	3	6	6
Mvmt Flow	38	51	108	7	17	122

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	267	111	0	0	115
Stage 1	111	-	-	-	-
Stage 2	156	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254
Pot Cap-1 Maneuver	722	942	-	-	1450
Stage 1	913	-	-	-	-
Stage 2	873	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	713	942	-	-	1450
Mov Cap-2 Maneuver	713	-	-	-	-
Stage 1	913	-	-	-	-
Stage 2	862	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9.86	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	829	216	-
HCM Lane V/C Ratio	-	-	0.107	0.011	-
HCM Ctrl Dly (s/v)	-	-	9.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

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	5	710	51	30	785	10	39	5	59	10	5	15
Future Vol, veh/h	5	710	51	30	785	10	39	5	59	10	5	15
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	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	8	8	8	1	1	1	1	1	1
Mvmt Flow	5	772	55	33	853	11	44	6	67	11	6	17
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	864	0	0	827	0	0	1704	1712	772	1709	1762	859
Stage 1	-	-	-	-	-	-	783	783	-	924	924	-
Stage 2	-	-	-	-	-	-	921	929	-	785	838	-
Critical Hdwy	4.15	-	-	4.18	-	-	7.11	6.51	6.21	7.11	6.51	6.21
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	2.245	-	-	2.272	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	766	-	-	778	-	-	73	91	401	72	85	358
Stage 1	-	-	-	-	-	-	389	406	-	324	350	-
Stage 2	-	-	-	-	-	-	325	348	-	387	383	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	766	-	-	778	-	-	61	87	401	54	81	358
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	87	-	54	81	-
Stage 1	-	-	-	-	-	-	386	403	-	311	335	-
Stage 2	-	-	-	-	-	-	292	333	-	316	380	-
Approach												
EB			WB			NB			SB			
HCM Ctrl Dly, s/v	0.06			0.36			78.82			56.25		
HCM LOS							F			F		
Minor Lane/Major Mvmt		NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	64	401	766	-	-	-	778	-	-	103		
HCM Lane V/C Ratio	0.787	0.167	0.007	-	-	-	0.042	-	-	0.331		
HCM Ctrl Dly (s/v)	163.4	15.8	9.7	-	-	-	9.8	-	-	56.2		
HCM Lane LOS	F	C	A	-	-	-	A	-	-	F		
HCM 95th %tile Q(veh)	3.6	0.6	0	-	-	-	0.1	-	-	1.3		

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	45	6	30	5	13	23	35	240	5	6	195	15
Future Vol, veh/h	45	6	30	5	13	23	35	240	5	6	195	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									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	7	34	6	15	26	40	276	6	7	224	17

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	610	609	233	601	614	279	241	0	0	282	0	0
Stage 1	247	247	-	359	359	-	-	-	-	-	-	-
Stage 2	364	362	-	241	255	-	-	-	-	-	-	-
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	406	410	806	412	407	760	1325	-	-	1281	-	-
Stage 1	757	702	-	659	627	-	-	-	-	-	-	-
Stage 2	655	625	-	762	696	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	362	393	806	372	390	760	1325	-	-	1281	-	-
Mov Cap-2 Maneuver	362	393	-	372	390	-	-	-	-	-	-	-
Stage 1	753	698	-	635	604	-	-	-	-	-	-	-
Stage 2	595	603	-	718	692	-	-	-	-	-	-	-

Approach	EB	WB			NB			SB			
HCM Ctrl Dly, s/v	14.85	12.42			0.98			0.22			
HCM LOS	B	B									
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Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	224	-	-	458	532	49	-	-			
HCM Lane V/C Ratio	0.03	-	-	0.203	0.089	0.005	-	-			
HCM Ctrl Dly (s/v)	7.8	0	-	14.9	12.4	7.8	0	-			
HCM Lane LOS	A	A	-	B	B	A	A	-			
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.3	0	-	-			

Intersection						
Approach	EB	WB	NB	SB		
Entry Lanes	2	2	1	1		
Conflicting Circle Lanes	1	1	2	2		
Adj Approach Flow, veh/h	936	1009	701	88		
Demand Flow Rate, veh/h	954	1029	722	93		
Vehicles Circulating, veh/h	460	496	564	1399		
Vehicles Exiting, veh/h	1032	790	850	126		
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	24.4	12.2		
Approach LOS	B	B	C	B		
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.328	4.328
A (Intercept)	1420	1420	1420	1420	1420	1420
B (Slope)	9.101e-4	9.101e-4	9.101e-4	9.101e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	448	506	484	545	722	93
Cap Entry Lane, veh/h	934	934	904	904	879	432
Entry HV Adj Factor	0.981	0.980	0.980	0.981	0.971	0.951
Flow Entry, veh/h	440	496	474	535	701	88
Cap Entry, veh/h	917	916	886	887	854	411
V/C Ratio	0.479	0.542	0.535	0.603	0.821	0.215
Control Delay, s/veh	9.9	11.2	11.3	13.0	24.4	12.2
LOS	A	B	B	B	C	B
95th %tile Queue, veh	3	3	3	4	9	1

Intersection

Intersection Delay, s/veh 33.3

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	771	855	336	637
Demand Flow Rate, veh/h	787	872	343	650
Vehicles Circulating, veh/h	549	373	1132	634
Vehicles Exiting, veh/h	735	994	142	611
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	36.1	35.2	14.0	37.6
Approach LOS	E	E	B	E

Lane	Left	Bypass	Left	Left	Bypass	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT		LTR	LT		LTR
RT Channelized		Yield			Free	
Lane Util	1.000		1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609	
Critical Headway, s	4.976	4.976	4.976	4.976	4.976	
A (Intercept)	1380	1380	1380	1380	1380	
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3	
Entry Flow, veh/h	726	61	872	234	109	650
Cap Entry Lane, veh/h	788	1194	943	435	1938	723
Entry HV Adj Factor	0.980	0.980	0.981	0.979	0.980	0.980
Flow Entry, veh/h	711	60	855	229	107	637
Cap Entry, veh/h	772	1170	925	426	1900	708
V/C Ratio	0.921	0.051	0.924	0.538	0.056	0.899
Control Delay, s/veh	38.9	3.5	35.2	20.6	0.0	37.6
LOS	E	A	E	C	A	E
95th %tile Queue, veh	13	0	14	3	0	12

Intersection

Int Delay, s/veh 2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	B				
Traffic Vol, veh/h	17	39	235	28	45	90
Future Vol, veh/h	17	39	235	28	45	90
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	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	19	44	267	32	51	102

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	488	283	0	0	299
Stage 1	283	-	-	-	-
Stage 2	205	-	-	-	-
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	541	758	-	-	1268
Stage 1	767	-	-	-	-
Stage 2	832	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	518	758	-	-	1268
Mov Cap-2 Maneuver	518	-	-	-	-
Stage 1	767	-	-	-	-
Stage 2	797	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.99	0	2.65
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	665	600	-
HCM Lane V/C Ratio	-	-	0.096	0.04	-
HCM Ctrl Dly (s/v)	-	-	11	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection

Int Delay, s/veh 9.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑		↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	15	900	52	62	760	10	29	5	49	10	5	10
Future Vol, veh/h	15	900	52	62	760	10	29	5	49	10	5	10
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									
Storage Length	35	-	160	50	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	88	88	88	92	92	92
Heavy Vehicles, %	3	3	3	2	2	2	12	12	12	1	1	1
Mvmt Flow	16	978	57	67	826	11	33	6	56	11	5	11

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	837	0	0	1035	0	0	1974	1983	978	1980	2034	832
Stage 1	-	-	-	-	-	-	1011	1011	-	966	966	-
Stage 2	-	-	-	-	-	-	964	972	-	1014	1067	-
Critical Hdwy	4.13	-	-	4.12	-	-	7.22	6.62	6.32	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.22	5.62	-	6.11	5.51	-
Follow-up Hdwy	2.227	-	-	2.218	-	-	3.608	4.108	3.408	3.509	4.009	3.309
Pot Cap-1 Maneuver	793	-	-	672	-	-	44	58	291	46	57	371
Stage 1	-	-	-	-	-	-	277	305	-	307	334	-
Stage 2	-	-	-	-	-	-	294	318	-	289	300	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	793	-	-	672	-	-	34	51	291	30	51	371
Mov Cap-2 Maneuver	-	-	-	-	-	-	34	51	-	30	51	-
Stage 1	-	-	-	-	-	-	271	299	-	276	301	-
Stage 2	-	-	-	-	-	-	252	286	-	225	293	-

Approach	EB	WB		NB		SB						
HCM Ctrl Dly, s/v	0.15	0.82		155.12		125.55						
HCM LOS				F		F						
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	36	291	793	-	-	672	-	-	54			
HCM Lane V/C Ratio	1.087	0.191	0.021	-	-	0.1	-	-	0.502			
HCM Ctrl Dly (s/v)	\$ 349.4	20.3	9.6	-	-	11	-	-	125.6			
HCM Lane LOS	F	C	A	-	-	B	-	-	F			
HCM 95th %tile Q(veh)	4	0.7	0.1	-	-	0.3	-	-	1.9			

Intersection

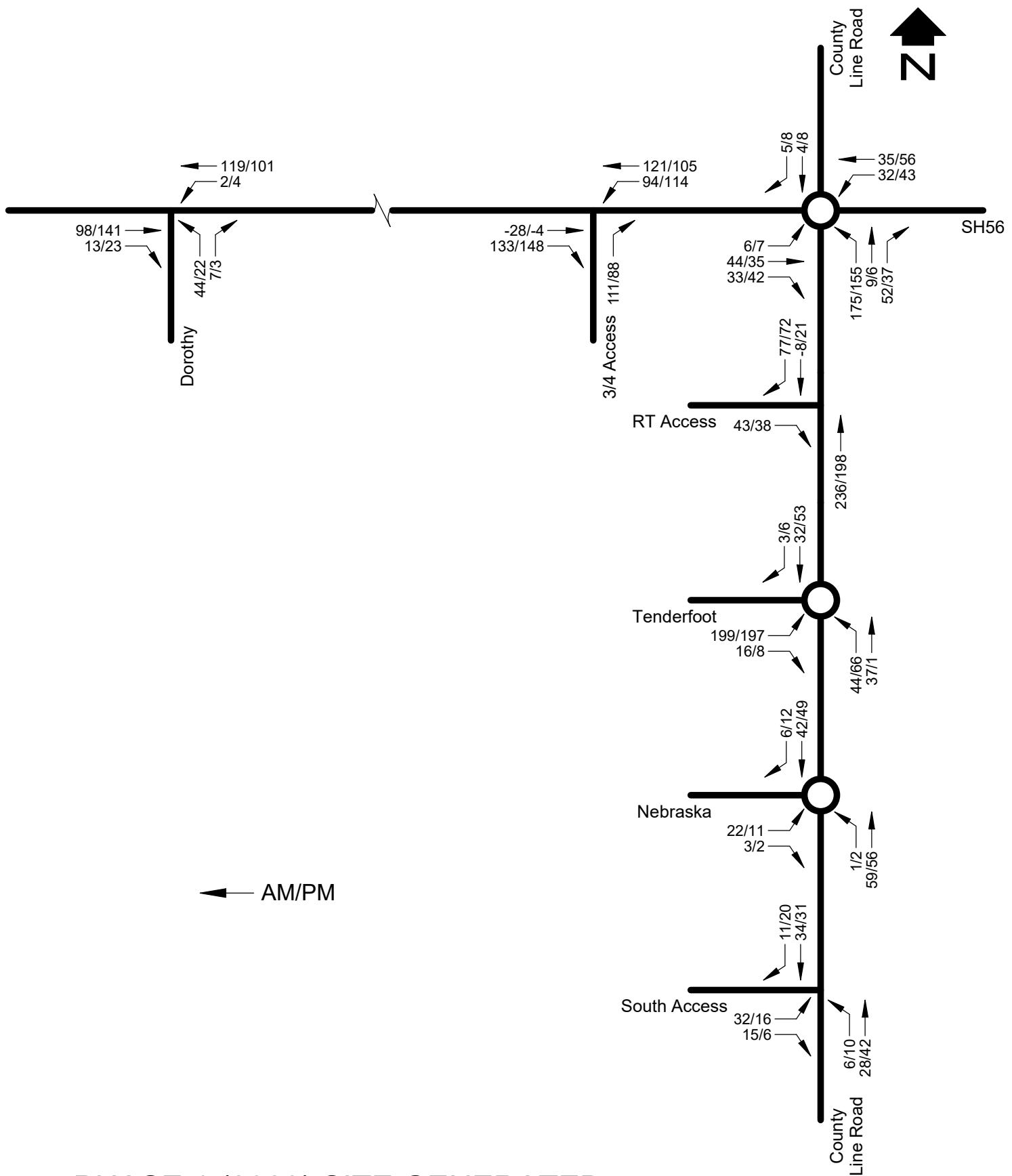
Int Delay, s/veh 4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	18	65	10	12	14	85	365	5	13	220	20
Future Vol, veh/h	40	18	65	10	12	14	85	365	5	13	220	20
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									
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	20	71	11	13	15	93	401	5	14	242	22

Major/Minor	Minor2	Minor1			Major1			Major2				
Conflicting Flow All	876	875	253	871	883	404	264	0	0	407	0	0
Stage 1	281	281	-	591	591	-	-	-	-	-	-	-
Stage 2	595	593	-	280	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	269	288	786	271	285	647	1300	-	-	1152	-	-
Stage 1	726	678	-	493	495	-	-	-	-	-	-	-
Stage 2	491	493	-	726	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	224	257	786	205	254	647	1300	-	-	1152	-	-
Mov Cap-2 Maneuver	224	257	-	205	254	-	-	-	-	-	-	-
Stage 1	715	668	-	448	449	-	-	-	-	-	-	-
Stage 2	422	447	-	632	661	-	-	-	-	-	-	-

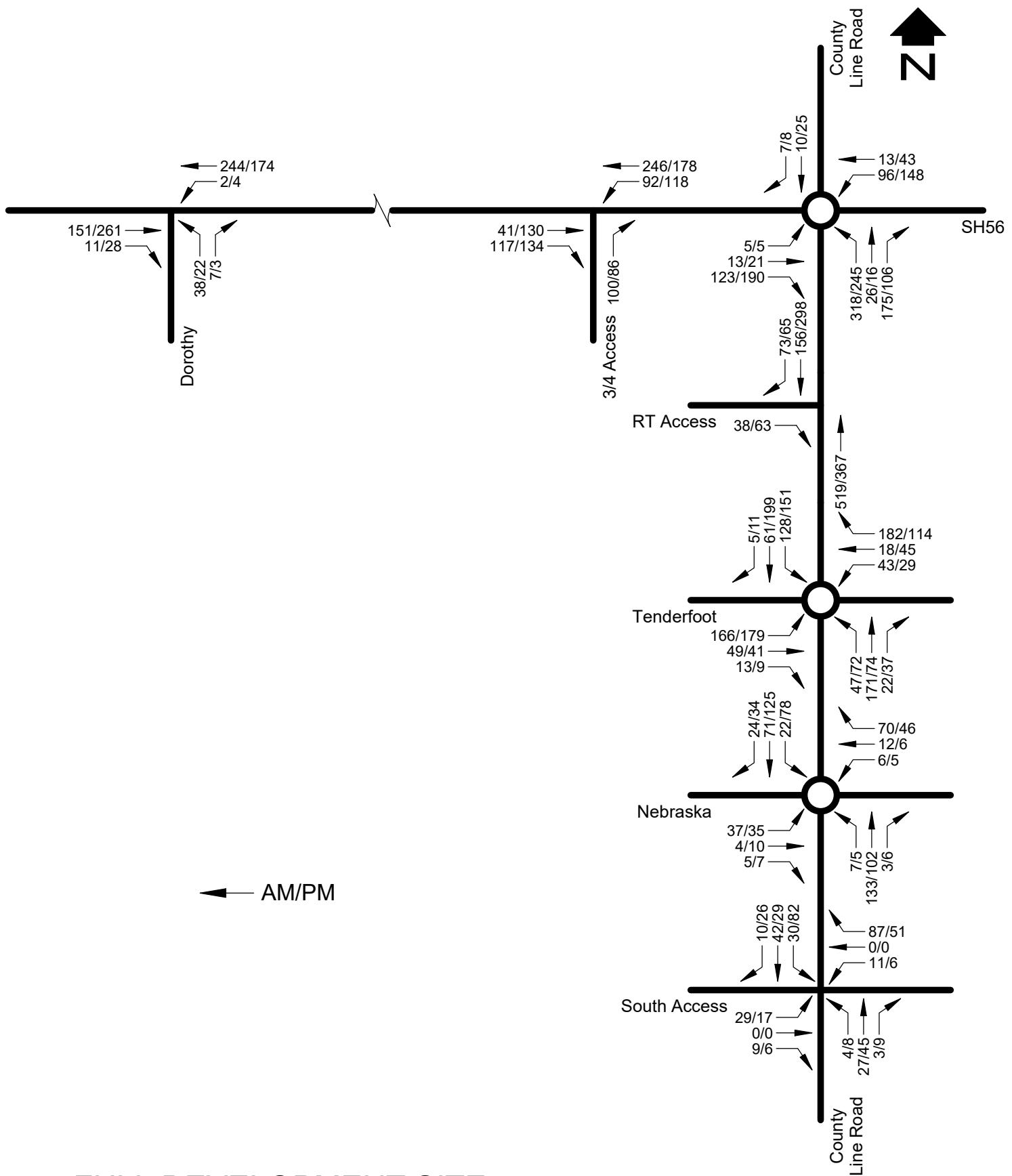
Approach	EB	WB			NB			SB		
HCM Ctrl Dly, s/v	20.13	18.48			1.49			0.42		
HCM LOS	C	C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR		
Capacity (veh/h)	335	-	-	371	306	91	-	-		
HCM Lane V/C Ratio	0.072	-	-	0.364	0.129	0.012	-	-		
HCM Ctrl Dly (s/v)	8	0	-	20.1	18.5	8.2	0	-		
HCM Lane LOS	A	A	-	C	C	A	A	-		
HCM 95th %tile Q(veh)	0.2	-	-	1.6	0.4	0	-	-		

Background Documentation



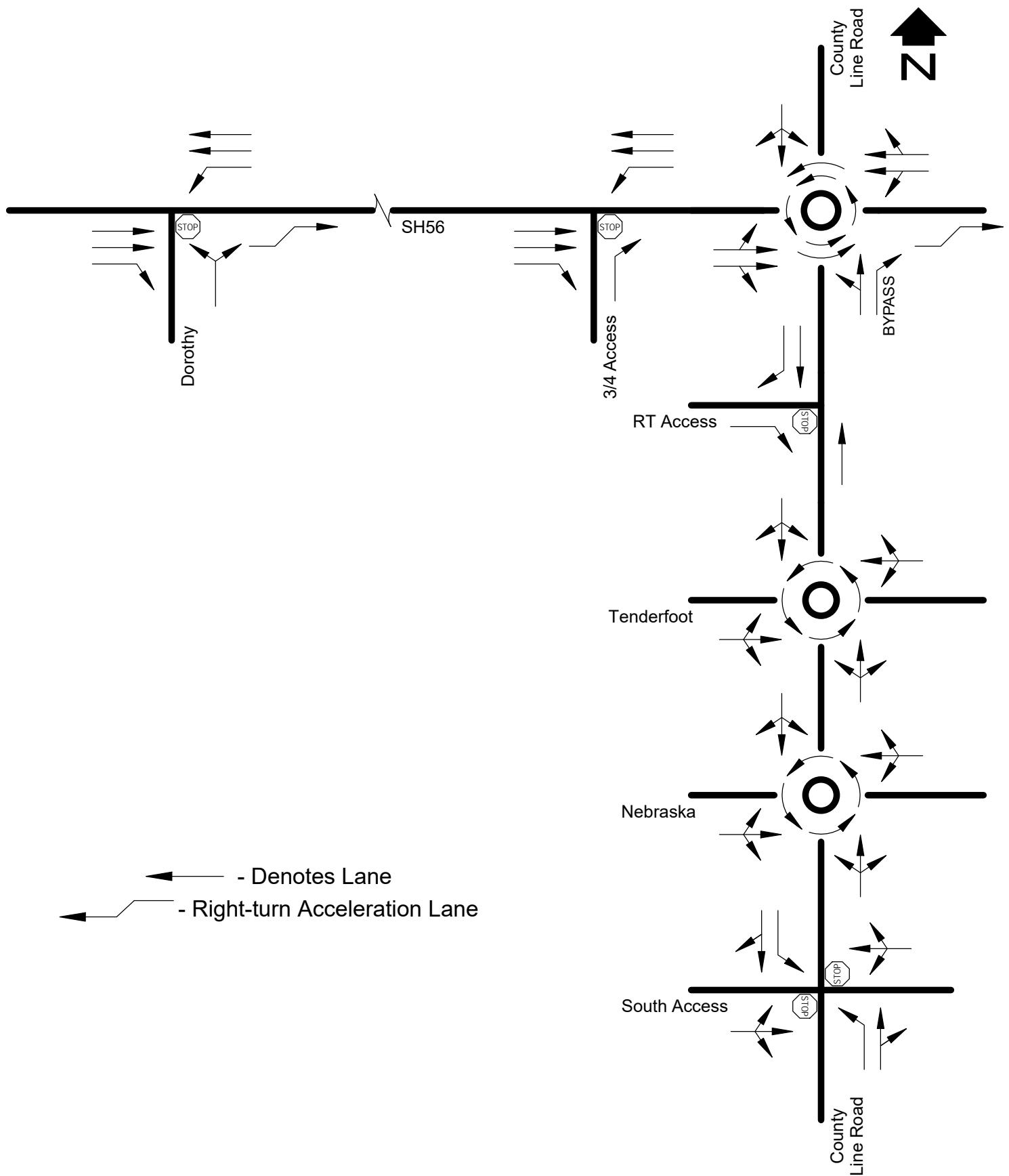
PHASE 1 (2029) SITE GENERATED
PEAK HOUR TRAFFIC

Figure 7



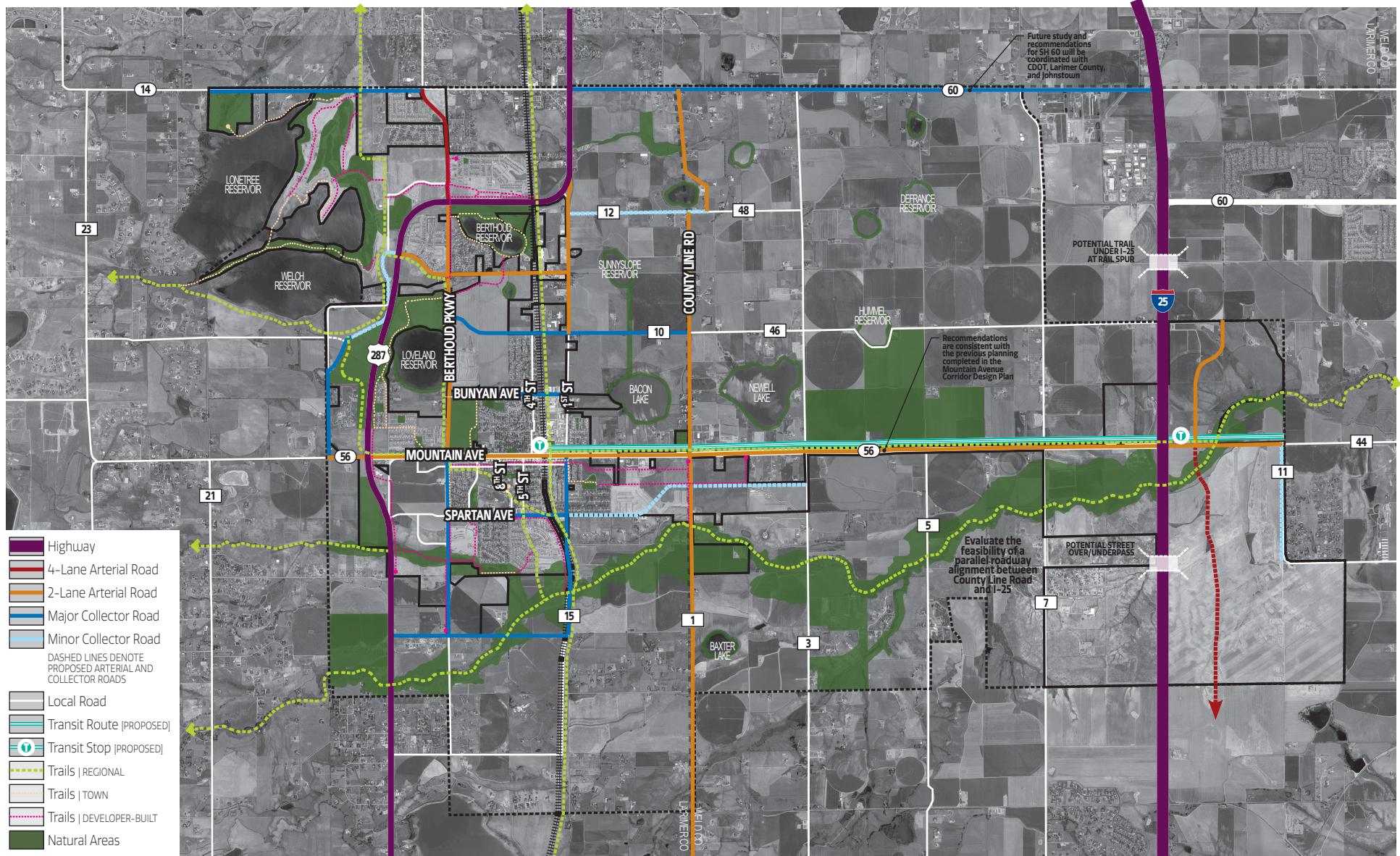
FULL DEVELOPMENT SITE
GENERATED PEAK HOUR TRAFFIC

Figure 8



LONG RANGE (2045) GEOMETRY

Figure 14



TRANSPORTATION PLAN MAP

LAST REVISED: SEPTEMBER 9, 2021

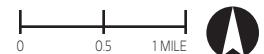


Table 4-1
Loveland (GMA and City Limits)
Motor Vehicle LOS Standards (Intersections)

Intersection Component	Major Intersection ¹	Minor Intersection ²	Driveway
Overall (City Limits)	LOS C	LOS C	No Limit
Overall (GMAs)	LOS D	LOS D	No Limit
Any Leg	LOS D	LOS E	No Limit
Any Movement	LOS E	LOS F	No Limit

¹ Includes all signalized and unsignalized arterial/arterial and arterial/ major collector intersections.
² Includes all unsignalized intersections (except major intersections) and high volume driveways
³ There are no LOS standards for I-25 Interchanges.
⁴ On State Highways, overall LOS D is acceptable.

Table 4-2
Fort Collins (GMA and City Limits)
Motor Vehicle LOS Standards (Intersections)

	Overall	Any Approach leg	Any Movement
Signalized	D ¹	E	E ²
Unsignalized Arterial / Arterial Collector / Collector	E ³	F ⁴	
Unsignalized Arterial / Collector Arterial / Local Collector / Local Local / Local	D ³	F ⁴	
Roundabout	E ^{3,5}	E ⁵⁴	E ⁵

¹ In mixed use district including downtown as defined by structure plan, overall LOS E is acceptable
² Applicable with at least 5% of total entering volume
³ Use weighted average to identify overall delay
⁴ Mitigation may be required
⁵ Apply unsignalized delay value thresholds to determine LOS

RESOLUTION NUMBER ##
(SERIES 2026)

A RESOLUTION OF THE TOWN OF BERTHOUD BOARD OF TRUSTEES APPROVING A PRELIMINARY PLAT FOR A DEVELOPMENT KNOWN AS THE “FICKEL FARM 5TH FILING DEVELOPMENT” IN THE TOWN OF BERTHOUD.

WHEREAS, the property under consideration is known as the “Fickel Farm 5th Filing” development; and more particularly described in Exhibit A attached hereto; and

WHEREAS, the Town of Berthoud (“Town”) approved on November 12, 2024, a Neighborhood Master Plan; and,

WHEREAS, the Town approved Ordinance No. 1345 on November 12, 2024, amending the zoning map of the Town of Berthoud to Urban Residential (UR); and

WHEREAS, the Preliminary Plat attached herein as Exhibit B has been reviewed by referral agencies to ensure the proposed development does not present a burden on service provision; and

WHEREAS, notice was properly posted in the manner required by law and a public hearing was conducted on February 10, 2026; a legal ad was published on December 21, 2025, and affected property owners within 500 feet of the site were notified by first-class mail before the Berthoud Planning Commission hearing on January 8, 2026; and

WHEREAS, after the public hearing on January 8, 2026, the Berthoud Planning Commission made a unanimous recommendation to the Town Board of Trustees to approve the Preliminary Plat; and

WHEREAS, based on the testimony and evidence presented at the public hearing on February 10, 2026, the Board of Trustees determines and finds that compliance with the Preliminary Plat intent statements as provided in Section 30-5-101 of the Berthoud Municipal Code has been demonstrated.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF BERTHOUD, COLORADO:

Section 1. Preliminary Plat Approval. The Preliminary Plat is hereby approved.

Section 2. Interpretation: This Resolution shall be interpreted and construed to effectuate its general purpose.

Section 3. Effective Date: The provisions of this Resolution shall take effect upon adoption.

APPROVED AND ADOPTED this 10th day of February 2026.

TOWN OF BERTHOUD

By _____

William Karspeck, Mayor

ATTEST:

By: _____

Christian Samora, Town Clerk

Exhibit A: Legal Description

Tract 1 and Tract 2, Fickel Farm PUD Fourth Filing, Town of Berthoud, Colorado, County of Larimer, State of Colorado.

Exhibit B: Preliminary Plat

(to be inserted)

PLANNING COMMISSION INFORMATION

COMMUNITY DEVELOPMENT DEPARTMENT



Meeting Date:	January 8, 2026
Agenda Title/Subject:	Annual Review of Ordinance 1241 and Member Terms
Type of Item:	Regular Item
Purpose:	Annual Review of Ordinance 1241, Membership in the Town of Berthoud Planning Commission; Terms and membership
Presented by:	Anne Johnson, Community Development Director

ATTACHMENTS:

- Ordinance 1241

BACKGROUND

The Planning Commission witnessed stable membership in 2025. Due to this stability, the Planning Commission did not have frequent orientation sessions inclusive of review of Ordinance 1241. With hope that this pattern of consistency continues, staff will present Ordinance 1241 at the first meeting of Planning Commission each year. An overview of the attached Ordinance is below:

- The Town Board of Trustees appoint citizens to the Planning Commission
- The Planning Commission shall be composed of 7 citizens of Berthoud
- Each member shall be appointed to a 3-year term
 - A member may be appointed to fill a vacancy and that newly-appointed member's term shall follow the original term
- Planning Commissioners shall not serve more than 2 consecutive terms
 - If applicants do not apply, a member may serve additional consecutive terms
- A member shall not miss more than:
 - Four or more meetings in a calendar year; or
 - Four meetings in a four-month period

Planning Commissioners were appointed to their original terms as listed below:

- Karen Anderson, Chair, 2nd term expires 9/2027
- Abigail Smith, Vice Chair, 2nd term expires 11/2026
- Nick Semedalas, Secretary, 1st term expires 8/2026
- Bryce Filho, 1st term expires 7/2027
- Marc Hofmans, 1st term expires 1/2027
- David Pond, 1st term expires 9/2027
- Stacy Sigman, 1st term expires 9/2027

UPDATE/NEXT STEPS:

The Planning Commissioners with terms expiring in 2026 will need to reapply if they are wanting to serve another term, even if the term will be their third term. In the event additional applicants do not apply, Planning Commissioners may be reappointed for a third term due to lack of applicants. More information will follow later in 2026.

RECOMMENDED ACTION(S):

The information contained in this memo is informational only.

ORDINANCE 1241
TOWN OF BERTHOUD

**AN ORDINANCE AMENDING RULES REGARDING MEMBERSHIP IN THE
TOWN OF BERTHOUD PLANNING COMMISSION**

WHEREAS the Town of Berthoud Planning Commission was created by Resolution 4-11 on March 8, 2011, in compliance with Section 31-23-202 of the Colorado Revised Statutes ("Statutes");

WHEREAS Section 31-23-203(4) of the Statutes authorizes the governing body of a municipality to provide by ordinance for the size, membership, designation of alternate membership, terms of members, removal of members pursuant to section 31-23-203(3) of the Statutes, and filling of vacancies of the municipality's planning commission as such is described in section 31-23-202 of the Statutes; and

WHEREAS the Board of Trustees of the Town of Berthoud desires to continue to exercise the authority granted by Section 31-23-203(4) of the Statutes by altering the membership structure of the Commission, effective for new appointments after the effective date of this Ordinance;

**NOW THEREFORE, BE IT ORDAINED BY THE BOARD OF TRUSTEES OF THE
TOWN OF BERTHOUD, COLORADO, THAT THE BERTHOUD MUNICIPAL CODE SHALL
BE AMENDED TO INCLUDE THE FOLLOWING SECTION 3.11 AS FOLLOWS:**

Section 3.11 – PLANNING COMMISSION MEMBERSHIP

Section 3.11-1. Membership rules for the Town of Berthoud Planning Commission set forth in Section 4.B(3) of Resolution 4-11, as well Ordinance 1145, and any other provision found in any other resolution or ordinance that is in conflict with this Ordinance or that relates to the same subject matter, are repealed.

Section 3.11-2. The Town of Berthoud Planning Commission, which will be referred to herein as the "Commission," shall be composed of seven members.

Section 3.11-3. All seven members of the Commission shall be citizens of the Town not currently serving on the Town Board of Trustees, and shall be selected by a majority vote of the Board of Trustees.

Section 3.11-4. All members of the Commission shall be bona fide residents of the municipality and, if any member ceases to reside in such municipality, his membership on the Commission shall automatically terminate.

Section 3.11-5. All members of the commission shall serve without compensation. The members shall hold no other municipal office.

Section 3.11-6. The term of each of the Members shall be three years or until his or her successor takes office. Reappointment to consecutive terms shall be permitted. Except as

otherwise provided herein, a member may serve only two consecutive terms. If at the end of an expiring term there are no applicants for the position, then the member may be appointed for an additional term without regard to the number of consecutive terms previously served by such member.

Section 3.11-7. Any member of the Commission who fails to attend four or more regular meetings of the Commission within a calendar year, or who fails to attend four regular meetings in any four-month period, shall be deemed to have resigned their position and shall be replaced without further hearing or process. Any member of the Commission may also be removed, after public hearings, by the Board of Trustees for inefficiency, neglect of duty, or malfeasance in office.

Section 3.11-8. Except as otherwise set forth in this Ordinance, vacancies occurring otherwise than through the expiration of term shall be filled for the remainder of the unexpired term by vote of the Board of Trustees after open advertisement of the vacancy and an adequate opportunity for submission of applications.

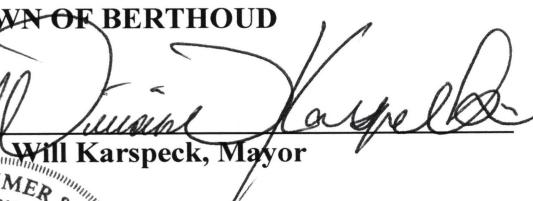
Section 3.11-9. All members of the Commission who were not appointed as Board of Trustee representatives and whose terms have not expired at the time when this Ordinance takes effect shall retain their memberships, which shall be deemed to have commenced on their actual, original commencement date.

EFFECTIVE DATE: This ordinance shall take effect immediately upon its adoption because immediate functioning of the Berthoud Planning Commission is necessary to the immediate preservation of the public peace, health, or safety of the citizens of Berthoud.

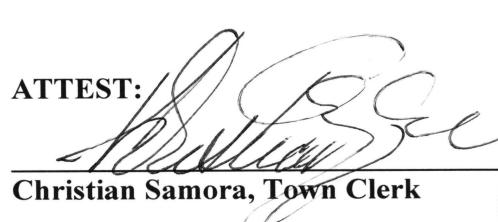
INTRODUCED, READ, PASSED, AND ADOPTED THIS 1st DAY OF May, 2018

TOWN OF BERTHOUD

BY:


Will Karspeck, Mayor

ATTEST:


Christian Samora, Town Clerk



PLANNING COMMISSION INFORMATION

COMMUNITY DEVELOPMENT DEPARTMENT



Meeting Date:	January 8, 2026
Agenda Title/Subject:	Berthoud Municipal Code, Chapter 30, Section 5: Subdivision and Land Use
Type of Item:	Regular Item
Purpose:	Review of Section 5, Subdivision and Land Use as a result of Ordinance 1367, repeal and replacement of the Berthoud Land Use Code, Chapter 30 of the Municipal Code
Presented by:	Anne Johnson, Community Development Director

ATTACHMENTS:

- Subdivision and Land Use Section, from Ordinance 1367

BACKGROUND

The Land Use Chapter of the Municipal Code was amended in 2025. The Subdivision and Land Use Section will be utilized often by the Planning Commission. This Section is being presented as a reminder and overview of the new outline.

- Section 30-5-101 contains Intent Statements which replace the process-specific Criteria for Approval. Staff reports will identify how each statement has been met by the applicant. Applicants are also required to detail how each Intent statement has been complied with in application materials. These statements are guideposts for future development in the Town of Berthoud and will be addressed as early as pre-application meetings.
- Section 30-5-102 identifies general procedures for the development and division of land. Of special note:
 - Unless a project receives vesting (Use by Special Review and Final Plat), if the project does not proceed forward within 12 months of the date of the approving Resolution/Ordinance/Notice of Decision, the application shall be automatically voided.
 - Applicant shall provide the Town with finalized documents within 30 days of the final public hearing or the date found on the Notice of Decision for administrative approvals.
- Section 30-5-103 contains a narrative and tabular description of the different application processes for land development and the subdivision of land.
- Section 30-5-104 contains a simple table listing application materials in general format followed by detailed descriptions of the application materials.
- Section 30-5-105 outlines each type of subdivision process. There are expectations/procedures for each application found in subsection A.
 - Subsection B: Minor Subdivision
 - Subsection C: Neighborhood Master Plan
 - Subsection D: Preliminary Plat

- Subsection E: Final Plat
 - Those Final Plats that are not in substantial conformance with the Preliminary Plat shall go back through the Preliminary Plat process.
 - Provisions for an administrative option.
 - Procedures for vesting
 - Procedures for consideration of early grading
- Subsection F: Replat
- Section 30-5-106 provides guidelines for administrative adjustments to recorded plats
- Sections 30-5-107 and 108 outlines each type of land use application and the process of approval.
 - There are expectations/ procedures for each application found in subsection 30-5-107.B.
 - 30-5-108 describes Plot Plans, Site Plans and Uses by Special Review
 - 30-5-108 contains a Fast Track option for Site Plans containing affordable/attainable housing for the Town's commitment to Proposition 123
- Section 30-5-109 consolidates Accessory Uses and Structures into one section.
 - Subsection E addresses Accessory Dwelling Units
 - Home Occupations are addressed separately
 - Subsection F addresses Storage Buildings and Detached Garages
- Section 30-5-110 outlines the processes and procedures for the Board of Adjustment.
- Section 30-5-111 outlines the purpose of Development Agreements.
- Section 30-5-112 provides expectations for the Pre-Construction activities and responsibilities for public improvements
- Section 30-5-113 consolidates all Certification Blocks into one location.

RECOMMENDED ACTION(S):

The information contained in this memo is informational only.

SECTION 5 SUBDIVISION AND LAND USE REGULATIONS

30-5-101 Intent

This Section is designed and enacted for the purposes of promoting the health, safety, convenience, order, prosperity and welfare of the present and future inhabitants of the Town. The regulations contained in this Section shall be known and cited as the Berthoud Subdivision and Development Regulations and referred to in this Section 5 as the "Regulations". The term development when used in these Regulations means new development and redevelopment. Each new development application and each redevelopment application shall include a narrative describing how the proposal will:

- A. Complement the Town's historic development patterns and fit into the context of the existing and planned development on surrounding properties.
 1. Street, sidewalk and trail alignment with adjoining developments and properties to ensure safe, efficient and pleasant walking, biking and driving experiences.
 2. Decrease dependency on vehicles.
 3. Existing and planned parks and open spaces in the development as well as in Town shall be connected by sidewalks and trails.
 4. The Parks, Trails and Open Space Master Plans were utilized in the development of the project.
 5. Compact, well-defined, sustainable neighborhoods to enhance the Town's character, complements the existing neighborhood and surrounding area.
- B. Adhere to the vision established in the Comprehensive Plan, Land Development Code, Overlay Districts and Master Plans covering the property including:
 - a. The Land Use Code and underlying zone district.
 - b. The Land Use Code development and design standards.
 - c. Architectural Guidelines.
 - d. Landscape Design Guidelines.
 - e. Engineering Standards and Specifications.
 - f. Flood hazard mitigation.
 - g. Geologic hazard mitigation.
 - h. Other plans, specifications and guidelines that may impact the property.
- C. Ensure there is sufficient provision for public utilities, services and facilities. The development shall be designed with consideration of the future needs as well as adequately managing the impact of the proposed development on the surrounding area and Town in general. Hazardous conditions on- and off-site shall not be created by the proposal.
 - a. Water
 - b. Sanitary Sewer
 - c. Stormwater
 - d. Electric and Natural Gas
 - e. Schools

- f. Fire Protection and Emergency Response
- g. Public Transit
- h. Traffic circulation
- i. Pedestrian movement
- j. Irrigation practices

D. Mitigate negative impacts of the development on the surrounding property:

- a. Light
- b. Air quality
- c. The Oil and Gas regulation section of this Chapter
- d. Sensitive natural, historic and environmental areas and properties
- e. Compatibility of uses

E. Address a need or desirability within Berthoud and the development proposal will help achieve a balance of land use, create a specific sense of place through place-making in each distinct neighborhood, provide a variety of housing types, meet architectural diversity standards, and integrate meaningful neighborhood identity features into the development according to Town goals.

F. Meet all applicable local, state and federal permits have been or will be obtained.

G. Address such other matters as the Town may deem necessary in order to protect the best interest of the public.

30-5-102 General procedures

- A. The procedures of this Section shall apply to any and all proposals for the subdivision and the development of land within the municipal boundaries of the Town, unless expressly and specifically exempted or provided otherwise in this Code. No subdivision or development shall be undertaken without prior approval or authorization pursuant to the terms of this Code. All subdivision and development shall comply with the applicable terms, conditions, requirements, standards and procedures established in this Section and the Municipal Code. The submittal of an application for approval pursuant to the provisions of these Regulations constitutes consent to, and agreement to comply with all of its applicable provisions.
- B. This Section establishes procedural and substantive rules for reviewing applications for necessary approvals to develop land and construct buildings and structures. Development applications will be reviewed for how they conform to the vision of the Town Comprehensive Plan, Master Plans affecting the property, and applicable guidelines and policies, and how they comply with the Zoning Code, overlay districts applicable to the property, Engineering standards and specifications, and applicable regulations as amended. The submittal of subdivision application for consideration pursuant to the provisions of these Subdivision Regulations constitutes an agreement and the implied consent of the owner or applicant to comply with all of its applicable provisions.
- C. The application requirements for each development and subdivision type can be found in the Application Materials Tables and the following descriptions in this Section. Where site specific circumstances warrant a deviation from one or more specific application requirement, the Community Development Director may grant a waiver of such requirement(s).
- D. The applicants are responsible for being fully familiar with all applicable provisions of these regulations. At the time of submittal, the applicant shall submit application materials in a form acceptable by the

Town. The application review process for each development and subdivision type can be found in the Land Use Processes and Procedures Table in this Section.

- E. Should the applicant not provide a material response to staff comments within six months of the date of the most recent comments, the application shall be automatically closed and the applicant shall be required to reapply. Any unused development review fee funds shall be reimbursed within ninety (90) days of the application closure.
- F. Should the application be approved, except where a vested right has been established in accordance with the Berthoud Development Code, and activity toward commencement of the project does not proceed forward within twelve (12) months of the date of the approving Resolution, approving Ordinance, or the Notice of Decision found in the Staff Report for an Administrative Approval, the application shall be automatically voided.
- G. The applicant shall provide the Town with finalized documents within thirty (30) days of the final public hearing or the date found on the Notice of Decision found in the Staff Report for an Administrative Approval. Final documents shall be inclusive of plans, plats, mapping products, construction documents, easements, agreements and the Development Agreement.

30-5-103 Application Processes

The Town has many different application processes for land development and the subdivision of land. Applications for land development and applications for subdivision are also referred to in these Regulations as land use applications. This Section of the Development Code provides a reference to what the common application process steps are and the Subdivision and Land Use Processes and Procedures Table is a guide to the required application processes. The description of each process or procedure is described below.

- A. Pre-application meeting: A pre-application meeting is required. The intent is to provide applicants with insight which may impact their applications, establish the process for application submittal, review application requirements and expectations, and to determine if the proposed use is consistent with the intent of the Land Use Code. The applicant shall provide an overview of their project and how the proposal meets the Town guidelines, standards, specifications and overlay district requirements. Staff may waive this requirement if the following applies:
 - 1. The required pre-application meeting for either a Preliminary Plat or a Final Plat may be waived if the preceding application is in process and close to completion, or received no material comments; and
 - 2. The required pre-application meeting for a Preliminary Plat is within four months of the approval of a Neighborhood Master Plan and the Neighborhood Master Plan received no material comments; or
 - 3. The required pre-application meeting for a Final Plat is within four months following the approval of a Preliminary Plat and the Preliminary Plat received no material comments.
- B. Administrative Review: Several land use applications may be reviewed through an Administrative Review process. Land use applications that may have an Administrative Review option are listed in the Subdivision and Land Use Processes and Procedures Table.
- C. Application Submittal: The applicant shall submit the application materials required. Refer to the required application materials be submitted as part of the application. The materials shall be submitted in a format and in the quantity required by the Town.
- D. Certification of Completeness: Within a reasonable period of time and upon receipt of a land use application, staff shall review the submitted materials in conformance with the pre-application meeting specifications, the Code requirements, requirements in Master Plans and applicable overlay districts, and to ensure materials are complete. Staff shall either certify the application is complete and in compliance with all submittal requirements or reject the submittal as incomplete and notify the applicant of any deficiencies. The Applicant shall then correct any deficiencies in the application package, if necessary, and resubmit the application to Town Staff who will review the submittal for completeness.

- E. Notice to Surrounding/Affected Property Owners: Staff shall provide notice of a pending application and/or public hearing within the period of time established in the Hearing and Notification Section of this Chapter. The applicant shall provide a mailing list of all surrounding and affected property owners to the Town along with the source of information used to generate the mailing list. Staff shall determine the format of the mailing list to be submitted. The mailing list shall be updated and provided to Staff within the time frame determined by Staff in accordance with the Hearing and Notification Section of this Chapter.
- F. Public Review. The public may view the application and provide comments which shall be reviewed by Staff, provided to the Applicant, and provided in packet materials for the public hearing process. When written comments are received prior to the Public Hearing, the applicant shall address public comments in a report to be included with the record prior to the Public Hearing.
- G. Notice of the mineral estate is the responsibility of the applicant. The applicant shall provide notice according to C.R.S. §§ 24-65.5-101, et seq. The Town shall be provided with the list of the mineral estate owners, source of the generated list (attorney or certified landman), and a copy of the notice provided prior to the hearing and included with hearing materials.
- H. Referral Period: Within an appropriate timeframe following Certification of Completeness, Staff will send information about the application to parties of interest such as an established referral agency. Referral agencies shall have a set period of time to make comments. Comments shall be reviewed by Staff, provided to the applicant, and provided in packet materials for the public hearing process. When comments are received prior to the Public Hearing, the applicant shall address public comments in a report to be included with the record prior to the Public Hearing.
 - 1. The applicant shall address staff and referral agency comments within six (6) months of the date of the Staff Report. Should six months' time pass without adequate response from the applicant, the application shall be determined to be withdrawn. Remaining development fees shall be refunded.
 - 2. Technical Review Meeting. Staff may determine if a meeting with specific referral agencies or with the Town is required prior to proceeding forward with submittals or public hearings. In the event Staff determines that a meeting with specific referral agency or agencies is needed, such meeting is required to be held before Staff proceeds forward with development review. The applicant may request a Technical Review Meeting and staff shall accommodate this request. If requested by the applicant, the applicant shall coordinate the attendance of referral agencies that are not part of the Town organization.
 - 3. Criteria for Approval: Criteria for Approval is found in the Code section relative to each application process. Each new development application and each redevelopment application shall include a narrative describing how the proposal will meet the Intent section of these Regulations as well as the Criteria for Approval for specific application types.
- I. Public Hearing Publication: The Town shall publish notice in a newspaper of general circulation of the upcoming public hearing(s) according to the Hearing and Notification Section of this Chapter.
- J. Sign Posting: After providing the Town with a sign deposit, the Applicant shall post a sign along all public road frontages. Timing for the sign posting can be found in the Hearing and Notification Section of this Chapter. The Applicant shall return the sign to the Town following the last Public Hearing concerning the proposed application. If the sign is damaged, the deposit shall not be returned to the Applicant.
- K. Planning Commission Hearing: If required, the Planning Commission shall hold a Public Hearing to review the land use application. The Planning Commission shall make a recommendation to the Board of Trustees to approve, conditionally approve or deny the application. The Planning Commission is the final Public Hearing on final plats. Notwithstanding that, the applicant may request the Board of Trustees notice and hold a public hearing and such public hearing on the final plat is necessary for purposes of creating a vested right pursuant to the Berthoud Development Code.
- L. Town Board of Trustees Public Hearing: If required for the purpose of establishing a vested right, the Board of Trustees shall, after receiving the report and recommendation from the Planning Commission, hold a public hearing, after proper notice is given and act upon the proposed land use application. Following the Public Hearing, the Board shall consider the comments and evidence presented at the hearing, evaluate

the application in accordance with the Criteria for Approval found in this Chapter and approve, approve with conditions or deny the application, in whole or in part.

M. Ordinance or Resolution: Land use applications receiving a Public Hearing shall be approved by either a Resolution or Ordinance as outlined in the Subdivision Land Use Processes and Procedures Table.

- N. Conditions of Approval and Recording: Prior to recording the documents for a land use application eligible for an administrative approval or those applications requiring a Public Hearing, the Applicant shall address all Conditions of Approval contained in the Staff Report and the Ordinance or Resolution, as required. Once staff is satisfied that the Conditions of Approval have been met, appropriate documents shall be recorded with the office of either the Larimer or Weld County Clerk and Recorder.
- O. Upon approval of any subdivision or land use application, the applicant has thirty days to finalize the materials and return documents to the Town for recording. If materials are not provided within this timeframe, the applicant may be considered void.

Subdivision and Land Use Processes and Procedures Table

Application Process	Pre-application meeting	Application Submittal	Certification of Completeness	Notice, Publication and Sign Posting	Mineral Notice	Referral Period	Administrative Option	Planning Commission	Town Board of Trustees	Criteria for Approval	Ordinance/Resolution	Conditions of Approval Addressed & Development Agreement	Record documents
Application Type													
Use by Special Review for Allowed Marijuana Business	Yes	Yes	Yes	Refer to the Hearing and Notification requirements Section of this Chapter of the Municipal Code	Yes	Yes	No	Yes	Yes	Yes	Resolution	Yes	Yes
Wireless Communication Facilities, use by right	Yes	Yes	Yes		No	Yes	Yes	No	No	Yes	No	Yes	Yes
Wireless Communication Facilities, Use by Special Review	Yes	Yes	Yes		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wireless Communication Facilities, Eligible Facilities	Yes	Yes	Yes		No	Yes	Yes	No	No	Yes	No	Yes	Yes
Site Plan	Yes	Yes	Yes		No	Yes	Yes	No	No	Yes	Administrative	Yes	Yes
Variance	Yes	Yes	Yes		No	Yes	No	Acting as BOA	Optional	Yes	Resolution	Yes	Record Resolution w/ Minutes as an attachment
Waiver	Yes	Yes	Yes		No	Yes	Optional	Yes	No	Yes	Resolution	Yes	Record Resolution w/ Minutes as an attachment
Annexation	Yes	Yes	Yes		Yes	Yes	No	No	Yes	Yes, also see C.R.S.	Ordinance	Yes	Yes
Zoning Amendment	Yes	Yes	Yes		No	Yes	No	Yes	Yes	Yes	Ordinance	Yes	Yes
Text Amendment to the Development Code	No	Yes	Yes		No	Optional	No	Yes	Yes	Yes	Ordinance	No	No
Neighborhood Master Plan	Yes	Yes	Yes		Yes	Yes	No, Minor Amendment Optional	Yes	Yes	Yes	Resolution	Yes	Yes
Preliminary Plat	Yes	Yes	Yes		Yes	Yes	No	Yes	Yes	Yes	Resolution	Yes	Yes
Final Plat See additional steps for vesting	Yes	Yes	Yes		No	Yes	Yes	Optional	No	Yes	Optional	Yes	Yes
Minor Sub Plat	Yes	Yes	Yes		Yes	Yes	No	Yes	No	Yes	Resolution	Yes	Yes
Administrative Adjustment to recorded plats	Yes	Yes	Yes		No	Optional	Yes	No	No	Yes	No	Yes	Yes
Replat	Yes	Yes	Yes		No	Yes	No	Yes	Yes	Yes	Resolution	Yes	Yes
Home Occupation	No	Yes	Yes		No	Optional	Yes	No	No	No	No	Yes	No
Short-term Rental	No	Yes	Yes	Refer to the Short Term Rental Section of this Chapter	No	No	Yes	No	No	Yes	No	No	No

NOTE: Processes with an "Optional" notation are for staff to determine the outcome of the step.

30-5-104 Subdivision Application materials

A. Application submittal requirements: The following table outlines the submittal requirements and standards for each subdivision application type. A description of the application item follows the table below. At the discretion of the Community Development Director, and depending on the particular project and potential impacts to the community, the Town reserves the right to waive certain requirements and request additional materials based upon the details of the specific project. Waiver or the request of additional materials may be made at the Pre-Application meeting or during the development review process.

Subdivision Application Materials Table

Application item	Preliminary Plat	Final Plat	Minor Subdivision	Neighborhood Master Plan	Administrative Adjustment	Replat	Zoning
Application Forms and Fees	X	X	X	X	X	X	X
Property Ownership	X	X	X	X	X	X	X
Neighboring Property owner list	X	X	X	X	X	X	X
Plat/Mapping Products	X	X	X	X	X	X	X
Grading plan and drainage report	Preliminary	Final	Final	Concept	X		
Construction drawings	80%	100%	100%				
Landscape, irrigation, and open space plans	Preliminary	Final	Final	Concept			
Architectural Diversity Plan	Preliminary	Final	Final	Concept			
Narrative materials	X	X	X	X	X	X	X
Supporting Documents	Preliminary	Final	Final	Preliminary			X
Agreements	Preliminary	Final	Final	Concept			X

B. Descriptions of application materials for all Subdivision processes. The Town reserves the right to waive certain requirements and request additional materials based upon the details of the specific project. Waiver or the request of additional materials may be made at the Pre-Application meeting or during the development review process. All application materials shall be submitted in a method and format acceptable to the Town.

1. Application Forms and Fees
 - a. Application Form provided by the Town
 - b. Memorandum of Understanding for Development Review fees on a form provided by the Town
 - c. Fees. The required application fees and any development review deposit fees will be provided to the applicant at the pre-application meeting. Fees are due upon submittal of the application.
2. Evidence of property ownership
 - a. Title Commitment: Dated no more than 30 days from the date of application submittal.

3. Neighboring Property owner list
 - a. A list of property owners and the source of the list in a format acceptable to the Town.
 - b. Refer to the public hearing and general notice provisions section of this Chapter.
4. General standards for all mapping and platting products. All Plat/Mapping products shall contain the following elements and follow the standards listed below:
 - a. Preparation
 - a. Prepared by a Professional Land Surveyor licensed to do business in the state and shall be a neat, clear, legible and reproducible document. The plat/map submitted for recording shall contain the original signatures and seals in permanent ink. If the County recording the document will accept electronic signatures, these may be provided.
 - b. All work shall comply with C.R.S. 38-50-101 and 38-51-101, et seq.
 - c. All work shall comply with the requirements of the Bylaws and Rules of Procedure of the State Board of Registration for Professional Engineers and Professional Land Surveyors and the Rules of Professional Conduct of the State Board of Registration for Professional Engineers and Professional Land Surveyors – Board Policy Statement.
 - b. Form for maps, plats, plans, engineering documents and report
 - a. The document to be recorded should the project be approved shall be delineated in permanent black ink on a dimensionally stable polyester sheet such as Mylar, or other material as approved by the Town.
 - b. Sheet specifications
 - a. Each sheet shall be twenty-four (24) inches in height and thirty-six (36) inches in width.
 - b. Drawn at a scale of one inch equals one hundred feet (1" = 100') or one inch equals two hundred feet (1" = 200').
 - c. Project title shall be at the top of each sheet including:
 - a. Project name
 - b. Section, Township, Range, County of either Larimer or Weld, State of Colorado
 - d. North arrow
 - e. A statement of known engineering scale and a bar-type scale
 - f. A statement defining lineal units
 - g. Date of preparation
 - h. Revision block which is updated with each submittal
 - i. A legend designating all abbreviations, line types and symbols
 - j. Names, telephone numbers, and addresses of the applicant, developer, engineer, surveyor and property owner. Application materials shall be signed by each prior to submittal
 - k. A scale drawing of all boundaries of the entire subject property on one sheet and written property description of the exterior boundary of the subject property.
 - l. Include acreage to the nearest one-hundredth (0.01) of an acre.
 - m. All distances shall be shown to the nearest one hundredth (0.01) of a foot and bearings to the nearest second. All distances shall be given in ground, not grid, distance.
 - n. All field-measured dimensions necessary to establish the boundaries on the ground and all dimensions for newly created lots necessary to establish the boundaries on the ground.
 - o. Bearing, distance, and curve data for all lot boundaries. All curve data shall include arc length, radius, central angle, chord bearing and chord distance. Boundaries shall be clearly indicated on the plat. Recorded bearings and distances that vary with measured bearings and distances shall be shown in parentheses along with measured bearings and distances.
 - p. The survey shown shall not have an error greater than one part in 10,000.

- q. A basis of bearing statement.
- r. The exterior boundary shall be tied to two (2) or more monumented public land survey monuments.
- s. Location and a description of all monuments, both found and set, that mark the boundaries of the property.
- t. Any conflicting boundary evidence (fences, conflicting monuments, physical features, etc.).
- u. All recorded, proposed and apparent easements and rights-of-way, including the purpose, width, and location of all existing and proposed easements located on the property and adjacent to the property. A plat note may be necessary to provide complete information of the purpose of the easement. Proposed easements shall have bearings, distances, and curve data sufficient to allow them to be established on the ground. These shall be labeled and dimensioned.
- v. All existing and proposed trails and sidewalks on and adjacent to the property (labeled and dimensioned).
- w. The location of any oil and gas facilities within two thousand feet (2,000) of the project boundary, described by latitude and longitude.
- x. Hydrologic features, including, but not limited to, irrigation canals and ditches on the subject property.
- y. The limits of any Special Flood Hazard Area on the subject property, and the source of the information provided.
- z. Limits of any areas of Geologic Hazard on the subject property, and the source of the information provided.
- aa. Parcels excepted from inclusion noted as "not included in this subdivision" and the boundary completely indicated by bearings and distances.
- bb. The names of property owners with the parcel boundary, parcel number and zoning classification of adjoining properties.
- cc. Applicable plat certificates and notes provided by the Town.
- dd. Topography at 2' contour intervals. Source may be from the United States Geological Survey (USGS).
- ee. Metes and bounds legal description of the subject property with closure statement and total acreage. The exterior boundary of the project and boundaries of all lots, tracts and outlots shall have a closure accuracy of one-hundredth (0.01) foot.
- c. A land use table that details the following:
 - a. Total project acreage
 - b. Total number and total acreage of each lot, outlot, tract and block
 - c. Total acreage of each proposed zone district/character district
 - d. Total acreage of road rights-of-way
 - e. Total number of dwelling units for residential lots and dwelling density per acre and character district
 - f. Acreage of each different land use or zoning classification proposed
 - g. For commercial/industrial developments, include the floor area ratio and identify compliance with the Commercial and Industrial Standards section of this Code.
 - h. For residential developments include the housing diversity counts and percentages and identify compliance with the Residential Design Standards section of this Code.
 - i. Lot, track, outlot and block numbers shall be:
 - a. Numbered in ascending numerical and consecutive order beginning with "Lot 1," for example

- b. Include square footage or acreage to two decimal places of each lot or tract
- d. Vicinity map
 - a. Minimum scale of one inch equals two thousand feet (1" = 2,000')
 - b. Illustrate adjoining properties for a distance of one-quarter (1/4) mile
 - c. Provide a north arrow
 - d. Delineate the project boundary
 - e. Identify adjacent roads, municipal boundaries, ditches and irrigation systems, railroads, etc. which shall be labeled
 - f. Location of oil and gas facilities on the property and within one-half mile of the property boundary. The distances shall be dimensioned. If there are no facilities within this distance, note the source of findings.
 - g. The section and dashed quarter section lines shall be included and labeled
- e. Development Overview Sheet. One sheet shall contain the following:
 - a. Street layout
 - b. Lot and Block arrangement
 - c. Floodplain/Floodway
 - d. Trails and sidewalks in relationship to neighboring properties and master plans impacting the project
 - e. Project phasing plan, if proposed.
- f. Index sheet shall be one sheet and contain the following:
 - a. Street names
 - b. Block and Lot arrangement and numbers
 - c. Outlot and Tract numbers and arrangement
 - d. Overlapping match lines, if necessary
- g. Existing site conditions map.
 - a. Show and label the physical characteristics and natural site constraints of the property and existing on-site structures, irrigation equipment, ditches, or laterals, utility lines, natural gas pipelines, overhead lines, railroads, easements and rights-of-way listed in title work, etc.

5. Construction Drawings

- a. Completeness expectations. Unless specified otherwise, all Construction Drawings and engineering documents shall be prepared according to the following expectations:
 - a. 80% Plans will contain most civil engineering design elements such as site grading, drainage, utilities and roadways.
 - b. 100% plans are fully detailed with all civil engineering components finalized including precise calculations, material specifications and complete annotations for construction. All documents are to be fully-coordinated across disciplines inclusive of acreage cross-referencing, finalized alignment, profiles and details for elements like storm drains, roadways or retaining walls, for example.
- b. Site improvements plan.
 - a. Show and label the anticipated amenities including but not limited to mailbox pedestals, development identification signs, bus stop locations and shelters, parks, trails, sidewalks, common open space, conservation areas, art, fixtures, neighborhood identity features, etc.
 - b. Street network and connectivity to the existing road network including all proposed access points; alley and road classification, plans and profiles.
 - c. Include a table indicating the name of the entity who will maintain and own the amenities after the site has been released of warranty.
 - d. Include an installation schedule.
 - e. Provide a draft deed for public lands for dedication of public sites for open space or other civic purposes.

- c. Utility plan. Refer to the Town of Berthoud Engineering and Infrastructure Design Standards and Construction Specifications for the details required for application submittal.
- d. Grading Plan and Drainage Report. Refer to the Town of Berthoud Engineering and Infrastructure Design Standards and Construction Specifications for the details required for application submittal.
- e. Lighting Plan prepared in accordance with the Outdoor Lighting and Dark Skies Section of this Chapter.
- f. Geotechnical Report.
- g. Geologic study. If upon referral to the Colorado Geologic Survey (CGS), the CGS requires a geologic study, then this report must be prepared by a registered professional engineer or professional geologist and shall address the following:
 - a. Site conditions
 - b. Geologic conditions
 - c. Engineering considerations and limitations
 - d. Additional investigations necessary per the CGS

6. Landscape, Irrigation, Parks and Open Space and Parking plan prepared in accordance with the Town's Landscape Design Guidelines and the Design Section of this Chapter and shall include:

- a. Project name.
- b. Scale, north arrow and date of preparation.
- c. Existing and proposed streets and street names.
- d. Lot lines, easements and public rights-of-way as shown on the subdivision plat, including gross and net area of all parcels.
- e. Location of proposed building footprints and parking areas.
- f. Location of storage, loading and service areas.
- g. Existing and proposed two-foot contours (based on USGS datum).
- h. General grading concepts for improvements, typical cross-sections of streets and special treatment areas.
- i. Existing site features including ditches, trees, shrubs and groundcovers and any drainage ways, wetlands or wildlife habitat present on the site.
- j. All existing trees within the proposed site and adjacent to the site must be accurately identified on the plan. Existing trees must be labeled as to their size, species and if they are intended to remain, be removed or transplanted. All replacement mitigation trees will need to be shown separately on the plan. Tree protection standards for existing trees to remain shall be included on the plan.
- k. Natural features, wetlands, wildlife corridors, floodplains, streams, ditches and other waterways.
- l. Define areas to be considered open space and if public or private. Indicate how open space will be maintained including: erosion control, revegetation, and weed management during and after construction.
- m. The location of existing and proposed utilities and easements. Utility lines can be 'ghosted' in on the landscape plan to vary the line types for cleaner drawings.
- n. Acreage and percentages of parks, trails and open spaces.
- o. Landscaping around signage, structures and site amenities.
- p. The extent and location of proposed trees, tree strips, shrubs, groundcovers, perennials, turf, fences, walls, and other site amenities, for example. Plant materials are to be drawn at two-thirds of its mature size.
- q. Landscape schedule [i.e. a table] including the represented plant symbol, Latin name, common name, planting size and number of individual plants. All plant materials are to meet the minimum size requirements as provided in this Code. Provide the percentage of each material to illustrate how the diversity standards are met.
- r. Location of fences, walks, etc.

- s. Proposed treatment of all ground surfaces must be clearly indicated, including turf, paving, mulch, native grass, seeded grass, etc. Grass areas are to be specified as seed or sod, and a seed mix/rate specified.
- t. Detail drawings at 1" = 20' to illustrate typical perimeter treatment, buffering, front yard and any special treatment areas on site.
- u. Sight distance triangles must be shown at street intersections pursuant to this Code.
- v. Project specific landscape notes and details to ensure the proper planting, establishment and survival of plant materials. Additional notes detailing the warranty for plant materials and continued maintenance shall be included.
- w. Proposed grading of the project site, including drainage swales, detention basins, retaining walls and any off-site infrastructure improvements.
- x. Notes for conservation and retention of top soil and landscape soil preparation.
- y. Restoration, revegetation or enhancement of disturbed natural areas or open space feature.
- z. Park structures, signage, play equipment, and other landscape or park amenities and appurtenances.
- aa. Buffering plan
 - a. Dimensioned buffer areas
 - b. Acreage of buffer areas
 - c. Proposed use of buffer areas
- bb. Park and open space plan
 - a. Park and open space distribution and location with acreages and percentages
 - b. Neighborhood identity features
 - c. Required buffer areas
 - d. Connection to regional trails, and trails and sidewalks located on adjacent properties
- cc. Pedestrian network
 - a. Location of all trails and sidewalks, and connection to the regional trails system and sidewalks and trails on adjacent properties
 - b. **Plan for off-site sidewalk or trail improvements including $\frac{1}{4}$ mile pedestrian shed beyond the project boundary.**
 - c. Depiction of bike lanes or other multi-modal features.
- dd. Provide a landscape maintenance plan inclusive of irrigation practices for different planting areas, weed control, replacement of diseased or dead materials, and mowing. Refer to the Landscape Guidelines. The landscape maintenance plan shall be submitted with the Final Plat.
- ee. Irrigation Plan shall be prepared in accordance with the Town's Irrigation Plan Guidelines. The Irrigation Plan shall be submitted with the Final Plat.
- ff. Neighborhood identity features shall be identified and precedent images or product specifications are to be provided.
 - gg. Parking plan in compliance with the parking section of the Design Standards found in this Chapter.
- hh. Hydrozone analysis shall detail the proposed consumption of potable and non-potable water for both interior and exterior uses. Indicate the intended source of water for potable and non-potable water uses. A table shall be created and placed on the Landscape Plan illustrating acreage per consumption type outlined in the Water Rights Dedication section of this Chapter. A sample table is included below as an illustration of the data required:

Project Name Hydrozone for landscaping common spaces prepared by: Proposed source of water:										
	Project acreage	X	Water demand in acre feet/ acre	=	Total Acre-feet of water needed	Project acreage	X	Water demand in SFE/acre	=	Total number of SFE needed
Natural areas, open water, impervious surface			0					0		
Native seed area			0.8					2		
Lawn grass, playing fields, tree/shrub beds, etc.			3					7.5		
Non-turf vegetation			1.33					3.25		
Total quantity of acre-feet of water needed					Total quantity of SFE needed					

To complete the following table, refer to the Water Rights Dedication section of this Chapter and list the proposed lot sizes in the right hand column and then complete the table per the column titles.

Project Name Water Calculation for potable use prepared by: Proposed source of water:			
	If non-potable water is proposed for irrigation on individual lots, provide the quantity required in this column	If non-potable water is proposed for lot irrigation, provide the quantity of potable water required in this column	If potable water is proposed for both outdoor and indoor uses, provide the water required in this column
Lot size/ number of lots			
Lot size/ number of lots			
Lot size/ number of lots			
Lot size/ number of lots			
Total SFE required			

Raw water dedication. Prior to the issuance of a building permit, the applicant shall provide to the Town funds to purchase sufficient raw water or rights thereto for that permit. At the time of Final Plat, all water necessary for irrigation of parks, open space, golf courses, playing fields, and similar public areas shall be dedicated to the Town per this Code.

7. Architectural diversity plan/common architectural guidelines for non-residential projects inclusive of signage shall be provided.
 - a. Graphics or illustrations of proposed exterior elevations.
 - b. Provide complete building elevations, drawn to scale, with illustrations of all colors and identifying major materials to be used in the structure(s).
 - c. Building floor plans, sectional drawings, perspective drawings, models, and/or computer visualizations when the impacts of a proposal warrant such information.
 - d. Architectural standards for the development. Standards in addition to those found in the Town's Architectural Guidelines and Design Standards section of this Chapter shall be provided to illustrate a sense of place for individual developments.
 - e. Development sign plan.

- i. Provide a plan illustrating a unified sign plan for the development. Illustrate how the sign will be integrated into the overall site inclusive of landscaping, sight distance, etc.
- 8. Narrative materials.
 - a. The applicant shall state how the requirements of the Intent Section will be met if not exceeded.
 - b. General description of the plan to manage drainage and stormwater
 - c. Statements regarding utility provision (potable and non-potable water, sanitary sewer, stormwater management, dry utilities). Describe utility capacity and the need to extend or upgrade lines. Describe the source of water and the quantity of water needed.
 - d. Duplicate the landscape plan hydrazone analysis in narrative materials.
 - e. Describe how the landscape and irrigation plans meet the requirements of this Chapter, the Landscape Design Guidelines, and any overlay district the property is located within.
 - f. Describe key findings in the Traffic Impact Study inclusive of anticipated on- and off-site improvements and phasing for these improvements.
- 9. Supporting documents.
 - a. Traffic Impact Study. This study must be prepared by a professional traffic engineer and identify the project impacts to the local and regional traffic system. The direct roadway impacts and proposed share in the cost of regional improvements and intersections must be identified for the project.
 - b. Mineral, oil and gas documentation. Evidence that the surface owner has contacted all lessees of mineral, oil and gas rights associated with the site. Included in the evidence must be the name of the current contact person, their phone number, and mailing address for each of the mineral owners or lessees. Said evidence may be provided in a mineral interests report prepared by a certified landman, title company, or attorney. See C.R.S. . §§ 24-65.5-101, et seq.
 - c. Colorado Historical Society (CHS) records search. At the discretion of the Town and in consultation with the Berthoud Historic Preservation Advisory Committee (HPAC), an applicant may be required to provide the Town with a CHS records listing historically or archaeologically significant findings on the property being subdivided at their expense. If a listing shows a significant finding, a site-specific historic survey per the requirements of the CHS is required. If, in coordination with the applicant, the Town Board decides to protect any historic resource, a protection plan must be developed in consultation with the HPAC.
 - d. General ecological resource survey. Prepared by a qualified biologist, geologist, ecologist, or similar qualified professional, a survey identifying the potential/absence/habitat of a threatened or endangered species and wetlands or other ecologically sensitive area. Said survey shall make practical recommendations regarding treatment or mitigation of the findings.
 - e. Deed for public lands. The applicant shall submit to the Town a warranty deed and title insurance for all lands dedicated on the Final Plat and to be accepted by the Town.
- 10. Agreements. The following agreement shall be secured and provided to the Town when requested.
 - a. Development Agreement. Prior to recording the final subdivision approval document, the applicant shall enter into a Development Agreement with the Town for all public improvements including on-site and off-site improvements which may include and not be limited to water, sanitary sewer, non-potable water, stormwater, sidewalks, street trees, traffic improvements, for example. The Town Board of Trustees hereby delegates to the Town Administrator the authority to approve and sign all development agreements between the applicant and the Town. See the Development Agreement and the Construction of Public Improvements Sections of this Chapter.
 - b. Floodplain use permit from the Town.
 - c. Agreement with irrigation companies.
 - d. Other agreements that may be necessary to allow the subdivision of land to occur.
- 1. Additional materials. At the Town's discretion and depending on the proposed subdivision and its potential impact to the community, the Town may request additional materials.

30-5-105 Subdivision types

The Town of Berthoud has many different application types of subdivisions, each of which will be described in this section. The required application materials will be listed in the Subdivision Application Materials Table and narrative found in this section.

A. For all subdivisions, the following applies:

1. Application Process. Refer to the Land Use Processes and Procedures Table and narrative section.
2. Public Notice. Refer to the Public Hearing and General Notice Provisions Table.
3. Application Materials. Refer to the Subdivision Application Materials Table and narrative section.

4. Criteria for Approval. Refer to the Intent section as well as additional Criteria for Approval in each individual application type found below. The Criteria for Approval is used to evaluate if the application can be approved.

B. Minor Subdivision.

1. The Minor Subdivision provides a streamlined land division process that allows the creation of no more than six total lots, from one parent tract or lot that meet the requirements of this Code.

2. To be eligible for the Minor Subdivision process, the following shall apply:
 - a.
 - a. The property has been previously platted within the Town; and
 - b. The proposed project includes no additional public right-of-way dedication necessary for access to the development.
 3. If denied, the applicant may appeal the Planning Commission's decision to the Town Board of Trustees.

4 Timeframe related to approval of Minor Subdivision. A Minor Subdivision is in full force and effect for one year from date of recordation. Applicants may request a single, one-year extension from the Town prior to termination of Minor Subdivision approval.

C. Neighborhood Master Plan.

1. The Neighborhood Master Plan is a concept design of the development and shall be submitted with a Zoning, Rezoning or Preliminary Plat application that includes a residential component, and depicts what the applicant envisions for the overall development, including zoning, transportation, pedestrian network, parks, open space, subdivision identity standards and other amenities, as well as precedent images. The Neighborhood Master Plan shall convey how the applicant has integrated the Town's master plans, architectural guidelines, landscape design guidelines, residential diversity standards, and neighborhood identity features, for example into their development proposal. The Neighborhood Master Plan is the method to describe how a proposed development fits into the context of Berthoud as a whole and the immediate surrounding areas. A Neighborhood Master Plan is not required for a Minor Subdivision.

a. Previously approved concept plans. Concept plans approved before the amendment of this section of the ordinance shall not be entitled to any vested development rights.

b. Timeframe related to approval of Neighborhood Master Plan. A Neighborhood Master Plan is in full force and effect for one year from date of Town Board action. Applicants may request a single, one-year extension from the Town prior to termination of the Neighborhood Master Plan approvalNeighborhood Master Plan and the Preliminary Plat approval.

c. Minor amendments. Minor amendments to the Neighborhood Master Plan may be approved administratively under the following conditions:

1. Does not change any land use, or location of any land use.
2. Does not change the number of lots or density by more than ten percent.

3. Does not contain significant changes in arterial or collector street alignment and/or access points, or other major public elements such as drainage improvements, utility lines or facilities.

4. Does not change any measurable standard (other than above), such as open space, or park area, by more than ten percent.

D. Preliminary Plat.

1. A Preliminary Plat is used to depict preliminary engineering studies, lot lines and construction documents. A Preliminary Plat illustrates how a subdivision meets the design and development requirements found in the Town Code inclusive of infrastructure, landscaping, traffic and lot lay-out.

2. *Preliminary Plat Required:* A Preliminary Plat is required for all subdivisions. No Final Plat will be processed or approved without prior Preliminary Plat approval.

3. *Phasing.* A Preliminary Plat shall designate the boundaries of phases for which separate Final Plats may be presented for approval. Each phase, either alone or in conjunction with previously approved and recorded phases, must meet all of the requirements of this Code.

4. The Preliminary Plat shall be in substantial compliance with the approved Neighborhood Master Plan. For the purposes of this Code, "substantial conformance" includes design adjustments made to meet any conditions of the Neighborhood Master Plan approval, and is determined as follows:

- a. Does not change any land use.
- b. Does not change the number of lots or residential density by more than 5%.
- c. Does not contain changes which would render the preliminary plan in nonconformance with requirements of this Code.
- d. Does not contain significant changes in street alignment and/or access points, or other public elements such as drainage improvements, utility lines or facilities.
- e. Does not change any measurable standard (other than above) by more than 15 percent.
- f. Preliminary Plats determined by the Community Development Director to have changes that exceed the definition of "substantial conformance" as above shall not be processed until a new Neighborhood Master Plan has been approved.

5. Every approval of a Preliminary Plat by the Board of Trustees shall constitute the Board's delegation to the Mayor to sign the final plat accepting the dedications set forth therein.

6. In order to establish the three-year statutory vested right, the applicant must request a required public hearing on a site specific development plan before the Board of Trustees. The public hearing on the Preliminary Plat satisfies this requirement provided that the Final Plat is identical to the approved Preliminary Plat. This means that the Final Plat is identical to the Preliminary Plat as submitted for the Public Hearing and incorporates only those modifications and conditions expressly provided for in the Preliminary Plat approving resolution. Notwithstanding any contrary provision, a Preliminary Plat is not a site specific development plan and no vested right is established by the approval of a Preliminary Plat.

E. Final Plat.

1 A Final Plat is used to complete the final engineering studies, lot lines and construction documents. A Final Plat illustrates how a subdivision meets the design and development requirements found in the Town Code inclusive of infrastructure, landscaping, traffic and lot lay-out.

2 The Final Plat must be in substantial conformance with the approved Preliminary Plat to receive an administrative review. For the purposes of this Code, "substantial conformance" includes design adjustments made to meet any conditions of the preliminary plan approval, and is determined as follows:

- a. Does not change any land use.

- b. Does not change the number of lots or residential density.
- c. Does not contain changes which would render the Final Plat in nonconformance with requirements of this Code.
- d. Does not contain significant changes in street alignment and/or access points, or other public elements such as parks, open space, public spaces, drainage improvements, utility lines or facilities.
- e. Does not change any measurable standard (other than above) by more than 5 percent.
- f. How the Applicant has addressed conditions of approval, if any were imposed during the Preliminary Plat by the Planning Commission and/or the Town Board of Trustees.
- g. Final Plats determined by the Community Development Director to have changes that exceed the definition of "substantial conformance" as above shall be processed through to the Planning Commission for a public hearing for a Preliminary Plat. .

1. The Final Plat must be in substantial conformance with the approved Preliminary Plat when proceeding forward with a traditional public hearing. For the purposes of this Code, "substantial conformance" includes design adjustments made to meet any conditions of the preliminary plan approval, and is determined as follows:
 - a. Does not change any land use.
 - b. Does not change the number of lots or residential density by more than five (5) percent.
 - c. Does not contain changes which would render the Final Plat in nonconformance with requirements of this Code.
 - d. Does not contain significant changes in street alignment and/or access points, or other public elements such as parks, open space, public spaces, drainage improvements, utility lines or facilities.
 - e. Does not change any measurable standard (other than above) by more than 15 percent.
 - f. How the Applicant has addressed conditions of approval, if any were imposed during the Preliminary Plat by the Planning Commission and/or the Town Board of Trustees.
2. Final Plats determined by the Community Development Director to have changes that exceed the definition of "substantial conformance" as above shall be processed through to the Planning Commission for a public hearing for a Preliminary Plat. .
3. *Timeframe related to approval of Final Plat.* Unless a vested right is established in accordance with the Berthoud Development Code, a Final Plat is in full force and effect for one year from date of recordation. Final Plat Applicants may request a single, one-year extension from the Town prior to termination of Final Plat Subdivision approval.
4. *Vesting: Final Plat Identical to Preliminary Plat.* In the event the Final Plat is identical to the approved Preliminary Plat, no additional public hearing is needed for the purposes of establishing a vested right. In such cases the Final Plat may be administratively approved and a vested property right of three years shall be deemed established upon the administrative approval of the Final Plat except that the period of time permitted by law for the exercise of rights or referendum and judicial review shall begin to run until the date of publication, in a newspaper of the Town granting the approval.
5. *Vesting: Final Plat Not Identical to Preliminary Plat.* In the event the Final Plat is not identical to the approved Preliminary Plat, and the applicant desires that the Final Plat establish a vested right, the applicant may request the Board of Trustees notice and hold a public hearing on the final plat and where applicable in cases where the applicant request rights exceeding three years, the proposed development agreement, for purposes of establishing a vested right pursuant to the Berthoud Development Code.
 - i. The following application materials are required:
 - i. Application Forms and Fees

1. Application Form provided by the Town
2. Memorandum of Understanding for Development Review fees on a form provided by the Town
3. Fees. The required application fees and any development review deposit fees will be provided to the applicant at the pre-application meeting. Fees are due upon submittal of the application.

- ii. Evidence of property ownership
 1. Title Commitment: Dated no more than 30 days from the date of application submittal.
- iii. Neighboring Property owner list
 1. A list of property owners and the source of the list in a format acceptable to the Town.
 2. Refer to the public hearing and general notice provisions section of this Chapter.
- iv. Letter of request for vesting
- v. Approved Final Plat
- vi. Approved Development Agreement
 1. Where the applicant requests rights be vested for a period exceeding three years, a Development Agreement providing for such rights to be vested for a period exceeding three years may only be approved by the Town Board in its legislative discretion pursuant to the factors provided in C.R.S. Section 24-68-104.

- ii. The following process shall be followed for a vesting request of a Final Plat:
 - i. The standards established in the Public Hearing and General Notice Provisions Table shall be followed.
 - ii. After proper notice, a public hearing shall be held before the Town Trustees. The Town Board of Trustees may approve, approve with conditions, or deny the final plat.

5. *Early grading.* After submittal of the Final Plat, an applicant may request approval to proceed with preliminary grading of the project area under the following circumstances. The Town reserves the right to approve or deny the request. This is an option to be approved by the Town.

- a. The construction documents must be signed and stamped by a professional engineer licensed to practice in the State of Colorado. The plans shall include a construction plan set for grading and drainage and approved by the Town Engineer; and
- b. The Town Engineering issues a memo authorizing specific grading work; and
- c. The applicant accepts the risk of early grading and stormwater management / water quality feature installation; and
- d. The applicant understands there is no presumption of any Final Plat approval expressed or implied by any authorization of early grading; and
- e. The applicant shall enter into an Agreement with the Town including posting surety in a form acceptable to the Town along with a cost estimate of the work to be performed, the cost of restabilizing the disturbed property, and other work should the applicant not proceed with the development post disturbance; and
- f. The applicant shall provide the Town with a Stormwater Management Plan approved by the Town Engineer and an approved Construction Stormwater Discharge Permit issued by the State of Colorado, if needed; and

g. The applicant shall hold a Pre-Construction meeting with Town representatives two weeks prior to work proceeding on site.

F. Replat

1. The Replat process provides for modifications to recorded plats. This process shall not be used to convey or create additional lots or tracts than originally existed.

2. This process shall be required for the following modifications to a recorded plat:

- a. Any change to a condition or note on a plat;
- b. The vacation of any right-of-way that results in a new lot configuration;
- c. The vacation of rights-of-way and easements of record over which the Town Board of Trustees have jurisdiction that are no longer needed after complete review by all appropriate agencies; or
- d. The relocation or dedication of new right-of-way within a previously recorded subdivision.

30-5-106 Administrative adjustment to recorded plats

- A. *Administrative Adjustment purpose.* The purpose of the administrative adjustment is to allow adjustments to recorded Final Plats where there is anticipated to be no significant impact to the Town. The Town Administrator may determine that the Planning Commission should make the decision as to the adjustment of internal or external boundary lines if the adjustment would have a significant impact on the Town or the neighborhood.
- B. *Administrative Adjustment allowed.* The Town Administrator is authorized to approve, execute and record plats where the following occur:
 - a. Consolidation of any number of lots into a single lot,
 - b. Modification or reconfiguration of the common property line between contiguous legal lots to reflect the generally recognized use of the property, or where they conform to the historic usage of the property.
 - c. Minor corrections to recorded plats that do not involve lot consolidations or changing lot boundaries.
- C. *Administrative Adjustment prohibited.* The Town Administrator is not authorized to approve, execute and record plats where the following occurs:
 - a. Result in the creation of additional lots;
 - b. Affect access, drainage or utility easements or rights-of-way serving the property or other properties in the area;
 - c. Create nonconforming resultant lots that do not meet the required minimum lot size standard of the applicable zone district;
 - d. Create a nonconforming setback for any existing building;
 - e. A change to a condition or note on a plat; or
 - f. Where there is a change in land use or in the intensity of residential land use including for example:
 - i. From single-family to multi-family,
 - ii. From residential to commercial,
 - iii. From commercial to industrial, or
 - iv. Any other like change in land use. b

D. . *Application materials.* In addition to the application materials listed in the Subdivision Application Materials Table, all owners of legal and equitable title shall execute before a Notary Public a petition stating they are the owners of equitable title to the property subject to the proposed administrative adjustment request. . The petition shall also contain such additional information that the Town may deem appropriate.

30-5-107 Land Use Application Materials

A. The Town of Berthoud has many different types of applications to authorize use of property. Each type of land use application process will be described in this section. The required application materials will be listed in the Land Use Application Materials Table and narrative found in this section.

B. For all land use applications, the following applies:

1. Application Process. Refer to the Land Use Processes and Procedures Table and narrative section.
2. Public Notice. Refer to the Public Hearing and General Notice Provisions Table.
3. Criteria for Approval. Refer to the Intent section as well as additional Criteria for Approval in each individual application type found below. The Criteria for Approval is used to evaluate if the application can be approved.
4. Upon approval of any land use application, the applicant has thirty days to finalize the materials and return documents to the Town for recording. If materials are not provided within this timeframe, the applicant may be considered void.
5. The Town Administrator, the Community Development Director, or their designee may waive certain application requirements, or may require additional application requirements, for land use applications for development or redevelopment of property within either the Mountain Avenue Overlay District or the Innovation Overlay District. Rationale for waiving such requirements shall be documented in writing and filed with application materials with the application record. Rationale shall be relative to site-specific conditions, not due to inconvenience or applicant/owner-induced hardships.

C. Application materials for a Site Plan and Use by Special Review applications are listed below.

1. Application Forms and Fees
 - a. Application Form provided by the Town
 - b. Memorandum of Understanding for Development Review fees on a form provided by the Town
 - c. Fees. The required application fees and any development review deposit fees will be provided to the applicant at the pre-application meeting. Fees are due upon submittal of the application.
2. Evidence of property ownership
 - a. Title Commitment: Dated no more than 30 days from the date of application submittal.
3. Neighboring Property owner list
 - a. A list of property owners and the source of the list in a format acceptable to the Town.
 - b. Refer to the public hearing and general notice provisions section of Chapter 30 of the Berthoud Municipal Code.
4. General standards for all mapping products found in the subdivision section of this Code shall be used as a guideline for land use mapping products. Depending on the nature of the land use permit, some of the requirements for a subdivision are not applicable for land use. Each applicant should work with the Community Development Department regarding expectations of the mapping products for land use permitting.
5. Construction Drawings at the 100% level are required to be submitted with land use applications. These plans are to be fully detailed with all civil engineering components finalized including precise calculations, material specifications and complete annotations for construction. All documents are to be fully-coordinated across disciplines inclusive of accurate cross-referencing, finalized alignment, profiles and details for elements like storm drains, roadways or retaining walls, for example. Applications should review the Construction Drawings requirements found in the Subdivision

requirements section of this Code and shall be used as a guideline for land use construction drawings. Depending on the nature of the land use permit, some of the requirements for a subdivision are not applicable for land use. Each applicant should work with the Community Development Department regarding expectations of the mapping products for land use permitting.

- a. Site improvements plan.
- b. Utility plan. Refer to the Town of Berthoud Engineering and Infrastructure Design Standards and Construction Specifications for the details required for application submittal.
- c. Grading Plan and Drainage Report. Refer to the Town of Berthoud Engineering and Infrastructure Design Standards and Construction Specifications for the details required for application submittal.
- d. Lighting Plan prepared in accordance with the Outdoor Lighting and Dark Skies Section of this Chapter.
- e. Geotechnical Report.
- f. Geologic study. If upon referral to the Colorado Geologic Survey (CGS), the CGS requires a geologic study, then this report must be prepared by a registered professional engineer or professional geologist and shall address the following:
 - i. Site conditions
 - ii. Geologic conditions
 - iii. Engineering considerations and limitations
 - iv. Additional investigations necessary per the CGS

6. Landscape, Irrigation, Parks and Open Space and Parking plan prepared in accordance with the Town's Landscape Design Guidelines and the Design Section of this Chapter and shall include:

- i. Project name.
- ii. Scale, north arrow and date of preparation.
- iii. Existing and proposed streets and street names.
- iv. Lot lines, easements and public rights-of-way as shown on the subdivision plat, including gross and net area of all parcels.
- v. Location of proposed building footprints and parking areas.
- vi. Location of storage, loading and service areas.
- vii. Existing and proposed two-foot contours (based on USGS datum).
- viii. General grading concepts for improvements, typical cross-sections of streets and special treatment areas.
- ix. Existing site features including ditches, trees, shrubs and groundcovers and any drainage ways, wetlands or wildlife habitat present on the site.
- x. All existing trees within the proposed site and adjacent to the site must be accurately identified on the plan. Existing trees must be labeled as to their size, species and if they are intended to remain, be removed or transplanted. All replacement mitigation trees will need to be shown separately on the plan. Tree protection standards for existing trees to remain shall be included on the plan.
- xi. Natural features, wetlands, wildlife corridors, floodplains, streams, ditches and other waterways.
- xii. Define areas to be considered open space and if public or private. Indicate how open space will be maintained including: erosion control, revegetation, and weed management during and after construction.
- xiii. The location of existing and proposed utilities and easements. Utility lines can be 'ghosted' in on the landscape plan to vary the line types for cleaner drawings.
- xiv. Acreage and percentages of parks, trails and open spaces.
- xv. Landscaping around signage, structures and site amenities.
- xvi. The extent and location of proposed trees, tree strips, shrubs, groundcovers, perennials, turf, fences, walls, and other site amenities, for example. Plant materials are to be drawn at two-thirds of its mature size.

- xvii. Landscape schedule [i.e. a table] including the represented plant symbol, Latin name, common name, planting size and number of individual plants. All plant materials are to meet the minimum size requirements as provided in this Code. Provide the percentage of each material to illustrate how the diversity standards are met.
- xviii. Location of fences, walks, etc.
- xix. Proposed treatment of all ground surfaces must be clearly indicated, including turf, paving, mulch, native grass, seeded grass, etc. Grass areas are to be specified as seed or sod, and a seed mix/rate specified.
- xx. Detail drawings at 1" = 20' to illustrate typical perimeter treatment, buffering, front yard and any special treatment areas on site.
- xi. Sight distance triangles must be shown at street intersections pursuant to this Code.
- xii. Project specific landscape notes and details to ensure the proper planting, establishment and survival of plant materials. Additional notes detailing the warranty for plant materials and continued maintenance shall be included.
- xxiii. Proposed grading of the project site, including drainage swales, detention basins, retaining walls and any off-site infrastructure improvements.
- xxiv. Notes for conservation and retention of top soil and landscape soil preparation.
- xxv. Restoration, revegetation or enhancement of disturbed natural areas or open space feature.
- xxvi. Park structures, signage, play equipment, and other landscape or park amenities and appurtenances.
- xxvii. Buffering plan
- xxviii. Park and open space plan
 - a. Park and open space distribution and location with acreages and percentages
 - b. Neighborhood identity features
 - c. Required buffer areas
 - d. Connection to regional trails, and trails and sidewalks located on adjacent properties
- xxix. Pedestrian network
 - a. Location of all trails and sidewalks, and connection to the regional trails system and sidewalks and trails on adjacent properties
 - b. Plan for off-site sidewalk or trail improvements including ¼ mile pedestrian shed beyond the project boundary.
 - c. Depiction of bike lanes or other multi-modal features.
 - d.
- xxx. Provide a landscape maintenance plan inclusive of irrigation practices for different planting areas, weed control, replacement of diseased or dead materials, and mowing. Refer to the Landscape Guidelines.
- xxxi. Irrigation Plan shall be prepared in accordance with the Town's Irrigation Plan Guidelines.
- xxxii. Neighborhood identity features shall be identified.
- xxxiii. Parking plan in compliance with the parking section of the Design Standards found in this Chapter.
- xxxiv. Hydrozone analysis shall detail the proposed consumption of potable and non-potable water for both interior and exterior uses. Indicate the intended source of water for potable and non-potable water uses. A table shall be created and placed on the Landscape Plan illustrating acreage per consumption type outlined in the Water Rights Dedication section of this Chapter. A sample table is included below as an illustration of the data required:

Project Name Hydrozone for landscaping common spaces prepared by: Proposed source of water:										
	Project acreage	X	Water demand in acre feet/ acre	=	Total Acre-feet of water needed	Project acreage	X	Water demand in SFE/acre	=	Total number of SFE needed
Natural areas, open water, impervious surface			0					0		
Native seed area			0.8					2		
Lawn grass, playing fields, tree/shrub beds, etc.			3					7.5		
Non-turf vegetation			1.33					3.25		
Total quantity of acre-feet of water needed					Total quantity of SFE needed					

To complete the following table, refer to the Water Rights Dedication section of this Chapter and list the proposed lot sizes in the right hand column and then complete the table per the column titles.

Project Name Water Calculation for potable use prepared by: Proposed source of water:			
	If non-potable water is proposed for irrigation on individual lots, provide the quantity required in this column	If non-potable water is proposed for lot irrigation, provide the quantity of potable water required in this column	If potable water is proposed for both outdoor and indoor uses, provide the water required in this column
Lot size/ number of lots			
Lot size/ number of lots			
Lot size/ number of lots			
Lot size/ number of lots			
Total SFE required			

Raw water dedication. Prior to the issuance of a building permit, the applicant shall provide to the Town funds to purchase sufficient raw water or rights thereto for that permit. At the time of Final Plat, all water necessary for irrigation of parks, open space, golf courses, playing fields, and similar public areas shall be dedicated to the Town per this Code.

7. Architectural diversity plan/common architectural guidelines for non-residential projects inclusive of signage shall be provided.
 - a. Graphics or illustrations of proposed exterior elevations.
 - b. Provide complete building elevations, drawn to scale, with illustrations of all colors and identifying major materials to be used in the structure(s).
 - c. Building floor plans, sectional drawings, perspective drawings, models, and/or computer visualizations when the impacts of a proposal warrant such information.
 - d. Architectural standards for the development. Standards in addition to those found in the Town's Architectural Guidelines and Design Standards section of this Chapter shall be provided to illustrate a sense of place for individual developments.
 - e. Development sign plan.

- j. Provide a plan illustrating a unified sign plan for the development. Illustrate how the sign will be integrated into the overall site inclusive of landscaping, sight distance, etc.
- 8. Narrative materials.
 - a. The applicant shall state how the requirements of the Intent Section will be met if not exceeded.
 - b. General description of the plan to manage drainage and stormwater
 - c. Statements regarding utility provision (potable and non-potable water, sanitary sewer, stormwater management, dry utilities). Describe utility capacity and the need to extend or upgrade lines. Describe the source of water and the quantity of water needed.
 - d. Duplicate the landscape plan hydrazone analysis in narrative materials.
 - e. Describe how the landscape and irrigation plans meet the requirements of this Chapter, the Landscape Design Guidelines, and any overlay district the property is located within.
 - f. Describe key findings in the Traffic Impact Study inclusive of anticipated on- and off-site improvements and phasing for these improvements.
- 9. Supporting documents.
 - a. Traffic Impact Study. This study must be prepared by a professional traffic engineer and identify the project impacts to the local and regional traffic system. The direct roadway impacts and proposed share in the cost of regional improvements and intersections must be identified for the project.
 - b. Mineral, oil and gas documentation. Evidence that the surface owner has contacted all lessees of mineral, oil and gas rights associated with the site. Included in the evidence must be the name of the current contact person, their phone number, and mailing address for each of the mineral owners or lessees. Said evidence may be provided in a mineral interests report prepared by a certified landman, title company, or attorney. See C.R.S. §§ 24-65.5-101, et seq
 - c. Colorado Historical Society (CHS) records search. At the discretion of the Town and in consultation with the Berthoud Historic Preservation Advisory Committee (HPAC), an applicant may be required to provide the Town with a CHS records listing historically or archaeologically significant findings on the property being subdivided at their expense. If a listing shows a significant finding, a site-specific historic survey per the requirements of the CHS is required. If, in coordination with the applicant, the Town Board decides to protect any historic resource, a protection plan must be developed in consultation with the HPAC.
 - d. General ecological resource survey. Prepared by a qualified biologist, geologist, ecologist, or similar qualified professional, a survey identifying the potential/absence/habitat of a threatened or endangered species and wetlands or other ecologically sensitive area. Said survey shall make practical recommendations regarding treatment or mitigation of the findings.
 - e. Deed for public lands. The applicant shall submit to the Town a warranty deed and title insurance for all lands dedicated on the Final Plat and to be accepted by the Town.
- 10. Agreements. The following agreement shall be secured and provided to the Town when requested.
 - e. Development Agreement. Prior to recording the final subdivision approval document, the applicant shall enter into a Development Agreement with the Town for all public improvements including on-site and off-site improvements which may include and not be limited to water, sanitary sewer, non-potable water, stormwater, sidewalks, street trees, traffic improvements, for example. See the Development Agreement and the Construction of Public Improvements Sections of this Chapter.
 - f. Floodplain use permit from the Town.
 - g. Agreement with irrigation companies.
 - h. Other agreements that may be necessary to allow the subdivision of land to occur.
- 2. Additional materials. At the Town's discretion and depending on the proposed subdivision and its potential impact to the community, the Town may request additional materials.

30-5-108 Land Use Application Types

- A. The Town of Berthoud has many different application types of land use applications, each of which will be described in this section. The required application materials are listed in the Land Use Application Materials Section.
 - 1. Plot Plan. Plot plans illustrate the relationship of a building to the property. A plot plan is required to apply for a building permit and is a part of the building permit process. The plot plan shows where the proposed building or structure will be located on the lot as well as the architectural design of the structure so the Town can establish that the proposed location will comply with all applicable regulations. A plot plan must illustrate the building in relationship to the property including: the building footprint, the tree strip, utility lines, driveways and curb cuts, sidewalks, utility boxes, irrigation lines, street signs, for example. Land use applications and a subdivision process may be required prior to application for a building permit.
 - 2. Site Plan. Site Plans illustrate the relationship of a building, access, site circulation, landscaping, easements, lighting, and parking, for example. The Site Plan shows how the lot will be developed so that the Town can ensure that the site design will be in compliance with all Town regulations and this Code. Approval of a Site Plan review application is a prerequisite to applying for a building permit for all new multi-family (excluding duplexes), commercial, and industrial developments. Refer to the Land Use Table for uses that may be contemplated through the Site Plan permit process. The standard administrative Site Plan review process is found in the Land Use Processes and Procedures Table. There are three alternatives to the administrative Site Plan and these are listed below.
 - a. The Site Plan Review application process may also be a requirement for redevelopment properties and the change of use of a property or structure. The Town Administrator, the Community Development Director, or their designee may waive certain application requirements for redevelopment of property within either the Mountain Avenue Overlay District or the Innovation Overlay District. Rationale for waiving such requirements shall be documented in writing and filed with application materials with the application record. Rationale shall be relative to site-specific conditions, not due to inconvenience or applicant/owner-induced hardships.
 - b. Site Plan applications may be referred to the Planning Commission for the Commission's review and action, based on a determination that the proposed development's complexity, projected impacts, or proximity to conflicting land uses merits such action.
 - i. The application and notice of the referral shall be sent to the Planning Commission for its review within a Public Hearing and action.
 - ii. Appeals of any Planning Commission final decision may be made to the Town Board acting as the Board of Appeals using the appeal procedures found in this Section
 - iii. *Board consideration of appeals.* The Board of Trustees shall consider any appeal within 45 days of the close of the 14-day appeal period, except an appeal associated with a concurrent development application requiring Board review or approval, shall be considered with final action on the concurrent development application. The Board shall apply the Site Plan review criteria to uphold, modify, or reverse an earlier decision.
 - b. Fast Track Site Plan applications for Multi-Family affordable housing developments and Mixed Use developments containing an affordable housing component.
 - i. Multi-family residential developments containing a minimum of fifty (50) percent of the units to be developed for affordable housing are eligible for the expedited review process outlined in the Town of Berthoud Expedited Site Plan Guidelines. Developers may utilize this fast track process or developers may utilize the standard Site Plan process when proposing an Affordable Housing development.

- j. If a Variance is needed, the Variance Section of this Chapter shall be followed and processed concurrently with the Fast Track Site Plan utilizing the Fast Track processing standards.
- ii. See the definition of Affordable housing in C.R.S. 29-32-101(2) and 29-32-105(2).
- iv. To qualify for the Town's fast track Site Plan process, the developer shall provide documentation on how the affordability and Area Median Income (AMI) standards shall be maintained in perpetuity in a form acceptable to the Town. This information shall be provided during the pre-application process.
- v. Fast Track Site Plan Review (and Variance process, if needed) begins at the time the applicant submits a complete application following the required pre-application process.
 - 1. A complete application shall include the submittal of all Site Plan application materials listed in this Section inclusive of the 100% Construction Document Plans. These materials shall be completed according to site-specific directions provided during the pre-application process.
 - 2. Staff shall have ten business days to determine if the application is complete. If the application is not complete, the applicant is afforded time to provide all necessary application materials.
 - 3. The staff review time of 90 days shall start when the application is determined to be completed.
 - 4. The Standard site plan review process shall be followed for referral agency review, public notice and preparation of the staff report.
 - 5. The applicant shall receive a Notice of Decision found in the Staff Report for an Administrative Approval from the Community Development Director after the review period and the decision shall contain whether the application is approved or denied.
 - 6. Modifications to an approved Fast Track Site Plan may require a new application to be made.
- vi. The applicant shall enter into a Development Agreement, if necessary per the Development Agreement Section of this Chapter and the site-specific improvements necessary for the development. The process to enter into the Development Agreement shall not exceed 90 days. Required elements of the Development Agreement shall be provided by the Town during the Site Plan pre-application process.
- vii. The Building Permit process shall not exceed 90 days for review.
- viii. Extensions to development review, development and finalization of a Development Agreement, and the Building Permit processing for a Fast Track project may be granted as described below:
 - a. The applicant may request a one-time 90-day extension;
 - b. An extension may be granted to allow time to comply with a state law or court order, which time shall be determined by the state law or court order;
 - c. An extension may be granted to allow time to address comments from an agency that has approval authority over the project and the review timeline adherence is outside the control of the Town of Berthoud;
 - d. The Town may extend its review period by an additional 30 days in order to address additional comments or concerns that arise during development review. The Town may extend its review period by multiple increments of 30 days, however it is not the intent of the

Town to unnecessarily delay Fast Track development review. The applicant is encouraged to respond within five business days' receipt of the need to extend development review.

3. Use by Special Review. Certain uses listed in the Land Use Table are more intensive and are subject to the granting of a Use by Special Review permit. Use by Special Review. Because of their unusual or special characteristics, Uses by Special Review review require additional evaluation so that they may be located properly with respect to their effects on surrounding properties. Refer to the Land Use Table for uses that may be contemplated through the Use by Special Review permit process.
 - a. Uses by Special Review may be permitted subject to such conditions and limitations as the Town may prescribe to ensure that the location and operation of the use will be in accordance with the Intent section of this Chapter. The scope and elements of any Use by Special Review may be limited or qualified by the conditions applicable to the specific property. Where conditions cannot be devised to achieve these objectives, applications for conditional use permits shall be denied.
4. *Post approval actions for Site Plan and Use by Special Review Permits.*
 - a. *Building Permit.* A building permit shall be issued only when the land use permit has been approved. However, with the approval of the Town, an applicant may submit a building permit application concurrent with the land use application. Building permits shall not be issued for any development that is not in conformance with the approved land use application.
 - b. Development Agreement. Depending on the nature of the Land Use Permit and extent of public improvements needed, a Development Agreement may be needed. See the Development Agreement section of this Chapter.
 - c. *Amendments to approved Land Use Permits.*
 - i. Minor variations in the location of structures, improvements, or open space areas caused by engineering or other unforeseen difficulties may be reviewed and approved by the Town Staff. Such changes shall not exceed ten percent of any measurable standard or modify the use, character, or density of an approved Site Plan. All plans so modified shall be revised to show the authorized changes and shall become a part of the permanent records of the Town.
 - ii. Changes that exceed the ten percent threshold, or other major modifications (such as changes in building size or footprint, relocation of access points, changes to required parking, etc.), shall be considered as a application. A complete application shall be prepared and submitted in compliance with the requirements set forth in this Section.

30-5-109 Accessory Uses and Structures

A. Purpose. This section establishes minimum standards for accessory uses and structures that are incidental and subordinate to principal uses. These standards are intended to minimize adverse impacts on surrounding properties and the community.

B. Intent. Accessory uses and structures are intended to allow property owners the full use of their property while maintaining the integrity of and character of the neighborhood and community. To accomplish these goals, accessory uses and buildings shall be erected and used only for purposes that are clearly secondary and incidental to the principal use of the property and shall be located on the same lot with the principal use.

C. Accessory Use and Structures Criteria. An accessory use or structure is normally incidental to a principal use. Accessory uses and structures shall comply with all the following criteria:

1. The accessory use shall be clearly incidental to and consistent with the principal use in the following measurements:
 - a. Lot/floor area devoted to the use or structure;
 - b. Economic production of the accessory use,
 - c. Traffic generation to the site, and
 - d. Customer/visitor generation

2. The accessory use shall be commonly associated with the operation of the principal use;
3. The accessory building/use shall be built and/or constructed only in conjunction with the principal use;
4. The accessory use shall be operated and maintained under the same ownership as the principal use; and
5. The accessory building shall not be used for living or sleeping unless the use meets the criteria of an Accessory Dwelling Unit as defined in the Additional Standards for Accessory Dwelling Units section below.

D. General Standards for All Accessory Uses and Structures.

1. Size. Accessory uses and structures shall not violate the dimensional, parking, landscaping, or open space standards of the applicable zoning district when taken together with the principal use or structure.
2. Timing. Accessory uses or structures are not allowed until the principal use or structure is established unless otherwise stated.
3. The accessory building shall adhere to the Dimensional and Bulk Standards of this Chapter.

E. Additional Standards for Accessory Dwelling Units. Unless otherwise noted in the Land Use Table of this Chapter an accessory dwelling unit in a detached building or in a portion of a single-family dwelling unit is allowed in those zoning districts where the use is listed as a use by right and where the use meets the following requirements:

1. Occupancy.
 - a. The accessory living area may be occupied by one additional family as defined by this code, separate from the principal dwelling unit.
2. Number, Size, and Type.
 - a. Only one accessory dwelling unit is permitted per lot.
 - b. The total square footage of the accessory dwelling unit shall not exceed 850-square feet.
 - c. The accessory dwelling unit shall be located not forward of the principal dwelling, shall match the design of the principal dwelling, and shall follow the accessory structures setback standards.
 - d. Mobile homes and recreational vehicles shall not be used as accessory dwelling units.
 - e. The single-family character of the property shall be maintained.
 - f. Accessory dwelling units are exempt from meeting parking requirements addressed in the parking section of this code.

b. Refer to the Impact Fee section of this Chapter.

5. Additional Standards for Home Occupations.

- a. Purpose: The purpose of the Home Occupation Section is to regulate the conduct of operating business activity in a residence or other structure on the same property as a residence.
- b. Home occupations must meet the following standards:
 - i. In addition to the family occupying the dwelling containing the home occupation, there shall not be more than one outside employee working at the site of the home occupation.
 - ii. The home occupation shall not exceed 1,000 square feet or 30 percent of the total floor area of the dwelling, whichever is less, or can be located in an accessory building not to exceed 500 square feet. The home occupation shall be conducted entirely within the dwelling or designated accessory building.

- iii. The home occupation shall be clearly incidental and secondary to the use of the dwelling for dwelling purposes and must not change the residential character thereof.
- iv. There shall be no change in the outside appearance of the building or premises or other visible evidence of the conduct of such home occupation, including advertising signs larger than two square feet in total size. No other displays or advertising that solicit or direct persons to the address other than the single sign limited to two square feet in total area is permitted.
- v. There must be no exterior storage on the premises of material or equipment used as a part of the home occupation, unless it is enclosed and lot coverage requirements for accessory uses are met.
- vi. No equipment or process shall be used in such home occupation which creates any glare, fumes, odors, smoke, noise or other conditions detectable to the normal senses off the lot, if the occupation is conducted in a single-family dwelling, or outside the dwelling unit if conducted in other than a single-family dwelling.
- c. The following uses because of their tendency to go beyond the limits permitted for home occupations and thereby impair the use and value of the residential area shall not be permitted as home occupations:
 - i. Marijuana businesses including allowed marijuana business as defined in this Chapter;
 - ii. Natural Medicine Center or Natural Medicine Business as defined in this Chapter;
 - iii. Auto repair or motorized implement repair;
 - iv. Dance, music or other types of instruction (if more than four students being instructed at one time);
 - v. The painting of vehicles, trailers or boats;
 - vi. Private schools with organized classes;
 - vii. Welding shops;
 - viii. Nursing facility(ies);
 - ix. Retail or wholesale sales to consumers upon the premises not incidental to the home occupation (e.g. hair care products at a hair stylist are incidental sales).
- d. All exterior aspects of the home occupation operation shall not disrupt the residential character of the area.
- e. The maximum number of vehicle trips per day for clients which may visit the home occupation per day is 15.
- f. A Home Occupation must maintain a Town of Berthoud Business License.

F. Additional Standards for Storage Buildings and Detached Garages.

- 1. Each lot may include detached storage buildings and detached garages for the sole use of the occupants of the principal building and the principal use on the lot.
- 2. Only those buildings that are designed, constructed, and approved by the Town of Berthoud Building Division as storage buildings or detached garages may be used for this purpose.
- 3. Manufactured homes cannot be used as storage buildings, barns, or garages.
- 4. Semi-trailer with attached running gear (i.e., axels, wheels) cannot be used as storage buildings or detached garages.
- 5. Conex containers cannot be used as storage buildings or detached garages.
- 6. The total combined ground floor area of all accessory storage buildings and detached garages shall not exceed ten percent of the lot's net area.

30-5-110 Board of Adjustment

- A. *Purpose.* Pursuant to §31-23-307(1), C.R.S., the Board of Trustees hereby appoints the Planning Commission of the Town of Berthoud to serve as the Board of Adjustment. The Board of Adjustment shall hear and decide variances, waiver requests, and appeals from and review any order, requirement, decision, or determination made by any administrative official charged with the enforcement of any ordinance with respect to the Development Code of the Town of Berthoud.
- B. The Board of Adjustment shall have the following powers and duties, all of which shall be subject to and in compliance with the laws of the state, in harmony with the purpose and intent of this code and the most appropriate development of the neighborhood:
 - 1. To hear and decide appeals from, and review any order, requirement, decision or determination made by an administrative official charged with enforcement of the provisions of this code;
 - 2. To authorize variances from the terms of the Design Standards, Zoning, and Sign regulation sections of this Chapter, where the strict enforcement of this title would create a situation which would result in unreasonable application of these standards. When considering variances, the Board of Adjustment shall consider the following criteria:
 - a. The intent statements found in this Section have been met; and
 - b. The hardship was not created by the actions of the proponent; and
 - c. Such relief may be granted without substantial detriment to the neighborhood or the public good and without substantially impairing the intent and purposes of this code; and
 - d. Provided that there are exceptional circumstances applying to the specific piece of property which do not generally apply to the remaining property in the same zoning area or neighborhood; and
 - e. That the requested variance shall not authorize any permanent use not permitted in the zoning district; and
 - f. In circumstances where the property owners affected most directly, e.g. neighbors, concur in writing with the variance that fact shall be given significant (but not conclusive) weight in favor of the request.
 - 3. To authorize, as variances, alterations in nonconforming uses and buildings. An altered nonconforming use previously authorized that has been discontinued for at least six months that has not been resumed or replaced by another nonconforming unless an extension of time is requested in writing prior to the expiration of the six month period. Nonconforming uses resuming after the six month expiration period will be required to apply for the use through a new application and approval process. Alterations in nonconforming uses and buildings shall be authorized provided the Board of Adjustment determines:
 - a. That the intent statements found in this Section have been met; and
 - b. That the hardship on which the request for variance is based is not self-inflicted; and
 - c. That the altered nonconforming use will not be greater in size, area, or impact than the original nonconforming use, and
 - d. The altered nonconforming building or use will not have any greater adverse impact on the neighborhood than the current nonconforming building or use.
 - 4. To authorize, as waivers, all or portions of the following processes in regards to platting, zoning and design standards for multiple lots from the Development Code of the Town of Berthoud with respect to the requirements of the following chapters only: Design Standards, Zoning, or Signs.

- a. Zoning regulations limited to setback encroachments or height limitations in conjunction with a Preliminary Plat approval, and;
- b. Design Standards limited to Site Plan, Preliminary Plat, or Use by Special Review application and approval criteria.

5. *Waivers.* Waivers shall be considered provided that the following procedures and considerations are met;

- a. *Waiver applications.* The applicant shall submit the following to the Town in conjunction with another application (re-zoning or Site Plan, Use by Special Review or Preliminary Plat only). All other cases shall follow the variance procedures.
 - i. Explanation letter — identifying the waiver being requested and explaining what exceptional condition, practical difficulty, or unnecessary hardship exists to require the waiver. The letter shall also address how the waiver, if granted, will not be detrimental to the public good, create a conflict with the Town Comprehensive Plan or impair the intent and purpose of this Code.
- a. The Subdivision and Land Use Process and Procedures Table shall be followed.
- b. Notice shall be given in accordance with the public hearing and general notice provisions found in this Chapter.
- c. Unless otherwise stated in the Resolution, all waivers granted shall be commenced within six months of the time such waiver is granted; otherwise the waiver shall be null and void.

6. To perform each and all of the duties specified in section 31-23-307 C.R.S., together with all other duties or authority which may hereafter be conferred on it by the laws of the state.

C. The Board of Trustees reserves the authority to act as the Board of Adjustment with respect to all matters in the Development Code and as allowed per Section 31-23-307 C.R.S, specifically:

- 1. All variances not related to Design Standards; Zoning, and Signs.
- 2. All appeals not related to Design Standards; Zoning, and Signs.
- 3. Appeals of Final Plats: Appeals of actions of staff regarding Final Plats shall be taken to the Planning Commission after the filing of an appeal to the Town within ten days of the date of staff's decision on the Final Plat. Appeals may be filed by the applicant or any abutting property owner and shall specifically state the grounds for appeal. The Planning Commission shall consider the appeal as a new matter and act to approve, approve with conditions, or deny the Final Plat based on the review and approval criteria that apply to all Final Plats. Any timely appeal received must be scheduled immediately for review at the next available Planning Commission meeting, but in no event later than 30 days.

D. *Procedures generally.* The board of adjustment shall hold a public hearing on all applications and appeals, subject to the following:

- 1. The procedures found in the Subdivision and Land Use Process and Procedures Table shall be followed.
- 2. Notice shall be given in accordance with the public hearing and general notice provisions found in this Chapter.
- 3. Unless otherwise stated in the Resolution, all variances granted shall be commenced within six months of the time such variance is granted; otherwise the variance shall be null and void.
- 4. The concurring vote of a majority of the board of adjustment shall be necessary to reverse any order, requirement, decision, or determination of any administrative official, or to decide in favor of the applicant in order to implement a variance.
- 5. *Criteria for approval of variances and waivers.* The condition of any variance or waiver authorized shall be stated in writing in the minutes of the Board with the justifications set forth. Waivers and variances may be granted only if they meet one of the following criteria:

- a. That the hardship on which the request for variance or waiver is based is not self-inflicted.
- b. The variance or waiver, if granted, will not alter the essential character of the neighborhood or district in which the property is located, nor diminish the value, use or enjoyment of adjacent property.
- c. The variance or waiver, if granted, is the minimum variance or waiver of applicable Code provision that will afford relief and is the least modification possible of the Code provisions which are in question.
- d. That such practical difficulties or unnecessary hardship has not been created by the applicant.
- e. The variance or waiver would substantially alleviate an existing, defined and described problem of Town-wide concern or would result in a substantial benefit to the Town by reason of the fact that the proposed project would address an important community need.
- f. The plan as submitted will promote the general purpose of the standard for which the modification is requested, equally well or better than a plan which complies with the standard for which a modification is requested.

- C. *Appeal procedures.* Every appeal to the board of adjustment shall be filed in writing not later than one month from the date of the order, requirement, decision, or determination being appealed. The board shall have no jurisdiction on any appeal not brought within 30 days from the date of the order, requirement, decision, or determination.
- D. *Administrative Variances.* The Community Development Director is authorized to approve administrative variances from setback requirements up to ten percent of the required setback after finding the proposed setback is consistent with the intent and purpose of this code, and the requirements of this Section.

30-5-111 Development agreements

- A. *Agreements and Improvements.* A Development Agreement stating that the applicant covenants and agrees to construct any required public improvements shown in the land use or subdivision Final Plat documents together with security in a form approved by the Town is required. No subdivision plat shall be signed by the Town or recorded at the office of the Larimer or Weld County Clerk, and no building permit shall be issued for development until a Development Agreement between the Town and the applicant has been executed. Such agreement shall include a list of all agreed-upon public improvements and landscaping, an estimate of the cost of such improvements, the form of guarantee for the improvements, and any other provisions or conditions deemed necessary to ensure that all improvements will be completed in a timely, quality and cost-effective manner.
- B. Other agreements or contracts setting forth the plan, method and parties responsible for the construction of any required public improvements shown in the Final Plat documents may also be required.
- C. As required by this Code and all applicable laws, rules and regulations, the applicant shall apply to the Town for inspection of improvements.
- D. The following improvements shall typically be constructed as determined by the Town:
 1. Road grading and surfacing.
 2. Curbs.
 3. Street lights.
 4. Sidewalks.
 5. Sanitary sewer collection system.

- 6. Storm sewers or storm drainage system, as required.
- 7. Potable water distribution system.
- 8. Non-potable water distribution system.
- 9. Fire hydrants.
- 10. Utility distribution system for public parks and open space.
- 11. Street signs at all street intersections.
- 12. Permanent reference monuments and monument boxes.
- 13. Underground telephone, telecommunications, cable, electricity and gas lines.
- 14. Berm or fence along major arterial and collector streets.
- 15. Required landscaping including on open space.
- 16. Required landscaping including park improvements.
- 17. Tree strips.
- 18. Under drains.
- 19. Trails, trail heads and associated improvements.
- 20. Required floodway improvements.
- 21. Required irrigation ditch improvements.
- 22. Required off-site improvements.
- 23. Any and all improvements not mentioned above.

E. *Time for completion.* Unless a vested right is established in accordance with the Berthoud Development Code, commencement of construction of all or a portion of the approved Final Plat shall occur within one year from the date of recordation of said Final Plat. The required time for the completion of all required improvements for all or a portion of said Final Plat shall be two years from Town's issuance of a grading or other permit to commence construction. However, the Board may, for good cause shown, extend such time for commencement or completion of the required improvements upon request from the applicant. Upon completion of such improvements within the required time and approval thereof by the Town, the Town shall cause the cash or letter of credit to be released within 30 days of the Town's acceptance of such improvements and receipt of the required as-built drawings. When such improvements are not completed within the required time, the Town may cause the proceeds of the cash, letter of credit or other financial guarantee to be used to close or complete the required improvements in accordance with the terms and provisions of the Development Agreement.

F. *Type and amount of security.* The Town will accept security or collateral in the following types and amounts:

- 1. Payment and performance bonds in the amount of 100 percent of the cost of improvements plus 15 percent contingency, or
- 2. Cash, certified funds, irrevocable letter of credit, or other form of security as approved by the Town in the amount of 25 percent of the cost of improvements plus contingency.

G. *No partial release of security.* No portion of the security for improvements will be released until the expiration of the warranty period. The required warranty period shall commence upon completion and initial approval of all required improvements and landscaping in accordance with the terms and provisions of the Development Agreement.

- H. *Warranty.* All workmanship and materials for required improvements shall be warranted for a minimum period of two years as specified in the Development Agreement and this Code.
- J. *Platting Required.* No Final Plat shall be recorded until the Developer and, if applicable, the Metropolitan District have executed a satisfactory Development Agreement with the Town providing for the installation of all public infrastructure required for the development as set forth in the Plat. In addition, no Development Agreement shall be recorded until all on and off-site easements and rights of way necessary for all public improvements have been acquired, and a Landscape Plan has been approved by the Town.

30-5-112 Pre-Construction Activities and Responsibility of Construction of Public Improvements

- B. Prior to the pre-construction meeting, the issuance of a building permit or the issuance of a grading permit, the following documents shall be provided to the Town as needed for the particular development:
 - 1. Surety or collateral in a form acceptable to the Town in the amount and form stipulated in the Development Agreement and guaranteeing adequate safe closure or completion of all public improvements for each phase of construction necessary for the subdivision. The amount of the security shall be either a Payment and Performance Bond in the amount of 100 percent of the estimated cost of public improvements or a Letter of Credit or other acceptable collateral in the amount of 25 percent of the estimated cost as approved by the Town Engineer for constructing all public improvements, unless otherwise provided for in an approved Development Agreement as described in Section 30-6-112 of this Code. Oil and gas surface use agreement.
 - a. Raw water dedication. The applicant shall provide payment or water to the Town in accordance with the Water Rights Dedication Section of this Code.
 - 2. List of contractors. List of all contractors that will be performing the improvements.
 - 3. Proof of insurance. Proof of workman's comprehensive insurance and liability insurance for each contractor.
 - a. An approved adjudication of water rights and a plan of augmentation.
 - b. A FEMA approved application (i.e., Conditional Letter of Map Revisions [CLOMR] or Letter of Map Revisions [LOMR]).
 - c. A Town-approved Flood Development Permit.
 - 2. Documentation identifying who will own and maintain open spaces. Funding mechanism for maintenance of open space including type of management of such open space.
 - a. Fully-executed deed for public lands for dedication of public sites for open space or other civic purposes.
 - 3. Right-of way permits from the Town.
 - 4. A State Highway utility permit from CDOT.
 - 5. A State Highway access permit from CDOT.
 - 6. A construction dewatering permit from the Colorado Department of Public Health and Environment.
 - 7. SWMP
 - 8. A 404 Permit from the Army Corps of Engineers.
 - 9. An Air Pollution Emission Notice (APEN) from the Colo. Department of Public Health and Environment.
 - 10. A permit for work in any ditch right-of-ways from individual ditch companies.
 - 11. Open space deed restriction. Areas designated as open space shall be protected by a deed restriction or other appropriate method to ensure that they cannot be subdivided or developed in the future and will remain as open space until the use is modified by the Town.

12. Construction traffic control plan. Applicant will develop a plan for Town Engineer review that addresses construction traffic, construction water, temporary road closures, street repairs, dust, noise and other construction-related concerns.
13. Other agreements, certificates, affidavits, enforcements or deductions as required by the Town.

B. Failure to comply with the Town's Municipal Separate Storm Sewer System (MS4) requirements shall result in stop-work orders and an inability to receive building permits and development review and subdivision approvals for future development.

30-5-113 Certification Blocks

A. Preliminary Plat, Final Plat and Replat Applications

LEGAL DESCRIPTION AND DEDICATION:

KNOW ALL PERSONS BY THESE PRESENTS: That the undersigned, being the owners of _____, located in Section _____, Township _____, Range _____ of the 6th Principal Meridian, Town of Berthoud, County of _____, State of Colorado, more particularly described as follows:

(LEGAL DESCRIPTION)

Have laid out, platted, and subdivided the above described land, under the name and style of _____, and by these presents do dedicate to the Town of Berthoud in fee simple the street and public "rights-of-way" as shown on the plats, and grant to the Town of Berthoud such easements and rights-of-way as are created hereby and depicted or, by note, referenced hereon, along with the right to install, maintain, replace and operate mains, transmission lines, service lines, and appurtenances, either directly or through the various public utilities, as may be necessary to provide such utility, cable television, water, electric, natural gas and sanitary services within this subdivision or property contiguous thereto, through, over, under, and across streets, utility and other easements, and other public places as shown on the plat. The sole right and authority to release or convey all or any such easements and right-of-way shall remain exclusively vested in the Town of Berthoud. All easements shall retain the right of ingress and egress for construction and maintenance of improvements. No permanent structures except fencing upon Town approval shall be allowed on any easement.

If owner is an individual(s):

Owner: John Doe

If owner is a corporation, limited liability company, partnership, association or other business entity:

Owner: The ABC Corporation, a Colorado corporation

By: John Doe, President

If owner is a trust:

Owner: The Jane Smith Trust

By: John Doe, as trustee of the Jane Smith Trust

LIENHOLDER'S DEDICATION: The undersigned mortgagee, for good and valuable consideration does by these presents, hereby subordinate all of its rights to such fee simple dedications and grants of easements to the Town of Berthoud as are depicted and referenced hereon and to the terms and conditions of the development agreement and this Final Plat and agrees that the development agreement and this Final Plat shall constitute a first and prior lien upon the (project name) to the same extent as though it were actually executed and recorded prior to said lien or deed of trust.

DATE: _____
LENDER'S NAME

BY: _____
TITLE: _____

SURVEYOR'S CERTIFICATE:

I, _____, a Registered Land Surveyor in the State of Colorado, do hereby certify that the survey of _____ was made under my supervision and the accompanying plat accurately and properly shows said subdivision and is in compliance with the Subdivision Regulations of the Town of Berthoud.

(Name, Registered Land Surveyors)
(Number)

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.

SITE SPECIFIC DEVELOPMENT PLAN: ONLY FOR FINAL PLATS AND USES BY SPECIAL REVIEW WHICH VESTED RIGHTS HAVE BEEN ESTABLISHED IN ACCORDANCE WITH THE PROCEDURES AND APPROVALS REQUIRED BY THE BERTHOUD DEVELOPMETN CODE.

This plan/final plat constitutes a site specific development plan as defined in Article 68 of Title 24, C.R.S., as amended, and Chapter 30 of the Berthoud Development Code available at the Berthoud Town Hall, 807 Mountain Ave., Berthoud, Colorado 80513.

APPROVAL CERTIFICATES:

Approved by the Town of Berthoud, Colorado, this _____ day of _____, 20____.

Mayor

The foregoing plat is approved for filing and accepted by the Town of Berthoud, Colorado, this _____ day of _____, 20____.

ATTEST: _____
Town Clerk

Approved by the Planning Commission of the Town of Berthoud, Colorado this _____ day of _____, 20____.

Chairperson

The foregoing map is approved for filing and accepted by the Town of Berthoud, Colorado this _____ day of _____, 20____.

ATTEST: _____
Town Planner

B. Zoning Map Amendment Applications

LEGAL DESCRIPTION:

KNOW ALL PERSONS BY THESE PRESENTS: That the undersigned, being the owners of _____, located in Section ___, Township _____, Range _____ of the 6th Principal Meridian, Town of Berthoud, County of _____, State of Colorado, more particularly described as follows:

(LEGAL DESCRIPTION)

This is to certify that the rezoning of the above-described property was approved by Ordinance No. _____ of the Town of Berthoud, passed and adopted on the _____ day of _____, 20____, and that the Mayor of the Town of Berthoud as authorized by said ordinance on behalf of the Town of Berthoud hereby for all acknowledges and adopts the said rezone upon which the certificate is endorsed for all purposes indicated hereon.

Approved by the Board of Trustees of the Town of Berthoud, Colorado this _____ day of _____, 20____.

Mayor

The foregoing map is approved for filing and accepted by the Town of Berthoud, Colorado this _____ day of _____, 20____.

ATTEST: _____

Town Clerk

Approved by the Planning Commission of the Town of Berthoud, Colorado this _____ day of _____, 20____.

Chairperson

The foregoing map is approved for filing and accepted by the Town of Berthoud, Colorado this _____ day of _____, 20____.

ATTEST: _____

Town Planner

C. Neighborhood Master Plan and Use by Special Review Applications

Approved by the Town of Berthoud, Colorado this _____ day of _____, 20____.

Mayor

The foregoing map is approved for filing and accepted by the Town of Berthoud, Colorado this _____ day of _____, 20____.

ATTEST: _____

Town Clerk

Approved by the Planning Commission of the Town of Berthoud, Colorado this _____ day of _____, 20____.

Chairperson

The foregoing map is approved for filing and accepted by the Town of Berthoud, Colorado this _____ day of _____, 20____.

ATTEST: _____
Town Planner

D. Administrative Amended Plat and Site Plan Review Applications

Approved by the Town Administrator of the Town of Berthoud, Colorado, this ____ day of _____ 20____.

Town Administrator

Approved by the Engineer of the Town of Berthoud, Colorado, this ____ day of _____ 20____.

Town Engineer

The foregoing plat is approved for filing and accepted by the Town of Berthoud, Colorado this ____ day of _____ 20____.

ATTEST: _____
Community Development Director

E. Development Construction Plans

Town of Berthoud Engineer Approval Statement

Town of Berthoud Approval

All work shall be constructed to the Town standards and specifications. These plans have been reviewed by the Town of Berthoud for concept only and general conformance with the Town standards and specifications. The review by the Town of Berthoud does not imply responsibility by the Town of Berthoud or the Town Engineer for accuracy and correctness of the plans and calculations.

These Plans are hereby approved for one year from the date of the Town Engineer's approval.

Approved By:

Town Engineer

Date