



Planning and Zoning Commission

Monday, June 27, 2022 at 6:00 pm

**PLEASE SILENCE ALL CELL PHONES AND ELECTRONIC
DEVICES. THANK YOU**

1. Meeting Information

207 Muegge Way, Bennett, CO 80102

For a live stream of the meeting use the information below:

<https://us06web.zoom.us/j/82680240820?pwd=VzkzUXINZ25vcnFld2xRNHh2ZUxLZz09>

Meeting ID: 826 8024 0820

Passcode: 420359

One tap mobile

+16699006833

2. Call to Order

Chair

a. Roll Call

3. Approval of Agenda

Chair

4. Consent Agenda

Chair

a. May 23, 2022 - Regular Meeting Minutes

Attachments:

- **May 23, 2022 - Regular Minutes** (P_Z_Minutes_-_May_23_2022.pdf)

Public Comments on Items Not on the Agenda

The Planning and Zoning Commission welcomes you. Thank you for joining us for our Town of Bennett Planning and Zoning Meeting. If you are not speaking, we ask that you please mute your microphone. For public comment please sign up on the provided sheet or in the chat box. If you are on the phone, once we get through the sign-up sheet and chat box we will call for any other comments for items not on the agenda.

Your comments will be limited to three (3) minutes. The Commission may not respond to your comments this evening, rather they may take your comments and suggestions under advisement and provide direction to the appropriate member of Town staff for follow-up. Thank you.

Regular Business

5. Public Hearing

a. Case No. 22.16 - Kiowa Creek Preserve Planned Development - PD Zoning

Resolution No. 2022-11 - A Resolution Recommending Approval of Zoning for Property Annexed to the Town of Bennett Known as the Kiowa Creek Annexation Nos. 1-3 and Recommending Approval of an Outline Development Plan for such Property

Steve Hebert, Planning and Economic Development Manager

Attachments:

- **Public Hearing Script** (0_-_Public_Hearing_Script.PC.pdf)
- **Staff Report - Case No. 22.16 - Kiowa Creek Preserve Planned Development - PD Zoning** (KCP_Zoning_StaffReport_P_Z_06_27_22_FINAL.pdf)
- **Staff PowerPoint Presentation - Case No. 22.16 - Kiowa Creek Preserve Planned Development - PD Zoning** (1_KiowaCreek_Zoning_P_Z_Presentation_06_27_22_FINAL.pdf)
- **Land Use Application** (2_BF_KCP_Application.pdf)
- **Letter of Intent/Narrative** (3_Ltr_of_Intent__VA_-12-06-21.pdf)
- **Kiowa Creek Preserve Outline Development Plan (ODP)** (4_KC-ODP_RE V1_060322.pdf)
- **Comprehensive Plan Guiding Principles Commentary** (5_Kiowa_Creek_C omprehensive_Plan_Principles_Commentary.pdf)
- **Kiowa Creek Traffic Memorandum** (6_KCP_TIS_June_2022.pdf)
- **Combined Staff and Referral Agency Comments** (7_KC_Annex_ODP_Co mbinedReferralComments.pdf)
- **2021 Bennett Comprehensive Plan** (8_2021_Comp_Plan_Town_of_Bennett _Reduced.pdf)
- **Resolution No. 2022-11 - A Resolution Recommending Approval of Zoning for Property Annexed to the Town of Bennett Known as the Kiowa Creek Annexation Nos. 1-3 and Recommending Approval of an Outline Development Plan for such Property** (Reso._No._2022-11_-_Kiowa _Creek_Zoning_and_ODP.PC.reso.pdf)
- **Suggested Motion** (Suggested_Motion.pdf)

b. Case No. 22.18 - Bennett Farms Planned Development - PD Zoning

Resolution No. 2022-10 - A Resolution Recommending Approval of Zoning for Property Annexed to the Town of Bennett Known as the Bennett Farms Annexation Nos. 1 and 2 and Recommending Approval of an Outline Development Plan for such Property

Steve Hebert, Planning and Economic Development Manager

Attachments:

- **Public Hearing Script** (0_ - Public_Hearing_Script.PC.pdf)
- **Staff Report - Case No. 22.18 - Bennett Farms Planned Development - PD Zoning** (BFarms_Zoning_StaffReport_P_Z_06_27_22_FINAL.pdf)
- **Staff PowerPoint Presentation - Case No. 22.18 - Bennett Farms Planned Development - PD Zoning** (1_BennettFarms_Zoning_P_Z_Presentation_06_27_22_FINAL.pdf)
- **Land Use Application** (2_BF_KCP_Application.pdf)
- **Letter of Intent/Narrative** (3_Ltr_of_Intent__VA_-12-06-21.pdf)
- **Bennett Farms Outline Development Plan (ODP)** (4_BF-ODP_REV1_060322.pdf)
- **Comprehensive Plan Guiding Principles Commentary** (5_Bennett_Farms_and_the_Comprehensive_Plan_Principles.pdf)
- **Bennett Farms Traffic Memorandum** (6_Bennett_Farms_Traffic_Study_2022-06-03.pdf)
- **Combined Staff and Referral Agency Comments** (7_Bennett_Farms_Annex_Zoning_CombinedReferrals.pdf)
- **Bennett 2021 Comprehensive Plan** (8_2021_Comp_Plan_Town_of_Bennett_Reduced.pdf)
- **Resolution No. 2022-10 - A Resolution Recommending Approval of Zoning for Property Annexed to the Town of Bennett Known as the Bennett Farms Annexation Nos. 1 and 2 and Recommending Approval of an Outline Development Plan for such Property** (Reso._No._2022-10_-_Bennett_Farms_Zoning_and_ODP.PC.reso.pdf)
- **Suggested Motion** (Suggested_Motion.pdf)

6. Commissioner Comments/Reports

7. Adjournment

Contact: Savannah Vickery (svickery@bennett.co.us 1 303 644 3249 x1032) | Agenda published on 06/23/2022 at 3:58 PM



Planning and Zoning Commission

Minutes

Monday, May 23, 2022 at 6:00 pm

**PLEASE SILENCE ALL CELL PHONES AND ELECTRONIC
DEVICES. THANK YOU**

1. Meeting Information

207 Muegge Way, Bennett, CO 80102

2. Call to Order

Chair

a. Roll Call

Minutes:

Present:

Martin Metsker

Gino Childs

Wayne Clark - Left at 6:47 p.m.

James Delaney

Grider Lee - Arrived at 6:08 p.m.

Scott Smith

Rachel Connor - Unexcused

Staff Present:

Steve Hebert, Planning & Economic Development Manager

Taeler Houlberg, Administrative Services Director

Dan Giroux, Town Engineer

Mike Heugh, Town Traffic Engineer

Savannah Vickery, Secretary

Public Present:

Chris McGranahan

Paul Shukas

Jim Marshall

John Vitella

3. Approval of Agenda

Chair

Minutes:

COMMISSIONER CLARK MOTIONED, COMMISSIONER CHILDS SECONDED to approve the agenda as presented:

Ayes: Childs, Clark, Delaney, Metsker, Smith

Nays: None

Absent: Lee

Unexcused: Connor

Martin Metsker, Chairman, declared the motion carried by unanimous vote.

4. Approval of Consent Agenda

Chair

a. March 21, 2022 - Regular Meeting Minutes

Minutes:

COMMISSIONER CLARK MOVED, COMMISSIONER CHILDS SECONDED to approve the consent agenda. The voting was as follows:

Ayes: Delaney, Metsker, Smith, Childs, Clark

Nays: None

Absent: Lee

Unexcused: Connor

Martin Metsker, Chairman, declared the motion carried by unanimous vote.

A. Action: Approval of March 21, 2022 Regular Meeting Minutes

Public Comments on Items Not on the Agenda

The Planning and Zoning Commission welcomes you. Thank you for joining us for our Town of Bennett Planning and Zoning Meeting. If you are not speaking, we ask that you please mute your microphone. For public comment please sign up on the provided sheet or in the chat box. If you are on the phone, once we get through the sign-up sheet and chat box we will call for any other comments for items not on the agenda.

Your comments will be limited to three (3) minutes. The Commission may not respond to your comments this evening, rather they may take your comments and suggestions under advisement and provide direction to the appropriate member of Town staff for follow-up. Thank you.

Regular Business

5. Public Hearing

a. Recommended Updates to Chapter 16, Articles 1 and 2 of the Bennett Municipal Code

Resolution No. 2022-09 - A Resolution of the Bennett Planning and Zoning Commission Recommending Approval of an Ordinance Amending Chapter 16 of the Bennett Municipal Code Regarding General

Minutes:

Martin Metsker, Chairman, called the matter of the updates to Chapter 16 Articles 1 and 2 of the Bennett Municipal Code to order.

The public hearing was opened at 6:03 p.m.

Savannah Vickery, Secretary, stated in accordance with the Colorado state statute, it was duly posted and published in the Eastern Colorado News on May 6, 2022 and May 13, 2022. Legal #2644.

Taeler Houlberg, Administrative Services Director, presented the proposed updates to Chapter 16 Articles 1 and 2 of the Bennett Municipal Code. Updates included adding or clarifying definitions, fixing grammatical errors, and updating language related to processes and land uses for additional clarity. Staff also proposed adopting a new zoning district, R-1A Alternate Low Density Residential District, to meet market demand for smaller residential lots, while maintaining the vision for lower density residential zones.

PUBLIC COMMENTS

No public comments were presented.

The public hearing was closed at 6:24 p.m.

COMMISSIONER CHILDS MOVED, COMMISSIONER LEE SECONDED to recommend approval of an ordinance amending Chapter 16 of the Bennett Municipal Code regarding General Provisions and Zoning. The voting was as follows:

Ayes: Lee, Metsker, Smith, Childs, Clark, Delaney

Nays: None

Unexcused: Connor

Martin Metsker, Chairmen, declared the motion carried by unanimous vote.

6. Action/Discussion Item

a. Case No. 22.14 - Muegge Farms Planning Area 1 (PA-1) Sketch Plan

Minutes:

Steve Hebert, Planning and Economic Development Manager, presented Case No. 22.14 - Muegge Farms Planning Area 1 (PA-1) Sketch Plan
No action was needed.

b. Update of Telecommunications Regulations in Chapter 16 of the Bennett Municipal Code

Minutes:

Steve Hebert, Planning and Economic Development Manager, presented

updates to the telecommunications regulations in Chapter 16 of the Bennett Municipal Code.

No action was needed.

7. Commissioner Comments/Reports

8. Adjournment

Minutes:

COMMISSIONER LEE MOVED, COMMISSIONER DELANEY SECONDED to adjourn the meeting. The meeting was adjourned at 7:15 p.m. Voting was as follows:

Ayes: Smith, Childs, Delaney, Lee, Metsker

Nays: None

Absent: Clark

Unexcused: Connor

Martin Metsker, Chairmen, declared the motion carried by unanimous vote.

Contact: Savannah Vickery (svickery@bennett.co.us 1 303 644 3249 x1032) | Minutes published on
06/23/2022 at 1:47 PM

**QUASI-JUDICIAL PUBLIC HEARING SCRIPT
(PLANNING COMMISSION)**

CHAIR: I will now open the public hearing on the following application: An application for Case No. 22.16 - Kiowa Creek Preserve Planned Development - PD Zoning

The purpose of the hearing is to provide a public forum for all interested parties who wish to comment on an application before the Commission. If you wish to speak please write your name and address on the sign-up sheet or in the chat box and you will be called on.

The Procedure for the public hearing will be as follows:

FIRST, there will be a presentation by the Town staff.

NEXT, we will have a presentation by the applicant.

After these two presentations we will allow people who signed up to speak for up to 3 minutes each. Please **DO NOT REPEAT** points made by others. It is fine to say, "I agree with the previous speaker's comments". Please direct your comments to the Commission, not the applicant or Town staff.

After receiving public comments, we will allow the applicant an opportunity to respond.

NEXT, the Planning Commission members may ask questions of anyone who testified.

I will then close the public hearing and no further testimony or other evidence will be received. The Planning Commission will discuss the matter and may take some kind of action.

Public hearings are recorded for the public record. All testimony must be presented, after you give your full name and address.

CHAIR: Do we have proper notification?

[Secretary to confirm on record notice has been provided]

Do any Commission members have any disclosures?

[Commissioners to disclose conflicts of interests, ex parte contacts, etc]

Town staff, please introduce the applicant and provide your staff report.

[Staff presentation]

Will the applicant or the applicant's representative present the application?

[Applicant presentation]

Do any of the Commissioners have questions of the applicant or Town staff?

[Question and Answer]

CHAIR: I will now open the public comment portion of the public hearing. For those wishing to speak, please clearly state your name and address for the record.

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Has anyone signed up to speak at this public hearing?

[If more than one person has signed in, call them in order.]

Is there any interested party in the audience that has not signed up but who wishes to speak regarding the application?

[Additional public comment]

If there is no more public comment, I will now close the public comment portion of the public hearing.

CHAIR: Does the applicant wish to respond to any of the comments?

[Opportunity for applicant to provide any rebuttal evidence]

CHAIR: Before we turn to Commissioner questions and deliberation, I want to state that the documents included within the record for this public hearing include all application materials submitted by the applicant; all materials included in the Planning Commission packets; any PowerPoint or other presentations given tonight; all written referral and public comments received regarding the application; the public comment sign-up sheet; the public posting log and photographs of the notice, and the Town's subdivision and zoning ordinances and other applicable regulations. Does anyone have any objection to inclusion of these items in the record?

CHAIR: I will now close the public hearing and the Planning Commission members will deliberate on the evidence presented. During deliberations, Commission members may ask questions of Town staff, but no further public comment or other testimony or evidence will be received.

Who would like to begin?

Who is next?

Any other questions or comments

[If anyone believes the applicable criteria have not been met, then please explain why so we have those reasons for the record.]

CHAIR: We have a draft Resolution in front of us and I would entertain a motion.

We have a motion on the floor by Commissioner _____ and a second by Commissioner _____ to approve Planning and Zoning Commission Resolution No. 2022-11.

May we have a Roll-Call vote?

Motion carries/fails.

STAFF REPORT



welcome neighbors.

TO: Members of the Planning and Zoning Commission
FROM: Steve Hebert, Planning and Economic Development Manager
DATE: June 27, 2022
SUBJECT: Case No. 22.16 – Kiowa Creek Preserve Planned Development – PD Zoning

Applicant/Representative(s): Kiowa Creek Preserve Holdings, LLC and Herdsman Capital, LLC – Russell McLennan / Vogel & Associates – Jeff Vogel

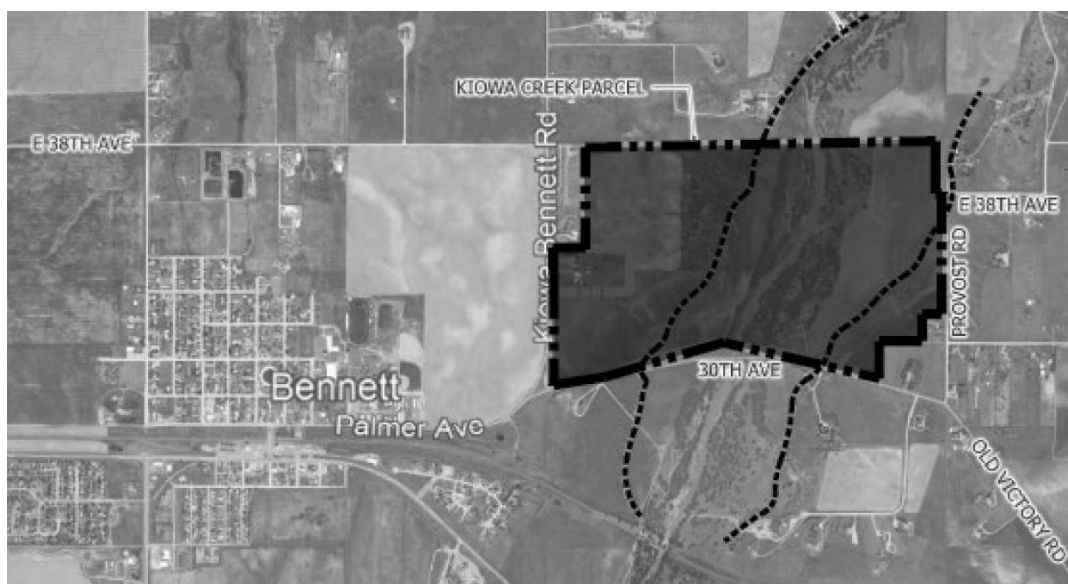
Location: Northeast of Old Victory Road and Kiowa-Bennett Road, South of East 38th and West of Provost Road

Purpose: Zone Approximately 314 Acres to Planned Development – PD District

Background

The applicants have petitioned the Town of Bennett to annex approximately 317.29 acres into the Town. (See Case No. 22.15.) The property is located northeast of Old Victory Road and Kiowa-Bennett Road, south of the East 38th alignment and west of Provost Road. See the vicinity map below.

If the annexation is approved by the Board of Trustees, the applicant proposes 314 acres be zoned Planned Development (PD) District. (Approximately 3 acres of the annexation is public right-of-way and not a part of this zoning application.) The properties are currently zoned A-3 (Agricultural) in unincorporated Adams County. The property owners are Kiowa Creek Preserve Holdings, LLC and Herdsman Capital, LLC. An Outline Development Plan (ODP) must be approved along with the PD zoning. The proposed ODP serves as the governing zoning document, outlining permitted land uses, a maximum of 915 residential units at various densities, 164,000 sq. ft. of commercial space, maximum building height, building setbacks, etc. The annexation and zoning will be considered by the Board of Trustees on June 28, 2022.



Summary of the Annexation and Initial Zoning Process

In Colorado, annexation into a municipality can take place in three ways: (1) landowner petition; (2) annexation election; or (3) unilateral annexation of an enclave or municipal-owned land. In this case, the landowners have submitted a petition to annex. Once the Town Board of Trustees has concluded that the annexation petition complies with state statute, a public hearing is scheduled for the Board to consider the annexation. If a zoning application is submitted concurrently, as in this case, the Planning and Zoning Commission shall also hold a public hearing to consider the zoning application. The Commission does not take action or make a recommendation on the annexation petition, just the zoning request.

Site Characteristics

The Kiowa Creek Preserve property is bounded on the west by Kiowa-Bennett Road, on the south by Old Victory Road, on the east by Provost Road and on the north by the extension of the East 38th Avenue alignment. Whereas much of the developed area of existing Bennett is relatively flat, the Kiowa Creek Preserve property slopes from west to east toward Kiowa Creek. The current elevation near Kiowa-Bennett Road is approximately 5,480 feet above sea level, dropping 80 feet to 5,400 feet along the bottom of the Kiowa Creek drainage way, providing a view of the prominent Kiowa Creek corridor.

The property consists of pasture and dry land farming as well as Kiowa Creek riparian corridor, with heavy stands of deciduous trees and scattered evergreens. The Kiowa Creek 100-year floodplain encompasses approximately 41 percent of the total area of the Outline Development Plan. There are currently no residents living on the property. Several older farm and ranch buildings still exist along the creek corridor, just north of Old Victory Road.

Proposed Zoning and Project Description

The applicant proposes zoning the property to Planned Development (PD) District. The zoning will only go into effect if the Town Board approves the annexation and the zoning.

The proposed Kiowa Creek Preserve Outline Development Plan (ODP) proposes the following:

Planning Area	Area (Acres)	Commercial (Sq. Ft.)	Zoning	Zoning Description	% of Total	Maximum Residential Density	Resid. Units
PA-1	13.6	164,000	MU	Mixed Use (including commercial)	4.3%	20	136
PA-2	65.7		MDR	Medium Density Resid.	20.9%	5	329
PA-3	8.5		HDR	High Density Resid.	2.7%	15	128
PA-4	24.9		MDR	Medium Density Resid.	7.9%	5	125
PA-5	27.7		MDR	Medium Density Resid.	8.8%	5	139
PA-6	28.1		AE	Agriculture - Education	9.0%		
PA-8	11.6		MDR	Medium Density Resid.	3.7%	5	58
Total	124.3						
PA-7	128.3		OS/F	Ag: Park/O.S./Floodplain			
Public ROW	3.3						
Total PD Area	313.9	164,000			100.0%		915

Applicant's Intent

The following is an overview from the Outline Development Plan:

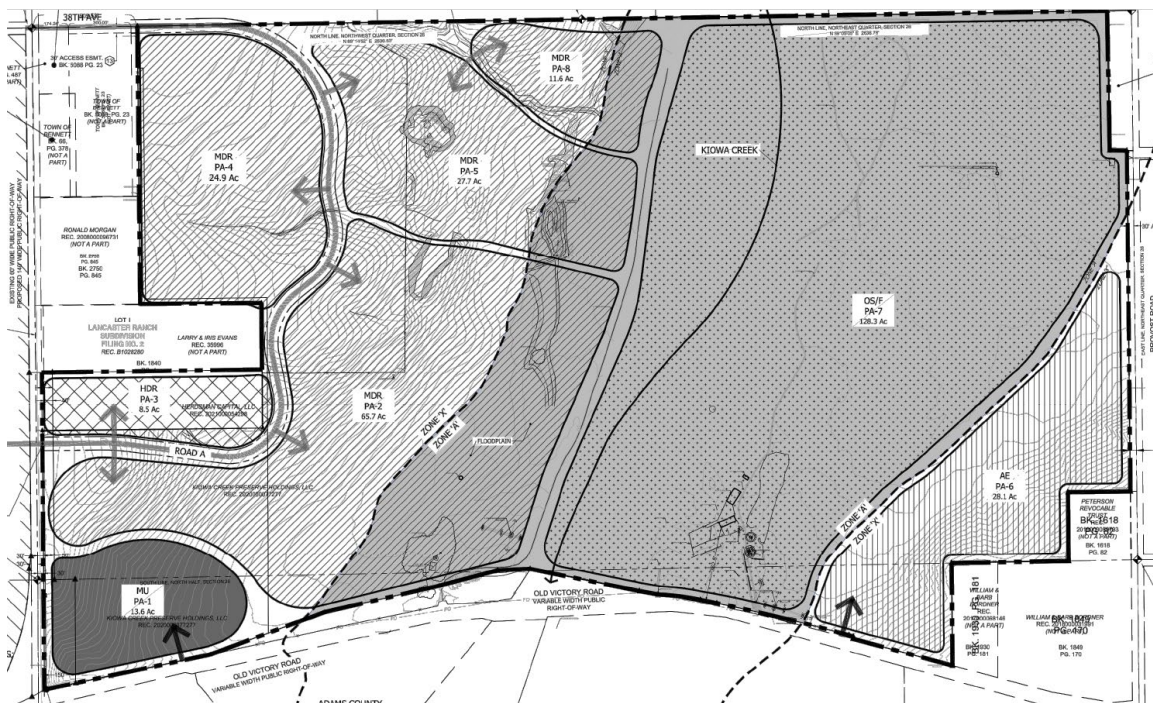
"The Kiowa Creek ODP is created to establish a land use pattern and standards that will integrate with the natural features of the site and advance community objectives. The design standards outline ensure goals and objective associated with each district are achieved.

Kiowa Creek Preserve is planned as a vital and balanced mixed use community that is based on integrated planning and design principles that include preservation of the natural features of the site and maintain the integrity of the floodplain that is aligned through the site, a planning approach that focuses on community connectivity that include well-connected systems of land use, recreational open space and trails that accommodate the needs of a multi-generational population.

The planning areas outlined in this ODP represent the proposed zone districts described in this development guide, including the permitted uses, lot and building standards created specifically for each district. There will be two main access points along Kiowa-Bennett Road that will be established and maintained throughout development of the entire site. Access from Old Victory Road is also proposed for Planning Areas 1 and 6."

The Outline Development Plan (ODP)

The ODP graphic plan is shown below. The Medium Density Residential areas are located along the creek corridor, extending west to the property line. The High Density Residential subarea is on the west side near Kiowa-Bennett Road. The Mixed Use subarea is at the southwest corner of the property, the Open Space/Floodplain area along the creek corridor and the Agricultural Education use area in the southeast corner of the property.

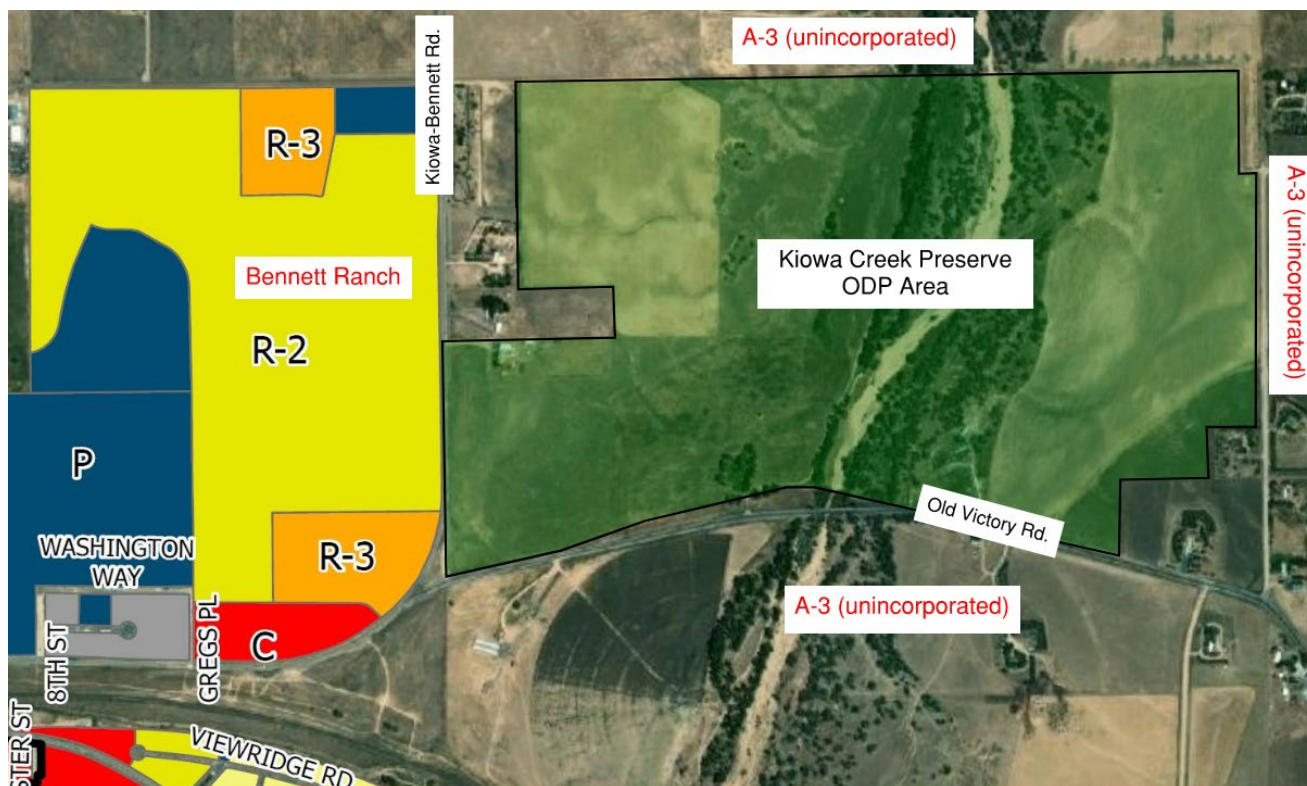


Most future uses will require a subdivision plat, which must be reviewed by the Planning and Zoning Commission and approved by the Town Board of Trustees. Future Final Development Plans (FDPs) must also be reviewed and approved by the Board of Trustees prior to development. More detailed plans for access, street design, water, sewer, stormwater, other utilities, landscaping, building elevations and materials, etc. will be required and reviewed at these subsequent stages.

Surrounding Zoning and Land Use

The subject property is surrounded on the north, south and east sides by large-lot residential and agricultural properties in unincorporated Adams County, zoned A-3, Agricultural. Properties to the west include two large-lot residential properties and the Town of Bennett's Mount View Cemetery. West of Kiowa-Bennett Road is the Bennett Ranch project, currently under construction, with R-2, R-3 and P - Public zoning. See the table below and a subsection of the Town of Bennett Zoning Map.

Direction	Zone District	Land Use
North	A-3 (Unincorporated)	Agricultural, Large Lot Residential
East	A-3 (Unincorporated)	Agricultural, Large Lot Residential
South	A-3 (Unincorporated)	Agricultural, Large Lot Residential
West	A-3 (Unincorporated) / R-2, R-3 and P - Public	Large Lot Residential, Mount View Cemetery / Bennett Ranch Subdivision



Availability of Public Services and Utilities

Water Supply

- The applicant has agreed to convey water rights from the Kiowa Creek Preserve property to the Town of Bennett. The estimated water availability underlying the property includes approximately 72.4 acre-feet of Upper Arapahoe, 28.4 acre-feet of Lower Arapahoe and 52.4 acre-feet of Laramie Fox Hills groundwater.
- Development on the property will be subject to the Town of Bennett's raw water supply guidelines and requirements, including development impact fees and groundwater rights credits or reimbursement policies.
- The Town of Bennett, through its system development fees, will require development of onsite groundwater wells, recycled water for outdoor irrigation and the acquisition of additional potable sources.
- In addition to groundwater wells, the development will require water tank storage development, through a Town water campus site.
- More information will be required as the property makes its way through next steps of technical analysis and detail, should the Town view the annexation and zoning applications favorably.

Wastewater Treatment

- The property is adjacent to multiple pending gravity sanitary sewer collection connection points to the immediate west, at State Highway 79.
- Although capacity in these pending sanitary sewer mains may allow for minor early-start/early-phase development of parts of the Kiowa Creek Preserve property, it is expected that the majority of the property will require service by means of an "East 38th Avenue" gravity sanitary sewer transmission main, as the applicant's engineer has identified and outlined.
- Development of the Kiowa Creek Preserve property with the proposed zoning will require expansion of the Town's Water Reclamation Facility (WRF) at East 38th Avenue.
 - The Town is currently conducting detailed pre-design technical studies for expansion of the existing WRF to support additional development, while also addressing improved effluent water quality, and especially treatment to quality levels supporting highly flexible and robust reuse water programs.
- The Kiowa Creek Preserve development would support the WRF expansion via Wastewater Development Impact Fees.
 - These fees are evaluated regularly by Town Staff, and reviewed with the Town Board of Trustees, to ensure the Town is collecting appropriate development fees to support required WRF expansion and upgrades.

Stormwater Management

- The property features significant regulatory Kiowa Creek floodplain areas, as the applicant has identified and recognized.
- The Town has adopted National Flood Insurance Program (NFIP) floodplain administration ordinances, which would govern proposed floodplain activities and all proposed development.

- The Town will work with the developer on any proposed floodplain amendments, modifications, and development, including for public improvement facilities, as might be indicated.
- It is anticipated that stormwater and floodplain management challenges can be successfully addressed for potential development on the property.

Access, Traffic Impacts and Timing of Development Relative to Improvements

- The property is immediately adjacent to Old Victory Road within Adams County, and State Highway 79, also within Adams County.
- General access locations onto the existing street network, including Old Victory Road and Highway 79 are conceptual at this stage. The ultimate number and location of new intersections will be determined at the time of subdivision plat.
- Accommodation for future State Highway 79 and Old Victory Way realignments, widenings, intersections, and other improvements, including right-of-way set-asides, will be required as subsequent stages of development.
- Road system access, improvements, connections and traffic impact management will be the subject of significant detailed technical analysis, proposals and design as the property goes through ensuing subdivision and development review, should the Town view the annexation and zoning applications favorably.

Fire and Rescue

The property lies within the Bennett-Watkins Fire Rescue (BWFR) Authority District. The developer shall confer with Bennett Fire Protection District and ensure that the proposed development conforms to adopted (IFC) fire code standards, adequate water delivery systems and fire flow, adequate access, treatment of the wildland-urban interface and other requirements of the District. The Town will continue its practice of referring development applications to the District to ensure the District's comments are addressed at the appropriate stage of development.

Gas, Electric and Telecommunications

Gas will be available from Colorado Natural Gas. Electric power will be available from CORE Electric Cooperative. CORE has asked that setbacks in the Outline Development Plan be amended to reflect a minimum 15-foot front setback on residential lots to accommodate CORE's service. Telecommunications will be available from Eastern Slope and Comcast.

School District

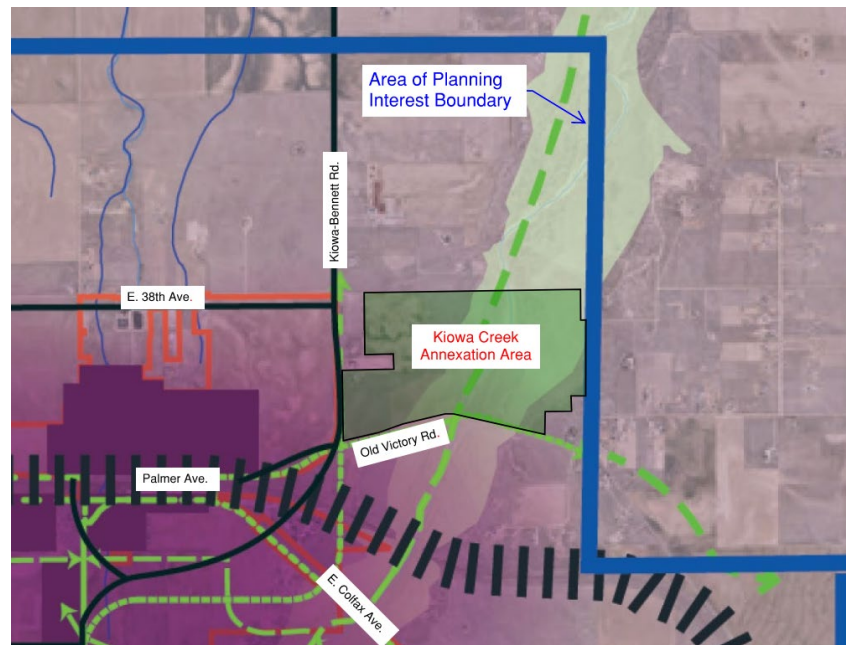
The Bennett School District 29J has no comment at this time. Development of the project will be subject to the Bennett Municipal Code and the Intergovernmental Agreement (IGA) Concerning Land Dedications or Payments in Lieu for School Purposes, in effect at the time of subdivision platting.

Staff Analysis and Findings

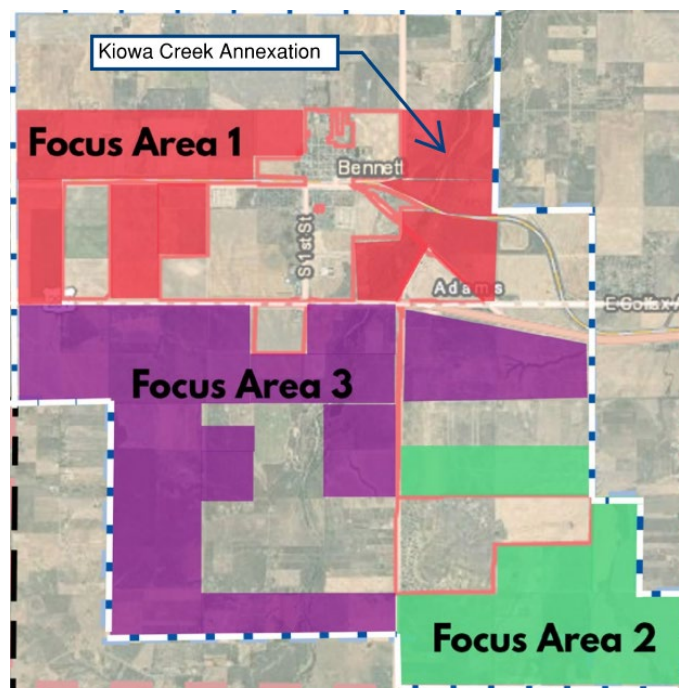
Consistency with the Comprehensive Plan and the Three-Mile Plan

The subject property is within the Area of Planning Interest in the 2021 Comprehensive Plan. The Area of Planning Interest includes unincorporated infill properties within Bennett, contiguous properties and

properties within a logical service area, ideal for future annexation and development in the Town. See a subsection of the Comprehensive Plan map below.



Within the Comprehensive Plan's **Area of Planning Interest**, growth areas are identified as Focus Areas. These focus areas are intended *"to provide guidance, not an obligation or priority, for future annexation by the Town or landowners."* The Kiowa Creek property is in **Focus Area 1**, as shown on the map below.



The proposed zoning is **compatible with the Town of Bennett Three-Mile Plan**, most recently adopted in January 2022. The Three-Mile Plan is a compilation of several Town adopted plans, policies and studies, including the following:

- a) 2021 Comprehensive Plan
- b) 2019 Capital Asset Inventory Master Plan
- c) 2019 Parks, Trails and Open Space Master Plan
- d) 2019 Arts and Cultural Master Plan
- e) 2011 Regional Trail Plan
- f) 2010 Downtown Planning Study
- g) 2013 Planning and Environmental Linkages Report

Comprehensive Plan Principles

The Comprehensive Plan includes twelve principles that provide guidance to elected and appointed officials, residents, business and land owners, project applicants, community partners and stakeholders concerning growth and future land uses. They are outlined below.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.	Y	The proposed zoning includes access to the existing vehicular transportation network. Internal and external pedestrian and bicycle connections can be established at the time of subdivision plat. In addition, preservation of the Kiowa Creek corridor will allow for eventual trail connections, not just for the subdivision, but the community as well.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.	Y	The ODP proposes a mix of residential densities, along with non-residential commercial support uses. In addition, the ODP includes the preservation of open space and accommodates an agricultural education element in Planning Area 6.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.	NA	This area is not part of the Town Center.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.	Y	The residential sub-zone offers a mix of unit types and densities, accommodating a diverse housing stock.
5. Commit to being good partners with other community agencies and organizations through collaboration, leveraging funding and planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.	Y	The Town of Bennett and the future developers and builders will have the opportunity to collaborate with all service providers. Increased assessed valuation will result in additional property tax revenues to the various special districts.
6. Foster an attractive community that retains residents in all stages of life through attainable housing, continuing education and a robust job market.	Y	With the mixed-use zoning proposed, working with future homebuilders and commercial developers, there will be an opportunity to promote attainable housing. In addition, the agricultural education element of the plan holds promise for great continuing education opportunities.
7. Preserve and protect natural open space and other areas that have	Y	Setting aside approximately 128 acres of the Kiowa Creek open space, park and floodplain area is one of

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.		the most significant open space preservation steps in the Town of Bennett's history. The flood hazard area will also be managed by the Town pursuant to the Municipal Code.
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.	Y	The zoning accommodates non-residential uses, which may include community gardens, farmers' markets and traditional grocery stores. The 128 acres of open space, as well as local parks and trails, offer opportunities for outdoor physical activities.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.	Y	The zoning contemplates the management of the floodplain, pursuant to municipal code, which will minimize flood damage. The developer will have the opportunity to work with Bennett-Watkins Fire on the wildland-urban interface and minimize the threat of wildfires.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.	Y	Setting aside 128 acres of the Kiowa Creek open space, park and floodplain area provides a buffer between the project and the lower-intensity rural character areas to the north, south and east. The accommodation of Ag-Education uses in the ODP will also assist in the blending into the rural setting.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.	Y	The Kiowa Creek Preserve property is contiguous to existing Town of Bennett boundaries, with infrastructure and services nearby, consistent with the Town's Capital Asset Inventory Master Plan (CAIMP).
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.	Y	The annexation agreement, along with provisions of the ODP and the Bennett Municipal Code, decisions can be predictable and assure equitable cost-sharing.

Overall Staff Finding: Staff finds the proposed zoning is consistent with the goals and policies of the Comprehensive Plan and the Three-Mile Area Plan.

Consistency with the Intent of the Zoning Code

Staff Finding: Staff finds the proposed zoning is consistent with the purpose of the Bennett Land Use Code, including the following items outlined in Section 16-1-50:

- (1) Implement the Town's goals, policies, plans, and programs to preserve and enhance the quality of life of its citizens and to promote economic vitality of its businesses;
- (2) Promote superior land use, design and design flexibility;
- (3) Support the development of Bennett as a model healthy community of interconnected employment and neighborhood centers;
- (4) Maintain and enhance a quality residential environment in the Town;
- (5) Provide a diversity of housing types at various densities;

- (6) Enhance the sales tax and employment base of the Town by attracting and retaining commercial and industrial development;
- (7) Provide adequate services and facilities to support existing and projected areas of population and growth;
- (8) Promote logical extensions of and efficient use of the Town's infrastructure;
- (9) Protect and preserve the rural nature of open lands;
- (10) Ensure that the fiscal impact of subdivision and development is borne by those parties who receive the benefits therefrom;
- (11) Support programs and help provide facilities that meet the recreational, cultural, public safety and educational needs of the community.

Consistency with the Planned Development Review Criteria in Section 16-2-350

Per Section 16-2-350, The Planning Commission and Board of Trustees shall consider the following in making their decision for approval, approval with conditions or denial of a PD.

Staff Finding: Based on discussion throughout this staff report and how the Outline Development Plan has been drafted, Staff finds the proposed Planned Development zoning meets the criteria in Section 16-2-350 outlined below. Some of the criteria will be further reviewed at the time of Final Development Plans.

- (1) The proposed PD District is compatible with present development in the surrounding area and will not have a significant, adverse effect on the surrounding area;
- (2) The proposed PD District is consistent with the public health, safety and welfare, as well as efficiency and economy in the use of land and its resources;
- (3) The proposed PD District is consistent with the overall direction and intent of this Article and the intent and policies of the Comprehensive Plan and other pertinent policy documents of the Town;
- (4) The proposed PD District provides for a creative and innovative design which could not otherwise be achieved through other standard zoning districts.
- (5) The PD provides adequate circulation in terms of the internal street circulation system, designed for the type of traffic generated, for separation from living areas, convenience, safety, access and noise and exhaust control.
- (6) The PD provides functional open space in terms of practical usability and accessibility, and optimum preservation of natural features, including trees and drainage areas, recreation, views, natural stream courses, bodies of water and wetlands.
- (7) To the extent practicable, the PD provides variety in terms of housing types, housing size, densities, facilities and open space.
- (8) The PD provides for pedestrian and bicycle traffic in terms of safety, separation, convenience, access, destination and attractiveness.
- (9) Services, including utilities, fire, police protection and other such services are available or can be made available to adequately serve the development.
- (10) No structures in the PD shall encroach on a floodplain except as permitted by the Town's floodplain ordinance.

- (11) Visual relief and variety of visual sightings shall be located within the PD through building placement, shortened or interrupted street vistas, visual access to open space and other design methods.

Referral Agency Review and Comments

The proposed Kiowa Creek zoning application was sent to several referral agencies for comment, including:

- | | |
|-------------------------------------|--------------------------------|
| 1. Town Planning | 6. CORE Electric Cooperative |
| 2. Town Engineer | 7. Colorado Natural Gas |
| 3. Town Traffic Engineer | 8. Bennett School District 29J |
| 4. Colorado Dept. of Transportation | 9. Adams County Planning |
| 5. Bennett-Watkins Fire Rescue | 10. Adams County Sheriff |

None of the agencies that responded have any objections to the proposed zoning. However, many of them, including the Town Engineer, Town Traffic Engineer, CDOT, Bennett-Watkins Fire, Bennett School District 29J and CORE Electric Cooperative, will require more analysis at the time of subdivision platting.

Public Comment

Notice of the June 27, 2022 Planning and Zoning Commission hearing and the June 28, 2022 Board of Trustees hearing was published in the Eastern Colorado News, posted on the subject property and sent to all property owners within 300 feet of the property. One adjacent property owner requested and received the annexation maps and zoning documents. No formal comments have been submitted to date.

Summary of Staff Findings and Recommendation on Annexation

Staff finds the proposed zoning is consistent with:

- the goals and policies of the Comprehensive Plan and the Three-Mile Area Plan;
- the purpose of the Bennett Land Use Code outlined in Section 16-1-50; and
- the Planned Development approval criteria outlined in Section 16-2-350

Staff recommends the Planning and Zoning Commission adopt Resolution No. 2022-11 recommending approval of the proposed zoning of Planned Development (PD) for the property annexed to the Town and known as the Kiowa Creek Annexation Nos. 1-3 to the Town of Bennett and approval of the proposed Kiowa Creek Preserve Outline Development Plan, subject to the following condition:

1. Before recording the outline development plan, the applicant shall make minor modifications as directed by Town Staff, the Town Attorney and the Town Engineer.

Attachments

1. Staff PowerPoint Presentation (PDF)
2. Land Use Application
3. Letter of Intent/Narrative
4. Kiowa Creek Preserve Outline Development Plan (ODP)
5. Comprehensive Plan Guiding Principles Commentary
6. Kiowa Creek Traffic Memorandum
7. Combined Staff and Referral Agency Comments
8. 2021 Bennett Comprehensive Plan
9. Proposed Resolution No. 2022-11

Case No. 22.16 Kiowa Creek Preserve Zoning

Planning and Zoning Commission

June 27, 2022

Steve Hebert, Planning & Economic Development Manager



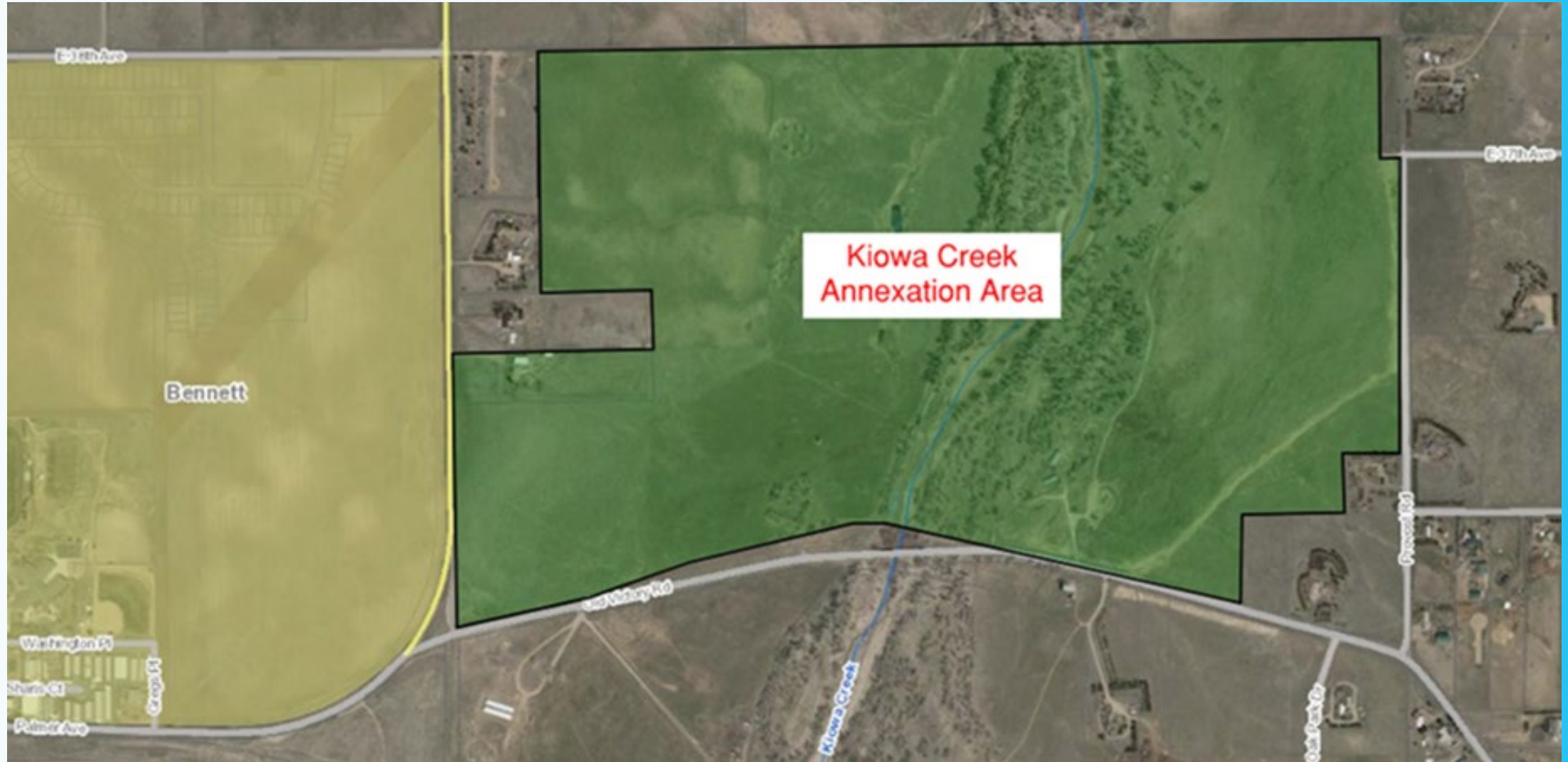
This PowerPoint presentation is a summary of the staff report to the Planning and Zoning Commission, dated June 27, 2022.

Proposed Annexation and Zoning to PD – Planned Development

- Proposal to zone 314 acres
- Currently unincorporated, zoned A-3 in Adams County
- Board of Trustees to consider annexation petition on June 28, 2022
- Proposed zoning is PD-Planned Development

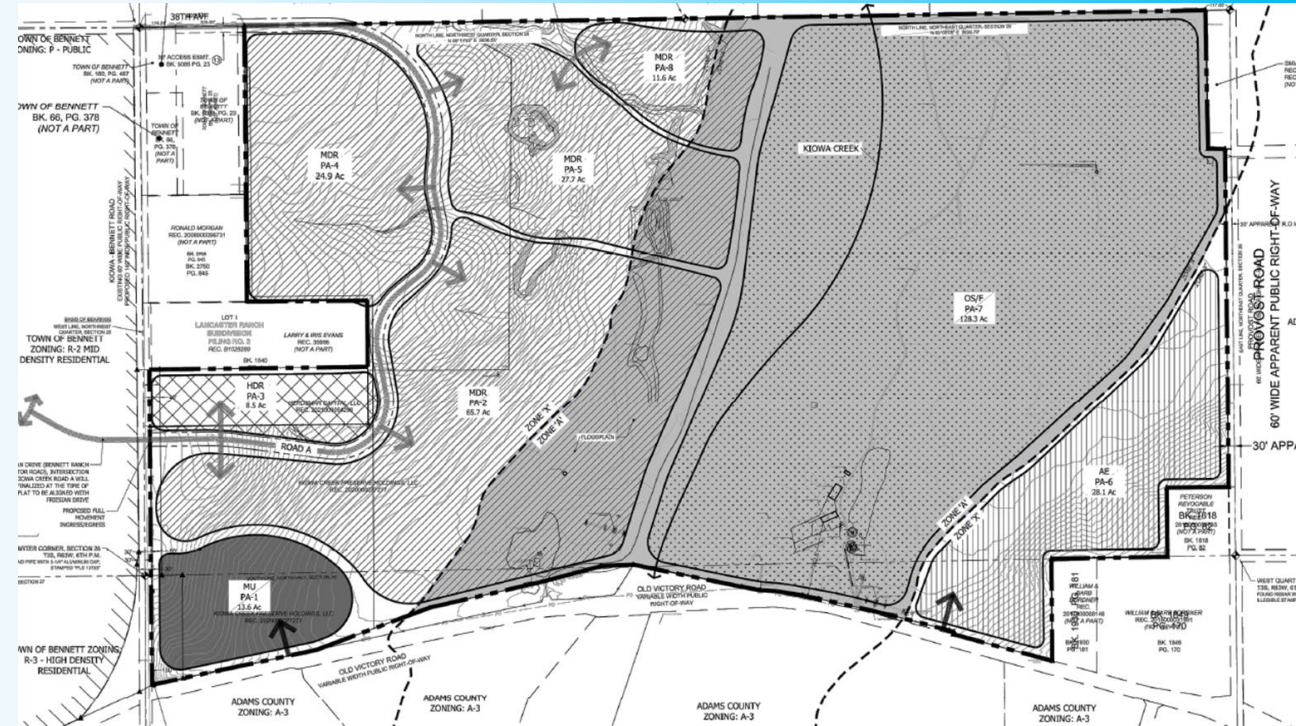


Kiowa Creek Preserve Property



Kiowa Creek Preserve ODP

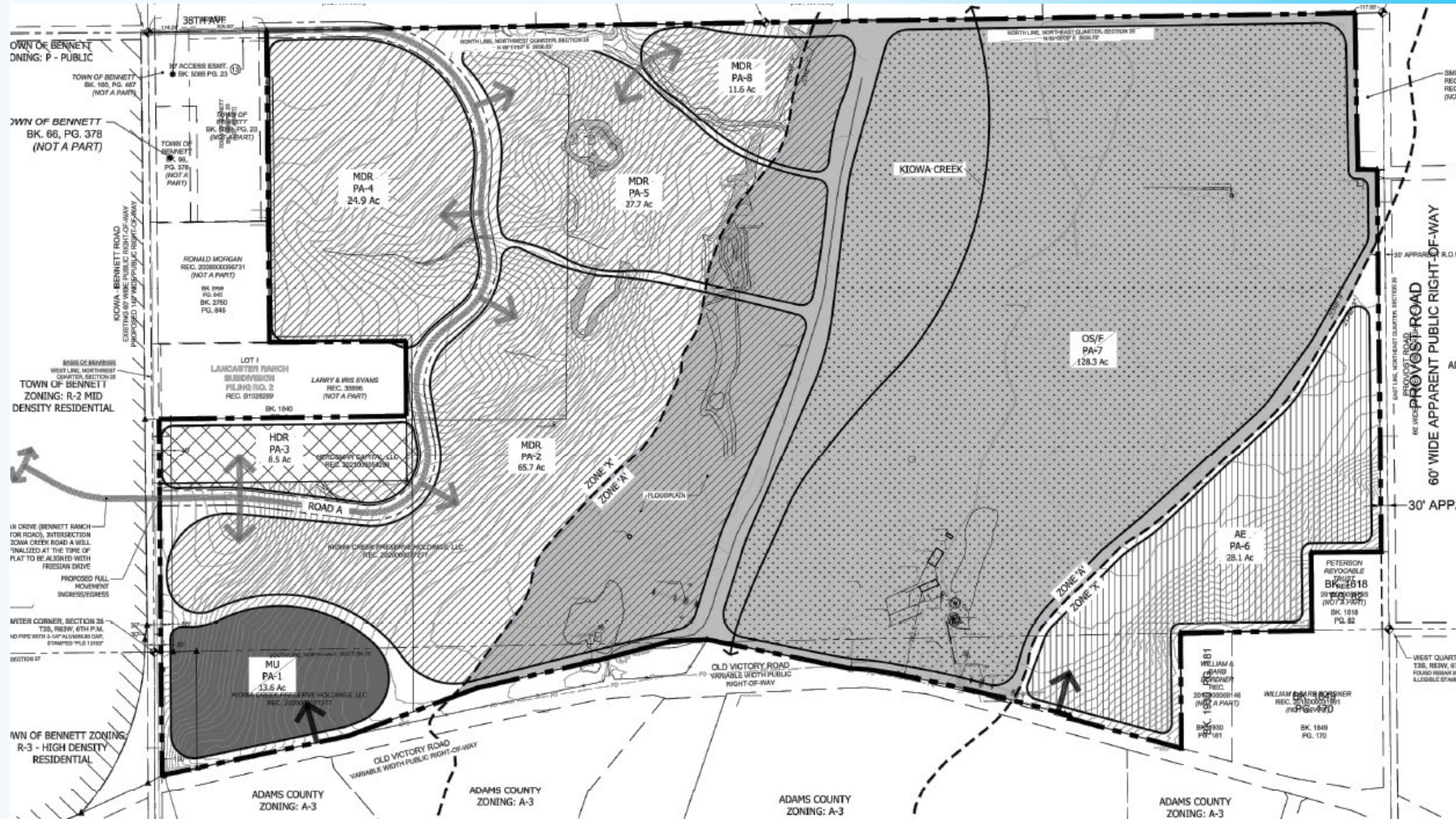
- 915 residential units
- 5-20 dwelling units/acre
 - Single-family detached
 - Single-family attached
 - Multi-family
- 164,000 sq. ft. commercial
- 128 acres floodplain and open space
- Agricultural education component



Kiowa Creek Preserve Land Use Chart

Planning Area	Area (Acres)	Commercial (Sq. Ft.)	Zoning	Zoning Description	% of Total	Maximum Residential Density	Resid. Units
PA-1	13.6	164,000	MU	Mixed Use (including commercial)	4.3%	20	136
PA-2	65.7		MDR	Medium Density Resid.	20.9%	5	329
PA-3	8.5		HDR	High Density Resid.	2.7%	15	128
PA-4	24.9		MDR	Medium Density Resid.	7.9%	5	125
PA-5	27.7		MDR	Medium Density Resid.	8.8%	5	139
PA-6	28.1		AE	Agriculture - Education	9.0%		
PA-8	11.6		MDR	Medium Density Resid.	3.7%	5	58
Total	124.3						
PA-7	128.3		OS/F	Ag: Park/O.S./Floodplain			
Public ROW	3.3						
Total PD Area	313.9	164,000			100.0%		915

Proposed Outline Development Plan (ODP)



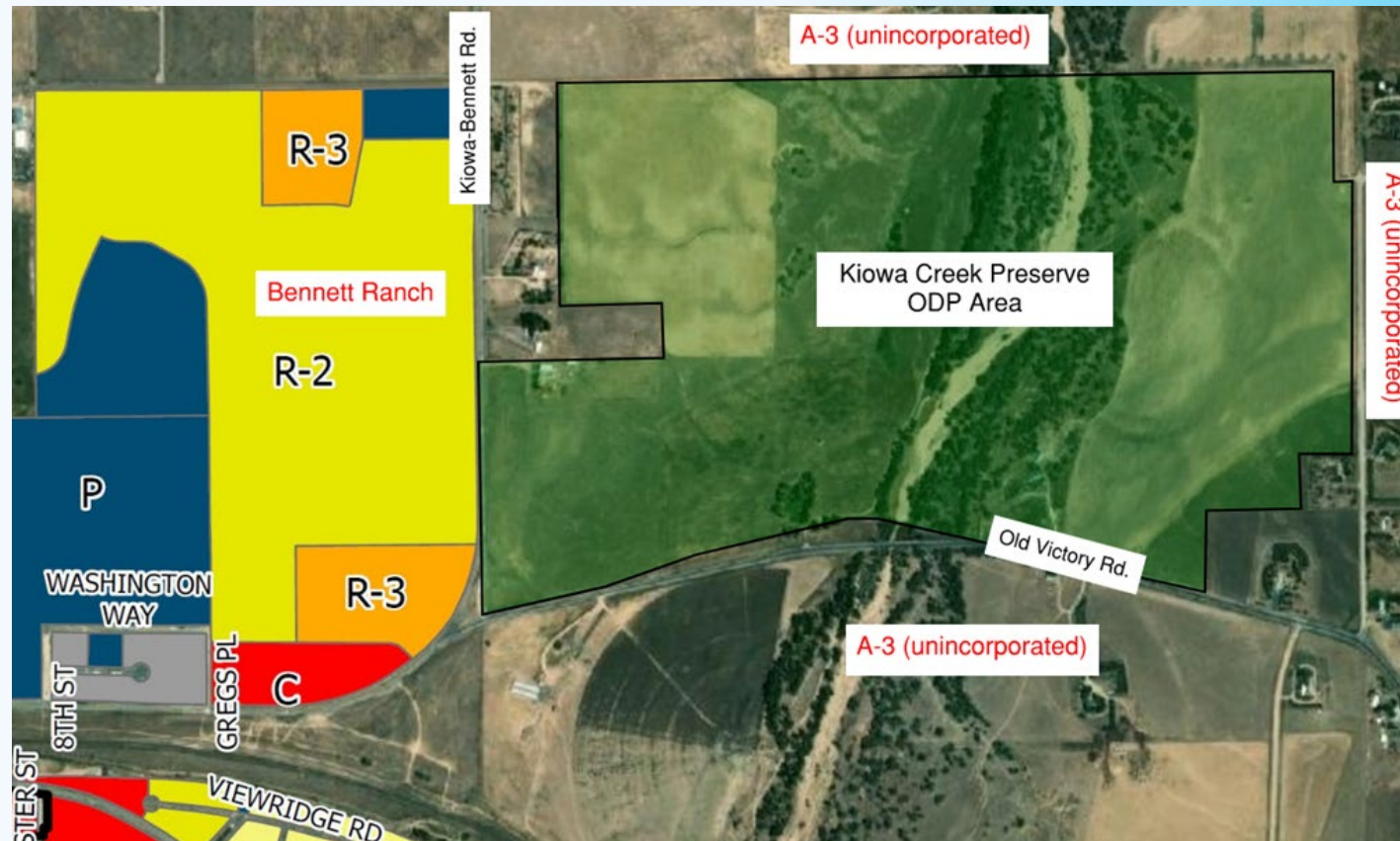
Applicant's Intent

The Outline Development Plan includes the following description of the Kiowa Creek proposal:

- Establish a land use pattern and standards that will integrate with the natural features of the site and advance community objectives.
- Design standards ensure goals and objective associated with each district are achieved.
- Planned as a vital and balanced mixed use community that is based on integrated planning and design principles that include preservation of the natural features of the site and maintain the integrity of the floodplain
- Focuses on community connectivity that include well-connected systems of land use, recreational open space and trails that accommodate the needs of a multi-generational population.

Surrounding Zoning and Land Use

Direction	Zone District	Land Use
North	A-3 (Unincorporated)	Agricultural, Large Lot Residential
East	A-3 (Unincorporated)	Agricultural, Large Lot Residential
South	A-3 (Unincorporated)	Agricultural, Large Lot Residential
West	A-3 (Unincorporated) / R-2, R-3 and P - Public	Large Lot Residential, Mount View Cemetery / Bennett Ranch Subdivision

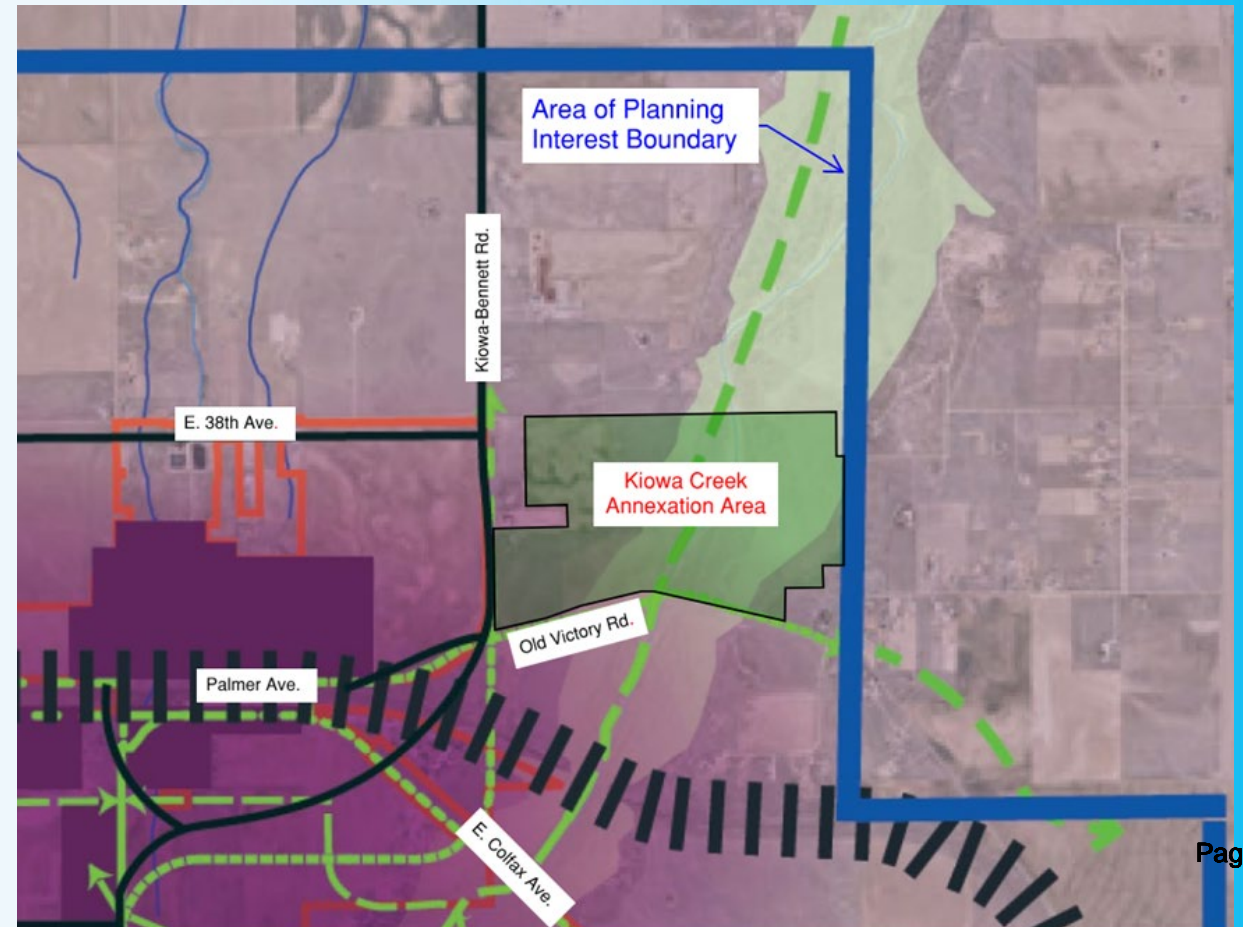


Availability of Public Infrastructure

- If the property is annexed and zoned, future subdivision plats and subdivision agreements will require the developer to design, finance and construct both onsite and offsite improvements.
 - Water and Sewer – Town of Bennett (with onsite and offsite improvements)
 - Regional Stormwater – Metro District or HOA, TBD at time of subdivision
 - Fire Protection – Bennett-Watkins Fire Rescue (consistent with IFC and other standards)
 - Access – Kiowa-Bennett Rd. (CO Hwy 79), Old Victory Rd. and an extension of E. 38th Ave.
 - Law Enforcement – Adams County Sheriff
 - Electricity – CORE Electric Cooperative (with onsite and offsite improvements)
 - Natural Gas – Colorado Natural Gas
 - Telecom – Eastern Slope Technologies or Comcast
 - Bennett School District 29J (school site or cash-in-lieu TBD)

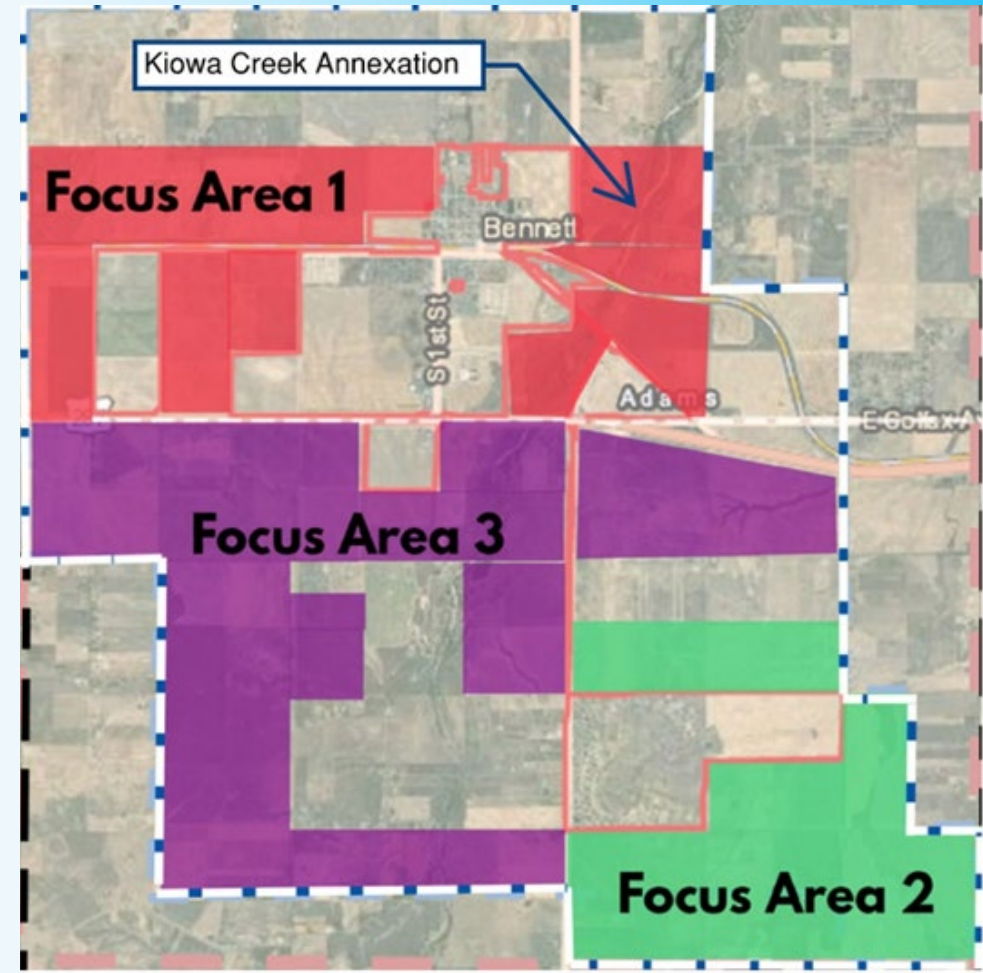
Consistent with the Comprehensive Plan and Three Mile Plan

- Within the Area of Planning Interest in the 2021 Comprehensive Plan



Consistent with the Comprehensive Plan and Three Mile Plan

- Within Focus Area 1 of the Comprehensive Plan



Consistent with the Comprehensive Plan and Three Mile Plan

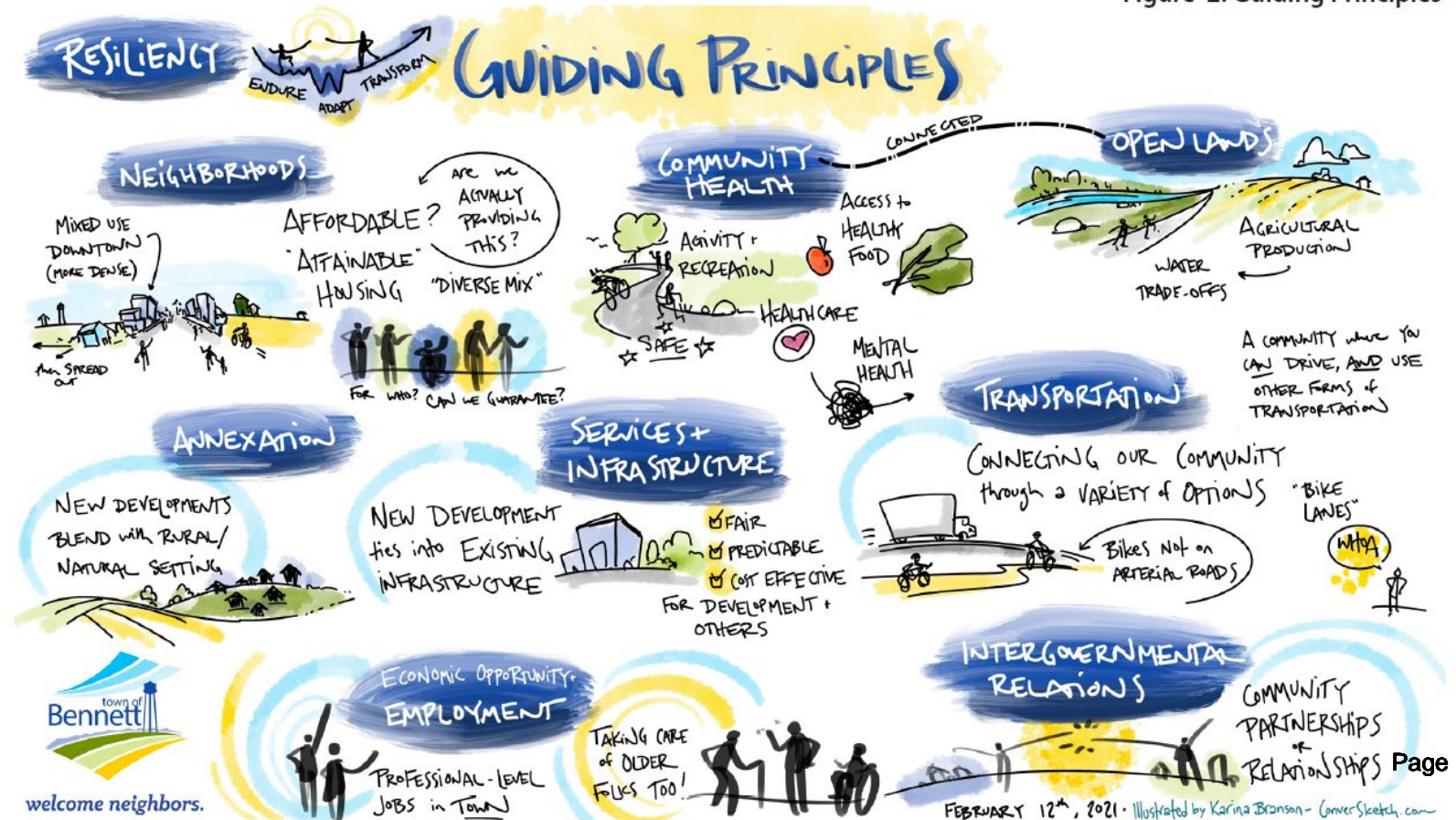
- Consistent with the Three Mile Plan
 - 2021 Comprehensive Plan
 - 2019 Capital Asset Inventory Master Plan
 - 2019 Parks, Trails and Open Space Master Plan
 - 2019 Arts and Cultural Master Plan
 - 2011 Regional Trail Plan
 - 2010 Downtown Planning Study
 - 2013 Planning and Environmental Linkages Report

Consistent with the Comprehensive Plan and Three Mile Plan

Figure 2: Guiding Principles

Consistent with Guiding Principles

(See Kiowa Creek and
the Comprehensive Plan
Principles commentary)



Guiding Principles Commentary

(See attachment to staff report)

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.	Y	The proposed zoning includes access to the existing vehicular transportation network. Internal and external pedestrian and bicycle connections can be established at the time of subdivision plat. In addition, preservation of the Kiowa Creek corridor will allow for eventual trail connections, not just for the subdivision, but the community as well.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.	Y	The ODP proposes a mix of residential densities, along with non-residential commercial support uses. In addition, the ODP includes the preservation of open space and accommodates an agricultural education element in Planning Area 6.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.	NA	This area is not part of the Town Center.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.	Y	The residential sub-zone offers a mix of unit types and densities, accommodating a diverse housing stock.
5. Commit to being good partners with other community agencies and organizations through collaboration, leveraging funding and planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.	Y	The Town of Bennett and the future developers and builders will have the opportunity to collaborate with all service providers. Increased assessed valuation will result in additional property tax revenues to the various special districts.
6. Foster an attractive community that retains residents in all stages of life through attainable housing, continuing education and a robust job market.	Y	With the mixed-use zoning proposed, working with future homebuilders and commercial developers, there will be an opportunity to promote attainable housing. In addition, the agricultural education element of the plan holds promise for great continuing education opportunities.
7. Preserve and protect natural open space and other areas that have environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.	Y	Setting aside 128 acres of the Kiowa Creek open space, park and floodplain area is one of the most significant open space preservation steps in the Town of Bennett's history. The flood hazard area will also be managed by the Town pursuant to the Municipal Code.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.	Y	The zoning accommodates non-residential uses, which may include community gardens, farmers' markets and traditional grocery stores. The 128 acres of open space, as well as local parks and trails, offer opportunities for outdoor physical activities.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.	Y	The zoning contemplates the management of the floodplain, pursuant to municipal code, which will minimize flood damage. The developer will have the opportunity to work with Bennett-Watkins Fire on the wildland-urban interface and minimize the threat of wildfires.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.	Y	Setting aside 128 acres of the Kiowa Creek open space, park and floodplain area provides a buffer between the project and the lower-intensity rural character areas to the north, south and east. The accommodation of Ag-Education uses in the ODP will also assist in the blending into the rural setting.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.	Y	The Kiowa Creek Preserve property is contiguous to existing Town of Bennett boundaries, with infrastructure and services nearby, consistent with the Town's Capital Asset Inventory Master Plan (CAIMP).
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.	Y	The annexation agreement, along with provisions of the ODP and the Bennett Municipal Code, decisions can be predictable and assure equitable cost-sharing.

Consistency with the Intent of the Zoning Code

The proposed zoning is consistent with the purpose of the Bennett Land Use Code, outlined in Section 16-1-50, including to:

- Preserve and enhance the quality of life of its citizens and to promote economic vitality of its businesses;
- Maintain and enhance a quality residential environment in the Town;
- Provide a diversity of housing types at various densities;
- Enhance the sales tax base of the Town by attracting and retaining commercial development;
- Promote logical extensions of and efficient use of the Town's infrastructure.
- Protect and preserve the rural nature of open lands;
- Support programs and help provide facilities that meet the recreational, cultural, public safety and educational needs of the community.

Consistency with Criteria for a PD District

The proposed zoning is consistent with the criteria for a Planned Development District, outlined in Section 16-2-350, including:

- Compatible with present development in the surrounding area and will not have a significant, adverse effect on the surrounding area;
- Consistent with the public health, safety and welfare, as well as efficiency and economy in the use of land and its resources;
- Consistent with the overall direction and intent of this Article and the intent and policies of the Comprehensive Plan and other pertinent policy documents of the Town;
- Provides for a creative and innovative design which could not otherwise be achieved through other standard zoning districts.
- Provides adequate circulation in terms of the internal street circulation system, designed for the type of traffic generated, for separation from living areas, convenience, safety, access and noise and exhaust control.

Consistency with Criteria for a PD District (Cont.)

- Provides functional open space in terms of practical usability and accessibility, and optimum preservation of natural features, including trees and drainage areas, recreation, views, natural stream courses, bodies of water and wetlands.
- Provides variety in terms of housing types, housing size, densities, facilities and open space.
- Provides for pedestrian and bicycle traffic in terms of safety, separation, convenience, access, destination and attractiveness.

Staff Findings on Case No. 22.16

- The proposed zoning is consistent with, or will promote, the goals and policies of the Town of Bennett 2021 Comprehensive Plan as required by Sections 16-1-90 and 16-2-360 of the Municipal Code.
- The proposal meets the criteria for a PD – Planned Development District outlined in Section 16-2-350.
- The proposed zoning is consistent with the purpose of the Bennett Land Use Code, outlined in Section 16-1-50.

Staff Recommendation

Staff recommends the Planning and Zoning Commission adopt Resolution No. 2022-11, recommending approval of the zoning of Kiowa Creek property to PD- Planned Development District and approval of the Kiowa Creek Preserve Outline Development Plan, subject to the approval of the annexation of the property by the Board of Trustees, subject to the following condition:

1. Before recording the outline development plan, the applicant shall make minor modifications directed by Town Staff, the Town Attorney and the Town Engineer.

(See Resolution)

Town of Bennett Land Use Application Form

TO BE COMPLETED BY APPLICANT

Application
Type:

Other

Other Annexation, Overall Development Plan, Metro Districts

Primary Contact Name: Jeff Vogel

Name of Firm: Vogel & Associates

Address: 475 W. 12th Avenue, Suite E

City: Denver

State: CO

Zip: 80204

Phone: (303) 893-4288

Email: jvogel@vogelassoc.com

Owner Name: Kiowa Creek Preserve Holdings, LLC, Herdsman Capital, LLC - Russell MacLennan

Address: PO Box 543

City: Bennett

State: CO

Zip: 80102

Phone: (303) 817-8736

Email: russ@machunts.com; Cooper Raines cooper@thecrrgroup.com

Mineral Estate Holder/Lease:

Name of Firm: See enclosed list of mineral right owners

Address:

City:

State:

Zip:

Phone:

Parcel#: See enclose parcel map

Subdivision Name: Kiowa Creek Preserve, Bennett Farms

Site Address: Northeast corner of Kiowa Bennett Rd and Old Victory Road

Nearest Major Intersection: Kiowa Bennett Rd and Old Victory, Colfax Ave and Harback Rd.

Legal Description: See enclosed Legal Descriptions

Current Zoning: Agriculture

Proposed # lots/units: Kiowa Creek: 1,030; Bennett Farms: 3,323

Total Acreage: Kiowa Creek: 321.6; Bennett Farms: 405.7

Gross Floor Area: See enclosed ODP

Proposed Gross Densities (du/ac): Kiowa: 3.2; Farm 8.2

Additional Notes: Please see cover letter and Overall Development Plans for Kiowa Creek and Bennett Farms for additional information.

All Submittal Requirements must accompany this application. All applicable fees must be paid at the time of application. Any extraordinary cost incurred by the Town of Bennett in reviewing and processing this application is the responsibility of the applicant.

An executed cost agreement must be attached to this application pursuant to Sec. 16-1-325 of the Bennett Municipal Code.

I understand this is an application only, it must be approved by the Town, and any required building permits must be obtained before the property can be used in accordance with the request. I hereby acknowledge all of the above information is correct.

Applicant's Signature: Russell MacLennan

Date: 12.18.21



December 6, 2021

Mr. Steve Hebert,
Planning & Economic Development Manager
Town of Bennett
207 Muegge Way
Bennett, Colorado 80102

**Re: Kiowa Creek Reserve and Bennett Farm Parcel
Annexation and Zoning Applications**

Dear Steve,

On behalf of Kiowa Creek Preserve Holdings, LLC (KCPH) and Herdsman Capital, LLC, I am pleased to submit the enclosed Kiowa Creek Preserve and Bennett Farms annexation, Outline Development Plan, and metropolitan district service plan application for your review. Annexation petitions and plat maps are also included with the application.

As discussed, the intent is to advance the annexation and rezoning of the Kiowa Creek parcel that is located east of Kiowa Bennett Road and adjacent to the Kiowa Creek riparian corridor. This parcel is approximately 326.6 acres. The Bennett Farms "Farm" parcel is approximately 405 acres and is located west of Harback Road between E. 38th Ave. and Colfax Ave.

Each parcel is envisioned to be redeveloped utilizing a development program that will include residential and non-residential land uses. This mixed-use program will provide for a diversity of housing and include uses that will promote economic growth. Each property is master planned to include a comprehensive open space and trail system. As discussed with the Town of Bennett, the intent is to utilize the eastern half of the Kiowa Creek property for a community open space park and agricultural education facility. Creating this large contiguous area of open space will provide extensive community and regional recreational benefits.

Given the location and physical characteristics of the "farm" parcel, the program is envisioned to include mixed use and residential uses. A master plan will be configured to address considerations related to land use development patterns, primary circulation, etc.

Planning principles will be utilized to ensure that project objectives are implemented with each component of the project. These principles include maintaining the integrity of the Kiowa Creek corridor and establishing a framework that will reinforce community connectivity. Land uses that will promote economic and trade is a primary objective along with providing for a diversity of residential housing. These planning principles are outlined with each Outline Development Plan.

Metropolitan District(s) service plans have been prepared and are to be processed concurrently with the ODP and annexation. These districts will be utilized to design, finance, implement and maintain infrastructure and facilities for the respective land use designations. Specifics regarding the intent and purpose is outlined in the service plans.

The following represents the planning team who will be working on the annexation and ODP.

Owner:

Kiowa Creek Preserve Holdings, LLC
Herdsman Capital, LLC
P.O. Box 543
Bennett, CO. 80102
Contact: Russell MacLennan, President

Planner/Representative:

Vogel & Associates, LLC
475 W. 12th Ave., Suite E
Denver, CO. 80204
Contact: Jeff Vogel

Civil Engineer/Surveyor:

Core Consultants
1950 W. Littleton Blvd.
Littleton CO. 80120
Contact: David Forbes

Land Use Legal Counsel:

Otten Johnson Robinson Neff & Ragonetti
950 17th Street
Denver CO. 80202
Contact: Tom Ragonetti, Allison Altaras

Metropolitan District Legal Counsel:

Icenogle, Seaver & Pogue
4725 S. Monaco Street, Suite 360
Denver, CO. 80237
Contact: Alan Pogue

As outlined above the Kiowa Creek Preserve and Bennett Farms projects are master planned as mixed-use communities that integrate with the physical characteristics associated with each unique parcel. Integrated planning principles have been incorporated into each master plan as required to advance environmental, social, and economic considerations. These principles and considerations also include addressing and advancing the “Guiding Principles” outlined in the Town of Bennett comprehensive plan.

Outlined below is a summary of Comprehensive Plan Guiding Principles and policies with justification of how each project advances the respective considerations.

1. Develop town and neighborhood centers with mixed land use and greater land density to shorten distances between homes, workplaces, schools, shopping, places of worship, cultural facilities, and recreation and social activities;

Justification:

Kiowa Creek Ranch Preserve is master planned to include a mixed-use center that will provide community and neighborhood services. This mixed-use center will be conveniently access via the street network and pedestrian open space system.

Bennett Farms is also master plan to include mixed-use and neighborhood centers. The mixed-use located on the west side of the property is proposed to include a variety of uses.

A neighborhood center is proposed that includes the historic farm headquarters. This facility is proposed to serve as a neighborhood gathering area that will include a variety of recreational facilities. The mixed-use planning areas and neighborhood centers are accessible by the street network and central open space system.

2. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production;

Justification:

Kiowa Creek Preserve is master planned to integrate with the Kiowa Creek riparian corridor. Approximately 40% of the property is configured as open space. This large area of contiguous open space is planned to include active and passive recreation facilities. Planning area 6 is proposed to serve as an agricultural education center. This facility is planned to include facilities and exhibit areas that will provide agriculture related education and recreation programs.

Bennett Farms is master planned to preserve natural drainages and existing agricultural facilities that will be transformed into community amenities. Active and passive open space areas have been incorporated into the master plan. A comprehensive trail system is planned to provide community and neighborhood connectivity.

3. Ensure that affordable housing and access to healthy living is available for people of all ages and income levels;

Justification:

Kiowa Creek Preserve and Bennett Farms are master planned to include a variety of housing types. Planning areas and land use classifications that include mixed-use, high density and medium density residential housing is included in both projects. Incorporating land uses that will accommodate a diversity of housing will accommodate a multi-income and age demographic.

4. Offer access to open space, trails, and parks to provide more opportunities for walking, biking, recreation, and contact with nature;

Justification:

Kiowa Creek Preserve is master planned to include an extensive comprehensive open space system. This large contiguous open system will serve as a community amenity for the Town of Bennett and the region. Given the scale of the open space system and physical characteristics, a variety of active and passive recreation facilities can be accommodated including an expansive trail system.

Bennett Farms is master planned to include a large linear park that is located within the center of the community. This linear park will have multiple connections to the adjacent planning areas and proposed neighborhood parks. An central trail system will be located within the open space and neighborhood parks.

5. Foster a distinctive, attractive community that retains our young people to support future community governance;

Justification:

Kiowa Creek Preserve and Bennett Farms are master planned to include mixed-use parcels that can accommodate a variety of employment related to uses. Providing employment opportunities within the Town of Bennett will provide for a more balanced and viable community that will encourage the retaining of the younger demographic.

Each master plan is proposed to include a diversity of housing types. Providing a diversity of housing types will accommodate a multi-dimensional demographic.

6. Preserve open space, farmland, and areas that have environmental significance to the region, particularly that are susceptible to flood hazard; are identified aquifer recharge areas; have natural mineral wealth; or are prime agricultural land;

Justification:

As noted above, the intent is to preserve the Kiowa Creek corridor as open space and a community amenity. This corridor also serves as a flood zone and wildlife corridor. Kiowa Creek is also considered an aquifer recharge area.

The proposed linear open space in Bennett Farms also includes a flood zone area. This corridor has also been utilized as wildlife habitat.

7. New development should be contiguous, or nearly so, to existing infrastructure and services;

Justification:

Kiowa Creek Preserve is located east of the Town of Bennett and east of the Bennett Ranch project. Utilities including water and sewer will be accessed from the west of Kiowa-Bennett Road. The Kiowa Creek Preserve property is also planned to include a sanitary lift station that has been requested by the Town. A utility plan has been prepared as part of this application illustrating how infrastructure and utilities will be provided.

Bennett Farms is master planned to include and expand required utilities. As outlined in the utility plan, connections will be provided primarily from the east and northeast. This will include the required extension of water and sewer mainlines.

8. Provide a variety of transportation choices including bicycle trails; sidewalks; and mass transit to reduce the dependence upon automobiles; and create streets that are safe for use by automobiles, pedestrians, and bicyclists;

Justification:

Kiowa Creek Preserve is planned to reinforce community connectivity by providing an interconnected street network system and comprehensive trail system. Residents and users will have alternative methods for accessing adjacent neighborhoods, the mixed-use center, and the Kiowa Creek open space corridor.

Bennett Farms includes a master plan framework plan that is comprised of a modified grid that interfaces with a comprehensive open space and trail system. This modified grid encourages walkable blocks and disperses traffic. Parks and neighborhood centers are located to serve as community focal points that are configured to be accessed via a pedestrian-friendly streets and the community trail system. The modified grid, walkable blocks and trail system also encourage the use of transit.

9. Make development decisions predictable, fair, and cost effective, with the responsibility of designing and constructing the infrastructure required for new development shared by all parties receiving benefit; and

Justification:

Kiowa Creek Preserve Management, LLC has been coordinating extensively with the Town of Bennett regarding several planning considerations related infrastructure, water and the preservation of open space including the Kiowa Creek riparian corridor that is proposed to be community and regional amenity.

Kiowa Creek Preserve and Bennett Farms are proposed to include Metropolitan Districts. These metropolitan districts will be utilized to design, construct and maintain public improvements for each of the respective projects. Kiowa Creek Preserve Management, LLC will continue to collaborate with the Town of Bennett staff regarding regional infrastructure and public improvement benefits.

10. Remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth.

Justification:

As noted above, Kiowa Cree Preserve Management, LLC and the metropolitan districts will collaborate and plan for future growth including addressing regional considerations related to open space, utilities, and transportation. This application includes an annexation agreement that outlines additional specifics with regards to open space, infrastructure, and other related improvements.

Outlined below, are the proposed planning and development considerations that have been incorporated into the application.

Zoning and Density

- ❖ Proposed Zoning ODP/PUD
 Kiowa Creek Parcel- Residential, Multi-family, Recreation/AG, and mixed use.
 Farm Parcel – Mixed Use, Residential.
- ❖ Kiowa Creek Proposed Density
 Residential Density 1,030 residential units.
 Commercial Density 164,000 sqft.
- ❖ Bennett Farms Proposed Density
 Residential Density 3,323 residential units.
 Commercial Density 692,600sqft.
- ❖ ODP/Site Specific Dev. ODP to be considered Site Specific Development Plan

Enclosed with this application is an annexation agreement that outlines additional detail and considerations. These considerations include addressing items related to dedications, open space, transportation etc.

Upon your review, we will be available to meet and discuss further the respective applications. We appreciate your assistance and look forward to working with you on these exciting projects.

Sincerely,

Vogel & Associates, LLC

Jeffrey Vogel, AICP

Principal

KIOWA CREEK PRESERVE
OUTLINE DEVELOPMENT PLAN
PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO
SHEET 1 OF 7

LEGAL DESCRIPTION:

A PARCEL OF LAND BEING A PORTION OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 26, THENCE N 89°04'52" E, ALONG THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 505.53 FEET TO THE NORTHEAST CORNER OF THAT DEED RECORDED IN BOOK 5088, PAGE 23, IN THE RECORDS OF THE ADAMS COUNTY CLERK AND RECORDER'S OFFICE, AND THE POINT OF BEGINNING;
THENCE N 89°04'52" E, CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 2131.00 FEET TO THE NORTH QUARTER CORNER OF SAID SECTION 26;
THENCE N 89°05'05" E, ALONG THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 26, A DISTANCE OF 2519.12 FEET TO THE NORTHWEST CORNER OF THOSE DEEDS RECORDED AT RECEPTION NOS. 2012000045574 & 2012000022879, SAID ADAMS COUNTY RECORDS;
THENCE S 01°03'51" E, ALONG THE WEST LINE OF SAID DEEDS, A DISTANCE OF 671.30 FEET;
THENCE S 89°07'59" E, ALONG THE SOUTH LINE OF SAID DEEDS, A DISTANCE OF 82.50 FEET TO A POINT BEING 30.00 FEET WEST OF THE EAST LINE OF THE NE 1/4 OF SAID SECTION 26;
THENCE S 00°37'19" E, ALONG A LINE BEING 30.00 FEET WEST OF AND PARALLEL TO THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 26, A DISTANCE OF 1632.35 FEET TO A POINT ON THE NORTH LINE OF THAT DEED RECORDED AT RECEPTION NO. 2019000059793, SAID ADAMS COUNTY RECORDS;
THENCE ALONG THE NORTH AND WEST LINES OF SAID DEED, THE FOLLOWING TWO (2) COURSES:
1. S 89°22'41" W, A DISTANCE OF 300.00 FEET;
2. S 00°37'19" E, A DISTANCE OF 332.51 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 26, ALSO BEING A POINT ON THE NORTH LINE OF THAT DEED RECORDED AT RECEPTION NO. 2018000031991, SAID ADAMS COUNTY RECORDS;

THENCE S 88°56'30" W, ALONG THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 26, A DISTANCE OF 562.00 FEET TO THE NORTHWEST CORNER OF THAT SPECIAL WARRANTY DEED RECORDED AT RECEPTION NO. 2017000068146, SAID ADAMS COUNTY RECORDS;
THENCE S 00°33'05" E, ALONG THE WEST LINE OF SAID DEED, A DISTANCE OF 490.63 FEET TO A POINT ON THE NORTH LINE OF THE OLD VICTORY ROAD RIGHT-OF-WAY;
THENCE N 75°03'29" W, ALONG SAID NORTH LINE, A DISTANCE OF 495.19 FEET TO THE SOUTHEAST CORNER OF THAT DEED RECORDED IN BOOK 4575, PAGE 808;
THENCE ALONG THE NORTH LINE OF SAID DEED, THE FOLLOWING FIVE (5) COURSES:
1. N 15°26'33" E, A DISTANCE OF 12.16 FEET;
2. N 74°33'27" W, A DISTANCE OF 22.81 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 10,040.00 FEET, A CENTRAL ANGLE OF 03°42'44" AND AN ARC LENGTH OF 650.50 FEET;
4. N 78°16'11" W, A DISTANCE OF 80.55 FEET TO A POINT OF CURVATURE;
5. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1,290.00 FEET, A CENTRAL ANGLE OF 09°06'20" AND AN ARC LENGTH OF 205.01 FEET TO A POINT ON THE NORTH LINE OF THE OLD VICTORY ROAD RIGHT-OF-WAY;

THENCE ALONG THE NORTH LINE OF SAID OLD VICTORY ROAD RIGHT-OF-WAY, THE FOLLOWING SEVEN (7) COURSES:
1. N 79°51'44" W, A DISTANCE OF 90.66 FEET;
2. N 78°29'52" W, A DISTANCE OF 535.92 FEET;
3. S 87°28'06" W, A DISTANCE OF 155.86 FEET;
4. S 75°11'48" W, A DISTANCE OF 290.21 FEET;
5. S 77°04'37" W, A DISTANCE OF 563.24 FEET;
6. S 69°38'15" W, A DISTANCE OF 584.13 FEET;
7. S 78°04'46" W, A DISTANCE OF 813.15 FEET TO A POINT BEING 30.00 FEET EAST OF THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 26, AND A POINT ON THE EAST LINE OF THE KIOWA-BENNETT ROAD RIGHT-OF-WAY;

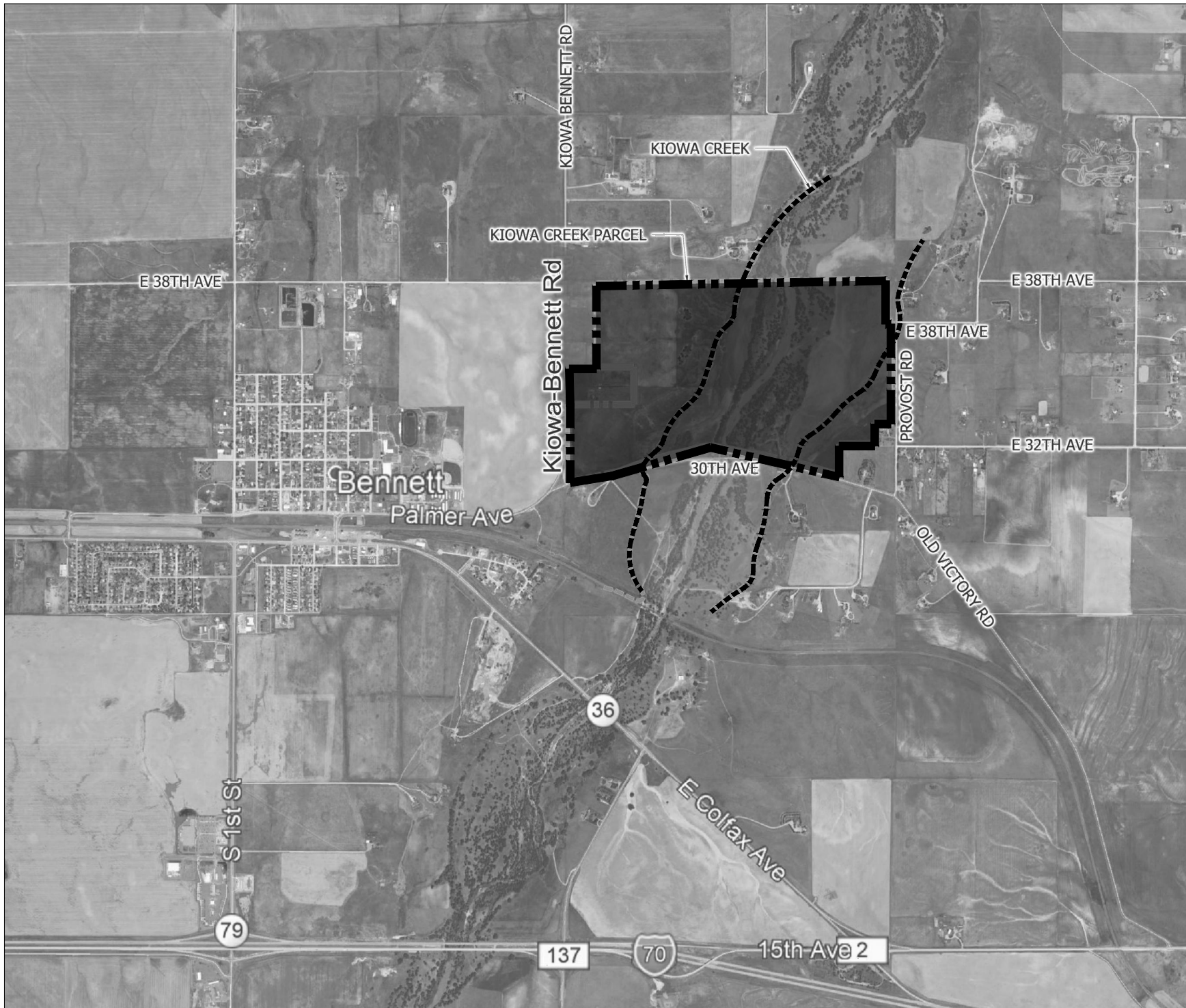
THENCE N 00°16'23" W, ALONG THE EAST LINE OF SAID KIOWA-BENNETT ROAD RIGHT-OF-WAY, AND ALONG A LINE BEING 30.00 FEET EAST OF AND PARALLEL TO THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 525.38 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 26;
THENCE N 00°35'24" W, ALONG THE EAST LINE OF SAID KIOWA-BENNETT ROAD RIGHT-OF-WAY, AND ALONG A LINE BEING 30.00 FEET EAST OF AND PARALLEL TO THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 715.50 FEET;

THENCE N 89°13'20" E, A DISTANCE OF 10.00 FEET TO THE SOUTHWEST CORNER OF LOT 2, LANCASTER RANCH SUBDIVISION FILING NO. 2, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. B1028280, SAID ADAMS COUNTY RECORDS;
THENCE N 00°35'24" W, ALONG THE WEST LINE OF SAID LOT 2 AND ALONG A LINE BEING 40.00 FEET EAST OF THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 280.56 FEET TO THE SOUTHWEST CORNER OF LOT 1, SAID LANCASTER RANCH SUBDIVISION FILING NO. 2;
THENCE ALONG THE SOUTH, EAST AND NORTH LINES OF SAID LOT 1, THE FOLLOWING THREE (3) COURSES:
1. N 89°13'20" E, A DISTANCE OF 1045.91 FEET;
2. N 00°13'45" W, A DISTANCE OF 319.02 FEET;
3. S 89°15'06" W, A DISTANCE OF 582.39 FEET TO THE SOUTEAST CORNER OF THAT DEED RECORDED AT RECEPTION NO. 2008000096731, SAID ADAMS COUNTY RECORDS;

THENCE N 00°35'24" W, A DISTANCE OF 1335.12 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 13,672,432 SQUARE FEET, OR 313.876 ACRES, MORE OR LESS.

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH P.M., BEING ASSUMED TO BEAR N 89°04'52" E, FROM THE NORTHWEST CORNER OF SAID SECTION 26, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP STAMPED "PLS 14108", IN A RANGE BOX, TO THE NORTH QUARTER CORNER OF SAID SECTION 26, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP, STAMPED "PLS 11389", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.



VICINITY MAP



OWNER ACKNOWLEDGEMENT

BY SIGNING THIS ODP, THE OWNER ACKNOWLEDGES AND ACCEPTS ALL OF THE REQUIREMENTS AND INTENT SET FORTH HEREIN.

KIOWA CREEK PRESERVE, LLC

HERDSMAN CAPITAL, LLC

NOTARY

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS DAY OF , 2022 BY

MY COMMISSION EXPIRES:

NOTARY PUBLIC

TOWN OF BOARD TRUSTEES APPROVAL

APPROVED BY THE TOWN BOARD OF TRUSTEES OF THE TOWN OF BENNETT, COLORADO THIS DAY OF , 20 BY ORDINANCE NO. .

MAYOR

ATTEST: TOWN CLERK

COUNTY CLERK AND RECORDER CERTIFICATE:

THIS PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF ADAMS COUNTY, COLORADO, AT O'CLOCK, M, THIS DAY OF , 20 .

RECEPTION NUMBER

ADAMS COUNTY CLERK AND RECORDER

DEPUTY

SHEET INDEX

SHEET 1 OF 7: COVER SHEET

SHEET 2 OF 7: ZONE DISTRICT PLAN

SHEET 3 OF 7: DEVELOPMENT STANDARDS AND GUIDELINES: INTRODUCTION

SHEET 4 OF 7: DEVELOPMENT STANDARDS AND GUIDELINES: HIGH DENSITY RESIDENTIAL (HDR), PA-3 MEDIUM DENSITY RESIDENTIAL (MDR), PA-2, PA-4, PA-5 and PA-8

SHEET 5 OF 7: DEVELOPMENT STANDARDS AND GUIDELINES: MEDIUM DENSITY RESIDENTIAL (MDR), PA-2, PA-4, PA-5 and PA-8 MIXED-USE DISTRICT (MU), PA-1 OPEN SPACE AND TRAILS (OS), PA-7

SHEET 6 OF 7: DEVELOPMENT STANDARDS AND GUIDELINES: OPEN SPACE AND TRAILS (OS), PA-7 AGRICULTURE EDUCATION (AE), PA-6

SHEET 7 OF 7: DEVELOPMENT STANDARDS AND GUIDELINES: LAND USE MATRIX TABLE



VOGEL & ASSOCIATES
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

PLANNER:

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Contact: Jeff Vogel
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

ENGINEER:

CORE CONSULTANTS INC.
Contact: Thomas M. Girard
3473 South Broadway
Englewood, Colorado 80113
303-703-4444

SURVEYOR:

CORE CONSULTANTS INC.
Contact: Jeff Anton
3473 South Broadway
Englewood, Colorado 80113
303-703-4444

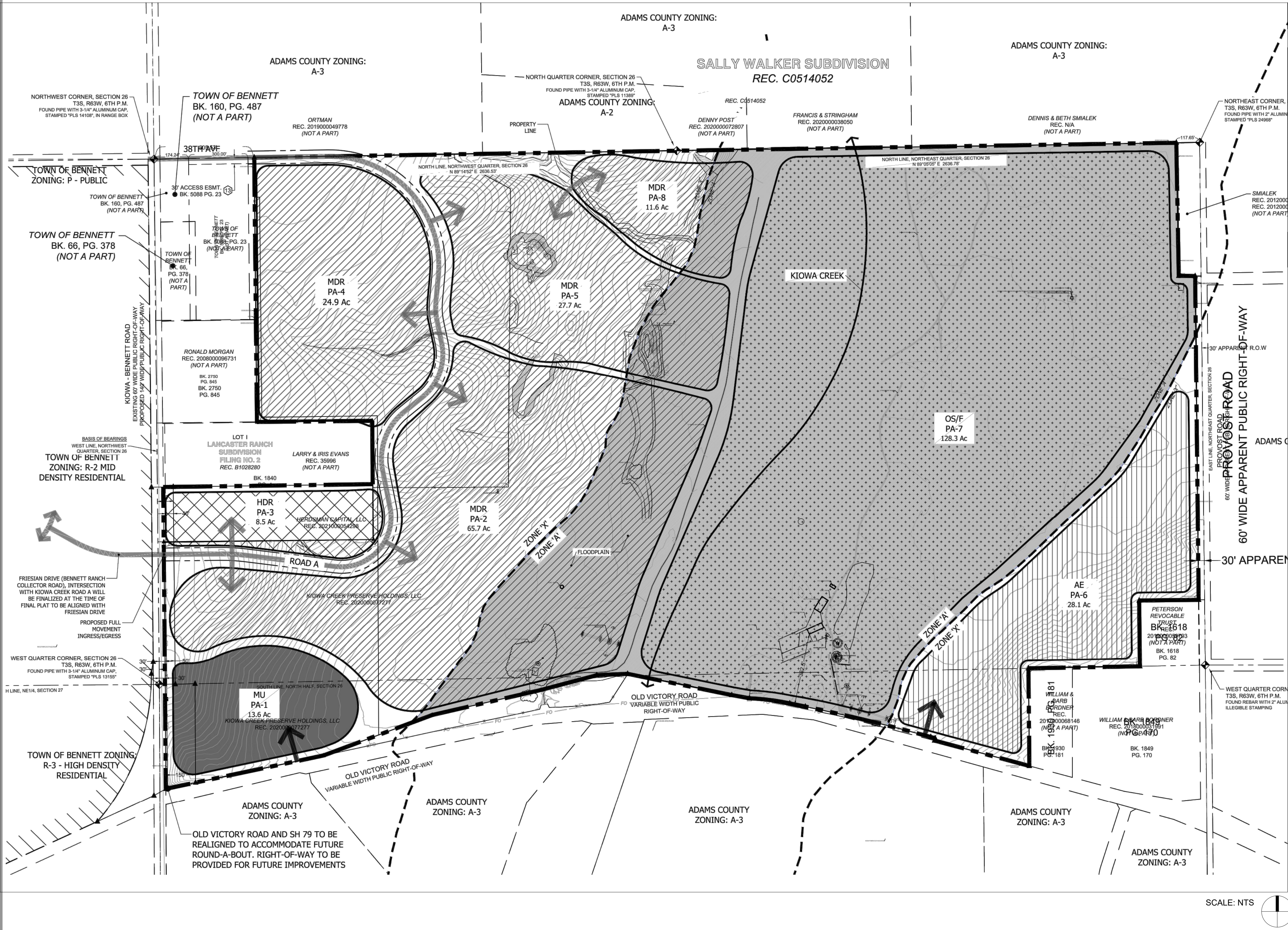
OWNER:

KIOWA CREEK PRESERVE, LLC
HERDSMAN CAPITAL, LLC
PO Box 543
Bennett, CO 80102

KIOWA CREEK PRESERVE (ODP) - COVER SHEET

Scale: N/A
Date: MARCH 1, 2022
Revision Date: JUNE 03, 2022

KIOWA CREEK PRESERVE
OUTLINE DEVELOPMENT PLAN
PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO
SHEET 2 OF 7



KIOWA CREEK PRESERVE							
PD - ZONING SUMMARY TABLE							
	PLANNING AREA	AREA (ACRES)	COMMERCIAL (SQ.FT.)	ZONING	ZONING DESCRIPTION	% OF TOTAL	MAX. RESIDENTIAL DENSITY (DU/AC)
	PA-1	13.6	164,000	MU	Mixed Use District	4.3%	20
	PA-2	65.7		MDR	Medium Density Residential District	20.9%	5
	PA-3	8.5		HDR	High Density Residential District	2.7%	15
	PA-4	24.9		MDR	Medium Density Residential District	7.9%	5
	PA-5	27.7		MDR	Medium Density Residential District	8.8%	5
	PA-6	28.1		AE	Agriculture - Education	9.0%	
	PA-8	11.6		MDR	Medium Density Residential District	3.7%	5
	Total Planning Area	124.3					
	OPEN SPACE						
	PA-7	128.3		OS/F	Agriculture: Park/ Open Space/Floodplain	40.9%	
	Public ROW	5.5				1.8%	
	TOTAL PD AREA	313.9	164,000			100.0%	913

- ROAD CIRCULATION
- FLOODPLAIN
- PROPERTY LINE

ZONE DISTRICT PLAN

Scale: N/A
Date: MARCH 1, 2022
Revision Date: JUNE 03, 2022

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 3 OF 7

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

INTRODUCTION:

OVERVIEW

KIOWA CREEK PRESERVE IS A PROPERTY THAT IS APPROXIMATELY 321 ACRES, LOCATED IN THE TOWN OF BENNETT. THE PROPERTY IS PART OF ADAMS COUNTY AND INCLUDES SIGNIFICANT GEOGRAPHIC FEATURES SUCH AS KIOWA CREEK, A MAJOR RIPARIAN CORRIDOR RUNNING NORTH AND SOUTH THROUGH THE PARCEL. THE PROJECT IS ENVISIONED TO BE A COHESIVE MASTER PLANNED COMMUNITY CONSISTING OF MIXED LAND USES INCLUDING RESIDENTIAL AND OPEN SPACE PLANNING AREAS. THE PARK/OPEN SPACE LAND INCLUDES PRESERVATION OF THE RIPARIAN CORRIDOR THAT SURROUNDS KIOWA CREEK. KIOWA CREEK PRESERVE OUTLINE DEVELOPMENT PLAN REPRESENTS THE FOLLOWING INTEGRATED PLANNING PRINCIPLES THAT REINFORCE THE CHARACTER OF THE SITE AND FUTURE GROWTH OF THE TOWN:

PRINCIPLE ONE: PRESERVE/ PROTECT NATURAL GEOGRAPHIC FEATURES AND OPEN SPACE. INCLUDING THE SITE'S MAIN RIPARIAN CORRIDOR AND SURROUNDING FLOODPLAIN ZONE.

PRINCIPLE TWO: IDENTIFY AND SUSTAIN GREEN INFRASTRUCTURE THROUGH PROGRESSIVE AND INTENTIONAL MEANS OF ARCHITECTURE AND SITE DESIGN THAT COMPLEMENT THE SITE.

PRINCIPLE THREE: ENHANCE COMMUNITY CONNECTIVITY WITH BOTH VEHICULAR AND PEDESTRIAN CIRCULATION.

PRINCIPLE FOUR: ESTABLISH A DIVERSITY OF HOUSING TYPES INCLUDING HIGH DENSITY RESIDENTIAL (HDR); SINGLE FAMILY ATTACHED AND MEDIUM DENSITY RESIDENTIAL (MDR);SINGLE FAMILY DETACHED

INTENT

KIOWA CREEK PRESERVE IS PLANNED TO ALLOW FOR A GREATER FLEXIBILITY OF DEVELOPMENT THAT IS SITE SPECIFIC TO ALLOW FOR THE PRESERVATION OF GEOGRAPHIC FEATURES, CONNECTIVITY TO THE TOWN AND TO ENCOURAGE FUTURE DEVELOPMENT PATTERNS WITHIN ADAMS COUNTY AND THE TOWN OF BENNETT. THIS INCLUDES A VARIETY OF MIXED-USE AND RESIDENTIAL LAND USES THAT WILL BE LOCATED WITHIN A PEDESTRIAN-ORIENTED COMMUNITY CONSISTING OF INTERCONNECTED TRAIL SYSTEMS, WALKABLE STREETS AND COMMUNITY PARKS/PRESERVED OPEN SPACE.

THIS MIXED USE COMMUNITY WILL PROVIDE SERVICES AND HOUSING ALTERNATIVES FOR A MULTI-GENERATIONAL POPULATION. THE KIOWA CREEK RIPARIAN CORRIDOR ALLOWS FOR A LARGE PORTION OF THE PROPERTY TO BE PRESERVED AS OPEN SPACE AND THE CREATION OF PEDESTRIAN FRIENDLY TRAILS.

THE PROPOSED TRAIL NETWORK IS DESIGNED TO CONNECT TO THE REGIONAL TRAIL SYSTEM SURROUNDING THE SITE AND THE TOWN OF BENNETT. KIOWA CREEK PRESERVE HAS A MIXED-USE PLANNING AREA LOCATED ON THE CORNER OF THE SITE PROVIDING VISIBILITY FROM THE KIOWA - BENNETT ROAD AND OLD VICTORY ROAD. CONNECTIONS TO THIS COMMUNITY WILL HELP INTEGRATE THE FUTURE COMMERCIAL, RETAIL AND RESIDENTIAL EXPANSION SURROUNDING KIOWA CREEK PRESERVE.

PLANNED DEVELOPMENT ZONING

THE KIOWA CREEK PRESERVE OUTLINE DEVELOPMENT PLAN (ODP) IS INTENDED TO PROVIDE A DEVELOPMENT PATTERN THAT WILL CREATE A FRAMEWORK FOR FUTURE GROWTH SURROUNDING THE SITE. THIS ODP INCLUDES A MIX OF RESIDENTIAL, MIXED-USE AND OPEN SPACE PLANNING AREAS. THE MIX OF RESIDENTIAL, MIXED-USE ALONG WITH OPEN SPACE AND TRAILS WILL ACCOMMODATE WIDE RANGES OF USERS, SERVICES AND HOUSING OPPORTUNITIES. THE KIOWA CREEK PRESERVE ODP PROVIDES DEVELOPMENT STANDARDS THAT REINFORCE THE PLANNING PRINCIPLES ABOVE.

DENSITY TRANSFER

DENSITY MAY BE TRANSFERRED TO A PLANNING AREA UP TO 30% OF THE DENSITY OF THE RECEIVING PLANNING AREA IF SUFFICIENT ROADWAY, WATER AND SEWER CAPACITY ARE AVAILABLE. TRANSFERS 30% OR LESS WILL REQUIRE AN ADMINISTRATIVE AMENDMENT TO THE ODP. REVIEW WILL BE REQUIRED BY THE TOWN ENGINEER, TRAFFIC ENGINEER AND OTHER REQUIRED AGENCIES.

LAND USE PLANNING OVERVIEW:

OVERALL DEVELOPMENT PROGRAM

THE KIOWA CREEK PRESERVE ODP IS CREATED TO ESTABLISH A LAND USE PATTERN AND STANDARDS THAT WILL INTEGRATE WITH THE NATURAL FEATURES OF THE SITE AND ADVANCE COMMUNITY OBJECTIVES. THE DESIGN STANDARDS OUTLINED ENSURE GOALS AND OBJECTIVES ASSOCIATED WITH EACH DISTRICT ARE ACHIEVED.

KIOWA CREEK PRESERVE IS PLANNED AS A VITAL AND BALANCED MIXED USE COMMUNITY THAT IS BASED ON INTEGRATED PLANNING AND DESIGN PRINCIPLES. PRINCIPLES THAT INCLUDE PRESERVATION OF THE NATURAL FEATURES OF THE SITE AND MAINTAIN THE INTEGRITY OF THE FLOODPLAIN THAT IS ALIGNED THROUGH THE SITE, A PLANNING APPROACH THAT FOCUSES ON COMMUNITY CONNECTIVITY THAT INCLUDES WELL-CONNECTED SYSTEMS OF LAND USE, RECREATIONAL OPEN SPACE, AND TRAILS THAT ACCOMMODATE THE NEEDS OF A MULTI-GENERATIONAL POPULATION.

THE PLANNING AREAS OUTLINED IN THIS ODP REPRESENT THE PROPOSED ZONE DISTRICTS DESCRIBED IN THIS DEVELOPMENT GUIDE, INCLUDING THE PERMITTED USES, LOT AND BUILDING STANDARDS CREATED SPECIFICALLY FOR EACH DISTRICT. THERE WILL BE TWO MAIN ACCESS POINTS ALONG KIOWA-BENNETT ROAD THAT WILL BE ESTABLISHED AND MAINTAINED THROUGHOUT DEVELOPMENT OF THE ENTIRE SITE. ACCESS FROM OLD VICTORY ROAD IS ALSO PROPOSED FOR PLANNING AREAS 1 AND 6.

RESIDENTIAL DEVELOPMENT

PLANNING AREAS 2 THROUGH 5 ARE PLANNED FOR BOTH MEDIUM DENSITY RESIDENTIAL (MDR) AND HIGH DENSITY RESIDENTIAL (HDR) USES. THE PURPOSE OF CREATING A VARIETY OF RESIDENTIAL ZONING DISTRICTS IS TO CREATE AN OPPORTUNITY FOR DIVERSE HOUSING THAT WILL ALLOW FOR A MULTI-GENERATIONAL POPULATION. KIOWA CREEK PRESERVE'S RESIDENTIAL NEIGHBORHOOD IS CONFIGURED WITHIN A DEVELOPMENT PATTERN THAT INCLUDES INTERCONNECTED PEDESTRIAN-ORIENTED STREETS, WALKABLE PARCELS AND CONNECTIVITY TO THE PRESERVED PARK/OPEN SPACE ON SITE.

THE STREET CONFIGURATION IS PLANNED TO ALLOW FOR A MULTI-MODAL TRANSPORTATION PROGRAM INCLUDING BICYCLE, PEDESTRIAN, VEHICLE AND TRANSIT ALTERNATIVES. THE STREET CONFIGURATION INCLUDES TWO PROPOSED FULL MOVEMENT INGRESS/EGRESS ACCESS POINTS THAT CONNECT TO KIOWA - BENNETT ROAD.

MIXED USE

PLANNING AREA 1 IS INTENDED TO BE CONFIGURED TO ACCOMMODATE A MIX OF USES, INCLUDING 164,000 SQUARE FEET OF COMMERCIAL SPACE.THE PROPOSED MIXED-USE (MU) DISTRICT IS CREATED TO SERVE AS A COMMUNITY AND REGIONAL FOCAL POINT. BUSINESS AND RETAIL THAT ARE WITHIN PLANNING AREA 1 WILL OFFER A DIVERSE RANGE OF SERVICES TO BENEFIT THE COMMUNITY.

THIS PLANNING AREA IS WITHIN A HIGH VISIBILITY AREA LOCATED AT THE SOUTH WEST CORNER OF THE PROPERTY ALONG KIOWA-BENNETT ROAD AND OLD VICTORY ROAD. THIS LOCATION IS SURROUNDED BY RESIDENTIAL USES AND WILL PROVIDE CONVENIENCE TO KIOWA CREEK PRESERVE RESIDENTS AND THE REGION.

SITE ANALYSIS:

EXISTING CONDITIONS AND ENVIRONMENTALLY SIGNIFICANT AREAS

THE APPROXIMATELY 321 ACRES THAT MAKE UP THE KIOWA CREEK PRESERVE ODP, IS COMPROMISED OF ONE CONTIGUOUS PARCEL. KIOWA BENNETT ROAD (60' PUBLIC ROW) NORTH/SOUTH ON THE WEST SIDE OF THE PROPERTY WITH PROVOST ROAD (60' ROW) RUNNING NORTH/SOUTH ON THE EAST PROPERTY LINE. THE LEGAL DESCRIPTION IS INCLUDED ON SHEET 1 OF 7 OF THIS ODP SET. THE SITE IS ENCLOSED BY AGRICULTURE FENCING ON ALL SIDES, A COUPLE 2-TRACK DIRT ROADS AND MOSTLY NATIVE UNDISTURBED VEGETATION WITH POCKETS OF DENSE FOLIAGE AND DECIDUOUS TREES. CURRENTLY THERE ARE NO RESIDENTS OR DEVELOPMENT ON THE PROPERTY. ALMOST HALF OF THE SITE IS WITHIN A DELINEATED 100-YEAR FLOODPLAIN ZONE THAT IS PART OF KIOWA CREEK THUS SERVES AS A VITAL RIPARIAN CORRIDOR. THIS CORRIDOR AND SURROUNDING FLOODPLAIN IS INTENDED TO BE PROTECTED AND PRESERVED AS OPEN SPACE. THE PARK/OPEN SPACE PLANNING AREA THAT INCLUDES PART OF THE FLOODPLAIN ZONE WILL BE DESIGNED TO PRESERVE THE NATURAL LAND AND GEOGRAPHICAL CHARACTERISTICS OF THE RIPARIAN CORRIDOR.

GENERAL SITE CONDITIONS:

PLANNING AREA BOUNDARIES

THE SEVEN PLANNING AREAS LOCATED WITHIN THE KIOWA CREEK PRESERVE ODP ARE SHOWN ON THE ZONE DISTRICT PLAN ON SHEET 2 OF 7. THIS PLAN ILLUSTRATES THE FOLLOWING FIVE ZONE DISTRICTS: HIGH DENSITY RESIDENTIAL (HDR), MEDIUM DENSITY RESIDENTIAL (MDR), MIXED-USE (MU), OPEN SPACE (OS) AND AGRICULTURE EDUCATION (AE). FINAL PLANNING AREA BOUNDARIES, ROAD ALIGNMENTS, INGRESS/EGRESS POINTS AND OPEN SPACE CALCULATIONS WILL BE ESTABLISHED WITH THE FINAL PLAT OR PLATS.

PLANNING AREA ACREAGES AND BOUNDARIES AS SHOWN ON THE ZONE DISTRICT PLAN ARE PRELIMINARY AND SUBJECT TO CHANGE WITH DETAILED PLANNING. INDIVIDUAL PLANNING AREA ACREAGES CAN CHANGE UP TO 20%. AN ADMINISTRATIVE AMENDMENT WILL BE REQUIRED TO THE ODP. ADDITIONAL ANALYSIS MAY BE REQUIRED BY THE TOWN ENGINEER, TRAFFIC ENGINEER, BENNETT-WATKINS FIRE AND OTHER REQUIRED AGENCIES.

SCHEDULE OF DEVELOPMENT, PROPOSED PHASING AND VESTING

THE PROJECT WILL BE DEVELOPED IN PHASES BASED ON LOGICAL GROWTH, INFRASTRUCTURE EXTENSION AND AVAILABILITY OF UTILITY SERVICE OF THE SITE. AS ILLUSTRATED ON THE ZONE DISTRICT PLAN, SHEET 2 OF 7, THE SITE WILL HAVE TWO POINTS OF ACCESS ALONG KIOWA - BENNETT ROAD, WHICH WILL INFLUENCE THE PHASING OF THE PROJECT. ACCESS TO PLANNING AREA 1 AND 6 IS ALSO PROPOSED FROM OLD VICTORY ROAD.

SPECIAL FINANCIAL DISTRICTS

IT IS ANTICIPATED THAT THIS DEVELOPMENT WILL REQUIRE THE FORMATION OF METROPOLITAN DISTRICTS UTILIZED TO DESIGN, FINANCE AND IMPLEMENT INFRASTRUCTURE REQUIRED. THIS WILL INCLUDE WATER, SEWER, UTILITIES AND OTHER PUBLIC IMPROVEMENTS TO THE SITE.

GENERAL NOTES

AT THE TIME OF PLATTING, NOISE MITIGATION WILL BE ADDRESSED ALONG STATE HIGHWAY 79.

END OF SECTION

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 4 OF 7

DEVELOPMENT STANDARDS AND GUIDELINES

INTRODUCTION

FOLLOWING ARE DESCRIPTIONS OF THE 7 PLANNING AREAS INCLUDING: AN INTENT STATEMENT, DEVELOPMENT PROGRAM, LAND USES, STANDARDS & SETBACKS AND GUIDELINES.

HIGH DENSITY RESIDENTIAL DISTRICT (HDR) PLANNING AREA 3

INTENT

LOCATED WITHIN THE NORTH WEST QUADRANT OF THE PROPERTY AND ADJACENT TO KIOWA BENNETT RD, PLANNING AREA 3 IS INTENDED TO BE DEVELOPED INTO A HIGH DENSITY RESIDENTIAL NEIGHBORHOOD. THE HIGH DENSITY RESIDENTIAL DISTRICT IS INTENDED TO BE COMPOSED OF SINGLE FAMILY ATTACHED HOMES INCLUDING TOWNHOMES, CLUSTER DEVELOPMENT AND PATIO HOMES.

DEVELOPMENT PROGRAM

THE INTENT IS TO INCORPORATE A RESIDENTIAL PROGRAM THAT CONSISTS OF A VARIETY OF SINGLE FAMILY ATTACHED AND MULTI-FAMILY HOUSING TYPES. PLANNING AREA 3 WILL OFFER A VARIETY OF ARCHITECTURAL STYLES/MODELS THAT WILL ACCOMMODATE DIVERSE RESIDENTS/USERS. THIS NEIGHBORHOOD WILL BE PLANNED TO REINFORCE CONNECTIVITY TO THE ADJACENT PLANNING AREAS AND THE CENTRAL OPEN SPACE SYSTEM.

PERMITTED LAND USES - HDR DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE HDR SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - HDR DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX	
HIGH DENSITY RESIDENTIAL DISTRICT (HDR)	
STANDARDS	HDR
MAXIMUM HEIGHT (PRINCIPAL STRUCTURE)	45 FT
(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA	3,500 SF FOR SFD, N/A FOR OTHER MULTI-FAMILY RESIDENTIAL
MINIMUM LOT WIDTH	40 FT FOR SFD, NONE FOR OTHER MULTI-FAMILY RESIDENTIAL
MAXIMUM LOT COVERAGE (BUILDING & PARKING)	75%
MINIMUM UNOBSTRUCTED OPEN SPACE	20%
DENSITY - MAXIMUM	25 DU/AC
SETBACKS	
PARKING LOT SETBACKS	LANDSCAPE BUFFER (1)
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW	
FRONT SETBACK (PRINCIPAL STRUCTURE)	10 FT (3)
(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK (PRINCIPAL STRUCTURE)	5 FT (3)
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1) (3)
REAR SETBACK (PRINCIPAL STRUCTURE)	15 FT
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)

MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT (3)
	(ACCESSORY STRUCTURE)	10 FT (3)
REAR SETBACK	(PRINCIPAL STRUCTURE)	20 FT
	GARAGE SETBACK	N/A (2)
NOTES:		
(1) 0 FT SETBACK IF NO OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK BACK REQUIRED		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		
(3) 15' SETBACK WHERE UTILITY EASEMENTS ARE LOCATED ALONG THE FRONT AND SIDE OF LOTS ADJACENT TO A STREET.		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREA 3 SHOULD PROVIDE SIDEWALKS ALONG ALL STREETS AND PRIVATE STREETS, PARKING LOTS EXCLUDED.
- ACCESS SHALL BE PROVIDED AND MAINTAIN CONNECTED TO THE ADJACENT KIOWA-BENNETT ROAD.
- KIOWA CREEK PRESERVE IS PLANNED TO INCLUDE A SERIES OF INTEGRATED AND PEDESTRIAN-ORIENTED RESIDENTIAL PLANNING AREAS.
- ESTABLISH WALKABLE NEIGHBORHOODS WITH CONVENIENT ACCESS TO MIXED-USE CENTERS, EMPLOYMENT CENTERS, TRANSIT AND OPEN SPACE.
- ENCOURAGE A DIVERSITY OF HOUSING TYPES AND HUMAN-SCALE ARCHITECTURE THAT WILL ENHANCE SOCIAL INTERACTION AND PEDESTRIAN ACTIVITY.
- INTERCONNECTED STREETS AND TRAFFIC PATTERNS USING ESTABLISHED BLOCK PATTERNS THAT ENCOURAGE CONNECTIVITY FOR VEHICLES AND PEDESTRIANS.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LANDSCAPE REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LIGHTING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)

PLANNING AREAS 2, 4 AND 5

INTENT

PLANNING AREAS 2, 4 AND 5 ARE CENTRALLY LOCATED IN BETWEEN HIGH DENSITY RESIDENTIAL PLANNING AREAS AND THE CENTRAL OPEN SPACE SYSTEM. THE MEDIUM DENSITY RESIDENTIAL DISTRICT IS INTENDED TO BE COMPOSED OF SINGLE FAMILY ATTACHED HOMES INCLUDING DUPLEXES. THE NEIGHBORHOOD WILL INCLUDE PEDESTRIAN CONNECTIONS TO THE OPEN SPACE SYSTEM. POCKET PARKS WILL BE INTEGRATED WITHIN NEIGHBORHOODS TO SERVE AS FOCAL POINTS AND GATHERING AREAS.

DEVELOPMENT PROGRAM

THE DESIGN GOAL IS TO CREATE A WALKABLE NEIGHBORHOOD THAT OFFERS MULTIPLE TYPES OF HOUSING TO CREATE A DIVERSE COMMUNITY. THE MDR PLANNING AREAS WILL BE FOCUSED ON BUILDING COMMUNITY CHARACTER THROUGH THE USE OF WALKABLE STREETS, POCKET PARKS AND TRAIL SYSTEMS.

PERMITTED LAND USES - MDR DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MDR SPECIFIC USE TYPE.

LOT AND BUILDING STANDARDS - MDR DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX	
MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)	
STANDARDS	MDR
MAXIMUM HEIGHT (PRINCIPAL STRUCTURE)	35 FT
(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA	3,500 SF
MINIMUM LOT WIDTH	30 FT
MAXIMUM LOT COVERAGE (BUILDING & PARKING)	70%
DENSITY - MAXIMUM	8 DU/AC
SETBACKS	
GARAGE SETBACKS (GARAGE DOOR TO SIDEWALK)	20 FT
(SIDE LOADED GARAGES)	10 FT (3)
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW	
FRONT SETBACK (PRINCIPAL STRUCTURE)	10 FT (3)
(ACCESSORY STRUCTURE)	10 FT (3)
SIDE SETBACK (PRINCIPAL STRUCTURE)	5 FT (3)
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1) (3)
REAR SETBACK (PRINCIPAL STRUCTURE)	10 FT
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS	
FRONT SETBACK (PRINCIPAL STRUCTURE)	10 FT (3)
(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK (PRINCIPAL STRUCTURE)	5 FT (3)
(ACCESSORY STRUCTURE)	10 FT (3)
REAR SETBACK (PRINCIPAL STRUCTURE)	20 FT
GARAGE SETBACK	N/A (2)
NOTES:	
(1) 0 FT SETBACK IF NO OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK BACK REQUIRED	
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS	
(3) 15' SETBACK WHERE UTILITY EASEMENTS ARE LOCATED ALONG THE FRONT AND SIDE OF LOTS ADJACENT TO A STREET	

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

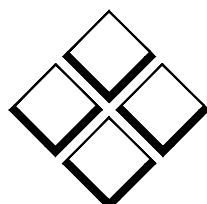
- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREAS 2,4,5 ,AND 8 SHOULD PROVIDE SIDEWALKS THROUGHOUT THE NEIGHBORHOOD AND ON ALL STREETS AND PRIVATE STREETS.
- PEDESTRIAN ACCESS SHOULD CONNECT TO ADJACENT PLANNING AREA DISTRICTS AND THE OPEN SPACE SYSTEM.
- BUILDING DESIGN AND ORIENTATION SHOULD BE PLANNED TO INTEGRATE WITH THE NATURAL SITE CHARACTERISTICS AND TO MAXIMIZE SOLAR EXPOSURE.
- MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- SINGLE FAMILY DETACHED (SFD) FRONT LOADED GARAGES REQUIRE A MINIMUM 18' DRIVEWAY FROM THE GARAGE FACE TO THE BACK OF WALK. SFD FRONT LOADED GARAGES WITH NO WALK REQUIRE A MINIMUM 20' DRIVEWAY FROM THE GARAGE FACE TO THE ASPHALT. SFD FRONT LOADED GARAGES LOCATED ON CORNER LOTS SHALL BE LOCATED 20' FROM POINT OF CURB RETURN

MDR CONT. ON SHEET 5 OF 7

DEVELOPMENT STANDARDS AND GUIDELINES

High Density Residential (HDR)
Medium Density Residential (MDR)

Scale: N/A
Date: MARCH 1, 2022
Revision Date: JUNE 03, 2022



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- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:
REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LANDSCAPE REQUIREMENTS:
REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LIGHTING REQUIREMENTS:
REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

END OF SECTION

MIXED USE DISTRICT (MU) PLANNING AREA 1

INTENT
THIS MIXED USE ZONE DISTRICT IS LOCATED WITHIN THE SOUTHWEST QUADRANT OF THE PROPERTY AT THE CORNER OF KIOWA-BENNETT ROAD AND OLD VICTORY ROAD. IT IS A VISIBLE SITE WITH CONVENIENT ACCESS. THIS MIXED-USE DISTRICT IS PLANNED TO ACCOMODATE COMMERCIAL, OFFICE, AND RETAIL USERS TO THE SITE. PREDOMINANTLY A COMMERCIAL FOCUS, THIS DISTRICT REQUIRES AT LEAST 50% OF ITS AREA TO BE USED FOR RETAIL, CIVIC, OFFICE OR OTHER COMMERCIAL USES. THE REMAINDER OF THE AREA MAY BE USED FOR RESIDENTIAL.

DEVELOPMENT PROGRAM
THE INTENT IS CREATE A VIBRANT MIXED USE CENTER THAT REINFORCES THE WALKABILITY AND CONNECTIVITY TO ADJACENT RESIDENTIAL NEIGHBORHOODS. THIS DISTRICT WILL BE VISUALLY AND PHYSICALLY CONNECTED UTILIZING PEDESTRIAN FRIENDLY WALKS AND STREETS. THE INTENT IS TO CREATE A VIBRANT MIXED USE CENTER THAT WILL SERVE AS A COMMUNITY AND REGIONAL FOCAL POINT. SITE AND ARCHITECTURAL COMPONENTS SHOULD BE CONFIGURED TO REINFORCE THE PUBLIC REALM. BUILDINGS SHALL BE ORIENTED TO ENCOURAGE PEDESTRIAN ACTIVITY AND SCREEN SERVICES. PLAZAS AND POCKET PARKS SHOULD BE INCORPORATED TO SERVE AS GATHERING AREAS. ACCESS AND PARKING SHOULD BE CONFIGURED TO PROVIDE EFFICIENCY AND SAFETY FOR MOTORISTS AND PEDESTRIANS.

RESIDENTIAL AND COMMERCIAL MIXED-USE
IF RESIDENTIAL LAND USES ARE DEVELOPED IN THE MIXED-USE PLANNING AREA, RETAIL, COMMERCIAL AND SERVICES WILL BE LIMITED TO PRINCIPAL USES THAT ARE COMPATIBLE WITH THE RESIDENTIAL NEIGHBORHOOD. IF RESIDENTIAL USES ARE NOT DEVELOPED IN THE MIXED-USE PLANNING AREA, A LIST OF ADDITIONAL PERMITTED USES AND DESIGN STANDARDS FOR NON-RESIDENTIAL USES APPLY.

COMMERCIAL LAND USES IN SUPPORT OF RESIDENTIAL DEVELOPMENT
WHERE COMMERCIAL DEVELOPMENT AND RESIDENTIAL USES ARE COMBINED, THE COMMERCIAL AND RESIDENTIAL USES MAY BE LOCATED IN THE SAME BUILDING OR ON ADJACENT LOTS. HORIZONTAL AND VERTICAL MIXED-USE IS PERMITTED. THE INTENT FOR THIS MIXED-USE DISTRICT IS TO COMBINE THE SUPPLY AND DEMANDS OF COMMERCIAL SERVICES, GOODS AND EMPLOYMENT WITH THE RESIDENTIAL SUPPLY AND DEMANDS OF THE COMMUNITY. BY CREATING OPPORTUNITIES FOR SERVICES, EMPLOYMENT AND ACTIVITY, THE RESIDENTIAL COMMUNITY WILL THRIVE OFF OF THE COMMERCIAL DEVELOPMENT AND THE COMMERCIAL DEVELOPMENT WILL ENCOURAGE A SUSTAINABLE RESIDENTIAL NEIGHBORHOOD BOTH PHYSICALLY AND FUNCTIONALLY.



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KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 5 OF 7

PERMITTED LAND USES - MU DISTRICT
THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MU SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - MU DISTRICT
THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

MIXED-USE DEVELOPMENT STANDARDS MATRIX		
MIXED-USE DISTRICT (MU)		
STANDARDS - COMMERICAL & RETAIL USES		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	50 FT
	(ACCESSORY STRUCTURE)	30 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
MAXIMUM FLOOR AREA RATIO - COMMERICAL		.7:1
SETBACKS - COMMERICAL & RETAIL		
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	15 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	5 FT (3)
REAR SETBACK	(PRINCIPAL STRUCTURE)	15 FT
	(ACCESSORY STRUCTURE)	5 FT
STANDARDS - RESIDENTIAL		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	45 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
DENSITY - MAXIMUM		25 DU/ AC
SETBACKS - RESIDENTIAL		MU
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
GARAGE		N/A (2) (3)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	10 FT (3)
SIDE SETBACK	(PRINCIPAL STRUCTURE)	0 FT (3)
	(ACCESSORY STRUCTURE)	5 FT (3)
REAR SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	5 FT
NOTES:		
(1) REFER TO TOWN OF BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS, FOR REQUIREMENTS AND DESIGN STANDARDS.		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		
(3) 15' SETBACK WHERE UTILITY EASEMENTS ARE LOCATED ALONG THE FRONT AND SIDE OF LOTS ADJACENT TO A STREET		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES
SITE PLANNING/ CONNECTIVITY:

- RETAIL, COMMERCIAL AND RESIDENTIAL USES SHALL PROVIDE PEDESTRIAN CONNECTIONS TO ALLOW VISITORS AND USERS TO CIRCULATE BETWEEN THE VARIOUS DEVELOPMENTS.
- DEVELOP BUILDING SITE LANDSCAPING THAT REINFORCES CONNECTIONS TO BUILDING ENTRANCES, COMMUNITY AMENITIES AND GREEN SPACE AREAS.
- ALL BUILDINGS WILL BE ARTICULATED ON ALL FOUR SIDES WITH VARIATIONS IN MATERIALS, CREATIVE ENTRY TREATMENTS AND FACADE COMPONENTS THAT HELP ESTABLISH BUILDING SCALE AND VARYING COMPOSITION.
- SHARED PARKING IS ENCOURAGED TO MAXIMIZE DENSITY AND USERS - SEE PARKING REQUIREMENTS BELOW.
- MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED

- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:
REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LANDSCAPE REQUIREMENTS:
REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LIGHTING REQUIREMENTS:
REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

END OF SECTION

OPEN SPACE AND TRAILS (OS) PLANNING AREA 7

INTENT
PLANNING AREA 7 IS INDENTED TO PROVIDE A LARGE CONTIGUOUS OPEN SPACE AREA THAT WILL CONSIST OF EXISTING NATURAL DRAINAGE CORRIDORS AND THE KIOWA CREEK RIPARIAN AREA. THIS AREA WILL BE USED FOR PRESERVATION, PROVIDE PASSIVE AND ACTIVE RECREATION. PEDESTRIAN TRAIL CONNECTIONS, VISUAL AMENITIES THAT BENEFIT THE COMMUNITY WILL BE INCORPORATED IN THIS DISTRICT.

DEVELOPMENT PROGRAM
KIOWA CREEK PRESERVE INCORPORATES A PLANNING APPROACH THAT PRESERVES THE NATURAL TOPOGRAPHY AND SIGNIFICANT GEOGRAPHICAL FEATURES OF THE LAND WITHIN THE SITE. CLUSTERING OF PLANNING AREAS IS UTILIZED TO PRESERVE APPROXIMATELY A 128 ACRES OF OPEN SPACE.

PARK, OPEN SPACE AND TRAIL CONNECTIONS ARE CREATED TO ENHANCE THE RESIDENTIAL DISTRICTS IN KIOWA CREEK PRESERVE PLANNED DEVELOPMENT. THE PROJECT SHALL BE REINFORCED THROUGH VARIOUS WALKABLE TRAIL CONNECTIONS TO ALL PLANNING AREAS.

PERMITTED LAND USES - OS DISTRICT
THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE OS SPECIFIC USE TYPE COLUMN.

TRAIL CONNECTIONS
ALONG WITH THE OPEN SPACE PLANNING AREA KIOWA CREEK PRESERVE WILL INCLUDE A HIERARCHY OF TRAILS. COMMUNITY CONNECTIVITY WITHIN KIOWA CREEK PRESERVE WILL INCLUDE CREATING A WELL CONNECTED SYSTEM OF PEDESTRIAN-FRIENDLY TRAILS. THIS SYSTEM WILL INCLUDE REGIONAL, COMMUNITY AND NEIGHBORHOOD TRAILS. THIS OPEN SPACE AREA SHALL SERVE AS AN AMENITY FOR THE SURROUNDING NEIGHBORHOODS WITHIN AND ADJACENT TO THIS PLANNED DEVELOPMENT. CONNECTIONS TO THIS PRESERVATION AREA WILL BE COORDINATED WITH THE TOWN OF BENNETT.

OS CONT. ON SHEET 6 OF 7

DEVELOPMENT STANDARDS AND GUIDELINES

Medium Density Residential (MDR),
Mixed Use District (MU)
Open Space and Trails (OS)

Scale: N/A
Date: MARCH 1, 2022
Revision Date: JUNE 03, 2022

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 6 OF 7

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:
SETBACKS AND DEVELOPMENT CRITERIA WILL BE FURTHER DEFINED AND DETERMINED AT THE TIME OF FINAL PLAT.

- NO FENCING OR PERMANENT STRUCTURES SHALL BE PERMITTED WITHIN THE 100 YEAR FLOODPLAIN ZONE.
- AGRICULTURAL BUILDINGS SHALL HAVE THE FOLLOWING MAXIMUM HEIGHTS:
BARNs 50 FEET
SILOS 75 FEET

AGRICULTURE - EDUCATION (AE)

PLANNING AREA 6

INTENT

THE DESIGN INTENT OF THE AE DISTRICT IS TO DESIGNATE AN AREA TO ACCOMMODATE LAND USES RELATED TO AGRICULTURE, EDUCATION, NATURAL RESOURCES AND LAND MANAGEMENT. EDUCATION IS ENCOURAGED TO INCLUDE HANDS ON LEARNING EXPERIENCE OF PROGRAMS SUCH AS CROP CULTIVATION, LIVESTOCK MANAGEMENT AND HORTICULTURE. PLANNING AREA 6 WILL INCLUDE TRAILS, PARKS AND OPEN SPACE WHICH WILL BE ACCESSIBLE AND CONNECTED TO THE CENTRAL TRAIL SYSTEM. THE FLUID CONNECTION/ AWARENESS TO THE AGRICULTURE - EDUCATION DISTRICT IS VITAL FOR THE OVERALL VISION OF KIOWA CREEK PRESERVE.

DEVELOPMENT PROGRAM

CREATE A VARIETY OF DEVELOPMENT PROGRAMMING INCLUDING BUT NOT LIMITED TO, GREENHOUSES, INDOOR ARENAS, BARNS AND EVENT SPACES. PROGRAMS DIRECTED TO PROMOTE EDUCATION RELATING TO SUSTAINABILITY, LAND MANAGEMENT AND PRESERVATION. THIS PLANNING AREA IS ENCOURAGED TO BE USED FOR GROUPS SUCH AS LOCAL FFA CHAPTERS AS WELL AS GENERAL YOUTH EDUCATION SUCH AS 4-H ORGANIZATIONS. LAND USES AND FACILITIES WILL BE INCORPORATED WITHIN THIS DISTRICT TO ACHIEVE THE NEEDS FOR INDIVIDUAL AND GROUPS TO EXPERIENCE HANDS ON LEARNING AND EDUCATION. SAFE, FUNCTIONAL, AESTHETICALLY CREATIVE AND WELL ORGANIZED DESIGN WILL MAKE THIS PLANNING AREA INTO A FOCAL POINT WITHIN KIOWA CREEK PRESERVE AND REGION.

PERMITTED LAND USES - AE DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE AE SPECIFIC USE TYPE COLUMN.

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING:
SETBACKS AND DEVELOPMENT CRITERIA WILL BE FURTHER DEFINED AND DETERMINED DURING THE SITE PLAN REVIEW AND PLAT PROCESS.

- AGRICULTURAL BUILDINGS SHALL HAVE THE FOLLOWING MAXIMUM HEIGHTS:
BARNs 50 FEET
SILOS 75 FEET

END OF SECTION

DEVELOPMENT STANDARDS AND GUIDELINES

Open Space and Trails (OS)
Agriculture - Education (AE)

Scale: N/A
Date: MARCH 1, 2022
Revision Date: JUNE 03, 2022

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 7 OF 7

LAND USE CLASSIFICATION	SPECIFIC USE TYPE						
AGRICULTURAL USES		MU	MDR	HDR	F	OS	AE
Agriculture or Ranch Use	Agriculture / Crop Cultivation	-	-	-	X	X	X
	Ranching (By Special Review)	-	-	-	-	X	X
	Agriculture as an Interim Use	X	X	X	X	X	X
	Community Gardens	X	X	X	X	X	X
Accessory Structures	Accessory Structures for Agriculture/ Ranching Operations	-	X	-	-	X	X
Animals / Livestock	Farm or Ranch Animal Center	-	-	-	-	X	X
	Rodeos (Subject to any local event permit requirements)	-	-	-	-	X	X
	Commercial Stables / Private Stables - Less than 30,000 Sq Ft	-	-	-	-	X	X
	Livestock Feed Lots	-	-	-	-	-	-
Horticulture and Nurseries	Greenhouse/nursery/tree production (w ith no outdoor storage)	-	-	-	-	X	X
	Outdoor Nursery / Tree Production	-	-	-	X	X	X
	Greenhouse/nursery/tree production (w ith outdoor storage)	-	-	-	-	-	X
Markets	Farmers Markets / Seasonal Farmers Markets	X	-	-	-	X	X

GENERAL LAND USE GUIDELINES NOTES:

1. NO STRUCTURES OR FENCES SHALL BE CONSTRUCTED WITHIN THE 100 YEAR FLOODPLAIN. USES WITHIN THE F-ZONE MUST BE EVALUATED BY THE TOWN ADMINISTRATOR FOR FINAL DETERMINATION ON WHETHER THE USE IS ALLOWABLE.
2. OUTDOOR SKATEBOARD PARKS CAN BE CONSTRUCTED IN CONJUNCTION WITH PUBLIC PARKS.
3. ONLY PUBLIC FACILITIES SHALL BE CONSTRUCTED ON DEDICATED PUBLIC OPEN SPACE.
4. AGRICULTURE USES SHALL BE PERMITTED AS AN INTERIM USE FOR ALL PLANNING AREAS UNTIL CONSTRUCTION, OR OVERLOT GRADING IS IMPLEMENTED.

LEGEND

- X PRINCIPAL PERMITTED USE
- A ACCESSORY USE
- EXCLUDED USE

LAND USE

MU - MIXED USE
MDR- MEDIUM DENSITY RESIDENTIAL
HDR - HIGH DENSITY RESIDENTIAL
F - FLOOD PLAIN
OS - OPEN SPACE
AE - AGRICULTURE - EDUCATION

MIXED USE (MU): PREDOMINANTLY A COMMERCIAL FOCUS. THIS DISTRICT REQUIRES AT LEAST 50% OF ITS AREA TO BE USED FOR RETAIL, CIVIC, OFFICE OR OTHER NON-RESIDENTIAL USES. THE REMAINDER OF THE AREA MAY BE USED FOR RESIDENTIAL. OPEN SPACE PLAZAS, COURTYARDS AND OTHER PEDESTRIAN ENHANCING ELEMENTS SHALL BE ENCOURAGED. MAXIMUM 0.7 FAR & MAXIMUM 164,000 SQ. FT. COMMERCIAL SPACE.

MEDIUM DENSITY RESIDENTIAL (MDR): THE INTENT IS TO ALLOW FOR SINGLE FAMILY DETACHED HOMES THAT CAN HAVE A MINIMUM LOT SIZE OF 3,500 SQ. FT.

HIGH DENSITY RESIDENTIAL (HDR): THE INTENT IS TO ALLOW FOR SINGLE FAMILY, SINGLE FAMILY ATTACHED HOMES AND MULTI-FAMILY UNITS.

FLOOD PLAIN (F): THE INTENT IS TO ACCOMMODATE AREAS FOR THE CONVEYANCE AND STORAGE OF STORMWATER. FLOOD PLAIN IS DEFINED AS THE FLOOD OF 100 YEAR FREQUENCY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

OPEN SPACE (OS): THE INTENT IS TO PROVIDE FOR PASSIVE AND ACTIVE RECREATION AND VISUAL AMENITIES FOR THE BENEFIT OF THE COMMUNITY.

AGRICULTURE - EDUCATION (AE): THE INTENT IS TO PRESERVE THIS LAND AND TO CREATE SUSTAINABLE AND ENVIRONMENTALLY PROTECTIVE LAND USES AND DEVELOPMENT PROGRAMMING THAT ENCOURAGES THE TEACHING OF AGRICULTURE, NATURAL RESOURCES AND LAND MANAGEMENT.

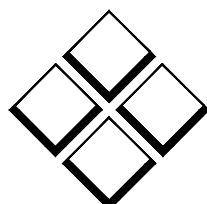
COMMERCIAL USES		MU	MDR	HDR	F	OS	AE
Animal Services	Doggie day care centers, animal boarding and training (indoor)	X	-	-	-	-	X
	Veterinary offices or clinics	X	-	-	-	-	-
Automobile Parking	Automobile parking lot	A	A	A	-	A	-
	Private park & ride lot, car pool lot or equivalent	X	-	-	-	X	X
Building Materials & Services (Retail)	All other similar uses (plumbing, electrical, lumber and building equipment-without outdoor storage)	X	-	-	-	-	-
	Landscape equipment, hardscape materials (without outdoor storage)	X	-	-	-	-	X
Eating and Drinking Establishments	Bar, tavern	X	-	-	-	-	-
	Catering services	X	-	-	-	-	-
	Restaurant with or without drive-thru / up	X	-	-	-	-	-
Office	Administrative and or Executive Offices	X	-	-	-	-	-
	Business or professional (including medical / dental office / clinics)	X	-	-	-	-	-
	Consulting Services Offices	X	-	-	-	-	-
	Courier services	X	-	-	-	-	-
	Corporate Headquarters / Offices	X	-	-	-	-	-
	Financial Institutions	X	-	-	-	-	-
	General Office / Temporary Offices	X	-	-	-	-	-
	Home Occupations	X	-	-	-	-	-
	Home / Land Sales Office	X	X	X	-	-	-
	Investment and Insurance Offices	X	-	-	-	-	-
	Massage therapy office / clinics	X	-	-	-	-	-
	Personal Services	X	-	-	-	-	-
Recreation / Amusement Facilities	Amusement Parks	-	-	-	-	-	-
	Small Theaters/ Performance centers (Outdoor Performances)	X	-	-	-	X	X
	Bowling, Billiards, Movie theaters and Similar uses	X	-	-	-	-	-
	Drive-in Theater	-	-	-	-	-	-
	Health clubs	X	-	-	-	-	-
	Parks	X	X	X	X	X	X
	Public and Private Golf Courses and Related Facilities	X	-	-	-	X	-
	Outdoor recreation	X	X	X	X	X	X
	Outdoor Skateboard Parks	X	-	-	-	X	-
	Community / Neighborhood Recreation Center	X	X	X	-	X	-
	Auto Sales and Repair	X	-	-	-	-	-
	Convenience store / grocery store (includig fuel sales)	X	-	-	-	-	-
Retail	Department Store	X	-	-	-	-	-
	Furniture / Appliance Store	X	-	-	-	-	-
	Grocery store (greater than 5,000 sq. ft.)	X	-	-	-	-	-
	Ground floor retail with office or residential on upper levels	X	-	-	-	-	-
	Retail (less than 40,000 sq.ft.)	X	-	-	-	-	-
	Retail (greater than 40,000 sq.ft. but less than 80,000 sq.ft.)	X	-	-	-	-	-
	Retail (greater than 80,000 sq.ft.)	X	-	-	-	-	-
	Liquor Sales	X	-	-	-	-	-
	Neighborhood Retail (e.g., delicatessen, retail bakery, specialty food market, coffee shop)	X	-	-	-	-	X
	Furniture or major household appliance repair	-	-	-	-	-	-
	Machinery sales, excluding truck trailers, heavy equipment, and farm machinery	X	-	-	-	-	X
	Repair Services (Not including Vehicles)	-	-	-	-	-	-
Telecommunications Facilities, Antennas, and Cell Towers	Refer to the Bennett Municipal Code	-	-	-	-	X	-
		X	-	-	-	X	-
		X	-	-	-	-	-
Vehicle / Equipment Sales and Services	Automobile, RV's, trailer and camper rentals	-	-	-	-	-	-
	Automobile w ashing facility	X	-	-	-	-	-
	Limited equipment rental (U-Haul type business)	X	-	-	-	-	-
	Major vehicle/equipment repair (includes auto body repair, paint shops, and incidental sales of parts)	-	-	-	-	-	-
	Motor vehicle dealer / sales, new and used RV's, trailers, and campers)	X	-	-	-	-	-
	Automobile fuel service stations	X	-	-	-	-	-
Visitor Accommodations	Hotel or motel lodging establishments	X	-	-	-	-	X
	Campground	-	-	-	X	X	X

INDUSTRIAL USES		MU	MDR	HDR	F	OS	AE
Outdoor Storage	Outdoor parking and storage of vehicles, except self-storage/mini storage	-	-	-	-	-	-
	Above ground oil and gas operations storage tanks	X	X	X	-	X	-
Oil and Gas	Oil and gas operations	X	X	X	-	X	-
PUBLIC, INSTITUTIONAL & CIVIC USES		MU	MDR	HDR	F	OS	AE
Ambulance Service	Garage and office for ambulance service	X	X	X	-	-	-
Clubs and Lodges	Private lodge or club (excluding guns)	X	-	-	-	-	X
Community Services	Events center less than 15,000 sq. ft.	X	-	-	-	X	X
	Events center greater than 15,000 sq. ft.	-	-	-	-	-	X
Day Care Facilities, Adult or Child	Child care center	X	-	-	-	-	-
	Adult day care center	X	-	-	-	-	-
Fire	Fire Stations	X	X	X	-	-	-
Hospitals	Hospital	X	-	-	-	-	-
	Outpatient surgical centers	X	-	-	-	-	-
Office and Recreation	Public administrative office or service building	X	-	-	-	X	-
	Public park or recreational facilities	X	X	X	-	X	X
Religious Institutions	Religious institutions and facilities	X	-	-	-	-	-
Educational Facilities	Public Schools	X	X	X	-	X	X
	Private business, trade, and vocation schools	X	-	-	-	-	X
Transportation Facilities	Public Transportation Terminals / Parking	X	-	-	-	-	X
	Private automobile parking lots or parking garages as a principal use	X	-	-	-	-	-
Utilities	Reservoirs or Aquifers recharge areas	X	X	X	X	X	X
	Electrical Substations	X	X	X	-	X	X
	Public Utility Office	X	-	-	-	-	-
	Solar Fields	X	X	X	-	X	X
	Wastewater Treatment Plants	X	X	X	-	X	X
	Water Treatment / Storage	X	X	X	-	X	-
	Water Storage (Reservoirs)	X	X	X	X	X	X
	Water Wells	X	X	X	X	X	X
	Wind Energy Conversion Systems (Windmills)	X	X	X	-	X	X
RESIDENTIAL USES		MU	MDR	HDR	F	OS	AE
Single Family Attached	Single Family Attached including townhomes, cluster development, and patio homes	X	-	X	-	-	-
Single Family Detached	Single Family Attached Duplexes	X	X	X	-	-	-
	Single Family Detached lots less than 0.5 acres	-	X	X	-	-	-
	Single Family Detached lots greater than 0.5 acres	-	X	-	-	-	-
Multi - Family	Multi-family including rental and for sale units	X	-	X	-	-	-
	Live / Work Units	X	-	X	-	-	-
Senior Housing	Primary residence for persons 55 years of age or older	X	X	X	-	-	-
	Recreation, medical, religious, laundry and / or caretaker facilities, and other building(s) and use(s) customarily appurtenant to the permitted use	-	X	X	-	-	-
Mobile Home	Mobile Home for Residential Purposes	-	-	-	-	-	-
	Supervisory, management and / or other facilities for the operation and/or maintenance of the manufactured home/mobile home park.	-	-	-	-	-	-
Group Homes	Group homes consistent with the Bennett Municipal Code and the CRS	X	X	X	-	-	-

DEVELOPMENT STANDARDS AND GUIDELINES

Land Use Matrix Tables

Scale: N/A
Date: MARCH 1, 2022
Revision Date: JUNE 03, 2022



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Kiowa Creek Comprehensive Plan Principles Commentary

The Comprehensive Plan includes twelve principles that provide guidance to elected and appointed officials, residents, business and land owners, project applicants, community partners and stakeholders concerning growth and future land uses. They are outlined below.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.	Y	The proposed zoning includes access to the existing vehicular transportation network. Internal and external pedestrian and bicycle connections can be established at the time of subdivision plat. In addition, preservation of the Kiowa Creek corridor will allow for eventual trail connections, not just for the subdivision, but the community as well.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.	Y	The ODP proposes a mix of residential densities, along with non-residential commercial support uses. In addition, the ODP includes the preservation of open space and accommodates an agricultural education element in Planning Area 6.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.	NA	This area is not part of the Town Center.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.	Y	The residential sub-zone offers a mix of unit types and densities, accommodating a diverse housing stock.
5. Commit to being good partners with other community agencies and organizations through collaboration, leveraging funding and planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.	Y	The Town of Bennett and the future developers and builders will have the opportunity to collaborate with all service providers. Increased assessed valuation will result in additional property tax revenues to the various special districts.
6. Foster an attractive community that retains residents in all stages of life through attainable housing, continuing education and a robust job market.	Y	With the mixed-use zoning proposed, working with future homebuilders and commercial developers, there will be an opportunity to promote attainable housing. In addition, the agricultural education element of the plan holds promise for great continuing education opportunities.
7. Preserve and protect natural open space and other areas that have environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.	Y	Setting aside 128 acres of the Kiowa Creek open space, park and floodplain area is one of the most significant open space preservation steps in the Town of Bennett's history. The flood hazard area will also be managed by the Town pursuant to the Municipal Code.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.	Y	The zoning accommodates non-residential uses, which may include community gardens, farmers' markets and traditional grocery stores. The 128 acres of open space, as well as local parks and trails, offer opportunities for outdoor physical activities.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.	Y	The zoning contemplates the management of the floodplain, pursuant to municipal code, which will minimize flood damage. The developer will have the opportunity to work with Bennett-Watkins Fire on the wildland-urban interface and minimize the threat of wildfires.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.	Y	Setting aside 128 acres of the Kiowa Creek open space, park and floodplain area provides a buffer between the project and the lower-intensity rural character areas to the north, south and east. The accommodation of Ag-Education uses in the ODP will also assist in the blending into the rural setting.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.	Y	The Kiowa Creek Preserve property is contiguous to existing Town of Bennett boundaries, with infrastructure and services nearby, consistent with the Town's Capital Asset Inventory Master Plan (CAIMP).
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.	Y	The annexation agreement, along with provisions of the ODP and the Bennett Municipal Code, decisions can be predictable and assure equitable cost-sharing.



Traffic Impact Study

Kiowa Creek Preserve Adams County, Colorado

Prepared for:

Kiowa Creek Preserve

Kimley»Horn

Kiowa Creek Preserve

Bennett, Colorado

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June 2022

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1.0 EXECUTIVE SUMMARY

This report has been prepared to document the results of a Traffic Study for the Kiowa Creek Preserve project proposed to be located along the north side of Old Victory Road, east of Kiowa-Bennett Road (SH-79) in Adams County, Colorado. It is anticipated that the site will be annexed into the Town of Bennett. For purposes of this study, Kiowa Creek Preserve was evaluated to include 651 single family housing units, 381 multifamily housing units, and approximately 164,000 square feet of retail uses. It is expected that Kiowa Creek Preserve will be completed within the next ten years; therefore, analysis was conducted for the 2030 buildout horizon and 2045 twenty-year long-term horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the Town of Bennett requested scope:

- (#1) 38th Avenue and Kiowa-Bennett Road (SH-79)
- (#2) Old Victory Road and Kiowa-Bennett Road (SH-79)
- (#3) Palmer Avenue and Adams Street/Kiowa Bennett Road (SH-79)
- (#4) Colfax Avenue (SH-36) and 1st Street (SH-79)
- (#5) Colfax Avenue (SH-36) and Adams Street
- (#6) Marketplace Drive and 1st Street (SH-79)
- (#7) I-70 Westbound Ramp and 1st Street (SH-79)
- (#8) I-70 Eastbound Ramp and 1st Street (SH-79)

In addition, the proposed full movement public access street intersection along Kiowa-Bennett Road (SH-79) with Road A, that will align with the future access to Bennett Ranch to the west, the proposed mixed-use access along Old Victory Road, and a proposed right-in/right-out access along Kiowa-Bennett Road (SH-79) were evaluated. Five full movement accesses along the internal proposed Road A were also included in this study. Likewise, the future roadway connection to the south as the extension of Kiowa-Bennett Road to Colfax Avenue and proposed roundabout intersection (#16) was included for evaluation in this traffic study.

Regional access to Kiowa Creek Preserve will be provided by Interstate 70 (I-70) and State Highway 36 (SH-36). Primary access will be provided by 1st Street (SH-79) and Kiowa-Bennet Road (SH-79). Direct access will be provided by proposed full movement access intersections of Road A along Kiowa-Bennett Road (SH-79), a full movement access along Old Victory Road, and a right-in/right-out access along Kiowa-Bennett Road (SH-79).

Kiowa Creek Preserve is expected to generate approximately 18,318 weekday daily trips, with 782 of these trips occurring during the morning peak hour and 1,570 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes Kiowa Creek Preserve will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

2030 Recommendations:

- To meet Colorado Department of Transportation (CDOT) standards, it is recommended that a northbound right turn lane of 380 feet plus a 220-foot taper and a southbound left turn lane of 500 feet plus a 300-foot taper be constructed at the intersection of (#1) 38th Avenue and Kiowa-Bennett Road (SH-79). Additionally, with completion of the adjacent Bennett Farms project, a 345-foot with 160-foot taper northbound left turn lane and an eastbound right turn to southbound acceleration lane is planned to be constructed at this intersection.
- It is understood that the intersection of (#2) Old Victory Road and Kiowa-Bennett Road (SH-79) is planned to be improved to a single-lane roundabout with a new south leg connecting Kiowa-Bennet Road (SH-79) to Colfax Avenue (SH-36) sometime in the near future to better align the three legs of the existing intersection. The eastbound and southbound approaches will have one shared lane for all movements whereas the northbound and westbound approaches will consist of a shared through/left turn lane and a 150-foot right turn lane. The connection of (#16) Colfax Avenue (SH-36) and Bennett Road (SH-79) is also planned to be a single-lane roundabout with single lane approaches. However, this roundabout is recommended to have two eastbound, westbound, and southbound approach lanes, as such

designated with a 300-foot eastbound left turn lane, a 150-foot westbound right turn lane, and a 150-foot southbound right turn lane with the roundabout construction.

- A traffic signal is anticipated to be warranted and needed at the (#4) Colfax Avenue (SH-36) and 1st Street (SH-79) intersection with 2030 background traffic volumes prior to the addition of Kiowa Creek Preserve traffic. Therefore, it is believed that this intersection will be signalized by other developments occurring within the Town of Bennett. When this intersection is signalized, it is also recommended that 450-foot westbound dual left turn lanes be constructed and designated. The existing two southbound receiving lanes along 1st Street will accommodate the construction of westbound dual left turn lanes; however, it is recommended that the forced southbound right turn lane at the Centennial Drive and 1st Street (SH-79) intersection to the south be restriped to a southbound shared through/right turn lane to continue the two southbound through lanes as long as possible in the existing roadway so that better traffic volume balancing occurs in the westbound dual left turn lanes.
- A traffic signal is anticipated to be warranted and needed at the intersection of (#5) Colfax Avenue (SH-36) and Adams Street with 2030 background traffic volumes, prior to the addition of Kiowa Creek Preserve project traffic. Therefore, it is recommended that this intersection be considered for future signalization. When this intersection is signalized, it is also recommended that a 375-foot eastbound left turn lane, a 150-foot westbound left turn lane, and a 75-foot southbound left turn lane all be constructed and designated.
- A traffic signal is currently being constructed at the intersection of (#6) Marketplace Drive and 1st Street (SH-79) and will therefore be implemented by 2030.
- With the addition of project traffic in 2030, a traffic signal is anticipated to be warranted and needed at the intersection of (#7) I-70 Westbound Ramp and 1st Street (SH-79). Therefore, it is recommended that this intersection be considered for signalization by 2030.
- With the addition of project traffic in 2030, a traffic signal is anticipated to be constructed by others at the intersection of (#8) I-70 Eastbound Ramp and 1st Street (SH-79) by 2030.

- A new public roadway (Road A) is proposed to access along Kiowa-Bennett Road (SH-79) as the east leg of 38th Avenue and as the east leg of a new intersection to be aligned with the Bennett Ranch access to the west. It is recommended that a R1-1 “STOP” sign be installed on the exiting westbound approach of Road A exiting the development at the southern intersection location. It is understood that Bennett Ranch is constructing a 355-foot with 160-foot taper northbound left turn lane at the Road A and Kiowa-Bennett Road (SH-79) intersection. A 500 foot with 300-foot taper southbound left turn lane is recommended to be designated within the shadow of the northbound left turn lane, as the northbound and southbound through lanes will already be transitioned around the area. The Kiowa Creek Preserve project is recommended to construct a 380-foot with 220-foot taper northbound right turn lane to meet CDOT standards.
- Five accesses are proposed along Road A internal to the site. Road A is proposed to be constructed as a Collector. It is recommended that single lane approaches be provided at all accesses along Road A. The exiting approaches out of the development to Road A should operate with stop-control with R1-1 “STOP” signs installed.
- An access to the mixed-use portion of the site is proposed to be located along Old Victory Road. It is recommended that two through lanes be provided eastbound and westbound, and that a 150-foot eastbound left turn lane be designated at this intersection. The southbound access approach exiting the development is recommended to operate with stop-control with a R1-1 “STOP” sign installed.
- An additional right-in/right-out is proposed along Kiowa-Bennett Road (SH-79). It is recommended that a 380-foot with 220-foot taper northbound right turn lane be constructed to meet CDOT SHAC standards. The westbound right turn access approach exiting the development is recommended to operate with stop-control with a R1-1 “STOP” sign installed. To restrict movements to right-turns only it is recommended that a R3-2 No Left Turn sign be installed under the “STOP” sign.
- CDOT Access Permits will be needed for the southern Road A access intersection along Kiowa-Bennett Road (SH-79) and the right-in/right-out access along Kiowa-Bennett Road (SH-79). Likewise, the threshold for requiring an access permit along roadways occurs when

project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the east leg of the proposed Road A access to align with 38th Avenue along SH-79 (Kiowa-Bennett Road) is anticipated to increase traffic volumes by more than 20 percent over existing. Therefore, access permits are anticipated to be needed at all three access intersections along Kiowa-Bennett Road (SH-79) as development occurs.

2045 Recommendations:

- At the (#2) Old Victory Road and Kiowa-Bennett Road (SH-79) roundabout, 150-foot eastbound and southbound right turn lanes may be needed.
- The eastbound left turn lane at the intersection of (#5) Colfax Avenue (SH-36) and Adams Street may need to be further extended to 425 feet if future traffic volume projections are realized.
- If future traffic volumes are realized, the intersection of the (#7) I-70 Westbound Ramp and 1st Street (SH-79) may need two northbound through lanes and a 50-foot northbound left turn lane with a 50-foot shared bay taper for the southbound left turn lane at the I-70 Eastbound Ramp intersection to the south. It is recommended that the second northbound through lane be constructed to act as a receiving lane from the eastbound dual left turn lanes from the I-70 Eastbound Ramp intersection to the south. This results in the need for a new four-lane wide bridge over I-70 (one southbound through lane, back-to-back left turn lanes, and two northbound through lanes. The southbound acceleration lane along 1st Street from Marketplace Drive to the north will drop as a continuous forced southbound right turn lane to the westbound onramp.
- The intersection of (#8) I-70 Eastbound Ramp and 1st Street (SH-79) may need to be further expanded to include two 475-foot eastbound left turn lanes and a separate southbound left turn lane and through lane. When this occurs, the 1st Street (SH-79) bridge over I-70 would need to be replaced with a wider four-lane bridge to accommodate two northbound through lanes, back-to-back left turn lanes, and one southbound through lane. It is recommended that the two northbound through lanes extend through the I-70 Westbound Ramp intersection at a minimum, but it is plausible that the entire section of 1st Street (SH-79) between Colfax Avenue

(SH-36) and I-70 will require two northbound and southbound through lanes, based on future traffic volume projections.

- By 2045, the intersection of Colfax Avenue (SH-36) and Kiowa Bennett Road (SH-79) is planned to be a signalized four leg intersection with further extension of Kiowa Bennett Road (SH-79). With construction of this fourth leg the northbound and southbound Colfax Avenue approaches will consist of a left turn lane, two through lanes, and a right turn lane. The eastbound and westbound Kiowa Bennett Road (SH-79) approaches will consist of one left turn lane, one through lane, and one right turn lane. It is recommended that the eastbound right turn lane, the northbound left turn lane, the northbound right turn lane, and the southbound left turn lane be designated to a length of 150 feet while the westbound left turn lane be designated to a length of 250 feet.

General Recommendations:

- Any on-site or offsite improvements should be incorporated into the Civil Drawings and conform to standards of Adams County, State of Colorado Department of Transportation, and/or the Town of Bennett (as applicable), as well as the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Study for the Kiowa Creek Preserve project proposed to be located along the north side of Old Victory Road, east of Kiowa-Bennett Road (SH-79) in Adams County, Colorado. It is anticipated that the site will be annexed into the Town of Bennett. A vicinity map illustrating the Kiowa Creek Preserve development location is shown in **Figure 1**. For purposes of this study, Kiowa Creek Preserve was evaluated to include 651 single family housing units, 381 multifamily housing units, and approximately 164,000 square feet of retail uses. A conceptual land use plan is attached in **Appendix G**. It is expected that Kiowa Creek Preserve will be completed in the next ten years; therefore, analysis was conducted for the 2030 buildout horizon and 2045 twenty-year long-term horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the Town of Bennett requested scope:

- (#1) 38th Avenue and Kiowa-Bennett Road (SH-79)
- (#2) Old Victory Road and Kiowa-Bennett Road (SH-79)
- (#3) Palmer Avenue and Adams Street/Kiowa Bennett Road (SH-79)
- (#4) Colfax Avenue (SH-36) and 1st Street (SH-79)
- (#5) Colfax Avenue (SH-36) and Adams Street
- (#6) Marketplace Drive and 1st Street (SH-79)
- (#7) I-70 Westbound Ramp and 1st Street (SH-79)
- (#8) I-70 Eastbound Ramp and 1st Street (SH-79)

In addition, the proposed full movement public access street intersection along Kiowa-Bennett Road (SH-79) with Road A, that will align with the future access to Bennett Ranch to the west, the proposed mixed-use access along Old Victory Road, and a proposed right-in/right-out access along Kiowa-Bennett Road (SH-79) were evaluated. Five full movement accesses along the internal proposed Road A were also included in this study. Likewise, the future roadway connection to the south as the extension of Kiowa-Bennett Road to Colfax Avenue and proposed roundabout intersection (#16) was included for evaluation in this traffic study.

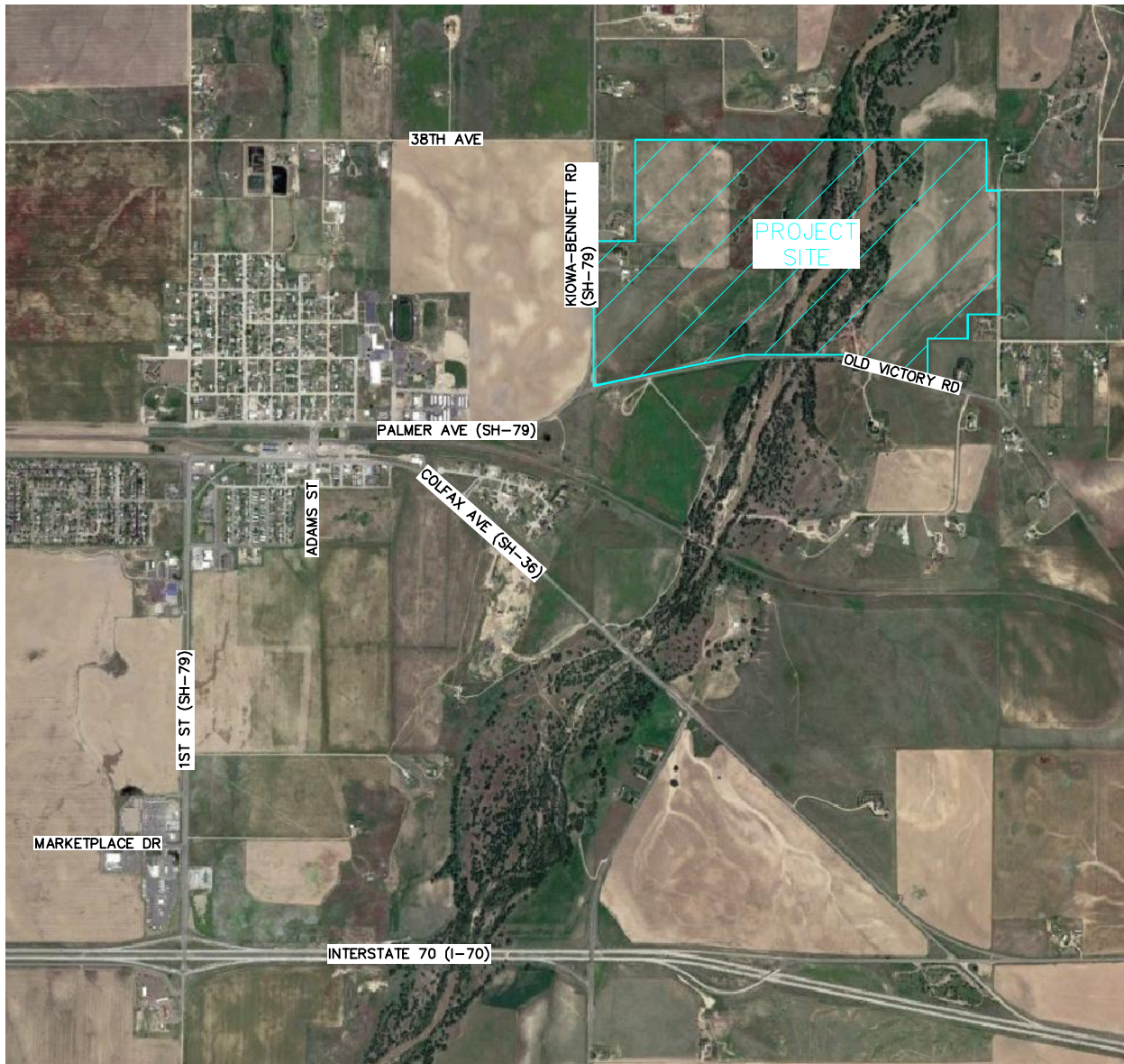


FIGURE 1
KIOWA CREEK PRESERVE
BENNETT, COLORADO
VICINITY MAP

Regional access to Kiowa Creek Preserve will be provided by Interstate 70 (I-70) and State Highway 36 (SH-36). Primary access will be provided by 1st Street (SH-79) and Kiowa-Bennet Road (SH-79). Direct access will be provided by proposed full movement access intersections of Road A along Kiowa-Bennett Road (SH-79), a full movement access along Old Victory Road, and a right-in/right-out access along Kiowa-Bennett Road (SH-79).

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site is comprised of vacant land. To the west is currently vacant land, but Bennett Ranch with 416 single-family homes, 231 multifamily homes, a school, a park, a fire station, and 99,600 square feet of retail are planned to be constructed within the next few years. The Town of Bennett currently borders the site on the west. North, east, and south of the proposed Kiowa Creek Preserve project site are rural residences.

3.2 Existing Roadway Network

Kiowa-Bennett Road (SH-79) extends in the north-south direction with one through lane in each direction. The speed limit along Kiowa-Bennett Road is 55 miles per hour northbound, north of Old Victory Road, and 65 miles per hour southbound starting north of 38th Avenue before transitioning to 55 miles per hour just north of Old Victory Road.

Kiowa-Bennett Road curves to the west and changes name to Palmer Avenue (SH-79) and extends in the east-west direction. Palmer Avenue provides one through lane in each direction with a posted speed limit of 45 miles per hour eastbound and 35 miles per hour westbound.

Colfax Avenue (SH-36) extends in the east-west direction with one through lane in each direction. It has a posted speed limit of 35 miles per hour west of Adams Street and 55 miles per hour east of Adams Street.

1st Street (SH-79) extends in the north-south direction with one through lane in each direction. The posted speed limit between Colfax Avenue (SH-36) and Marketplace Drive is 35 miles per hour and increases to 45 miles per hour south of Marketplace Drive.

Old Victory Road extends in the east-west direction with one through lane in each direction and a posted speed limit of 45 miles per hour. Adams Street extends in the north-south direction with one through lane in each direction. Within the study are the Union Pacific Railroad runs parallel with Palmer Avenue and crosses Adams Street approximately 185 feet north of Colfax Avenue (US-36).

The unsignalized intersection of (#1) 38th Avenue and Kiowa-Bennett Road (SH-79) operates with stop control on the eastbound and westbound approaches of 38th Avenue and private access, respectively. 38th Avenue is a public roadway that is currently unpaved as a gravel roadway. All four approaches provide a single lane shared for all movements. An aerial photo of the existing intersection configuration is below (north is up - typical).



(#1) 38th Avenue & Kiowa-Bennett Road (SH-79)

The unsignalized T-intersection of (#2) Old Victory Road and Kiowa-Bennett Road (SH-79) operates with stop control on the westbound approach of Old Victory Road. The westbound right turn lane operates under free conditions with a slip lane located north of the intersection. Kiowa-Bennett Road curves from an east-west roadway to a north-south roadway through this intersection. All three approaches provide a single lane shared for all movements. The intersection is proposed to be converted to a roundabout in the future with a leg extending south to Colfax Avenue (SH-36). An aerial photo of the existing intersection configuration is below.



(#2) Old Victory Road & Kiowa-Bennett Road (SH-79)

The unsignalized T-intersection of (#3) Palmer Avenue (SH-79) and Adams Street operates with stop control on the southbound approach of Palmer Avenue. Adams Street curves into Palmer Avenue (SH-79). The southbound approach of Palmer Avenue perpendicularly intersects the Adams Street to Palmer Avenue curve. The eastbound approach provides a left turn lane and a through lane. The westbound approach provides a shared through/right turn lane, but westbound right turns use the slip lane to head westbound through onto Palmer Avenue. An aerial photo of the existing intersection configuration is below.



(#3) Palmer Avenue (SH-79) & Adams Street

The unsignalized T-intersection of (#4) Colfax Avenue (SH-36) and 1st Street (SH-79) operates with stop control on the northbound approach of 1st Street (SH-79). The northbound approach provides a left turn lane and a channelized right turn lane that operates under FREE conditions. The eastbound approach provides a through lane and a right turn lane while the westbound approach provides a left turn lane and a through lane. An aerial photo of the existing intersection configuration is below.



(#4) Colfax Avenue (SH-36) & 1st Street (SH-79)

The unsignalized intersection of (#5) Colfax Avenue (SH-36) and Adams Street operates with stop control on the northbound and southbound approaches of Adams Street. All four approaches provide a single lane shared for all movements. An aerial photo of the existing intersection configuration is below.



(#5) Colfax Avenue (SH-36) & Adams Street

The unsignalized intersection of (#6) Marketplace Drive and 1st Street (SH-79) operates with stop control on the eastbound and westbound approaches of Marketplace Drive. The northbound, southbound, and westbound approaches provide a left turn lane, a through lane, and a right turn lane. The westbound approach provides a left turn lane and a shared through/right turn lane. An aerial photo of the existing intersection configuration is not provided because the aerial is not recent on the current geometry.

The unsignalized intersection of (#7) I-70 Westbound Ramp and 1st Street (SH-79) operates with stop control on the westbound approach of the I-70 westbound off-ramp. The northbound approach provides a shared through/left turn lane while the southbound approach provides a shared through/right turn lane. The westbound approach provides a single lane shared for all movements. An aerial photo of the existing intersection configuration is below.



(#7) I-70 WB Ramp & 1st Avenue (SH-79)

The unsignalized intersection of (#8) I-70 Eastbound Ramp and 1st Street (SH-79) operates with stop control on the eastbound approach of the I-70 eastbound off-ramp. The southbound approach provides a shared through/left turn lane while the northbound approach provides a shared through/right turn lane. The eastbound approach provides a single lane shared for all movements. An aerial photo of the existing intersection configuration is below.



(#8)-70 EB Ramp & 1st Avenue (SH-79)

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.

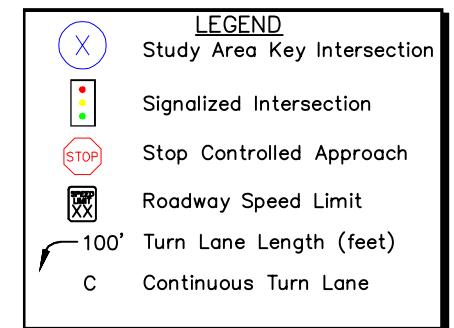
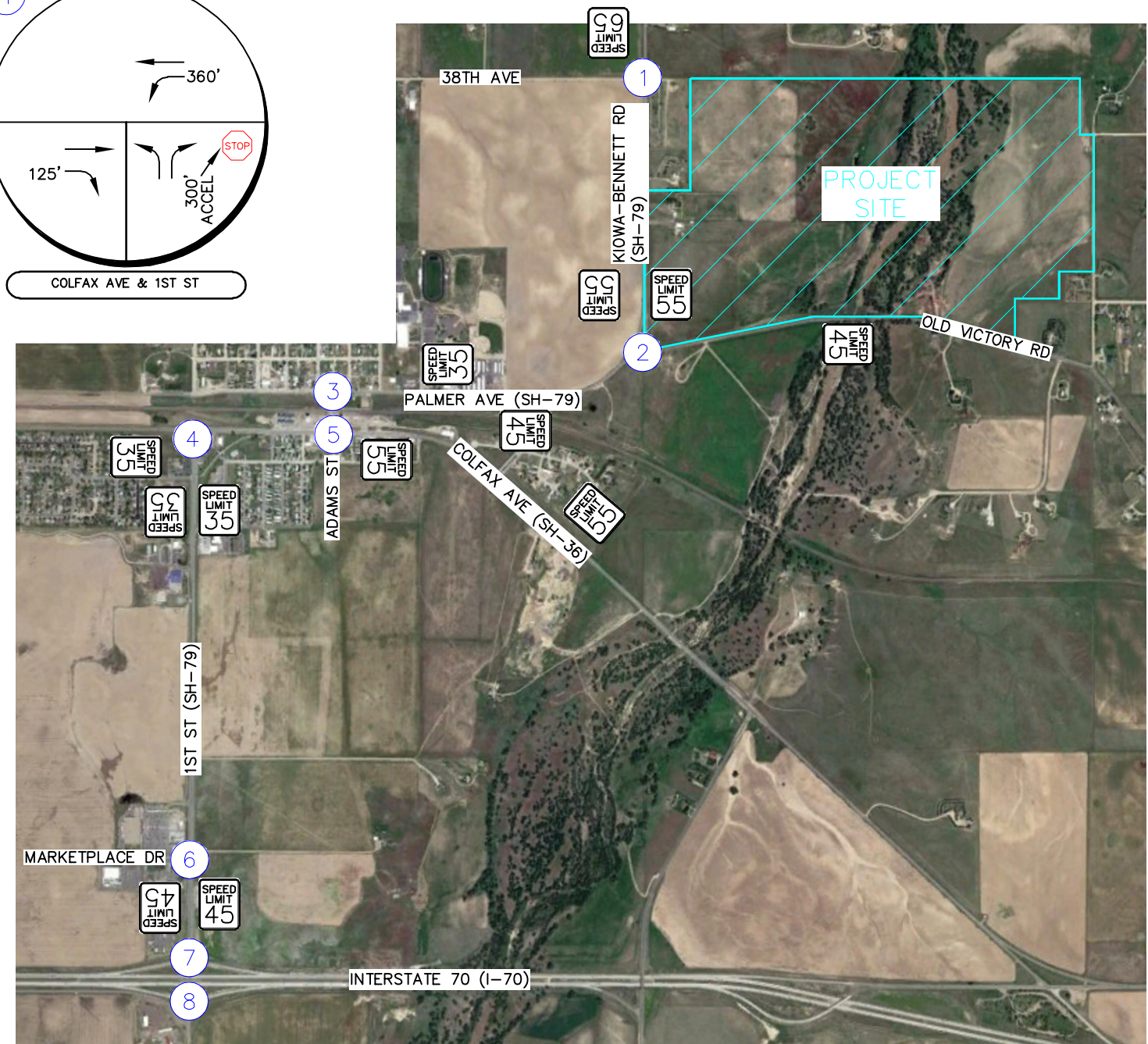
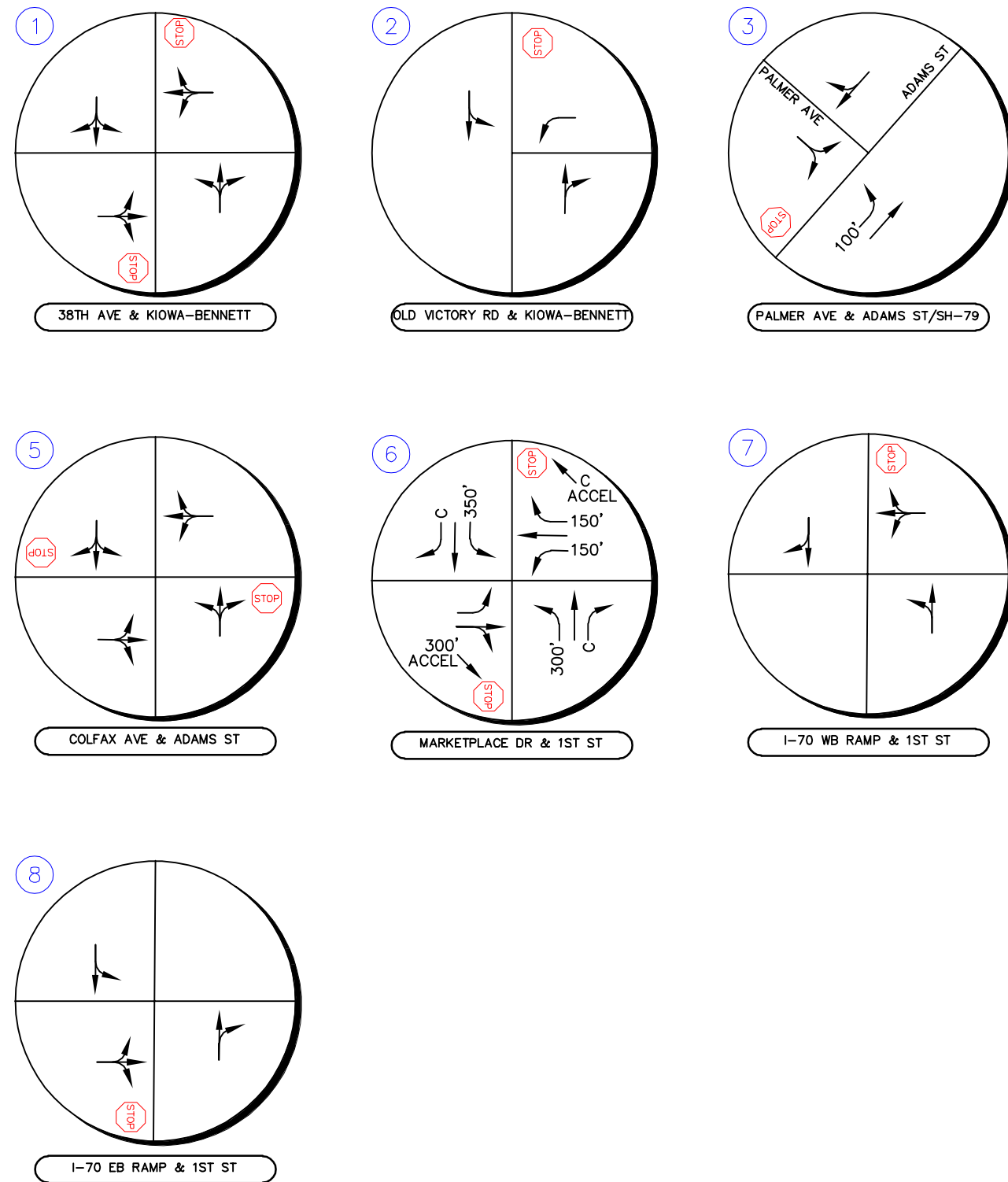


FIGURE 2
KIOWA CREEK PRESERVE
BENNETT, COLORADO
EXISTING GEOMETRY AND CONTROL

3.3 Existing Traffic Volumes

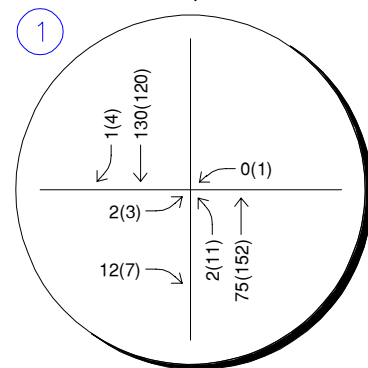
Existing turning movement counts were conducted at the study intersections on Wednesday, October 13, 2021 with the exception of the intersection of Marketplace Drive and 1st Street which was collected on Tuesday, October 19, 2021 during the morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on these count dates. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

3.4 Unspecified Development Traffic Growth

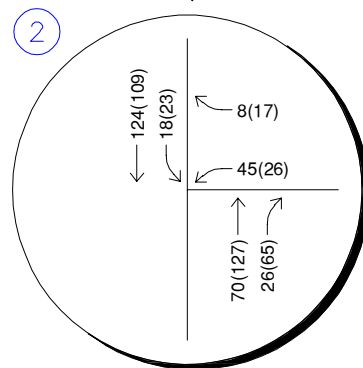
According to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along SH-79 (1st Street), US-36 (Colfax Avenue), and Palmer Avenue/Kiowa-Bennett Road (SH-79) in the vicinity of the site is between 1.24 and 2.07. The 20-year growth factor equates to annual growth rate of 2.30 percent. Traffic information from the CDOT Online Transportation Information System (OTIS) website is included in **Appendix B**. The project traffic volumes associated with Bennett Ranch, located west of Kiowa-Bennett Road (SH-79), were included in the short-term and long-term background traffic volumes. The project traffic from the Bennett Ranch development is included in the 2.30 percent growth from CDOT. Therefore, the growth rate was decreased to 1.70 percent to estimate near term 2030 and long term 2045 traffic volume projections at the key intersections and to match CDOT projections. Consistent with the findings in the SH-79 and Kiowa-Bennett Corridor PEL Study, a significant reroute has been provided for the 2045 analysis and the continuous SH-79 roadway extending through I-70. The traffic volume projections from the SH-79 and Kiowa-Bennett Corridor PEL Study were used as a basis for determining 2045 background traffic volumes in this study. However, it is believed that 2035 traffic volumes from the PEL study are underestimated compared to 2045 traffic projections in this study; therefore, the travel pattern movements from the PEL study were scaled based on the 2045 traffic volume projections for the area.

Background traffic volumes for 2030 and 2045 are shown in **Figures 4** and **5**, respectively.

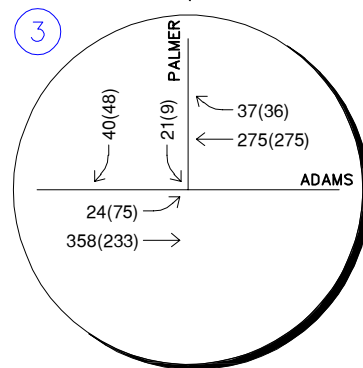
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7:00 to 8:00AM (4:45 to 5:45PM)



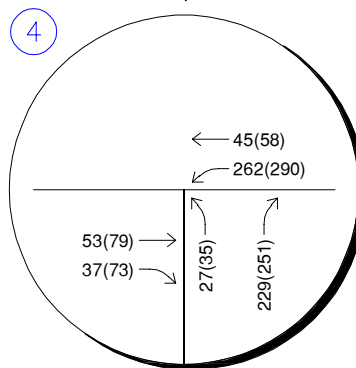
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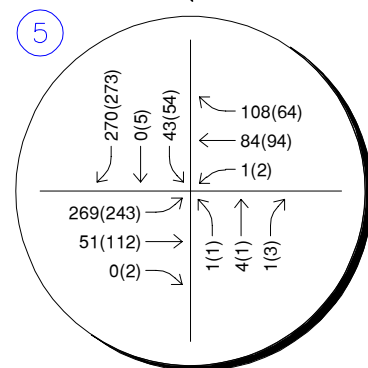
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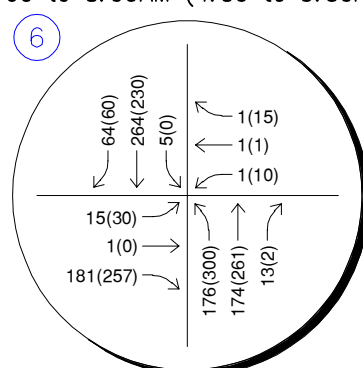
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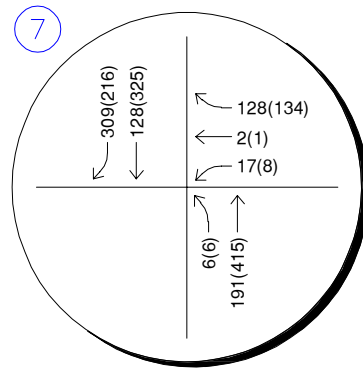
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Tuesday, October 19, 2021
7:00 to 8:00AM (4:30 to 5:30PM)



Wednesday, October 13, 2021
7:00 to 8:00AM (4:30 to 5:30PM)



Wednesday, October 13, 2021
7:00 to 8:00AM (5:00 to 6:00PM)

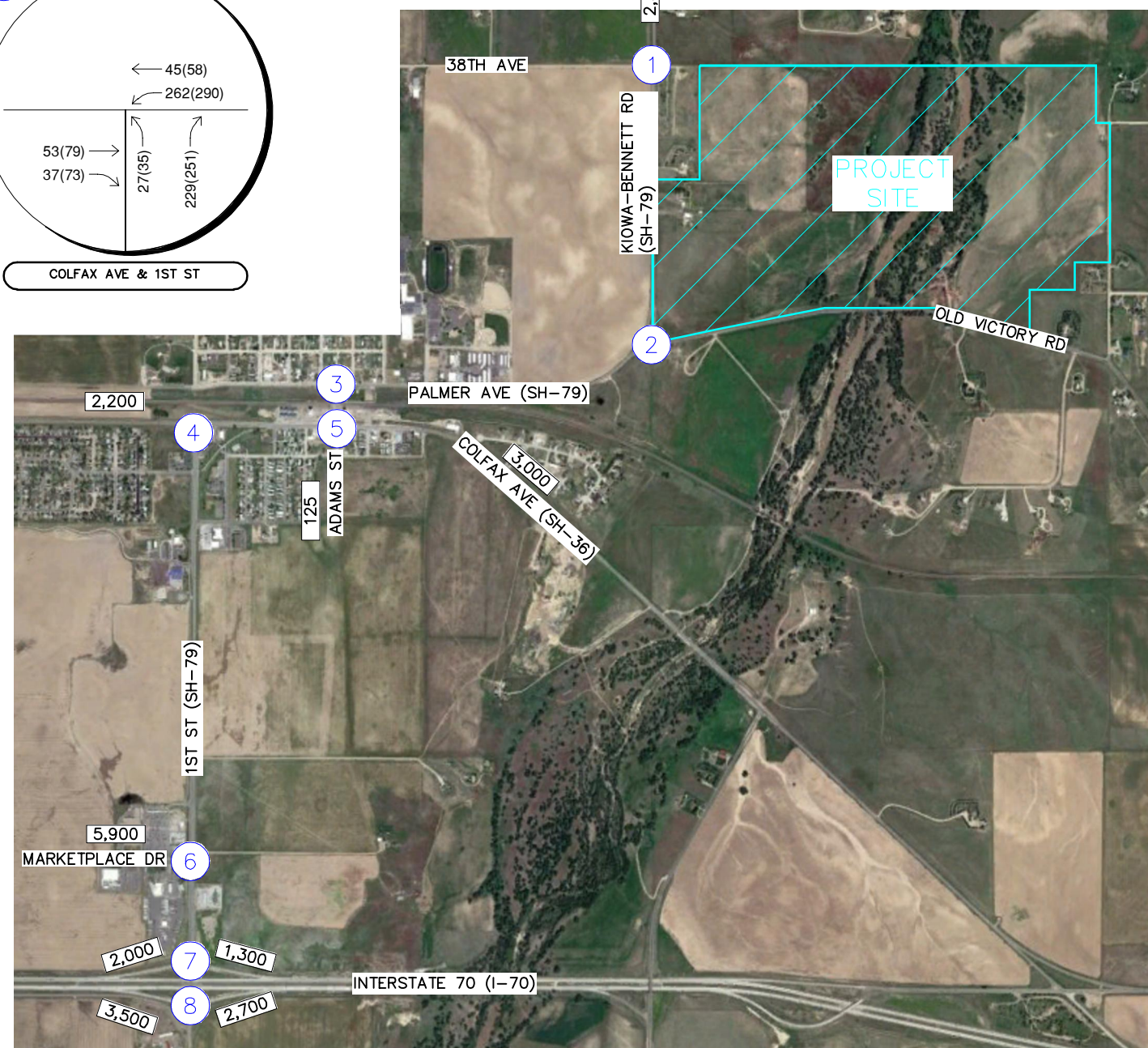
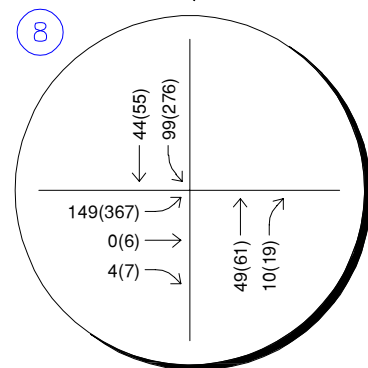


FIGURE 3
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2021 EXISTING TRAFFIC VOLUMES

LEGEND	
(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

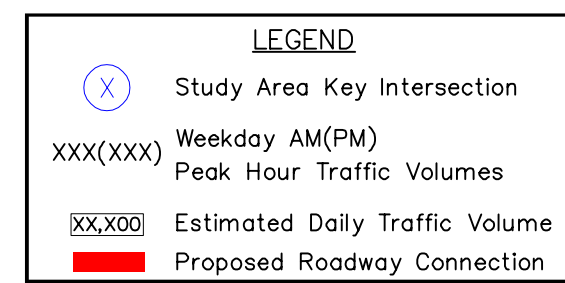
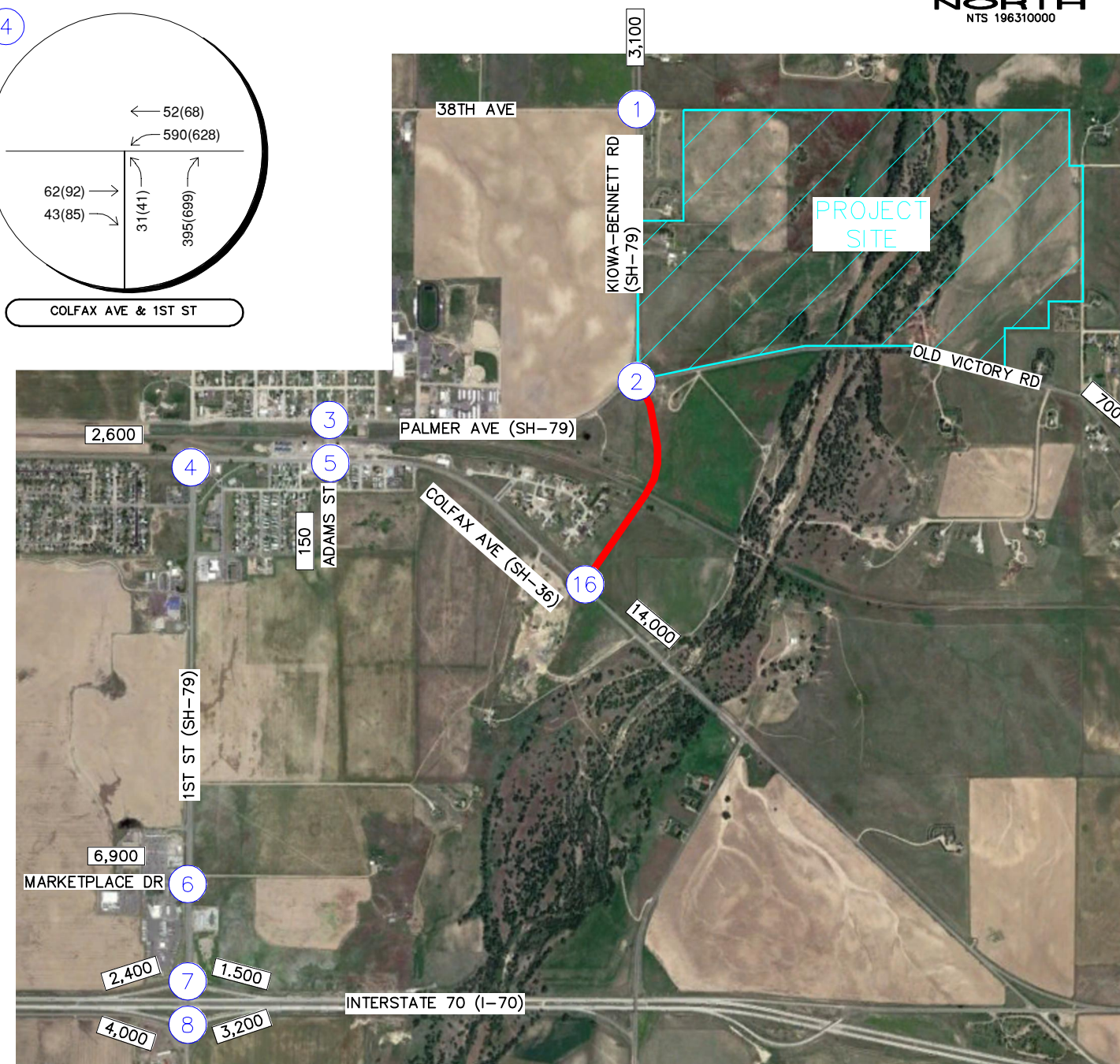
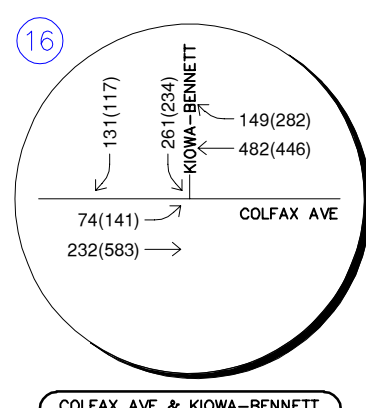
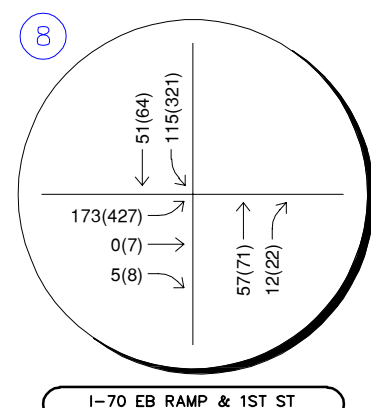
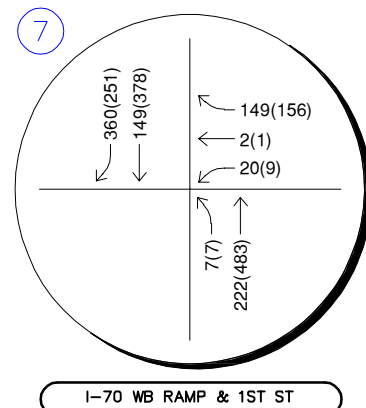
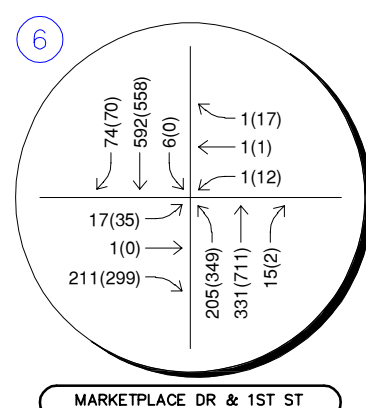
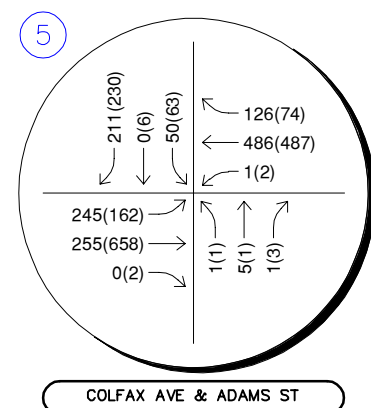
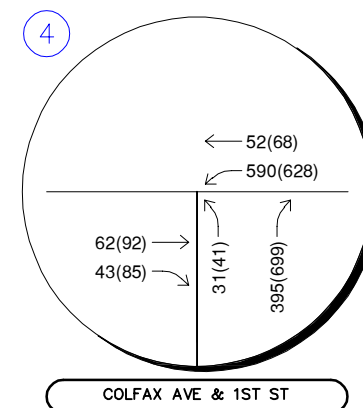
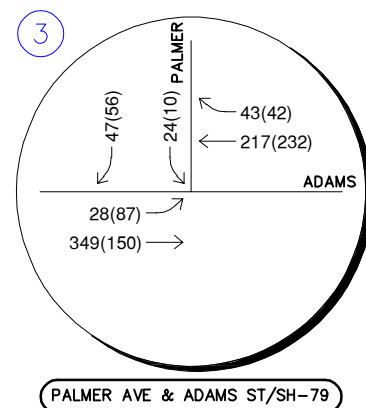
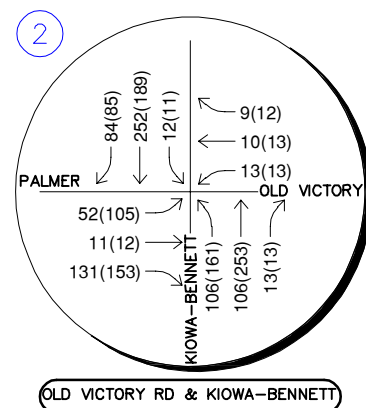
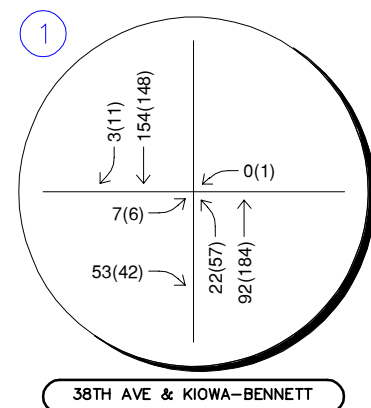


FIGURE 4
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2030 BACKGROUND TRAFFIC VOLUMES

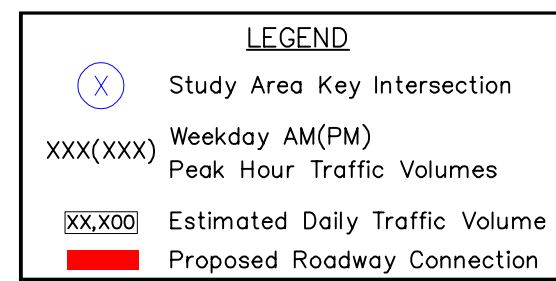
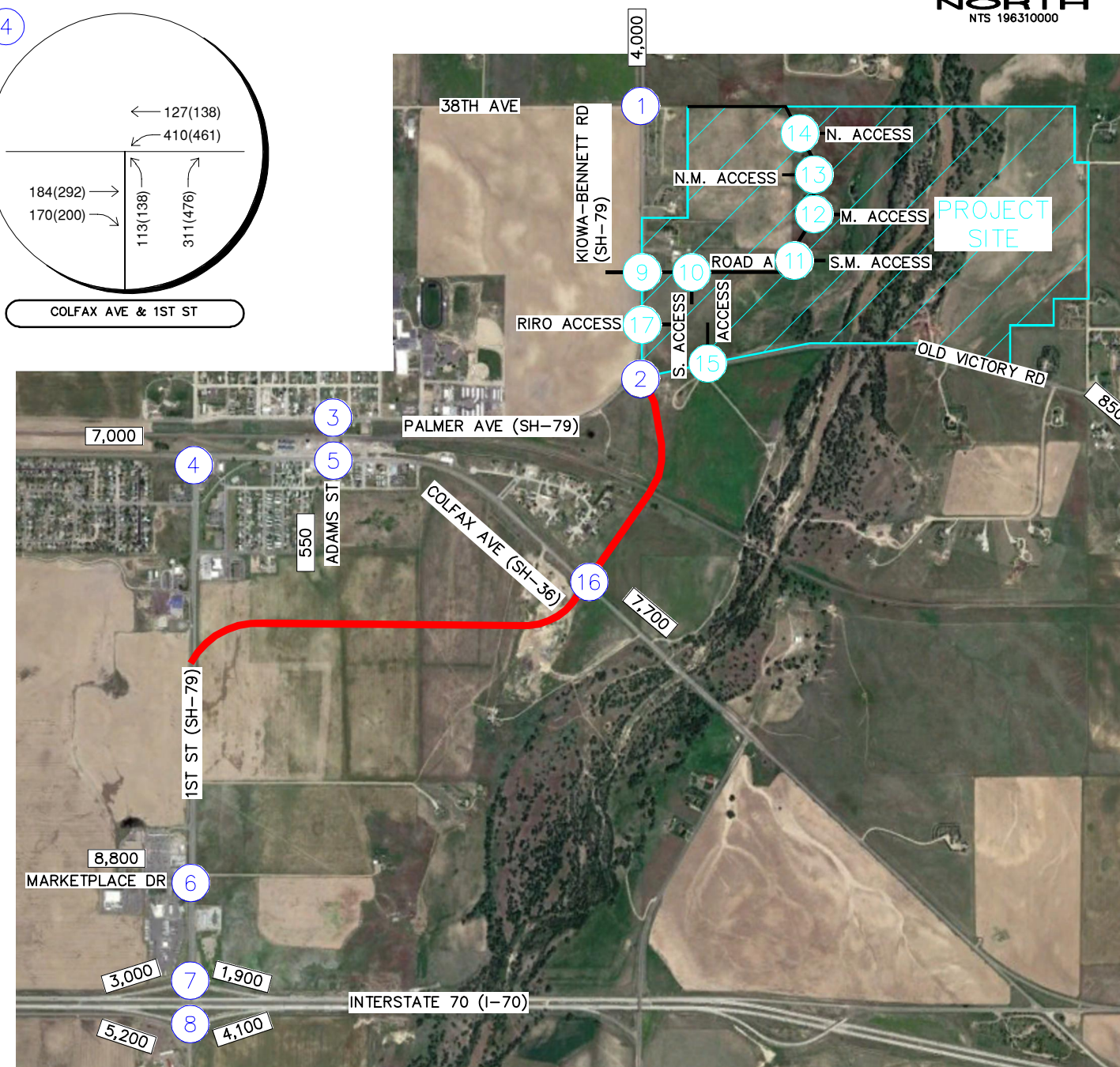
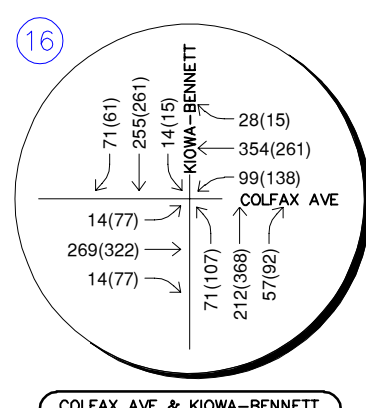
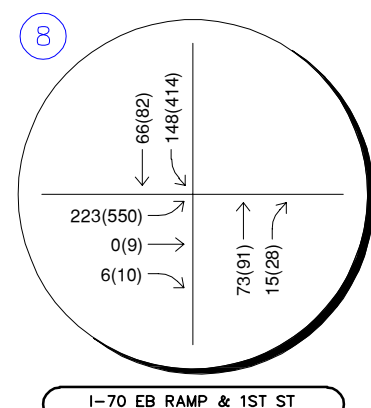
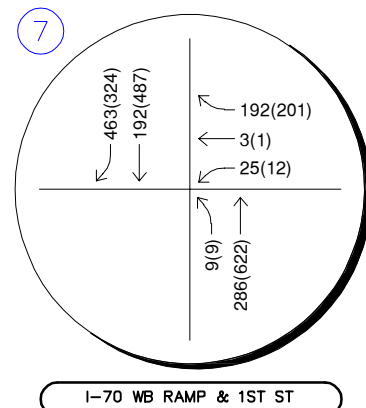
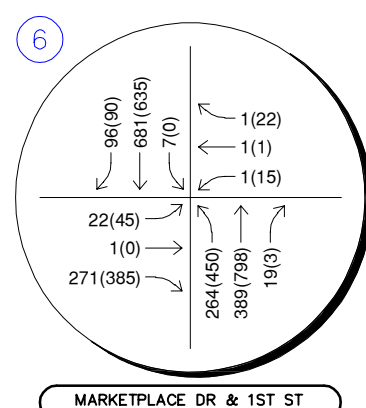
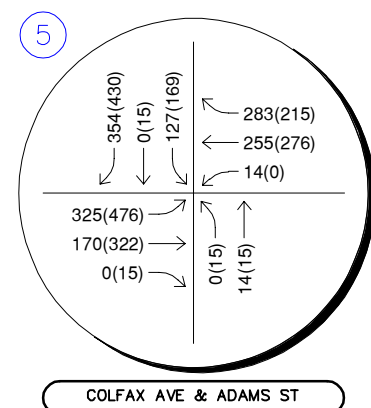
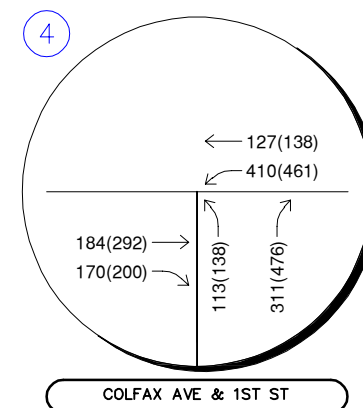
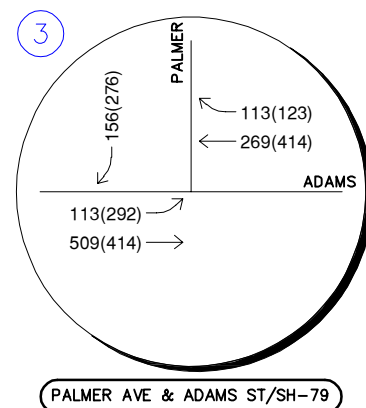
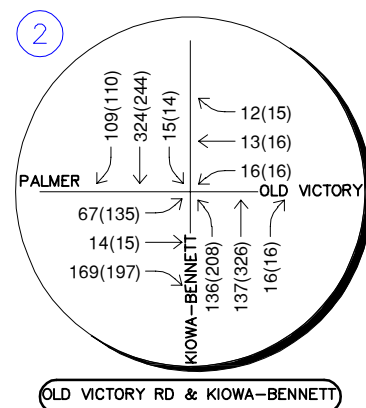
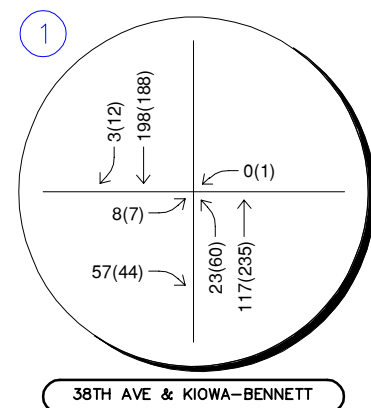


FIGURE 5
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2045 BACKGROUND TRAFFIC VOLUMES

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report fitted curve equations that applies to Single-Family Detached Housing (ITE Land Use Code 210), Multifamily Housing (Low-Rise) (ITE Land Use Code 220), and Shopping Center (>150k) (ITE Land Use Code 820) for traffic associated with the development.

Kiowa Creek Preserve is expected to generate approximately 18,318 weekday daily trips, with 782 of these trips occurring during the morning peak hour and 1,570 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual*, 11th Edition – Volume 3, 2021. **Table 1** summarizes the estimated trip generation for the Kiowa Creek Preserve. The trip generation worksheets are included in **Appendix C**.

Table 1 – Kiowa Creek Preserve Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single Family Detached Housing (210) – 651 Dwelling Units	5,654	107	303	410	364	214	578
Multifamily Housing (Low-Rise) (220) – 381 Dwelling Units	2,518	34	108	142	117	69	186
Shopping Center (820) – 164,000 Square Feet	10,146	143	87	230	387	419	806
Total Project Trips	18,318	284	498	782	868	702	1,570

¹ Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

4.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. Separate trip distributions were prepared due to the SH-79 reconfiguration expected to occur between the 2030 and 2045 horizons. The project trip distribution for the proposed development is illustrated in **Figure 6** for the 2030 horizon and **Figure 7** for the 2045 horizon.

4.3 Traffic Assignment

Kiowa Creek Preserve traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment is shown in **Figure 8** for the 2030 horizon and **Figure 9** for the 2045 horizon.

4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2030 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2030 and 2045 horizon years in **Figures 10** and **11**, respectively.

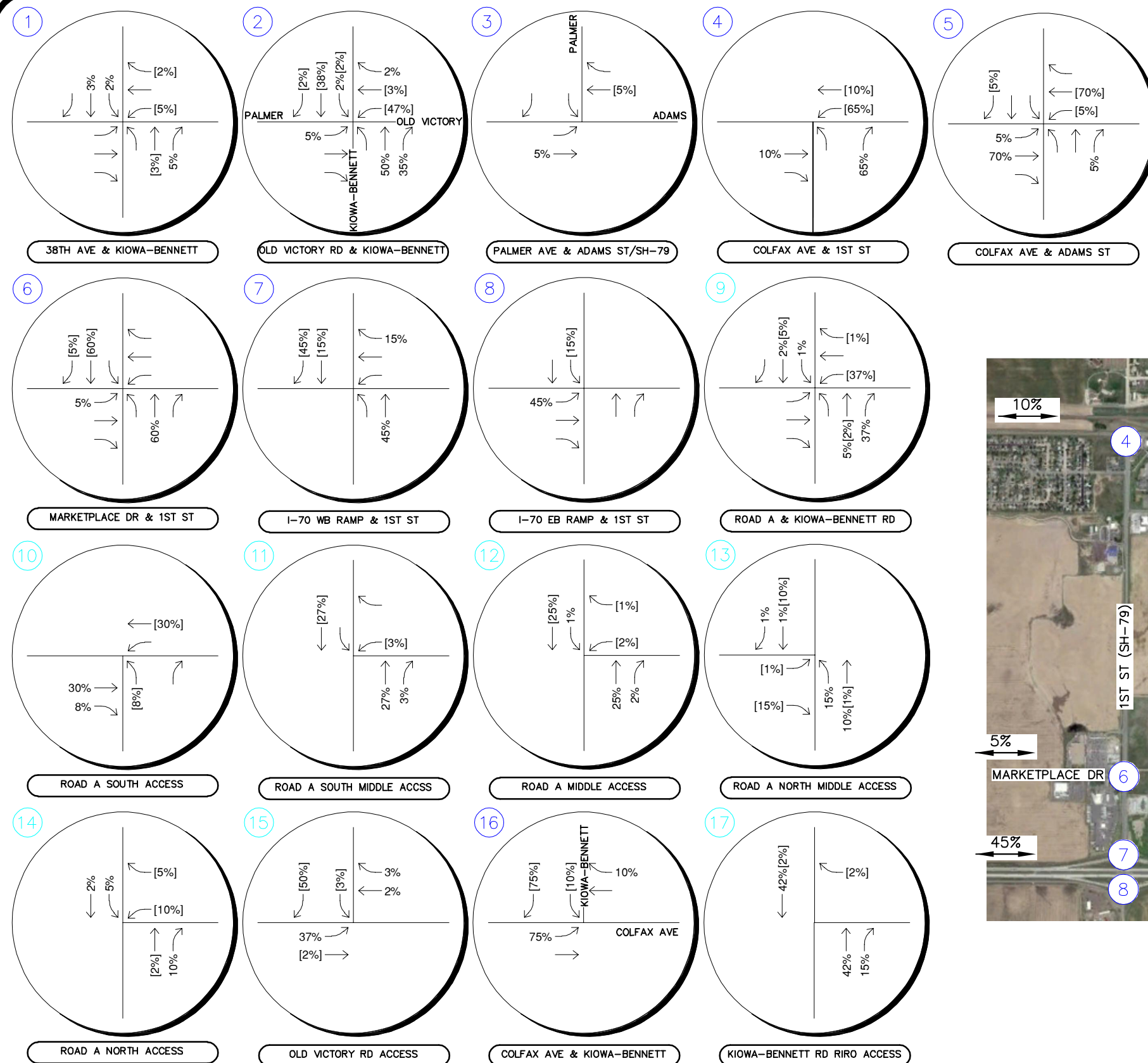
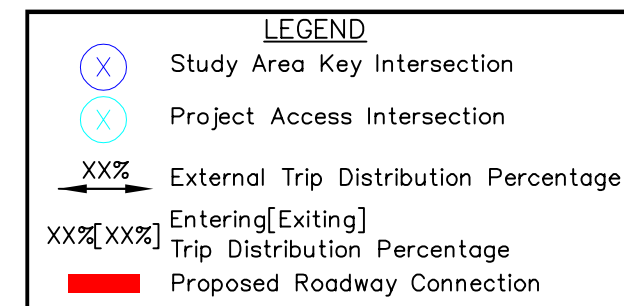
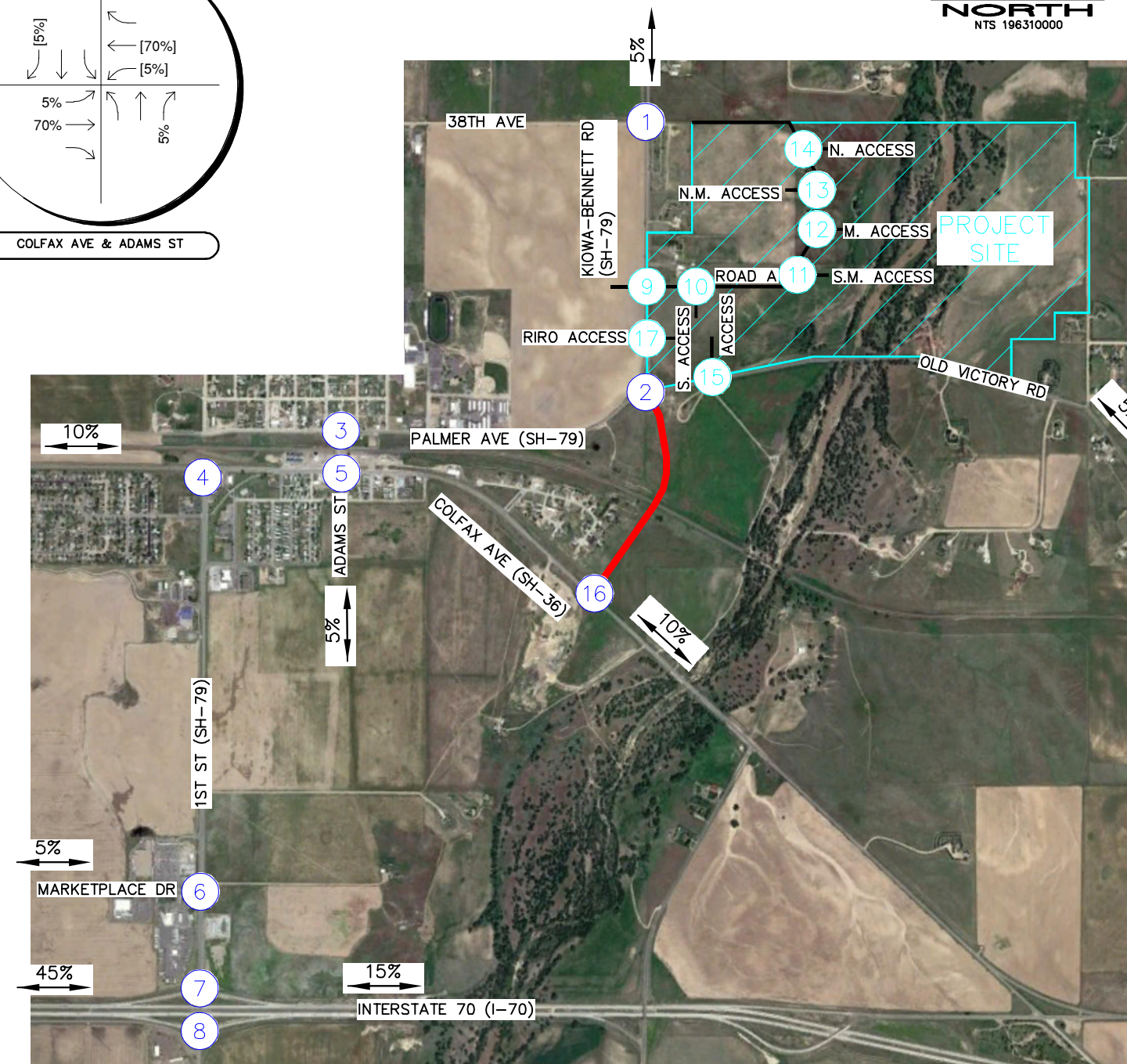


FIGURE 6
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2030 PROJECT TRIP DISTRIBUTION



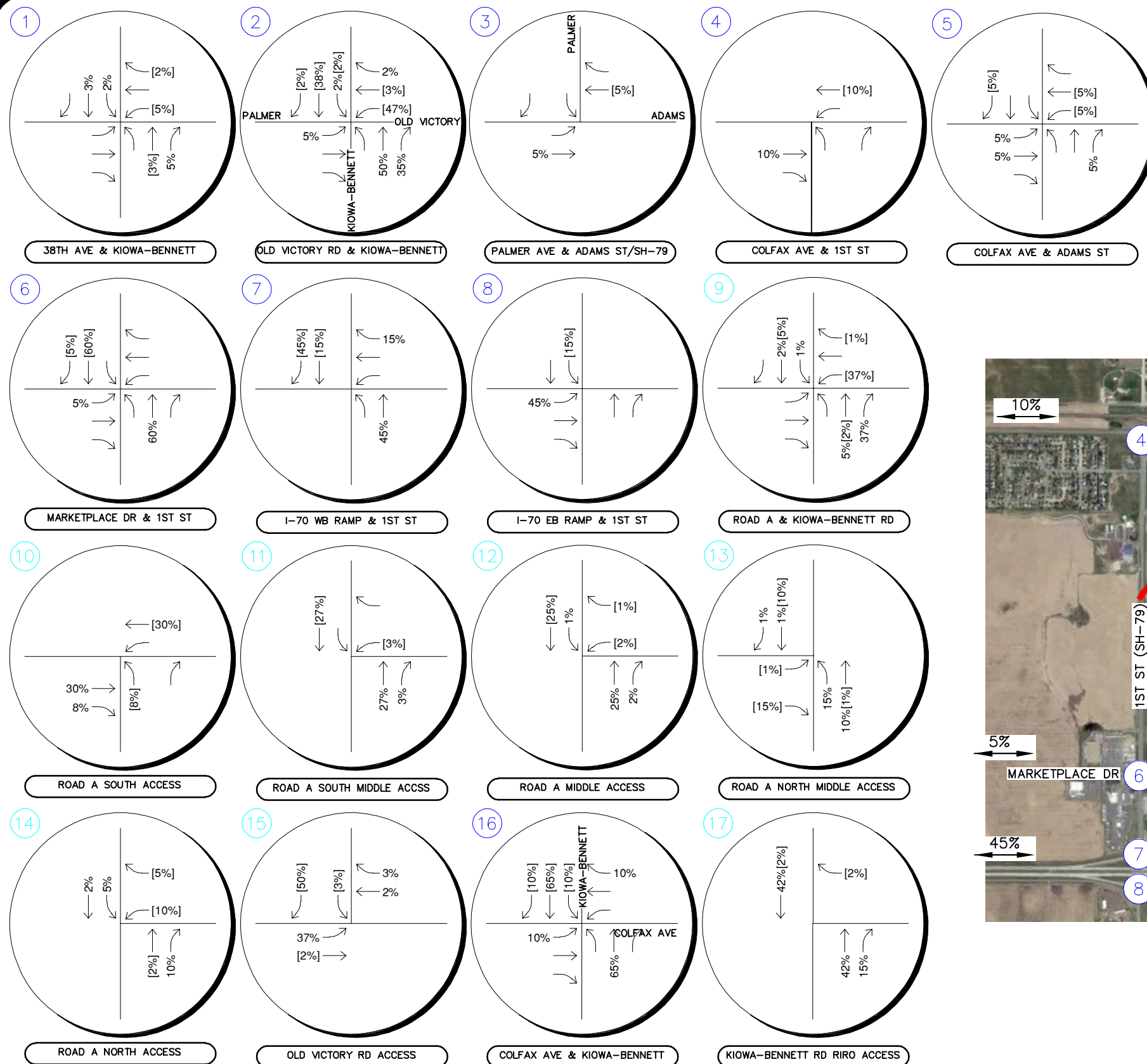
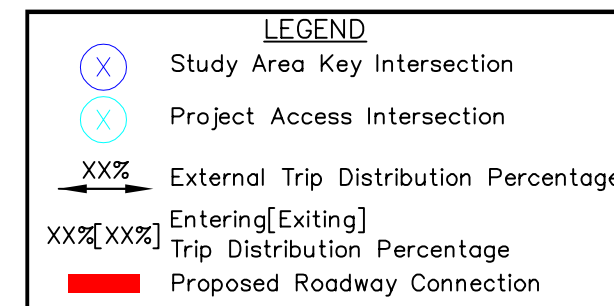
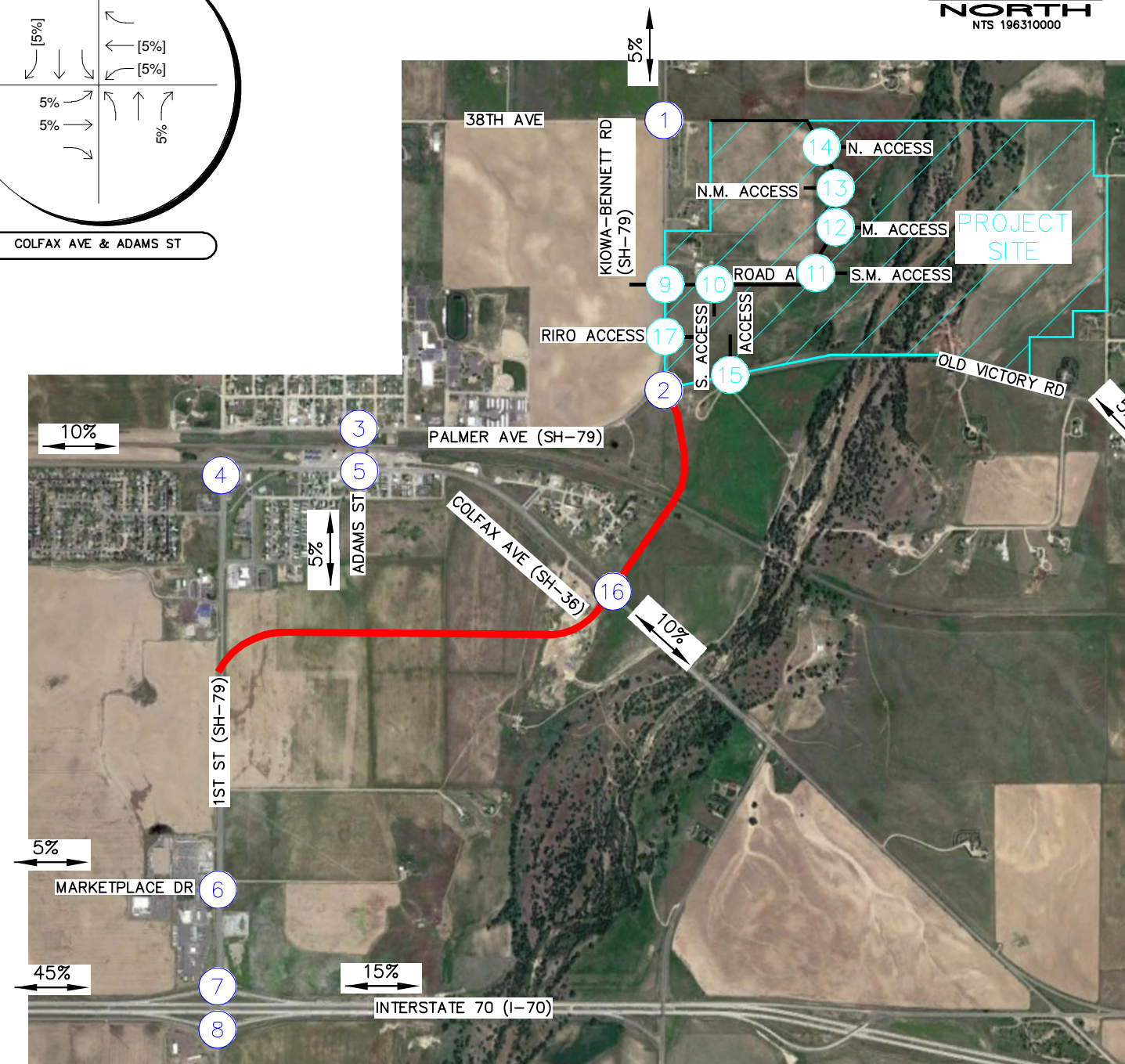


FIGURE 7
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2045 PROJECT TRIP DISTRIBUTION



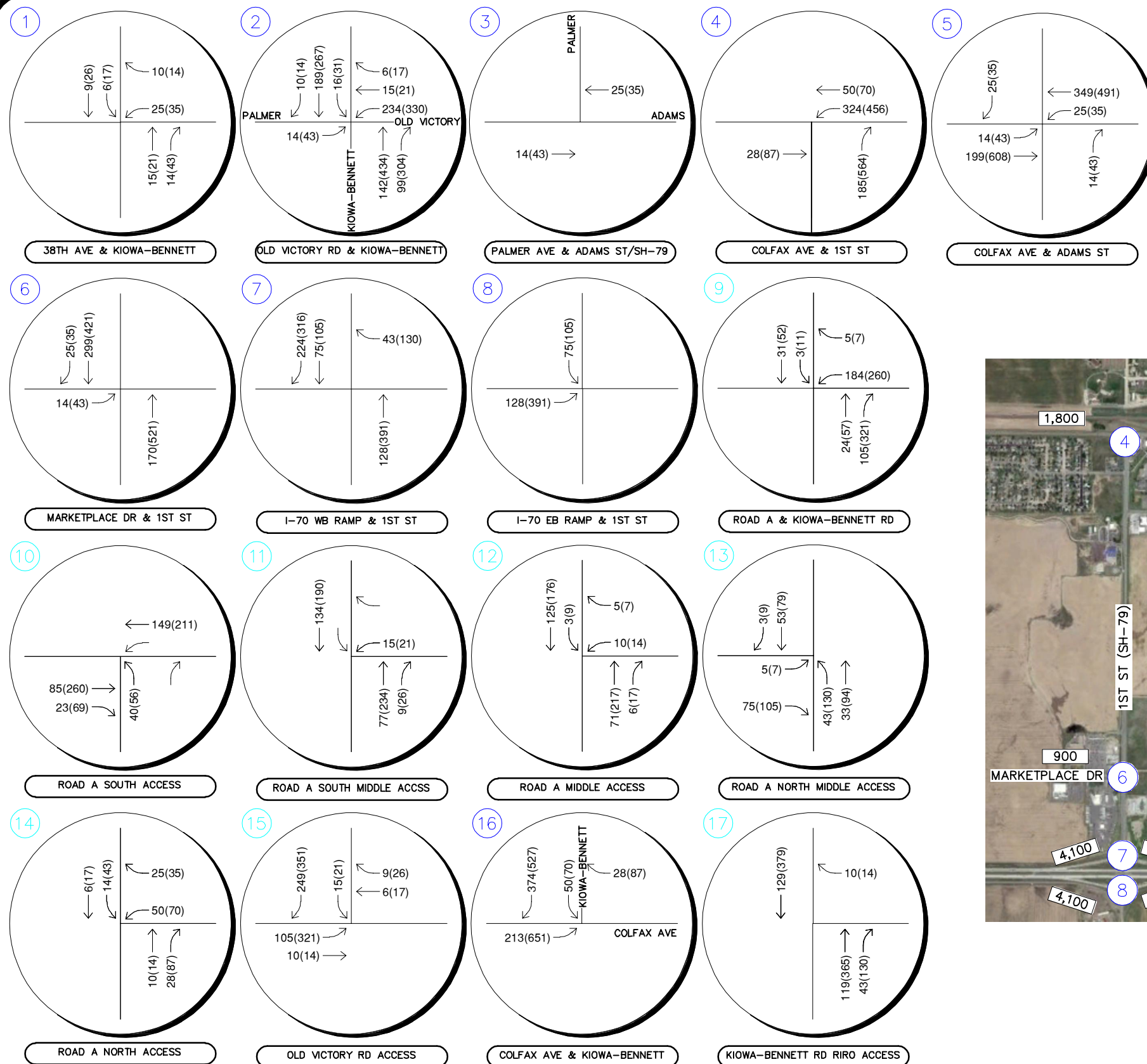
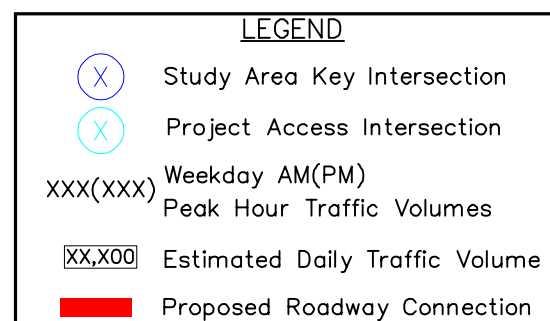
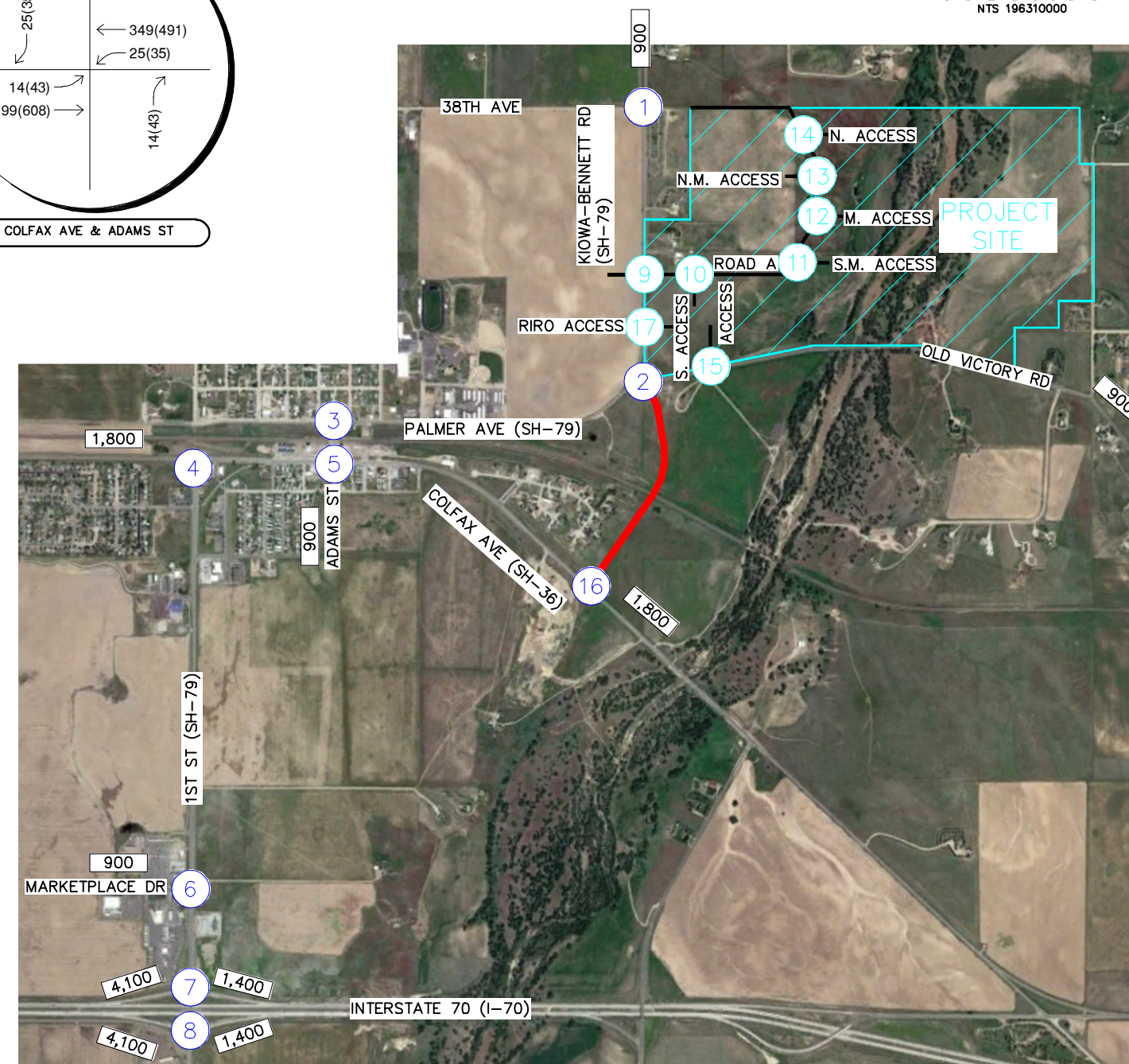


FIGURE 8
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2030 PROJECT TRAFFIC ASSIGNMENT



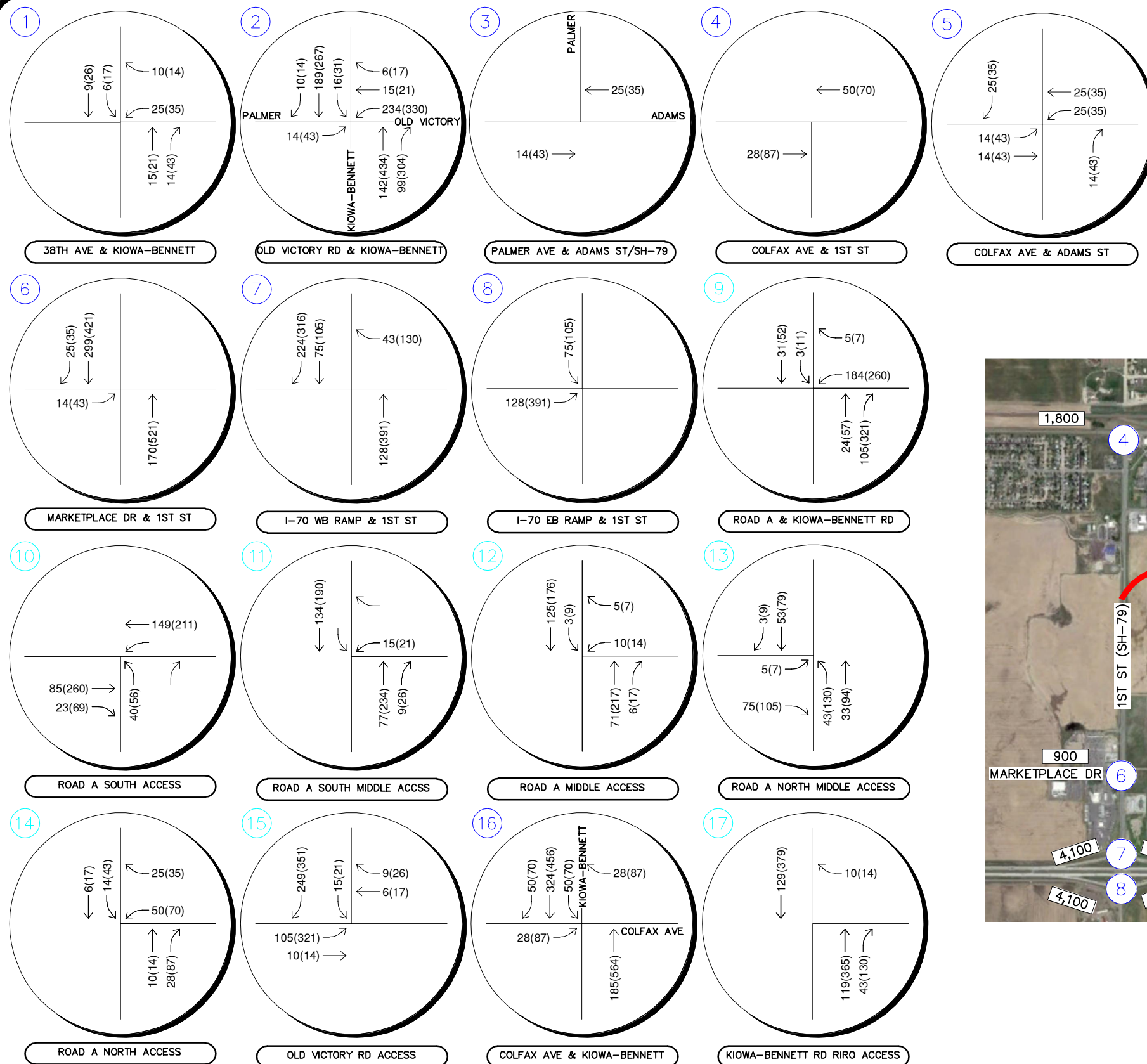
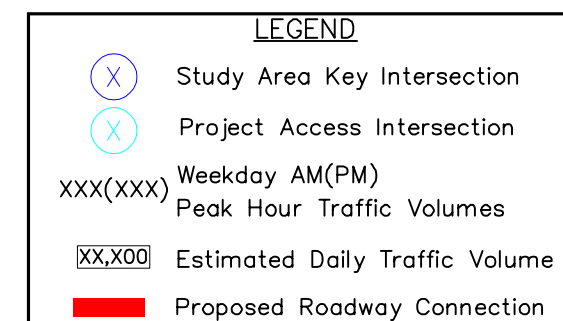
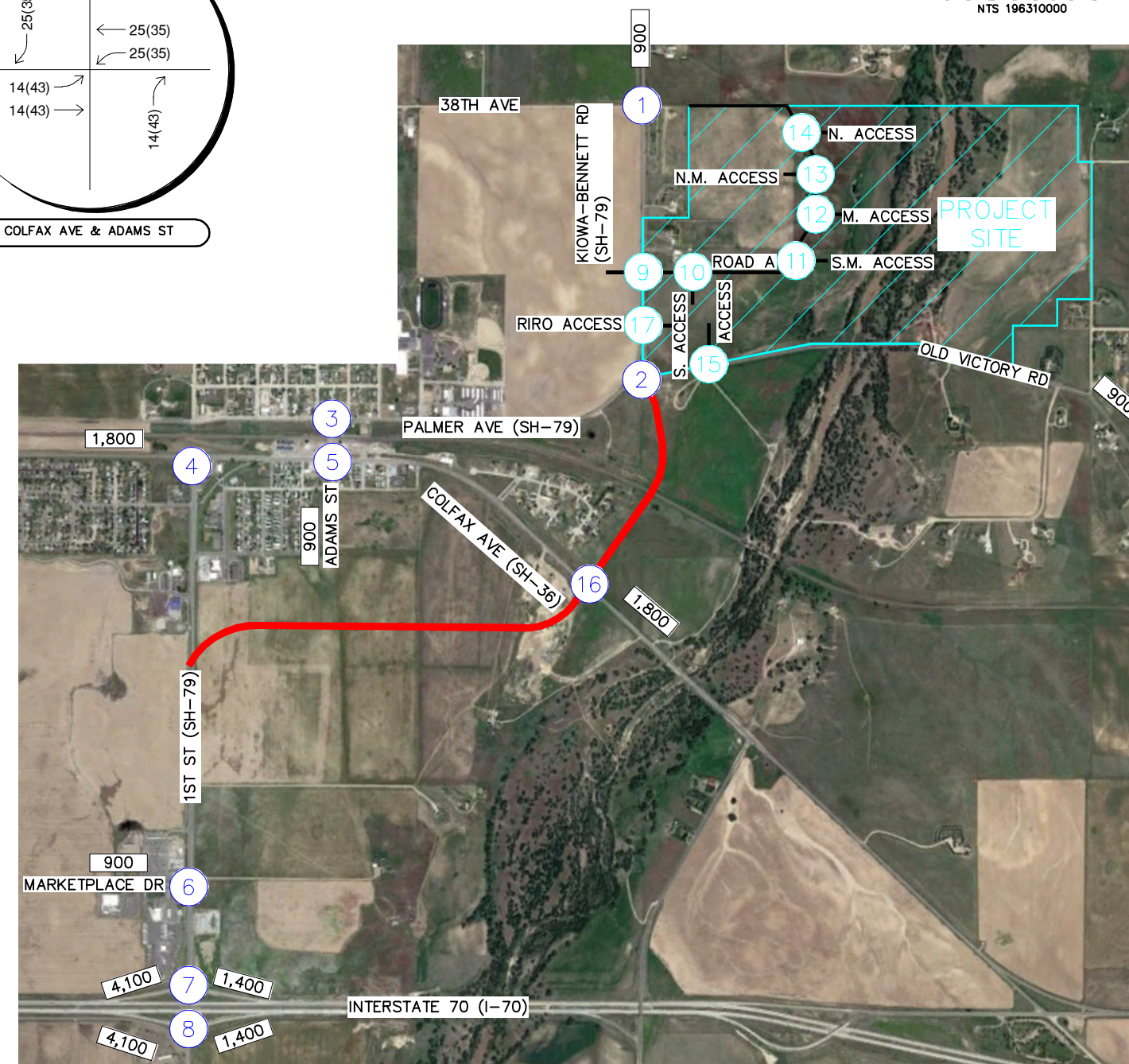


FIGURE 9
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2045 PROJECT TRAFFIC ASSIGNMENT



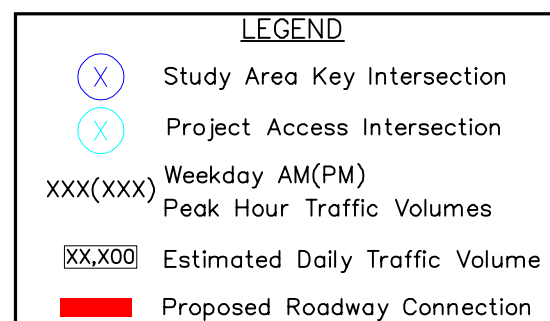
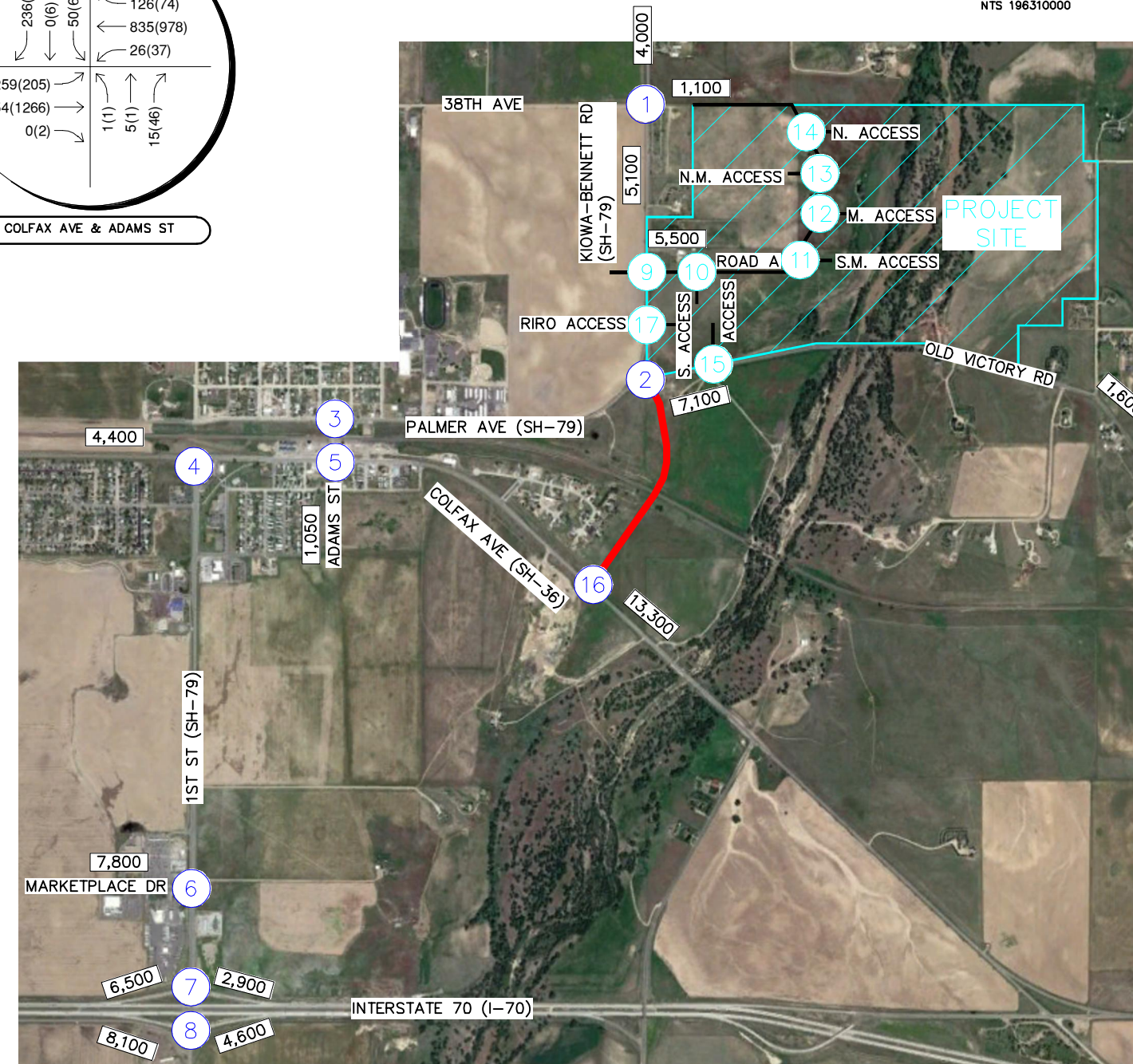
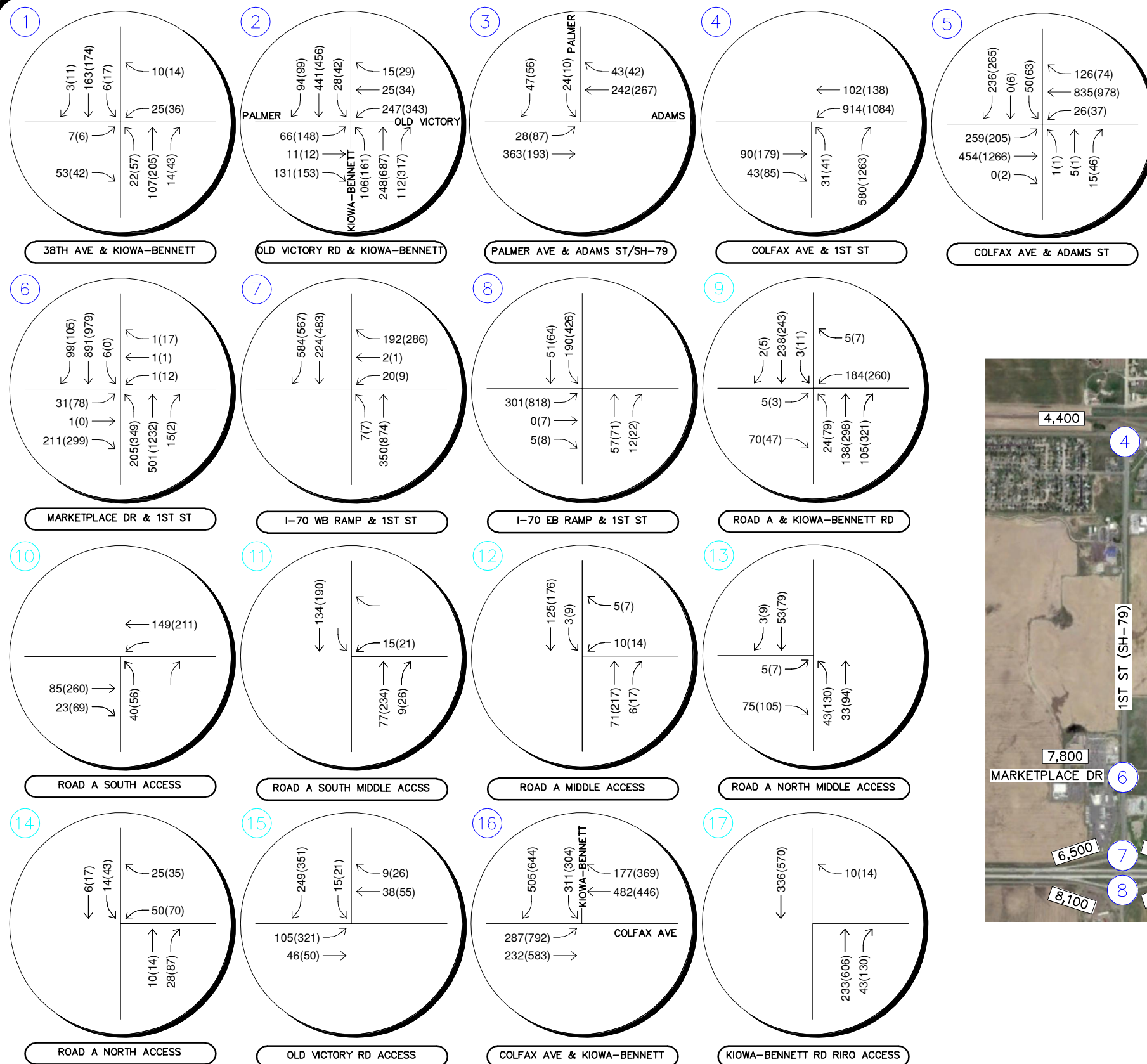


FIGURE 10
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2030 TOTAL TRAFFIC VOLUMES

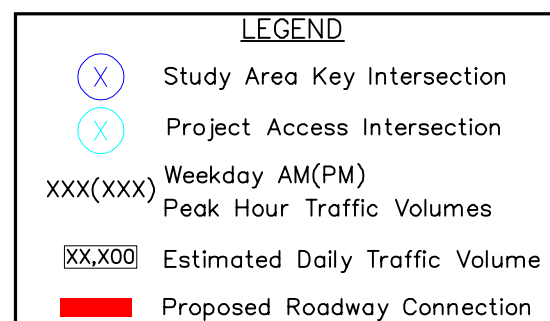
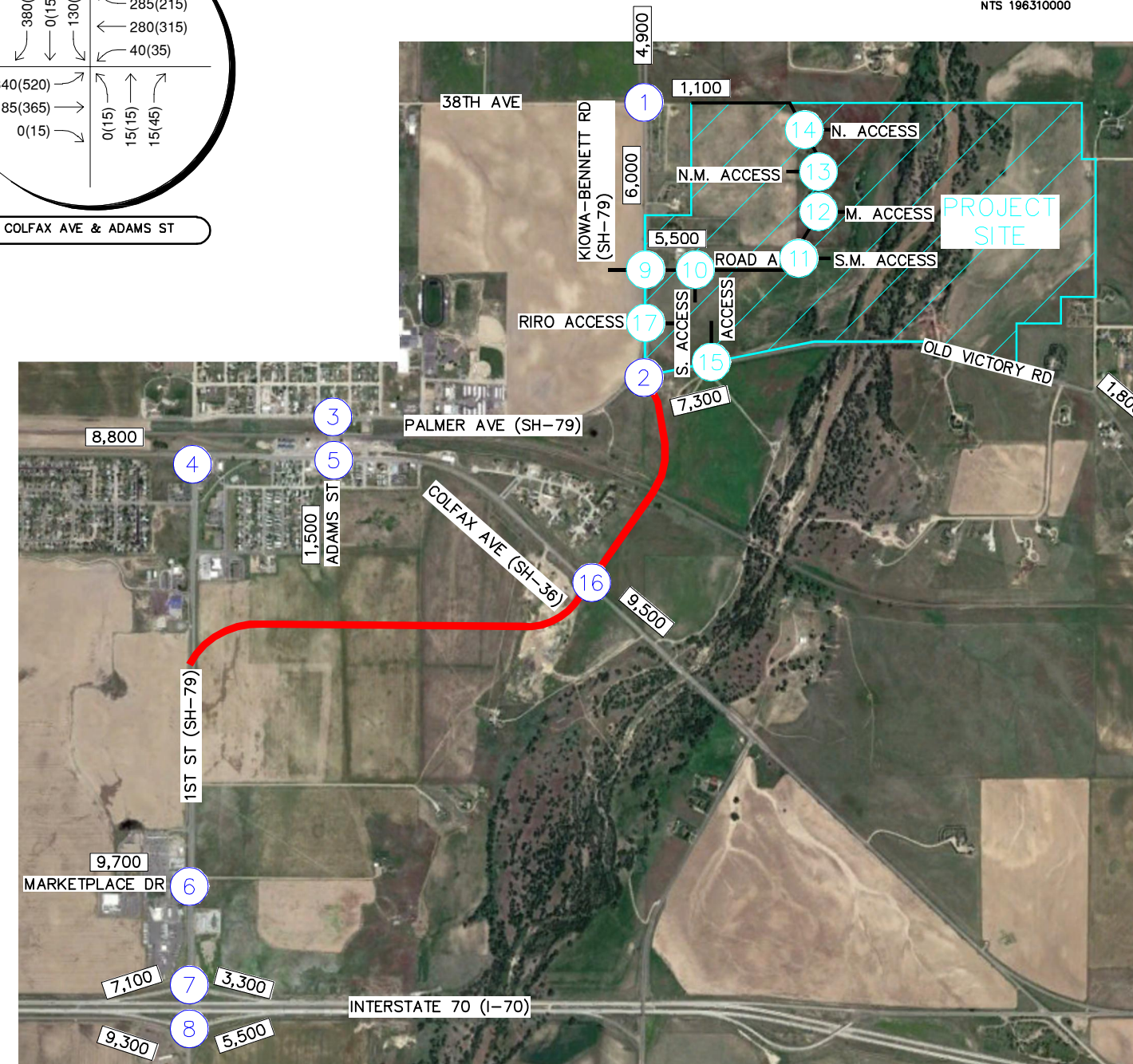
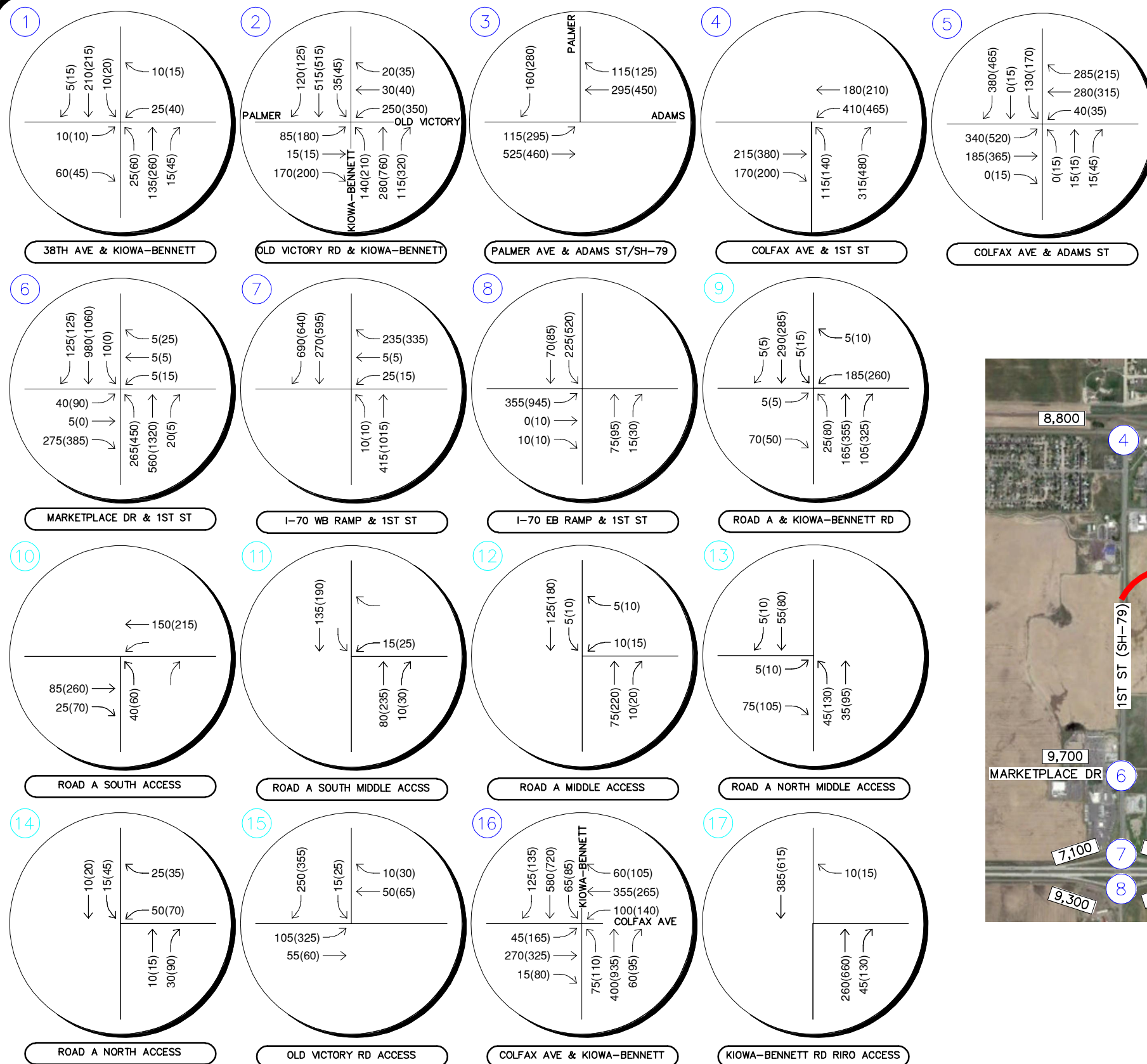


FIGURE 11
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2045 TOTAL TRAFFIC VOLUMES

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2030 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*².

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and four-way stop controlled intersections are defined for each approach and for the overall intersection.

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the existing and 2030 horizon analysis years while the HCM urban standard of 0.92 was used for the long-term 2045 horizon analysis. Synchro traffic analysis software was used to analyze the signalized, and unsignalized key intersections for HCM level of service.

(#1) 38th Avenue and Kiowa-Bennett Road (SH-79)

The unsignalized intersection of (#1) 38th Avenue and Kiowa-Bennett Road (SH-79) operates with stop control on the eastbound and westbound approaches of 38th Avenue. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. To be consistent with the Bennett Ranch study it is recommended that a northbound left turn lane and an eastbound to southbound right turn acceleration lane be designated at this intersection. Additionally, to meet CDOT standards it is recommended that a northbound right turn lane and southbound left turn lane be constructed with the project. With these improvements, all movements are anticipated to operate at an acceptable level of service throughout the 2045 horizon as an unsignalized intersection. Of note, the current plans with the proposed northbound left turn deceleration lane and eastbound to southbound right turn acceleration lane at the 38th Avenue and SH-79 intersection leave approximately 11 feet of space from the edge of the northbound through lane to the ROW for implementation of a northbound right turn lane. Therefore, it is believed that reducing the width of the proposed northbound right turn lane to 11 feet may make this design feasible. Otherwise, there is approximately 7.5 feet from ROW to the cemetery fence for acquiring additional ROW to allow for standard width right turn lane. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – 38th Avenue & Kiowa-Bennett Road (SH-79) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Left	7.5	A	7.5	A
Eastbound Approach	9.2	A	9.4	A
Westbound Approach	0.0	A	10.7	B
Southbound Left	0.0	A	0.0	A
2030 Background #				
Northbound Left	7.6	A	7.6	A
Eastbound Approach	0.0	A	0.0	A
Westbound Approach	0.0	A	12.3	B
Southbound Left	0.0	A	0.0	A
2030 Background Plus Project ##				
Northbound Left	7.6	A	7.7	A
Eastbound Approach	0.0	A	0.0	A
Westbound Approach	10.8	B	13.0	B
Southbound Left	7.5	A	7.8	A
2045 Background #				
Northbound Left	7.7	A	7.8	A
Eastbound Approach	0.0	A	0.0	A
Westbound Approach	0.0	A	13.5	B
Southbound Left	0.0	A	0.0	A
2045 Background Plus Project ##				
Northbound Left	7.8	A	7.8	A
Eastbound Approach	0.0	A	0.0	A
Westbound Approach	11.7	B	14.8	B
Southbound Left	7.6	A	7.9	A

= Northbound left and eastbound to southbound right turn acceleration lane

= # + Northbound right and southbound left

(#2) Old Victory Road and Kiowa-Bennett Road (SH-79)

The unsignalized T-intersection of (#2) Old Victory Road and Kiowa-Bennett Road (SH-79) operates with stop control on the westbound approach of Old Victory Road. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. It is understood that the intersection is proposed to be converted to a single lane roundabout in the near future to better align the three existing legs of the intersection and to provide a fourth south leg connecting to Colfax Avenue (SH-36). The eastbound and southbound approaches will have one shared lane for all movements whereas the northbound and westbound approaches will consist of a shared through/left turn lane and a right turn lane. With project traffic, this intersection is anticipated to operate at an acceptable level of service throughout the 2030 horizon. If future volumes are realized by 2045, an eastbound right turn lane and a southbound right turn lane may need to also be constructed. With these improvements the intersection is

anticipated to operate acceptably in 2045 with project traffic. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 – Old Victory Road & Kiowa-Bennett Road (SH-79) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Westbound Approach	10.6	B	10.3	B
Southbound Left	7.5	A	7.7	A
2030 Background #	5.5	A	6.0	A
Eastbound Approach	5.8	A	5.9	A
Westbound Left/Through	3.6	A	4.6	A
Westbound Right	3.4	A	4.4	A
Northbound Left/Through	4.3	A	6.4	A
Northbound Right	2.8	A	2.9	A
Southbound Approach	6.3	A	5.9	A
2030 Background Plus Project #	11.1	B	22.6	C
Eastbound Approach	11.9	B	21.0	C
Westbound Left/Through	7.6	A	32.8	D
Westbound Right	4.1	A	7.8	A
Northbound Left/Through	5.8	A	18.5	C
Northbound Right	3.7	A	6.0	A
Southbound Approach	17.4	C	32.4	D
2045 Background #	6.6	A	7.7	A
Eastbound Approach	7.2	A	7.6	A
Westbound Left/Through	3.9	A	5.5	A
Westbound Right	3.7	A	5.2	A
Northbound Left/Through	4.9	A	8.3	A
Northbound Right	2.9	A	3.1	A
Southbound Approach	7.8	A	7.5	A
2045 Background Plus Project ##	9.4	A	22.8	D
Eastbound Left/Through	7.9	A	11.1	B
Eastbound Right	9.7	A	11.3	B
Westbound Left/Through	8.6	A	45.1	E
Westbound Right	4.5	A	8.9	A
Northbound Left/Through	6.6	A	28.4	D
Northbound Right	3.8	A	6.1	A
Southbound Left/Through	14.5	B	19.9	C
Southbound Right	5.3	A	6.3	A

= Single Lane Roundabout with Additional Northbound and Westbound Right Turn Lanes

= # + Southbound Right and Eastbound Right Turn Lanes

(#3) Palmer Avenue (SH-79) and Adams Street

The unsignalized T-intersection of (#3) Palmer Avenue (SH-79) and Adams Street operates with stop control on the southeastbound approach of Palmer Avenue. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating at an acceptable level of service throughout the 2045 horizon. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – Palmer Avenue (SH-79) & Adams Street LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Eastbound Left	8.4	A	8.3	A
Southbound Approach	13.0	B	11.1	B
2030 Background				
Eastbound Left	8.0	A	8.1	A
Southbound Approach	11.3	B	10.6	B
2030 Background Plus Project				
Eastbound Left	8.0	A	8.2	A
Southbound Approach	11.6	B	10.9	B
2045 Background				
Eastbound Left	8.5	A	10.3	B
Southbound Approach	11.9	B	18.7	C
2045 Background Plus Project				
Eastbound Left	8.6	A	10.7	B
Southbound Approach	12.3	B	20.6	C

(#4) Colfax Avenue (SH-36) and 1st Street (SH-79)

The unsignalized T-intersection of (#4) Colfax Avenue (SH-36) and 1st Street (SH-79) operates with stop control on the northbound approach of 1st Street (SH-79). The intersection movements operate acceptably at LOS C or better during both peak hours under existing conditions. With or without project traffic, the northbound left turn is anticipated to operate poorly by 2030 under stop-control. Therefore, a MUTCD 2009 Four-Hour vehicular volume signal warrant analysis was completed for this intersection with 2030 background traffic volumes. It was found that a signal is warranted at this intersection prior to the addition of project traffic. Therefore, it is recommended that this intersection be signalized by 2030. Signal warrant analysis is provided in **Appendix E**. When this intersection is signalized it is also recommended that dual westbound left turn lanes be constructed and designated. With construction of the second westbound left turn lane, it is recommended that the two southbound receiving lanes continue as far south as possible with the

existing southbound right turn lane at the intersection of Centennial Drive and 1st Street (SH-79) to the south being restriped to a shared southbound through/right turn lane. With these improvements, this intersection is anticipated to operate acceptably with project traffic throughout 2045. **Table 6** provides the results of the LOS analysis conducted at this intersection.

Table 6 – Colfax Avenue (SH-36) & 1st Street (SH-79) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Left	16.9	C	17.3	C
Northbound Right	0.0	A	0.0	A
Westbound Left	8.2	A	8.4	A
2030 Background				
Northbound Left	86.2	F	68.6	F
Northbound Right	0.0	A	0.0	A
Westbound Left	9.5	A	10.3	B
2030 Background Plus Project				
Northbound Left	>300	F	>300	F
Northbound Right	0.0	A	0.0	A
Westbound Left	13.6	B	32.4	D
2030 Background Plus Project #	24.7	C	33.5	C
Eastbound Through	23.3	C	24.1	C
Eastbound Right	22.5	C	23.3	C
Westbound Left	27.6	C	38.8	D
Westbound Through	0.0	A	3.9	A
Northbound Left	43.1	D	43.1	D
Northbound Right	0.0	A	0.0	A
2045 Background				
Northbound Left	151.7	F	142.8	F
Northbound Right	0.0	A	0.0	A
Westbound Left	9.9	A	11.7	B
2045 Background Plus Project #	27.5	C	26.6	C
Eastbound Through	15.7	B	18.4	B
Eastbound Right	15.6	B	16.2	B
Westbound Left	46.3	D	44.5	D
Westbound Through	0.2	A	0.2	A
Northbound Left	43.3	D	44.4	D
Northbound Right	0.0	A	0.0	A

= Signalized with dual westbound left turn lanes

(#5) Colfax Avenue (SH-36) and Adams Street

The unsignalized intersection of (#5) Colfax Avenue (SH-36) and Adams Street operates with stop control on the northbound and southbound approaches of Adams Street. The intersection movements operate acceptably at LOS D or better during both peak hours under existing conditions. With or without project traffic, the northbound and southbound approaches are anticipated to operate poorly by 2030 with the existing stop-control. Therefore, a MUTCD Four Hour warrant analysis was completed for this intersection with 2030 background traffic volumes. It was found that a signal is warranted at this intersection prior to the addition of project traffic. Therefore, it is recommended that this intersection be signalized by 2030. Signal warrant analysis is provided in **Appendix E**. When this intersection is signalized, it is also recommended left turn lanes be designated on the eastbound, westbound, and southbound approaches. With these improvements, this intersection is anticipated to operate acceptably with project traffic throughout 2045. **Table 7** provides the results of the LOS analysis conducted at this intersection.

Table 7 – Colfax Avenue (SH-36) & Adams Street LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Approach	30.0	D	17.6	C
Eastbound Left	8.8	A	8.3	A
Westbound Left	7.4	A	7.5	A
Southbound Approach	29.7	D	23.3	C
2030 Background				
Northbound Approach	95.3	F	74.0	F
Eastbound Left	11.7	B	9.8	A
Westbound Left	8.0	A	9.3	A
Southbound Approach	>300	F	>300	F
2030 Background Plus Project				
Northbound Approach	>300	F	>300	F
Eastbound Left	19.0	C	15.7	C
Westbound Left	8.9	A	14.0	B
Southbound Approach	>300	F	>300	F
2030 Background Plus Project #	41.6	D	43.7	D
Eastbound Left	79.6	E	47.1	D
Eastbound Through/Right	7.3	A	54.7	D
Westbound Left	7.9	A	48.4	D
Westbound Through/Right	45.6	D	23.0	C
Northbound Approach	59.7	E	62.6	E
Southbound Left	63.6	E	65.4	E
Southbound Through/Right	78.9	E	79.5	E
2045 Background				
Northbound Approach	67.9	F	>300	F
Eastbound Left	10.6	B	11.9	B
Westbound Left	7.6	A	0.0	A
Southbound Approach	>300	F	>300	F
2045 Background Plus Project #	24.2	C	31.3	C
Eastbound Left	12.3	B	32.9	C
Eastbound Through/Right	8.2	A	10.5	B
Westbound Left	9.1	A	13.8	B
Westbound Through/Right	16.8	B	25.4	C
Northbound Approach	50.7	D	51.5	D
Southbound Left	62.7	E	63.6	E
Southbound Through/Right	61.7	E	0.0	A

= Signalized, left turn lanes on the eastbound, westbound, and southbound approaches

(#6) Marketplace Drive and 1st Street (SH-79)

The unsignalized intersection of (#6) Marketplace Drive and 1st Street (SH-79) operates with stop control on the eastbound and westbound approaches of Marketplace Drive. The intersection movements operate acceptably at LOS D or better during both peak hours under existing conditions. Construction of a signal is currently underway at this intersection. Therefore, this intersection was analyzed as a signalized intersection starting in 2030. With signalization this intersection is anticipated to operate acceptably throughout 2045 with project traffic. However, it should be noted that the northbound left turn may operate at LOS F if future traffic volumes are realized. **Table 8** provides the results of the LOS analysis conducted at this intersection.

Table 8 – Marketplace Drive & 1st Street (SH-79) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Left	8.5	A	8.9	A
Eastbound Left	16.1	C	26.7	D
Eastbound Through/Right	0.0	A	0.0	A
Westbound Left	16.1	C	25.2	D
Westbound Through	16.7	C	24.1	C
Westbound Right	0.0	A	0.0	A
Southbound Left	7.6	A	0.0	A
2030 Background #	2.0	A	3.3	A
Eastbound Left	59.4	E	59.1	E
Eastbound Through/Right	57.8	E	0.0	A
Westbound Left	57.7	E	56.7	E
Westbound Through	57.8	E	55.8	E
Westbound Right	0.0	A	0.0	A
Northbound Left	1.3	A	3.4	A
Northbound Through	0.3	A	0.9	A
Northbound Right	0.0	A	0.0	A
Southbound Left	0.6	A	0.0	A
Southbound Through	1.4	A	1.7	A
Southbound Right	0.7	A	0.9	A
2030 Background Plus Project #	3.1	A	14.0	B
Eastbound Left	59.8	E	57.3	E
Eastbound Through/Right	56.8	E	0.0	A
Westbound Left	56.7	E	52.2	D
Westbound Through	56.8	E	51.5	D
Westbound Right	0.0	A	0.0	A
Northbound Left	4.0	A	62.0	E
Northbound Through	0.5	A	5.2	A
Northbound Right	0.0	A	0.0	A
Southbound Left	0.7	A	0.0	A
Southbound Through	2.6	A	5.2	A
Southbound Right	0.8	A	1.5	A

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2045 Background #	2.4	A	5.3	A
Eastbound Left	59.4	E	58.7	E
Eastbound Through/Right	57.4	E	0.0	A
Westbound Left	57.3	E	55.8	E
Westbound Through	57.4	E	54.8	D
Westbound Right	0.0	A	0.0	A
Northbound Left	2.7	A	10.9	B
Northbound Through	0.3	A	1.2	A
Northbound Right	0.0	A	0.0	A
Southbound Left	0.6	A	0.0	A
Southbound Through	1.7	A	2.1	A
Southbound Right	0.7	A	1.0	A
2045 Background Plus Project #	4.8	A	48.4	D
Eastbound Left	59.0	E	56.7	E
Eastbound Through/Right	55.6	E	0.0	A
Westbound Left	55.7	E	50.9	D
Westbound Through	55.6	E	50.3	D
Westbound Right	0.0	A	0.0	A
Northbound Left	11.3	B	276.6	F
Northbound Through	0.6	A	8.3	A
Northbound Right	0.0	A	0.0	A
Southbound Left	0.9	A	0.0	A
Southbound Through	3.2	A	6.3	A
Southbound Right	1.0	A	1.8	A

= Signalized

(#7) I-70 Westbound Ramp and 1st Street (SH-79)

The unsignalized intersection of (#7) I-70 Westbound Ramp and 1st Street (SH-79) operates with stop control on the westbound approach of the I-70 westbound off-ramp. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. With project traffic, the westbound approach is anticipated to operate at LOS F during the afternoon peak hour. A MUTCD Four-Hour signal warrant analysis was completed for this intersection with 2030 background traffic volumes. It was found that a signal is warranted at this intersection with project traffic. Therefore, it is recommended that this intersection be signalized by 2030. Signal warrant analysis is provided in **Appendix E**. With signalization this intersection is anticipated to operate acceptably throughout 2030 with project traffic.

If future volumes are realized by 2045, it is recommended that a northbound left turn lane and two northbound through lanes exist. It is recommended that the second northbound through lane be constructed to act as a receiving lane from the dual left turn lanes from the I-70 Eastbound Ramp intersection to the south. The southbound acceleration lane from eastbound Marketplace Drive

intersection to the north can become a forced southbound right turn lane for traffic turning to the I-70 Westbound Ramp. With these improvements, this intersection is anticipated to operate acceptably throughout 2045. **Table 9** provides the results of the LOS analysis conducted at this intersection.

Table 9 – I-70 WB Ramp & 1st Street (SH-79) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Left	8.3	A	8.6	A
Westbound Approach	10.9	B	13.4	B
2030 Background				
Northbound Left	8.6	A	8.9	A
Westbound Approach	11.6	B	15.4	C
2030 Background Plus Project				
Northbound Left	9.7	A	10.8	B
Westbound Approach	15.0	C	103.1	F
2030 Background Plus Project #	13.1	B	15.8	B
Westbound Approach	74.1	E	79.2	E
Northbound Left/Through	0.5	A	2.9	A
Southbound Through/Right	2.5	A	8.7	A
2045 Background				
Northbound Left	9.1	A	9.7	A
Westbound Approach	13.7	B	23.5	C
2045 Background Plus Project ##	13.6	B	11.5	B
Westbound Approach	79.6	E	80.0	E
Northbound Left	0.1	A	0.1	A
Northbound Through	0.1	A	0.3	A
Southbound Through	0.2	A	0.7	A
Southbound Right	1.9	A	1.5	A

= Signalized

= # + Northbound Left and Two Through Lanes; Southbound Through and Right Turn Lanes

(#8) I-70 Eastbound Ramp and 1st Street (SH-79)

The unsignalized intersection of (#8) I-70 Eastbound Ramp and 1st Street (SH-79) operates with stop control on the eastbound approach of the I-70 eastbound off-ramp. The eastbound approach at this intersection currently operates at LOS F during the afternoon peak hour. It is believed that this intersection will be signalized in the near future by an adjacent project. Therefore, this intersection was evaluated as a signalized intersection in 2030. With signalization this intersection is anticipated to operate acceptably throughout 2030 with project traffic.

If future traffic volume projections are realized by 2045, this intersection may need to be reconstructed with two eastbound left turn lanes and a southbound left turn lane. Two northbound lanes would be needed along 1st Street northbound causing a need for the bridge over I-70 to be widened. With these improvements this intersection is anticipated to operate acceptably with project traffic throughout 2045. **Table 10** provides the results of the LOS analysis conducted at this intersection.

Table 10 – I-70 EB Ramp & 1st Street (SH-79) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Eastbound Approach	12.8	B	203.5	F
Southbound Left	7.5	A	8.0	A
2030 Background #	25.4	C	26.8	C
Eastbound Approach	57.7	E	52.2	D
Northbound Through/Right	2.8	A	9.1	A
Southbound Left/Through	0.3	A	2.0	A
2030 Background Plus Project #	26.4	C	51.9	D
Eastbound Approach	51.6	D	62.2	E
Northbound Through/Right	5.3	A	21.7	C
Southbound Left/Through	0.6	A	43.2	D
2045 Background #	24.6	C	32.1	C
Eastbound Approach	55.2	E	55.6	E
Northbound Through/Right	3.8	A	13.1	B
Southbound Left/Through	0.4	A	9.7	A
2045 Background Plus Project ##	26.5	C	30.6	C
Eastbound Left	53.6	D	49.8	D
Eastbound Through/Right	45.0	D	27.8	C
Northbound Through/Right	3.0	A	10.4	B
Southbound Left	0.5	A	5.2	A
Southbound Through	0.1	A	0.1	A

= Signalized

= # + Dual Eastbound Left Turn Lanes and a Southbound Left Turn Lane

(#16) Colfax Avenue (SH-36) and Kiowa-Bennett Road (SH-79)

It is understood that a single-lane roundabout with single lane approaches is proposed along Colfax Avenue (SH-36) to connect with an extension of Kiowa-Bennet Road (SH-79) in the near future. This intersection was analyzed starting with the 2030 background scenario. This intersection is anticipated to operate acceptably with 2030 background traffic. With project traffic, this intersection may need two lane eastbound, westbound, and southbound approaches with a separate eastbound left turn lane, a separate westbound right turn lane, and separate southbound left and right turn lanes by 2030. By 2045, this intersection is planned to be a signalized four leg intersection with further extension of Kiowa Bennett Road (SH-79). With construction of this fourth leg, the northbound and southbound Colfax Avenue approaches will consist of a left turn lane, two through lanes, and a right turn lane. The eastbound and westbound Kiowa Bennett Road (SH-79) approaches will consist of one left turn lane, one through lane, and one right turn lane. With these improvements this intersection will operate acceptably in 2045. **Table 11** provides the results of the LOS analysis conducted at this intersection.

Table 11 – Colfax Avenue (SH-36) & Kiowa-Bennett Road (SH-79) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2030 Background	9.7	A	14.2	B
Eastbound Approach	7.0	A	17.2	C
Westbound Approach	9.1	A	13.1	B
Southbound Approach	12.6	B	10.6	B
2030 Background Plus Project	47.8	E	240.2	F
Eastbound Approach	12.1	B	270.1	F
Westbound Approach	16.7	C	299.7	F
Southbound Approach	95.6	F	145.6	F
2030 Background Plus Project #	9.6	A	20.8	C
Eastbound Left	7.1	A	28.8	D
Eastbound Through/Right	5.8	A	11.6	B
Westbound Left/Through	10.3	B	32.3	D
Westbound Right	5.0	A	16.6	C
Southbound Left	9.7	A	9.0	A
Southbound Through/Right	13.6	B	19.4	C
2045 Background ##	26.0	C	23.7	C
Eastbound Left	51.3	D	41.6	D
Eastbound Through	38.5	D	34.3	C
Eastbound Right	32.0	C	28.9	C
Westbound Left	51.4	D	51.0	D
Westbound Through	42.2	D	32.6	C
Westbound Right	32.4	C	27.5	C
Northbound Left	9.6	A	13.3	B
Northbound Through	7.9	A	11.1	B
Northbound Right	7.7	A	10.5	B
Southbound Left	8.5	A	12.6	B
Southbound Through	8.0	A	10.6	B
Southbound Right	7.8	A	10.2	B
2045 Background Plus Project ##	22.0	C	22.4	C
Eastbound Left	53.9	D	49.7	D
Eastbound Through	38.3	D	33.7	C
Eastbound Right	31.8	C	28.4	C
Westbound Left	51.2	D	50.5	D
Westbound Through	41.9	D	32.1	C
Westbound Right	33.0	C	29.0	C
Northbound Left	13.2	B	21.9	C
Northbound Through	8.6	A	14.8	B
Northbound Right	7.8	A	10.9	B
Southbound Left	10.7	B	27.2	C
Southbound Through	9.3	A	13.3	B
Southbound Right	8.3	A	11.3	B

= Roundabout, two lane approaches on eastbound, westbound, and southbound with eastbound left turn lane, westbound right turn lane, and southbound left and right turn lanes
 ## = Extension of Kiowa-Bennett Road, northbound and southbound Colfax Avenue approaches with a left turn lane, two through lanes, and a right turn lane, eastbound and westbound Kiowa Bennett Road (SH-79) approaches with one left turn lane, one through lane, and one right turn lane

Project Accesses

A new public roadway (Road A) is proposed to access along Kiowa-Bennett Road (SH-79) as the east leg of 38th Avenue and as the east leg of a new intersection to be aligned with the Bennett Ranch access to the west. Road A meets the criteria for a collector roadway as set forth in the Town of Bennett Roadway Design and Construction Standards. However, 38th Avenue east of Kiowa-Bennett Road (SH-79) meets the criteria for a local roadway as set forth in the Town of Bennett Roadway Design and Construction Standards. It is recommended that a R1-1 “STOP” sign be installed on the exiting westbound approach of Road A exiting the development at the southern intersection location. It is understood that Bennett Ranch is constructing a 355-foot with 160-foot taper northbound left turn lane at the Road A and Kiowa-Bennett Road (SH-79) intersection. A southbound left turn is recommended to be designated at this access to a length of 500 feet plus a 300-foot taper to meet CDOT standards. The Kiowa Creek Preserve project is recommended to construct a 380-foot with 220-foot taper northbound right turn lane to meet CDOT standards.

Five accesses are proposed along Road A internal to the site. Road A is proposed to be constructed as a Collector. It is recommended that single lane approaches be provided at all accesses along Road A. The exiting approaches out of the development to Road A should operate with stop-control with R1-1 “STOP” signs installed.

An access to the mixed-use portion of the site is proposed to be located along Old Victory Road. Old Victory Road meets the criteria for an arterial roadway as set forth in the Town of Bennett Roadway Design and Construction Standards. Therefore, it is recommended that two through lanes be provided eastbound and westbound, and that an eastbound left turn lane be designated. The southbound access approach exiting the development should provide one shared lane and is recommended to operate with stop-control with a R1-1 “STOP” sign installed.

An additional right-in/right-out is proposed along Kiowa-Bennett Road (SH-79). It is recommended that a northbound right turn lane be constructed to meet CDOT SHAC standards. The westbound right turn access approach exiting the development is recommended to operate with stop-control with a R1-1 “STOP” sign installed. To restrict movements to right-turns only, it is recommended that a R3-2 No Left Turn sign be installed under the “STOP” sign.

Table 12 provides the results of the level of service for this project street accesses. As shown in the table, the project street access intersections are anticipated to have all movements operating with acceptable LOS E or better during the peak hours in both the buildout year 2030 and the 2045 long term horizons.

Table 12 – Project Access Level of Service Results

Intersection	2030 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Road A & Kiowa-Bennett Rd								
Northbound Left	7.8	A	8.0	A	8.0	A	8.1	A
Eastbound Approach	10.4	B	10.8	B	11.0	B	12.1	B
Westbound Approach	20.9	C	29.5	D	26.6	D	39.6	E
Southbound Left	7.8	A	9.0	A	7.8	A	9.2	A
Road A South Access								
Northbound Approach	10.3	B	13.3	B	10.3	B	13.4	B
Westbound Left	0.0	A	0.0	A	0.0	A	0.0	A
Road A South Middle Access								
Westbound Approach	9.9	A	11.9	B	9.9	A	12.0	B
Southbound Left	0.0	A	0.0	A	0.0	A	0.0	A
Road A Middle Access								
Westbound Approach	9.5	A	11.0	B	9.5	A	11.0	B
Southbound Left	7.4	A	7.8	A	7.4	A	7.8	A
Road A North Middle Access								
Northbound Left	7.4	A	7.7	A	7.4	A	7.7	A
Eastbound Approach	9.0	A	9.6	A	9.0	A	9.7	A
Road A North Access								
Westbound Approach	9.1	A	9.9	A	9.1	A	10.0	B
Southbound Left	7.3	A	7.5	A	7.3	A	7.5	A
Old Victory Rd Access								
Eastbound Left	7.5	A	8.1	A	7.5	A	8.2	A
Southbound Approach	10.1	B	13.0	B	10.3	B	13.9	B
Old Victory Rd Access #								
Eastbound Left	7.5	A	8.1	A	7.5	A	8.2	A
Southbound Approach	10.0	B	12.8	B	10.1	B	13.6	B
Kiowa-Bennet Rd RIRO Access								
Westbound Right	9.6	A	13.0	B	9.8	A	13.7	B

= Two eastbound and westbound through lanes, eastbound left turn lane

5.3 CDOT Turn Bay Length Analysis

CDOT Access Permits will be needed for the southern Road A access intersection along Kiowa-Bennett Road (SH-79) and the right-in/right-out access along Kiowa-Bennett Road (SH-79). Likewise, the threshold for requiring an access permit along roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the east leg of the proposed Road A access to align with 38th Avenue along SH-79 (Kiowa-Bennett Road) is anticipated to increase traffic volumes by more than 20 percent over existing. Therefore, access permits are anticipated to be needed at all three access intersections along Kiowa-Bennett Road (SH-79) as development occurs.

SH-79 is categorized as an NR-B roadway with a 55 miles per hour speed limit northbound, a speed limit of 65 miles per hour southbound at the intersection with 38th Avenue, and a speed limit of 55 miles per hour southbound at the intersection with Road A, as such turn lanes requirements are to be designed per the State Highway Access Code (SHAC). According to the State Highway Access Code for category Non-Rural Arterial (NR-B) roadways the turn lane warrants are as follows:

- A left turn lane with storage length plus taper is required for any access with a projected peak hour left ingress turning volumes greater than 25 vph. If the posted speed is greater than 40 mph, a deceleration lane and taper is required for any access with a projected peak hour left ingress turning volumes greater than 10 vph. The taper length will be included within the deceleration lane.
- A right turn lane with storage length plus taper is required for any access with a projected peak hour right ingress turning volumes greater than 50 vph. If the posted speed is greater than 40 mph, a right turn deceleration lane and taper is required for any access with a projected peak hour right ingress turning volumes greater than 25 vph. The taper length will be included within the deceleration length.

Based on the 2030 traffic volume projections, turn lane requirements at the project access intersections along SH-79 are as follows:

SH-79 & 38th Avenue

- A southbound left turn lane **is** warranted at this intersection based on projected 2030 background plus project traffic volumes being 17 southbound left turns during the peak

hour and the threshold being 10 vph. Based on the 65 mile per hour speed limit, the deceleration length is 500 feet, plus a 300-foot taper. Therefore, it is recommended that the southbound left turn lane be constructed and designed to 500 feet plus a 300-foot taper by 2030.

- A northbound right turn lane **is** warranted at this intersection based on projected 2030 background plus project traffic volumes being 43 northbound right turns during the peak hour and the threshold being 25 vph. Based on the 55 mile per hour speed limit, the deceleration length is recommended to provide 380 feet, plus a 220-foot taper. Therefore, it is recommended that the northbound right turn lane be constructed and designed to 380 feet plus a 220-foot taper by 2030.

SH-79 & Road A

- A southbound left turn lane **is** warranted at this intersection based on projected 2030 background plus project traffic volumes being 11 southbound left turns during the peak hour and the threshold being 10 vph. Based on the 65 mile per hour speed limit, the deceleration length is 500 feet, plus a 300-foot taper. Therefore, it is recommended that the southbound left turn lane be constructed and designed to 500 feet plus a 300-foot taper by 2030.
- A northbound right turn lane **is** warranted at this intersection based on projected 2030 background plus project traffic volumes being 321 northbound right turns during the peak hour and the threshold being 25 vph. Based on the 55 mile per hour speed limit, the deceleration length is recommended to provide 380 feet, plus a 220-foot taper. Therefore, it is recommended that the northbound right turn lane be constructed and designed to 380 feet plus a 220-foot taper by 2030.

SH-79 Right-In/Right-Out Access

- A northbound right turn lane **is** warranted at this intersection based on projected 2030 background plus project traffic volumes being 130 northbound right turns during the peak hour and the threshold being 25 vph. Based on the 55 mile per hour speed limit, the deceleration length is recommended to provide 380 feet, plus a 220-foot taper. Therefore, it is recommended that the northbound right turn lane be constructed and designed to 380 feet plus a 220-foot taper by 2030.

5.4 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 13** with calculations provided within the level of service operational sheets of **Appendix D** for unsignalized intersections and **Appendix F** for signalized intersections.

Table 13 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2030 Calculated Queue (feet)	2030 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
38th Ave & Kiowa-Bennett Rd					
Northbound Left	DNE	25'	345'+160'T	25'	345'+160'T
Northbound Right	DNE	25'	380'+220'T (CDOT)	25'	380'+220'T (CDOT)
Southbound Left	DNE	25'	500'+300'T (CDOT)	25'	500'+300'T (CDOT)
Old Victory Rd & Kiowa Bennett Rd					
Eastbound Right	DNE	-	-	50'	150'
Westbound Right	DNE	25'	150'	25'	150'
Northbound Right	DNE	25'	150'	25'	150'
Southbound Right	DNE	-	-	25'	150'
Palmer Ave & Adams St/SH-79					
Northeastbound Left	100'	25'	100'	50'	100'
Colfax Ave & 1st St					
Eastbound Right	125'	38'	125'	90'	125'
Westbound Left	360'	440' DL	450' DL	228' DL	450' DL
Colfax Ave & Adams St					
Eastbound Left	DNE	368'	375'	403'	425'
Westbound Left	DNE	26'	150'	27'	150'
Southbound Left	DNE	118'	75'	295'	75'
Marketplace Dr & 1st St					
Westbound Left	150'	30'	150'	35'	150'
Westbound Right	150'	25'	150'	27'	150'
Northbound Left	300'	390'	300'	805'	300'
Southbound Left	350'	25'	350'	25'	350'
I-70 WB Ramp & 1st St					
Northbound Left	DNE	-	-	25'	50'
Southbound Right	DNE	-	-	96'	C
I-70 EB Ramp & 1st St					
Eastbound Left	DNE	-	-	462' DL	475' DL
Southbound Left	DNE	-	-	494'	300'

Intersection Turn Lane	Existing Turn Lane Length (feet)	2030 Calculated Queue (feet)	2030 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Colfax Ave & Kiowa-Bennett Rd					
Eastbound Left	DNE	300'	300'	188'	300'
Eastbound Right	DNE	-	-	31'	150'
Westbound Left	DNE	-	-	231'	250'
Westbound Right	DNE	100'	150'	50'	150'
Northbound Left	DNE	-	-	100'	150'
Northbound Right	DNE	-	-	32'	150'
Southbound Left	DNE	-	-	86'	150'
Southbound Right	DNE	200'	200'	30'	200'
Road A & Kiowa-Bennett Rd					
Northbound Left	DNE	25'	355'+160'T	25'	355'+160'T
Northbound Right	DNE	25'	380'+220'T (CDOT)	25'	380'+220'T (CDOT)
Southbound Left	DNE	25'	500'+300'T (CDOT)	25'	500'+300'T (CDOT)
Old Victory Road Access					
Eastbound Left	DNE	25'	150'	25'	150'
Kiowa-Bennett Rd RIRO Access					
Northbound Right	DNE	25'	380'+220'T (CDOT)	25'	380'+220'T (CDOT)

DNE = Does Not Exist; C = Continuous; **Red** Text = Storage Deficiency; **Blue** Text = Recommendation

A 345-foot with 160-foot taper northbound left turn lane is planned to be constructed at the intersection of 38th Avenue and Kiowa Bennett Road (#1) with construction of the Bennett Farms development.

When the northbound and westbound right turn lanes are constructed at the (#2) Old Victory Road and Kiowa Bennett (SH-79) roundabout intersection, it is recommended that they be 150 feet in length. By 2045, this intersection may need 150-foot eastbound and southbound right turn lanes if future traffic volumes are realized

When the second westbound left turn lane is constructed at the intersection of (#4) Colfax Avenue and 1st Street it is recommended that both westbound left turn lanes be designated to a length of 450 feet by 2030.

The intersection of (#5) Colfax Avenue and Adams Street is recommended to have a 375-foot eastbound left turn lane, a 150-foot westbound left turn lane, and a 75-foot southbound left turn lane. The southbound left turn lane can only be constructed to a length of 75 feet due to the existing railroad track location to the north. If future volumes are realized by 2045 the eastbound left turn lane may need to be extended to 425 feet.

Although the queue for the northbound left turn lane at the intersection of (#6) Marketplace Drive and 1st Street extends past the available storage, this lane cannot be extended due to the back-to-back left turn lane for the gas station driveway to the south. In the future, dual northbound left turn lanes could be considered for this movement.

If future traffic volumes are realized by 2045, a separate 50-foot northbound left turn lane may be needed at the intersection of (#7) I-70 Westbound Ramp and 1st Street. A shared bay taper of 50 feet to allow for a 300-foot southbound left turn lane for the (#8) I-70 Eastbound Ramp and 1st Street intersection to the south should be designated in the back-to-back condition, although the southbound queue may extend beyond the 300-foot left turn lane length.

It is recommended that 475-foot dual eastbound left turn lanes be constructed at the intersection of the (#8) I-70 Eastbound Ramp and 1st Street by 2045.

It is understood that a 355-foot with 160-foot taper northbound left turn lane will be constructed by others at the intersection of (#9) Road A and Kiowa-Bennet Road in accordance with the Bennett Ranch study.

It is recommended that a 150-foot eastbound left turn lane be designated at the Old Victory Road Access (#15).

With construction of the (#16) Colfax Avenue (SH-36) and Kiowa-Bennett Road (SH-79) roundabout, it is recommended that a 300-foot eastbound left turn lane, a 150-foot westbound right turn, and a 200 foot-southbound right turn lane exist. When this intersection is reconstructed as a signalized four leg intersection by 2045, it is recommended that the eastbound right turn lane, the northbound left turn lane, the northbound right turn lane, and the southbound left turn lane be designated to a length of 150 feet while the westbound left turn lane be designated to a length of 250 feet.

5.5 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 12** for the 2030 horizon and **Figure 13** for the 2045 horizon.

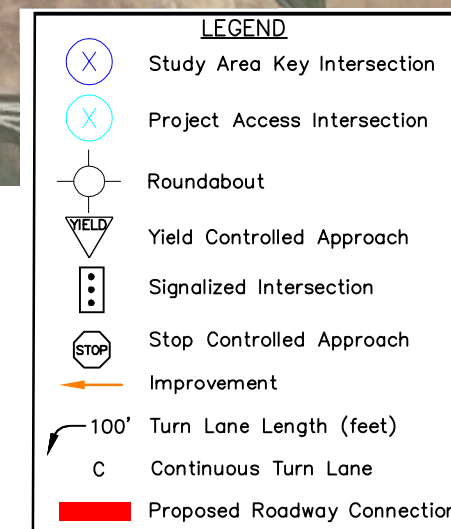
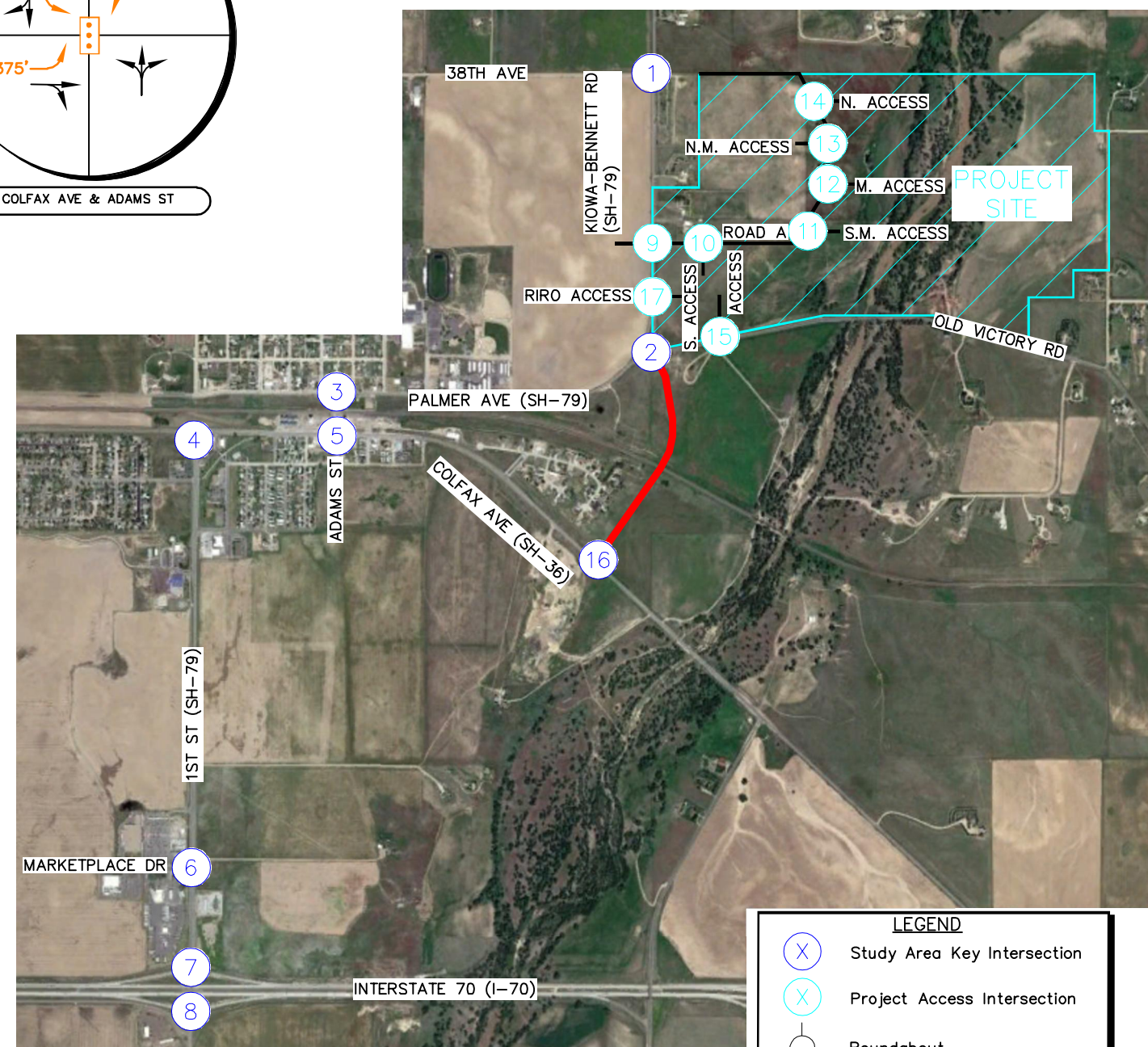
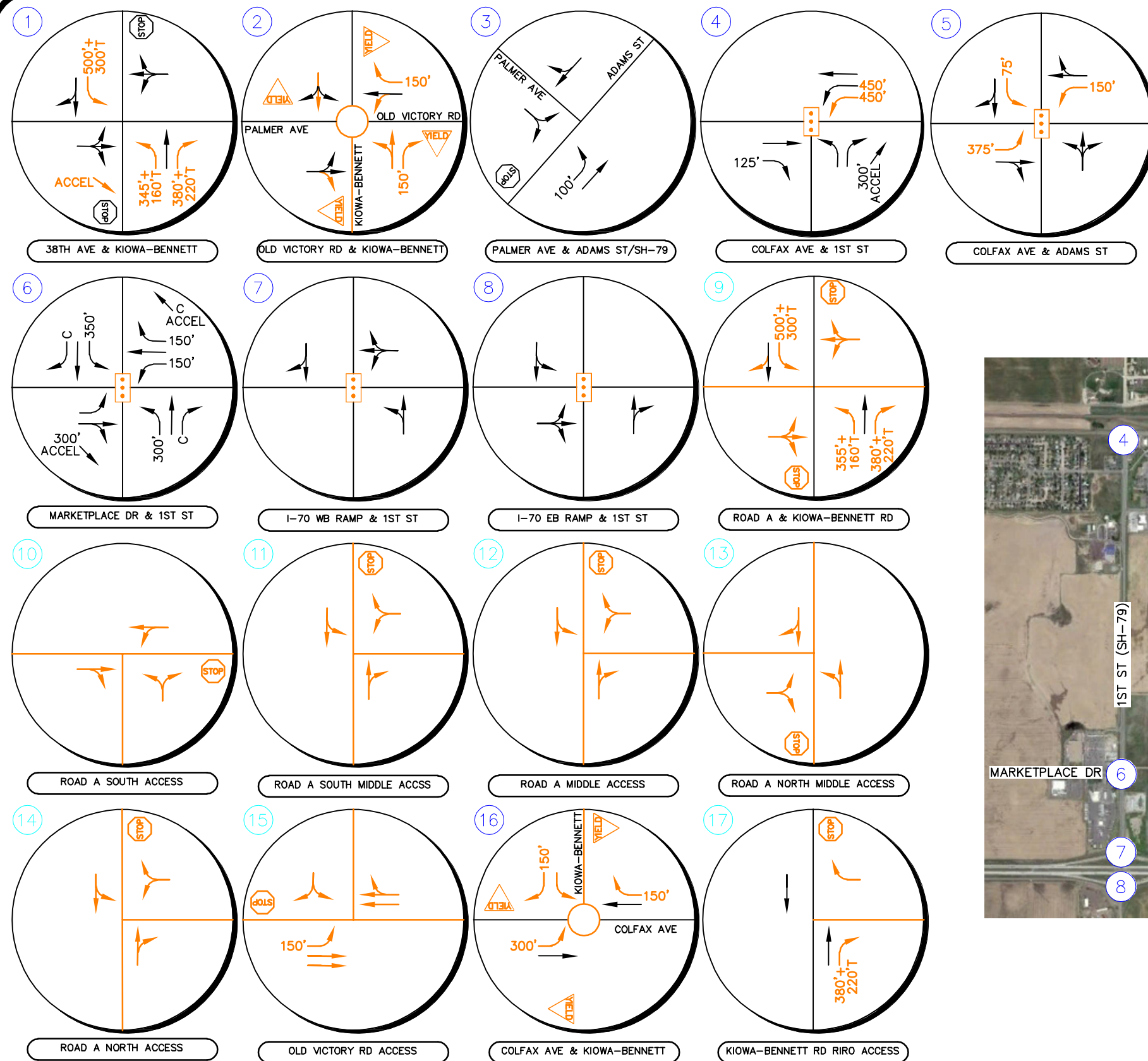


FIGURE 12
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2030 RECOMMENDATIONS

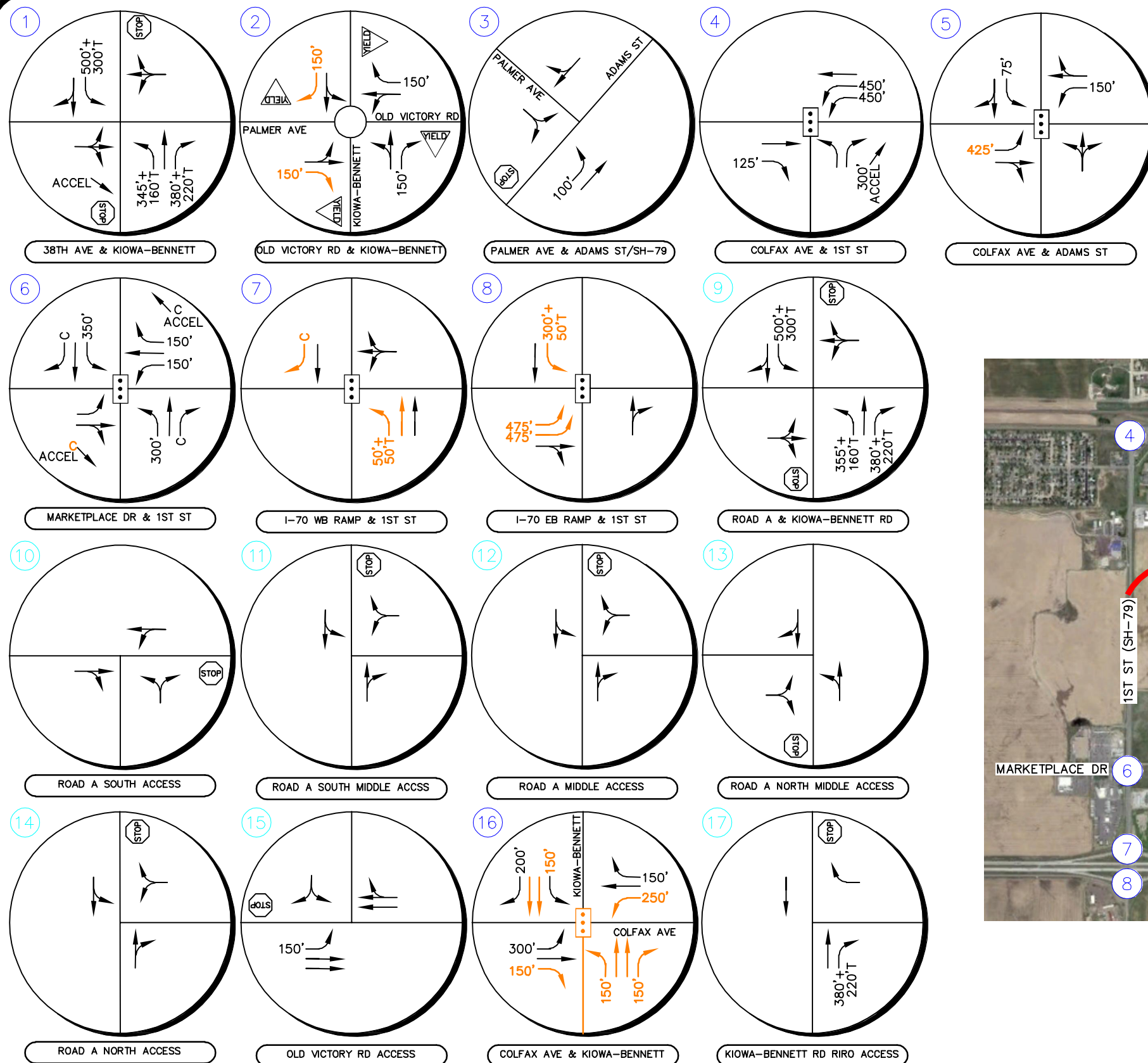
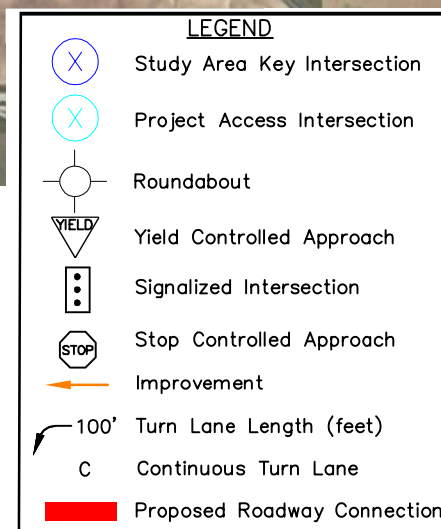
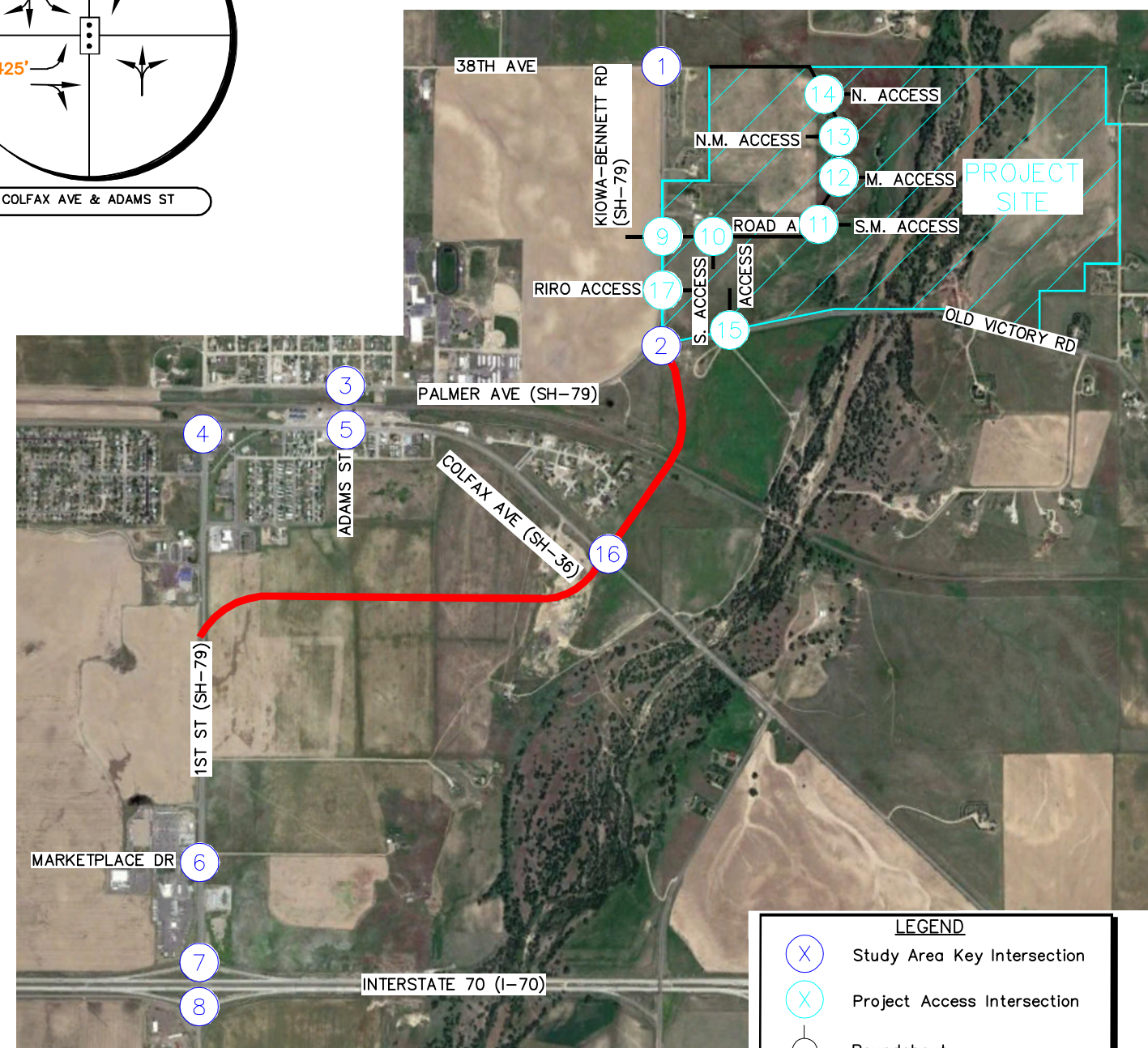


FIGURE 13
KIOWA CREEK PRESERVE
BENNETT, COLORADO
2045 RECOMMENDATIONS



6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes Kiowa Creek Preserve will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

2030 Recommendations:

- To meet Colorado Department of Transportation (CDOT) standards, it is recommended that a northbound right turn lane of 380 feet plus a 220-foot taper and a southbound left turn lane of 500 feet plus a 300-foot taper be constructed at the intersection of (#1) 38th Avenue and Kiowa-Bennett Road (SH-79). Additionally, with completion of the adjacent Bennett Farms project, a 345-foot with 160-foot taper northbound left turn lane and an eastbound right turn to southbound acceleration lane is planned to be constructed at this intersection.
- It is understood that the intersection of (#2) Old Victory Road and Kiowa-Bennett Road (SH-79) is planned to be improved to a single-lane roundabout with a new south leg connecting Kiowa-Bennet Road (SH-79) to Colfax Avenue (SH-36) sometime in the near future to better align the three legs of the existing intersection. The eastbound and southbound approaches will have one shared lane for all movements whereas the northbound and westbound approaches will consist of a shared through/left turn lane and a 150-foot right turn lane. The connection of (#16) Colfax Avenue (SH-36) and Bennett Road (SH-79) is also planned to be a single-lane roundabout with single lane approaches. However, this roundabout is recommended to have two eastbound, westbound, and southbound approach lanes, as such designated with a 300-foot eastbound left turn lane, a 150-foot westbound right turn lane, and a 150-foot southbound right turn lane with the roundabout construction.
- A traffic signal is anticipated to be warranted and needed at the (#4) Colfax Avenue (SH-36) and 1st Street (SH-79) intersection with 2030 background traffic volumes prior to the addition of Kiowa Creek Preserve traffic. Therefore, it is believed that this intersection will be signalized by other developments occurring within the Town of Bennett. When this intersection is signalized, it is also recommended that 450-foot westbound dual left turn lanes be constructed and designated. The existing two southbound receiving lanes along 1st Street

will accommodate the construction of westbound dual left turn lanes; however, it is recommended that the forced southbound right turn lane at the Centennial Drive and 1st Street (SH-79) intersection to the south be restriped to a southbound shared through/right turn lane to continue the two southbound through lanes as long as possible in the existing roadway so that better traffic volume balancing occurs in the westbound dual left turn lanes.

- A traffic signal is anticipated to be warranted and needed at the intersection of (#5) Colfax Avenue (SH-36) and Adams Street with 2030 background traffic volumes, prior to the addition of Kiowa Creek Preserve project traffic. Therefore, it is recommended that this intersection be considered for future signalization. When this intersection is signalized, it is also recommended that a 375-foot eastbound left turn lane, a 150-foot westbound left turn lane, and a 75-foot southbound left turn lane all be constructed and designated.
- A traffic signal is currently being constructed at the intersection of (#6) Marketplace Drive and 1st Street (SH-79) and will therefore be implemented by 2030.
- With the addition of project traffic in 2030, a traffic signal is anticipated to be warranted and needed at the intersection of (#7) I-70 Westbound Ramp and 1st Street (SH-79). Therefore, it is recommended that this intersection be considered for signalization by 2030.
- With the addition of project traffic in 2030, a traffic signal is anticipated to be constructed by others at the intersection of (#8) I-70 Eastbound Ramp and 1st Street (SH-79) by 2030.
- A new public roadway (Road A) is proposed to access along Kiowa-Bennett Road (SH-79) as the east leg of 38th Avenue and as the east leg of a new intersection to be aligned with the Bennett Ranch access to the west. It is recommended that a R1-1 “STOP” sign be installed on the exiting westbound approach of Road A exiting the development at the southern intersection location. It is understood that Bennett Ranch is constructing a 355-foot with 160-foot taper northbound left turn lane at the Road A and Kiowa-Bennett Road (SH-79) intersection. A 500 foot with 300-foot taper southbound left turn lane is recommended to be designated within the shadow of the northbound left turn lane, as the northbound and southbound through lanes will already be transitioned around the area. The Kiowa Creek

Preserve project is recommended to construct a 380-foot with 220-foot taper northbound right turn lane to meet CDOT standards.

- Five accesses are proposed along Road A internal to the site. Road A is proposed to be constructed as a Collector. It is recommended that single lane approaches be provided at all accesses along Road A. The exiting approaches out of the development to Road A should operate with stop-control with R1-1 “STOP” signs installed.
- An access to the mixed-use portion of the site is proposed to be located along Old Victory Road. It is recommended that two through lanes be provided eastbound and westbound, and that a 150-foot eastbound left turn lane be designated at this intersection. The southbound access approach exiting the development is recommended to operate with stop-control with a R1-1 “STOP” sign installed.
- An additional right-in/right-out is proposed along Kiowa-Bennett Road (SH-79). It is recommended that a 380-foot with 220-foot taper northbound right turn lane be constructed to meet CDOT SHAC standards. The westbound right turn access approach exiting the development is recommended to operate with stop-control with a R1-1 “STOP” sign installed. To restrict movements to right-turns only it is recommended that a R3-2 No Left Turn sign be installed under the “STOP” sign.
- CDOT Access Permits will be needed for the southern Road A access intersection along Kiowa-Bennett Road (SH-79) and the right-in/right-out access along Kiowa-Bennett Road (SH-79). Likewise, the threshold for requiring an access permit along roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the east leg of the proposed Road A access to align with 38th Avenue along SH-79 (Kiowa-Bennett Road) is anticipated to increase traffic volumes by more than 20 percent over existing. Therefore, access permits are anticipated to be needed at all three access intersections along Kiowa-Bennett Road (SH-79) as development occurs.

2045 Recommendations:

- At the (#2) Old Victory Road and Kiowa-Bennett Road (SH-79) roundabout, 150-foot eastbound and southbound right turn lanes may be needed.
- The eastbound left turn lane at the intersection of (#5) Colfax Avenue (SH-36) and Adams Street may need to be further extended to 425 feet if future traffic volume projections are realized.
- If future traffic volumes are realized, the intersection of the (#7) I-70 Westbound Ramp and 1st Street (SH-79) may need two northbound through lanes and a 50-foot northbound left turn lane with a 50-foot shared bay taper for the southbound left turn lane at the I-70 Eastbound Ramp intersection to the south. It is recommended that the second northbound through lane be constructed to act as a receiving lane from the eastbound dual left turn lanes from the I-70 Eastbound Ramp intersection to the south. This results in the need for a new four-lane wide bridge over I-70 (one southbound through lane, back-to-back left turn lanes, and two northbound through lanes. The southbound acceleration lane along 1st Street from Marketplace Drive to the north will drop as a continuous forced southbound right turn lane to the westbound onramp.
- The intersection of (#8) I-70 Eastbound Ramp and 1st Street (SH-79) may need to be further expanded to include two 475-foot eastbound left turn lanes and a separate southbound left turn lane and through lane. When this occurs, the 1st Street (SH-79) bridge over I-70 would need to be replaced with a wider four-lane bridge to accommodate two northbound through lanes, back-to-back left turn lanes, and one southbound through lane. It is recommended that the two northbound through lanes extend through the I-70 Westbound Ramp intersection at a minimum, but it is plausible that the entire section of 1st Street (SH-79) between Colfax Avenue (SH-36) and I-70 will require two northbound and southbound through lanes, based on future traffic volume projections.
- By 2045, the intersection of Colfax Avenue (SH-36) and Kiowa Bennett Road (SH-79) is planned to be a signalized four leg intersection with further extension of Kiowa Bennett Road (SH-79). With construction of this fourth let the northbound and southbound Colfax Avenue approaches will consist of a left turn lane, two through lanes, and a right turn lane. The

eastbound and westbound Kiowa Bennett Road (SH-79) approaches will consist of one left turn lane, one through lane, and one right turn lane. It is recommended that the eastbound right turn lane, the northbound left turn lane, the northbound right turn lane, and the southbound left turn lane be designated to a length of 150 feet while the westbound left turn lane be designated to a length of 250 feet.

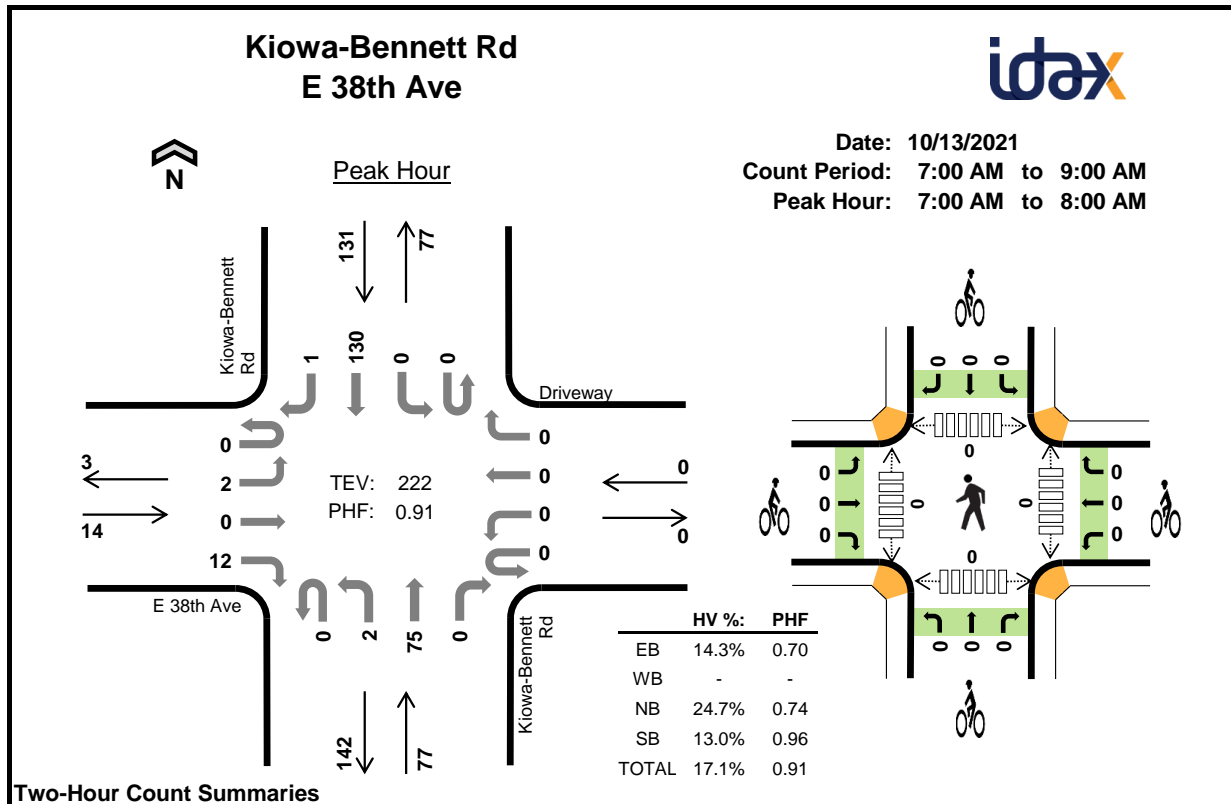
General Recommendations:

- Any on-site or offsite improvements should be incorporated into the Civil Drawings and conform to standards of Adams County, State of Colorado Department of Transportation, and/or the Town of Bennett (as applicable), as well as the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

APPENDICES

APPENDIX A

Intersection Count Sheets

**Two-Hour Count Summaries**

Interval Start		E 38th Ave				Driveway				Kiowa-Bennett Rd				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	2	0	3	0	0	0	0	0	0	17	0	0	0	33	0	55	0
7:15 AM		0	0	0	4	0	0	0	0	0	1	10	0	0	0	33	0	48	0
7:30 AM		0	0	0	4	0	0	0	0	0	0	23	0	0	0	30	1	58	0
7:45 AM		0	0	0	1	0	0	0	0	0	1	25	0	0	0	34	0	61	222
8:00 AM		0	0	0	3	0	0	0	0	0	1	13	0	0	0	21	0	38	205
8:15 AM		0	2	0	1	0	0	0	0	0	1	24	0	0	0	26	0	54	211
8:30 AM		0	0	0	0	0	0	0	0	0	0	16	1	0	0	21	0	38	191
8:45 AM		0	0	0	0	0	0	0	0	0	0	17	0	0	0	27	0	44	174
Count Total		0	4	0	16	0	0	0	0	0	4	145	1	0	0	225	1	396	0
Peak Hour	All	0	2	0	12	0	0	0	0	0	2	75	0	0	0	130	1	222	0
	HV	0	0	0	2	0	0	0	0	0	2	17	0	0	0	17	0	38	0
	HV%	-	0%	-	17%	-	-	-	-	-	100%	23%	-	-	-	13%	0%	17%	0

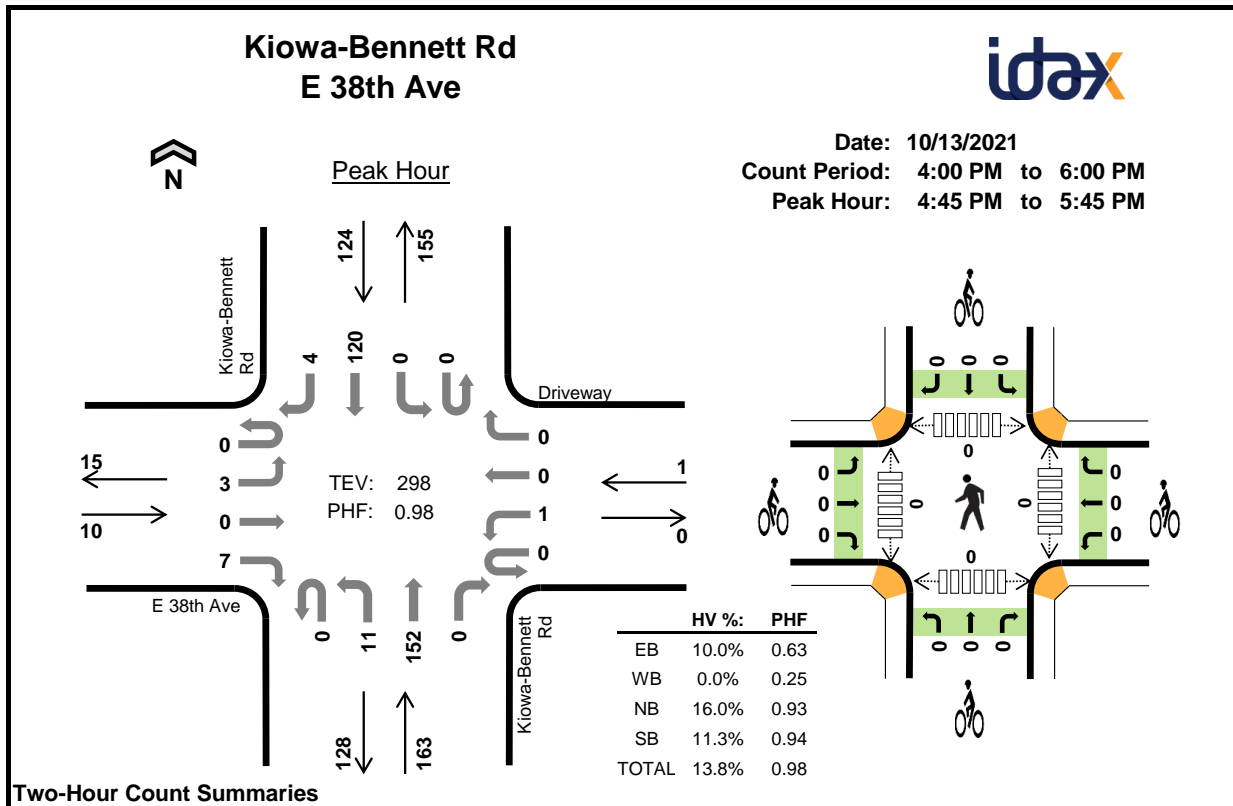
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	4	2	6	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	7	7	14	0	0	0	0	0	0	0	0	0	0
7:30 AM	2	0	3	2	7	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	5	6	11	0	0	0	0	0	0	0	0	0	0
8:00 AM	3	0	2	2	7	0	0	0	0	0	0	0	0	0	0
8:15 AM	2	0	6	5	13	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	6	7	13	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	3	7	10	0	0	0	0	0	0	0	0	0	0
Count Total	7	0	36	38	81	0	0	0	0	0	0	0	0	0	0
Peak Hour	2	0	19	17	38	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	E 38th Ave				Driveway				Kiowa-Bennett Rd				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
	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	4	0	0	0	2	0	6	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	6	0	0	0	7	0	14	0
7:30 AM	0	0	0	2	0	0	0	0	0	0	3	0	0	0	2	0	7	0
7:45 AM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	6	0	11	38
8:00 AM	0	0	0	3	0	0	0	0	0	0	2	0	0	0	2	0	7	39
8:15 AM	0	1	0	1	0	0	0	0	0	0	6	0	0	0	5	0	13	38
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	7	0	13	44
8:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	10	43
Count Total	0	1	0	6	0	0	0	0	0	2	34	0	0	0	38	0	81	0
Peak Hour	0	0	0	2	0	0	0	0	0	2	17	0	0	0	17	0	38	0

Two-Hour Count Summaries - Bikes																		
Interval Start	E 38th Ave			Driveway			Kiowa-Bennett Rd			Kiowa-Bennett Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	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				
7:30 AM	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				
8:00 AM	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				
8:30 AM	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				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		E 38th Ave				Driveway				Kiowa-Bennett Rd				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
		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	0	2	0	1	0	0	0	3	21	0	0	0	39	1	68	0
4:15 PM		0	1	0	3	0	0	0	0	0	2	33	0	0	0	28	0	67	0
4:30 PM		0	0	0	1	0	0	0	0	0	3	39	0	0	0	24	0	67	0
4:45 PM		0	1	0	3	0	0	0	0	0	2	39	0	0	0	29	1	75	277
5:00 PM		0	1	0	2	0	0	0	0	0	3	36	0	0	0	31	2	75	284
5:15 PM		0	0	0	0	0	0	0	0	0	5	39	0	0	0	27	1	72	289
5:30 PM		0	1	0	2	0	1	0	0	0	1	38	0	0	0	33	0	76	298
5:45 PM		0	0	0	2	0	0	0	0	0	3	33	0	0	0	34	0	72	295
Count Total		0	5	0	15	0	2	0	0	0	22	278	0	0	0	245	5	572	0
Peak Hour	All	0	3	0	7	0	1	0	0	0	11	152	0	0	0	120	4	298	0
	HV	0	0	0	1	0	0	0	0	0	3	23	0	0	0	13	1	41	0
	HV%	-	0%	-	14%	-	0%	-	-	-	27%	15%	-	-	-	11%	25%	14%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

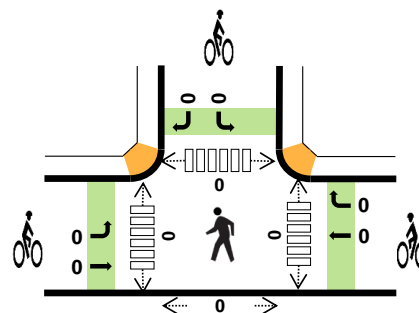
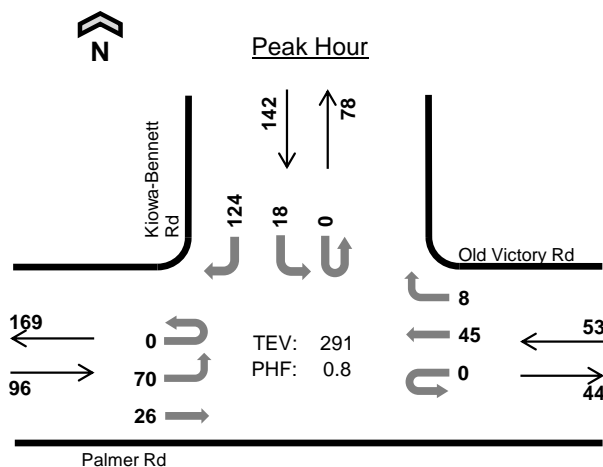
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	3	7	11	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	4	2	6	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	6	4	11	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	5	6	12	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	9	3	12	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	7	3	10	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	5	2	7	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0
Count Total	3	0	43	31	77	0	0	0	0	0	0	0	0	0	0
Peak Hour	1	0	26	14	41	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	E 38th Ave				Driveway				Kiowa-Bennett Rd				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
	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	1	0	0	0	0	0	2	1	0	0	0	7	0	11	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	6	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	6	0	0	0	4	0	11	0
4:45 PM	0	0	0	1	0	0	0	0	0	1	4	0	0	0	6	0	12	40
5:00 PM	0	0	0	0	0	0	0	0	0	1	8	0	0	0	3	0	12	41
5:15 PM	0	0	0	0	0	0	0	0	0	1	6	0	0	0	2	1	10	45
5:30 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0	7	41
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	8	37
Count Total	0	0	0	3	0	0	0	0	0	5	38	0	0	0	30	1	77	0
Peak Hour	0	0	0	1	0	0	0	0	0	3	23	0	0	0	13	1	41	0

Two-Hour Count Summaries - Bikes																		
Interval Start	E 38th Ave			Driveway			Kiowa-Bennett Rd			Kiowa-Bennett Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	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				
4:30 PM	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				
5:00 PM	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				
5:30 PM	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				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Kiowa-Bennett Rd Old Victory Rd



	HV %:	PHF
EB	17.7%	0.57
WB	7.5%	0.78
NB	-	-
SB	12.7%	0.93
TOTAL	13.4%	0.80

Two-Hour Count Summaries

Interval Start		Palmer Rd				Old Victory Rd				0				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	16	2	0	0	0	8	1	0	0	0	0	0	3	0	30	60	0
7:15 AM		0	11	4	0	0	0	13	0	0	0	0	0	0	7	0	31	66	0
7:30 AM		0	18	3	0	0	0	13	4	0	0	0	0	0	4	0	32	74	0
7:45 AM		0	25	17	0	0	0	11	3	0	0	0	0	0	4	0	31	91	291
8:00 AM		0	12	4	0	0	0	8	2	0	0	0	0	0	3	0	22	51	282
8:15 AM		0	18	1	0	0	0	5	7	0	0	0	0	0	5	0	23	59	275
8:30 AM		0	15	5	0	0	0	0	2	0	0	0	0	0	3	0	17	42	243
8:45 AM		0	12	2	0	0	0	4	4	0	0	0	0	0	3	0	26	51	203
Count Total		0	127	38	0	0	0	62	23	0	0	0	0	0	32	0	212	494	0
Peak Hour	All	0	70	26	0	0	0	45	8	0	0	0	0	0	18	0	124	291	0
	HV	0	17	0	0	0	0	2	2	0	0	0	0	0	2	0	16	39	0
	HV%	-	24%	0%	-	-	-	4%	25%	-	-	-	-	-	11%	-	13%	13%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

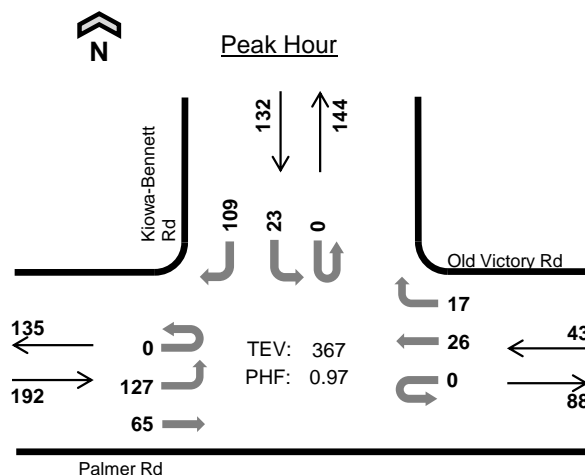
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	1	0	1	6	0	0	0	0	0	0	0	0	0	0
7:15 AM	7	1	0	6	14	0	0	0	0	0	0	0	0	0	0
7:30 AM	2	1	0	5	8	0	0	0	0	0	0	0	0	0	0
7:45 AM	4	1	0	6	11	0	0	0	0	0	0	0	0	0	0
8:00 AM	4	0	0	5	9	0	0	0	0	0	0	0	0	0	0
8:15 AM	5	1	0	6	12	0	0	0	0	0	0	0	0	0	0
8:30 AM	4	1	0	7	12	0	0	0	0	0	0	0	0	0	0
8:45 AM	3	1	0	7	11	0	0	0	0	0	0	0	0	0	0
Count Total	33	7	0	43	83	0	0	0	0	0	0	0	0	0	0
Peak Hr	17	4	0	18	39	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Palmer Rd				Old Victory Rd				0				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6	0
7:15 AM	0	7	0	0	0	0	1	0	0	0	0	0	0	0	1	0	14	0
7:30 AM	0	2	0	0	0	0	0	1	0	0	0	0	0	0	1	0	8	0
7:45 AM	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	6	11	39
8:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	9	42
8:15 AM	0	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	12	40
8:30 AM	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	12	44
8:45 AM	0	3	0	0	0	0	1	0	0	0	0	0	0	0	1	0	11	44
Count Total	0	31	2	0	0	0	4	3	0	0	0	0	0	0	4	0	83	0
Peak Hour	0	17	0	0	0	0	2	2	0	0	0	0	0	0	2	0	39	0

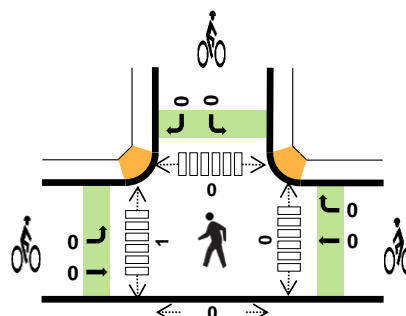
Two-Hour Count Summaries - Bikes														15-min Total	Rolling One Hour		
Interval Start	Palmer Rd			Old Victory Rd			0			Kiowa-Bennett Rd							
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	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		
8:00 AM	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		
8:30 AM	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		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Kiowa-Bennett Rd Old Victory Rd



Date: 10/13/2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	9.4%	0.96
WB	2.3%	0.77
NB	-	-
SB	15.9%	0.87
TOTAL	10.9%	0.97

Two-Hour Count Summaries

Interval Start		Palmer Rd				Old Victory Rd				0				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	25	21	0	0	0	7	0	0	0	0	0	0	5	0	33	91	0
4:15 PM		0	34	13	0	0	0	11	2	0	0	0	0	0	8	0	27	95	0
4:30 PM		0	33	16	0	0	0	5	9	0	0	0	0	0	6	0	22	91	0
4:45 PM		0	35	15	0	0	0	3	6	0	0	0	0	0	4	0	27	90	367
5:00 PM		0	38	3	0	0	0	11	1	0	0	0	0	0	6	0	27	86	362
5:15 PM		0	41	15	0	0	0	4	4	0	0	0	0	0	4	0	23	91	358
5:30 PM		0	36	15	0	0	0	4	4	0	0	0	0	0	7	0	29	95	362
5:45 PM		0	33	6	0	0	0	6	4	0	0	0	0	0	7	0	28	84	356
Count Total		0	275	104	0	0	0	51	30	0	0	0	0	0	47	0	216	723	0
Peak Hour	All	0	127	65	0	0	0	26	17	0	0	0	0	0	23	0	109	367	0
	HV	0	17	1	0	0	0	0	1	0	0	0	0	0	3	0	18	40	0
	HV%	-	13%	2%	-	-	-	0%	6%	-	-	-	-	-	13%	-	17%	11%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
4:00 PM	4	0	0	8	12	0	0	0	0	0	0	0	0	0	0
4:15 PM	5	0	0	2	7	0	0	0	0	0	0	1	0	0	1
4:30 PM	5	1	0	4	10	0	0	0	0	0	0	0	0	0	0
4:45 PM	4	0	0	7	11	0	0	0	0	0	0	0	0	0	0
5:00 PM	9	0	0	2	11	0	0	0	0	0	0	0	0	0	0
5:15 PM	7	1	0	1	9	0	0	0	0	0	0	0	0	0	0
5:30 PM	5	0	0	1	6	0	0	0	0	0	0	0	0	0	0
5:45 PM	4	0	0	4	8	0	0	0	0	0	0	0	0	0	0
Count Total	43	2	0	29	74	0	0	0	0	0	0	1	0	0	1
Peak Hr	18	1	0	21	40	0	0	0	0	0	0	1	0	0	1

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Palmer Rd				Old Victory Rd				0				Kiowa-Bennett Rd				15-min Total	Rolling One Hour
	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	1	0	0	0	0	0	0	0	0	0	0	1	0	7	12	0
4:15 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	0
4:30 PM	0	5	0	0	0	0	0	1	0	0	0	0	0	0	0	4	10	0
4:45 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	5	11	40
5:00 PM	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11	39
5:15 PM	0	7	0	0	0	0	0	1	0	0	0	0	0	0	0	1	9	41
5:30 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	37
5:45 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	34
Count Total	0	42	1	0	0	0	0	2	0	0	0	0	0	3	0	26	74	0
Peak Hour	0	17	1	0	0	0	0	1	0	0	0	0	0	3	0	18	40	0

Two-Hour Count Summaries - Bikes														15-min Total	Rolling One Hour		
Interval Start	Palmer Rd			Old Victory Rd			0			Kiowa-Bennett Rd							
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	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		
4:30 PM	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		
5:00 PM	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		
5:30 PM	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		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Adams St Palmer Ave

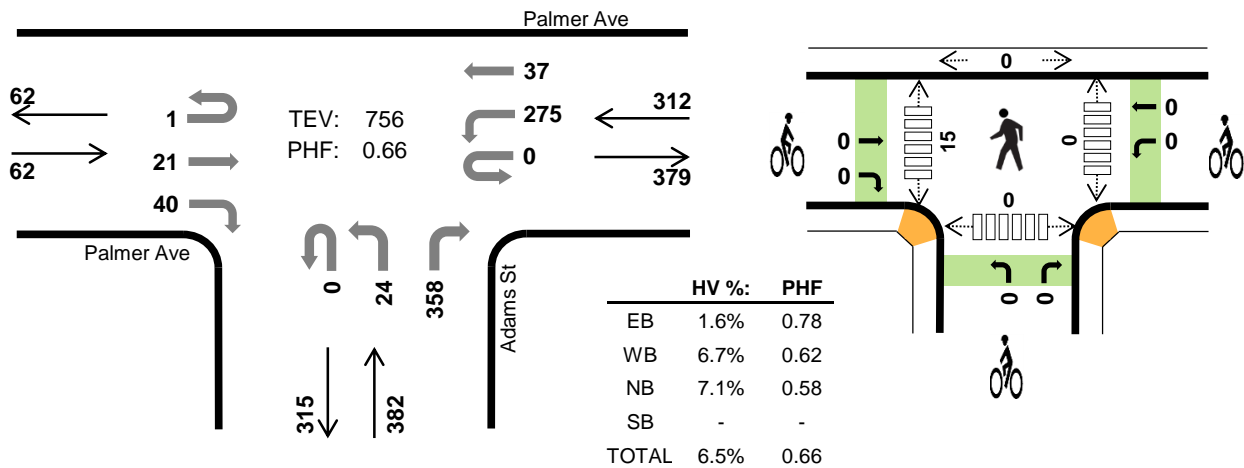


Peak Hour

Date: 10/13/2021

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 7:15 AM to 8:15 AM



Two-Hour Count Summaries

Interval Start	Palmer Ave Eastbound				Palmer Ave Westbound				Adams St Northbound				Adams St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	9	0	30	3	0	0	6	0	43	0	0	0	0	96	0
7:15 AM	0	0	5	11	0	35	1	0	0	4	0	70	0	0	0	0	126	0
7:30 AM	1	0	10	9	0	90	13	0	0	13	0	151	0	0	0	0	287	0
7:45 AM	0	0	6	10	0	105	20	0	0	3	0	100	0	0	0	0	244	753
8:00 AM	0	0	0	10	0	45	3	0	0	4	0	37	0	0	0	0	99	756
8:15 AM	0	0	2	9	0	39	1	0	0	11	0	30	0	0	0	0	92	722
8:30 AM	0	0	1	6	0	23	0	0	0	8	0	26	0	0	0	0	64	499
8:45 AM	0	0	0	3	0	36	2	0	0	6	0	20	0	0	0	0	67	322
Count Total	1	0	29	67	0	403	43	0	0	55	0	477	0	0	0	0	1,075	0
Peak Hour	All	1	0	21	40	0	275	37	0	0	24	0	358	0	0	0	756	0
	HV	0	0	0	1	0	21	0	0	0	1	0	26	0	0	0	49	0
	HV%	0%	-	0%	3%	-	8%	0%	-	-	4%	-	7%	-	-	-	6%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
7:00 AM	1	2	8	0	11	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	7	13	0	21	0	0	0	0	0	0	6	0	0	6
7:30 AM	0	4	4	0	8	0	0	0	0	0	0	6	0	0	6
7:45 AM	0	7	5	0	12	0	0	0	0	0	0	3	0	0	3
8:00 AM	0	3	5	0	8	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	7	7	0	14	0	0	0	0	0	0	1	0	0	1
8:30 AM	1	7	4	0	12	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0
Count Total	3	45	46	0	94	0	0	0	0	0	0	16	0	0	16
Peak Hr	1	21	27	0	49	0	0	0	0	0	0	15	0	0	15

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Palmer Ave				Palmer Ave				Adams St				0				15-min Total	Rolling One Hour
	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	2	0	0	0	2	0	6	0	0	0	0	11	0
7:15 AM	0	0	0	1	0	7	0	0	0	0	0	13	0	0	0	0	21	0
7:30 AM	0	0	0	0	0	4	0	0	0	0	1	0	3	0	0	0	8	0
7:45 AM	0	0	0	0	0	7	0	0	0	0	0	5	0	0	0	0	12	52
8:00 AM	0	0	0	0	0	3	0	0	0	0	0	5	0	0	0	0	8	49
8:15 AM	0	0	0	0	0	7	0	0	0	0	1	0	6	0	0	0	14	42
8:30 AM	0	0	0	1	0	7	0	0	0	0	0	4	0	0	0	0	12	46
8:45 AM	0	0	0	0	0	7	1	0	0	0	0	0	0	0	0	0	8	42
Count Total	0	0	1	2	0	44	1	0	0	0	4	0	42	0	0	0	94	0
Peak Hour	0	0	0	1	0	21	0	0	0	0	1	0	26	0	0	0	49	0

Two-Hour Count Summaries - Bikes

Interval Start	Palmer Ave			Palmer Ave			Adams St			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	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
7:30 AM	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
8:00 AM	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
8:30 AM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Adams St Palmer Ave

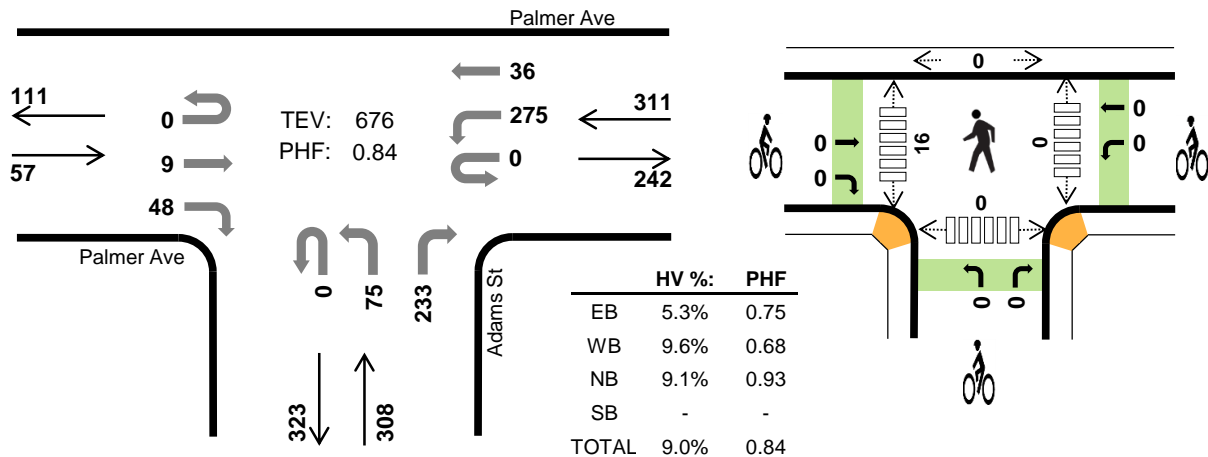


Peak Hour

Date: 10/13/2021

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:00 PM to 5:00 PM



Two-Hour Count Summaries

Interval Start	Palmer Ave Eastbound				Palmer Ave Westbound				Adams St Northbound				Adams St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	10	0	105	9	0	0	15	0	61	0	0	0	0	201	0
4:15 PM	0	0	0	9	0	69	14	0	0	18	0	50	0	0	0	0	160	0
4:30 PM	0	0	3	15	0	50	10	0	0	26	0	57	0	0	0	0	161	0
4:45 PM	0	0	5	14	0	51	3	0	0	16	0	65	0	0	0	0	154	676
5:00 PM	0	0	2	12	0	55	6	0	0	14	0	59	0	0	0	0	148	623
5:15 PM	0	0	2	20	0	38	3	0	0	10	0	73	0	0	0	0	146	609
5:30 PM	0	0	1	11	0	47	1	0	0	20	0	73	0	0	0	0	153	601
5:45 PM	0	0	1	11	0	53	4	0	0	15	0	56	0	0	0	0	140	587
Count Total	0	0	15	102	0	468	50	0	0	134	0	494	0	0	0	0	1,263	0
Peak Hour	All	0	0	9	48	0	275	36	0	0	75	0	233	0	0	0	676	0
	HV	0	0	0	3	0	23	7	0	0	4	0	24	0	0	0	61	0
	HV%	-	-	0%	6%	-	8%	19%	-	-	5%	-	10%	-	-	-	9%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
4:00 PM	0	11	4	0	15	0	0	0	0	0	0	16	0	0	16
4:15 PM	0	6	7	0	13	0	0	0	0	0	0	0	0	0	0
4:30 PM	2	8	10	0	20	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	5	7	0	13	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	13	0	14	0	0	1	0	1	0	1	0	0	1
5:15 PM	2	1	12	0	15	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	1	3	0	5	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	6	5	0	11	0	0	0	0	0	0	1	0	0	1
Count Total	6	39	61	0	106	0	0	1	0	1	0	18	0	0	18
Peak Hr	3	30	28	0	61	0	0	0	0	0	0	16	0	0	16

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Palmer Ave				Palmer Ave				Adams St				0				15-min Total	Rolling One Hour
	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	10	1	0	0	0	0	4	0	0	0	0	15	0
4:15 PM	0	0	0	0	0	3	3	0	0	1	0	6	0	0	0	0	13	0
4:30 PM	0	0	0	2	0	5	3	0	0	1	0	9	0	0	0	0	20	0
4:45 PM	0	0	0	1	0	5	0	0	0	2	0	5	0	0	0	0	13	61
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	13	0	0	0	0	14	60
5:15 PM	0	0	0	2	0	0	1	0	0	0	0	12	0	0	0	0	15	62
5:30 PM	0	0	0	1	0	1	0	0	0	1	0	2	0	0	0	0	5	47
5:45 PM	0	0	0	0	0	6	0	0	0	0	0	5	0	0	0	0	11	45
Count Total	0	0	0	6	0	31	8	0	0	5	0	56	0	0	0	0	106	0
Peak Hour	0	0	0	3	0	23	7	0	0	4	0	24	0	0	0	0	61	0

Two-Hour Count Summaries - Bikes

Interval Start	Palmer Ave			Palmer Ave			Adams St			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	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
4:30 PM	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
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	1
5:15 PM	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	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S 1st st E Colfax Ave

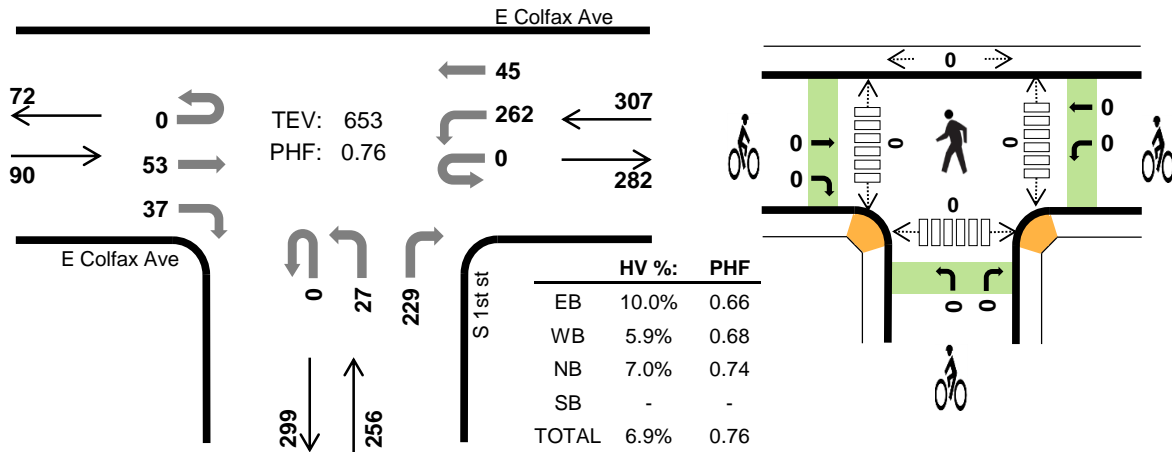


Peak Hour

Date: 10/13/2021

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 7:15 AM to 8:15 AM



Two-Hour Count Summaries

Interval Start		E Colfax Ave				E Colfax Ave				S 1st st				0				15-min Total	Rolling One Hour
		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	6	5	0	36	7	0	0	9	0	26	0	0	0	0	89	0
7:15 AM		0	0	9	6	0	38	12	0	0	5	0	44	0	0	0	0	114	0
7:30 AM		0	0	24	10	0	69	8	0	0	4	0	82	0	0	0	0	197	0
7:45 AM		0	0	15	13	0	98	15	0	0	6	0	69	0	0	0	0	216	616
8:00 AM		0	0	5	8	0	57	10	0	0	12	0	34	0	0	0	0	126	653
8:15 AM		0	0	7	5	0	47	10	0	0	7	0	27	0	0	0	0	103	642
8:30 AM		0	0	9	4	0	24	5	0	0	8	0	23	0	0	0	0	73	518
8:45 AM		0	0	5	6	0	39	14	0	0	4	0	20	0	0	0	0	88	390
Count Total		0	0	80	57	0	408	81	0	0	55	0	325	0	0	0	0	1,006	0
Peak Hour	All	0	0	53	37	0	262	45	0	0	27	0	229	0	0	0	0	653	0
	HV	0	0	6	3	0	12	6	0	0	3	0	15	0	0	0	0	45	0
	HV%	-	-	11%	8%	-	5%	13%	-	-	11%	-	7%	-	-	-	-	7%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
7:00 AM	1	3	2	0	6	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	6	7	0	17	0	0	0	0	0	0	0	0	0	0
7:30 AM	2	3	4	0	9	0	0	0	0	0	0	0	0	0	0
7:45 AM	2	5	3	0	10	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	4	4	0	9	0	0	0	0	0	0	0	0	0	0
8:15 AM	3	10	4	0	17	0	0	0	0	0	0	0	0	0	0
8:30 AM	2	5	3	0	10	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	12	1	0	13	0	0	0	0	0	0	0	0	0	0
Count Total	15	48	28	0	91	0	0	0	0	0	0	0	0	0	0
Peak Hr	9	18	18	0	45	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Colfax Ave				E Colfax Ave				S 1st st				0				15-min Total	Rolling One Hour
	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	2	1	0	0	1	0	1	0	0	0	0	6	0
7:15 AM	0	0	3	1	0	4	2	0	0	2	0	5	0	0	0	0	17	0
7:30 AM	0	0	1	1	0	1	2	0	0	0	0	4	0	0	0	0	9	0
7:45 AM	0	0	2	0	0	3	2	0	0	0	0	3	0	0	0	0	10	42
8:00 AM	0	0	0	1	0	4	0	0	0	1	0	3	0	0	0	0	9	45
8:15 AM	0	0	1	2	0	5	5	0	0	0	0	4	0	0	0	0	17	45
8:30 AM	0	0	2	0	0	3	2	0	0	0	0	3	0	0	0	0	10	46
8:45 AM	0	0	0	0	0	6	6	0	0	0	0	1	0	0	0	0	13	49
Count Total	0	0	10	5	0	28	20	0	0	4	0	24	0	0	0	0	91	0
Peak Hour	0	0	6	3	0	12	6	0	0	3	0	15	0	0	0	0	45	0

Two-Hour Count Summaries - Bikes

Interval Start	E Colfax Ave			E Colfax Ave			S 1st st			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	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
7:30 AM	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
8:00 AM	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
8:30 AM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S 1st st E Colfax Ave

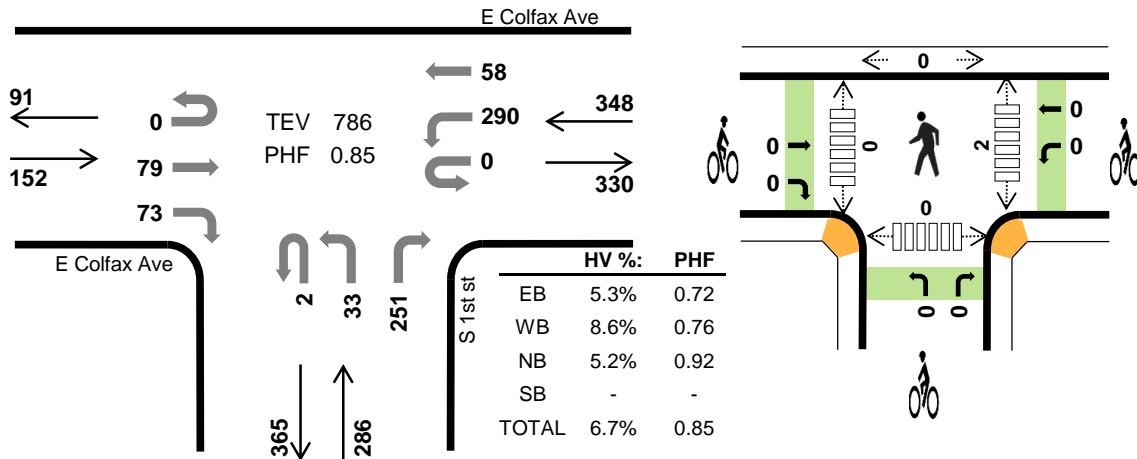


Peak Hour

Date: 10/13/2021

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:00 PM to 5:00 PM



Two-Hour Count Summaries

Interval Start		E Colfax Ave				E Colfax Ave				S 1st st				0				15-min Total	Rolling One Hour
		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	22	23	0	99	16	0	0	11	0	59	0	0	0	0	230	0
4:15 PM		0	0	24	29	0	67	7	0	0	10	0	58	0	0	0	0	195	0
4:30 PM		0	0	13	11	0	67	18	0	1	5	0	64	0	0	0	0	179	0
4:45 PM		0	0	20	10	0	57	17	0	1	7	0	70	0	0	0	0	182	786
5:00 PM		0	0	15	16	0	67	11	0	1	0	0	55	0	0	0	0	165	721
5:15 PM		0	0	17	16	0	59	11	0	4	0	0	66	0	0	0	0	173	699
5:30 PM		0	0	19	12	0	64	11	0	0	0	0	65	0	0	0	0	171	691
5:45 PM		0	0	10	15	0	59	9	0	0	0	0	62	0	0	0	0	155	664
Count Total		0	0	140	132	0	539	100	0	7	33	0	499	0	0	0	0	1,450	0
Peak Hour	All	0	0	79	73	0	290	58	0	2	33	0	251	0	0	0	0	786	0
	HV	0	0	5	3	0	22	8	0	0	1	0	14	0	0	0	0	53	0
	HV%	-	-	6%	4%	-	8%	14%	-	0%	3%	-	6%	-	-	-	-	7%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
4:00 PM	2	7	2	0	11	0	0	0	0	0	0	0	0	0	0
4:15 PM	3	5	7	0	15	0	0	0	0	0	0	0	0	0	0
4:30 PM	2	12	4	0	18	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	6	2	0	9	0	0	0	0	0	2	0	0	0	2
5:00 PM	5	3	3	0	11	0	0	11	0	11	0	0	0	0	0
5:15 PM	2	5	6	0	13	0	0	6	0	6	0	2	0	0	2
5:30 PM	1	4	2	0	7	0	0	13	0	13	0	1	0	0	1
5:45 PM	1	3	4	0	8	0	0	7	0	7	0	0	0	0	0
Count Total	17	45	30	0	92	0	0	37	0	37	2	3	0	0	5
Peak Hr	8	30	15	0	53	0	0	0	0	0	2	0	0	0	2

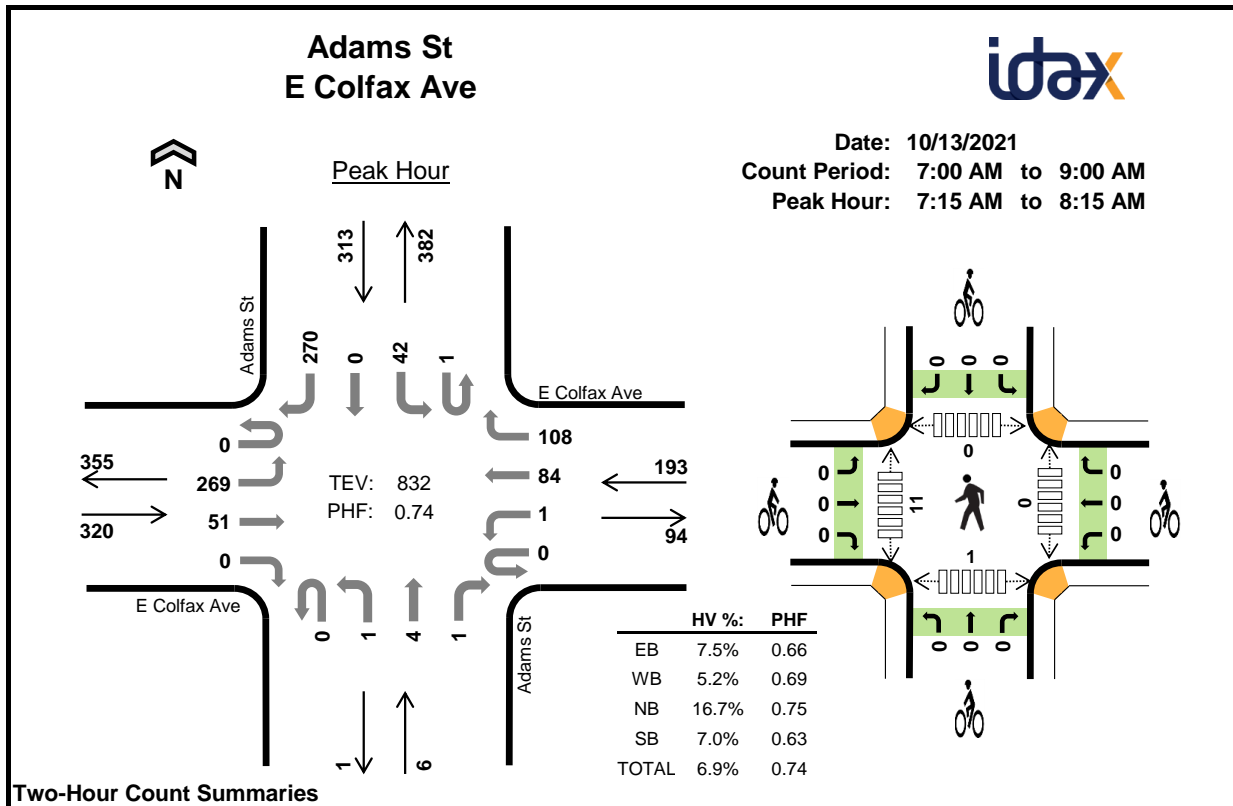
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E Colfax Ave				E Colfax Ave				S 1st st				0				15-min Total	Rolling One Hour
	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	2	0	0	6	1	0	0	0	0	2	0	0	0	0	11	0
4:15 PM	0	0	1	2	0	5	0	0	0	1	0	6	0	0	0	0	15	0
4:30 PM	0	0	1	1	0	7	5	0	0	0	0	4	0	0	0	0	18	0
4:45 PM	0	0	1	0	0	4	2	0	0	0	0	2	0	0	0	0	9	53
5:00 PM	0	0	4	1	0	3	0	0	0	0	0	3	0	0	0	0	11	53
5:15 PM	0	0	2	0	0	2	3	0	0	0	0	6	0	0	0	0	13	51
5:30 PM	0	0	1	0	0	4	0	0	0	0	0	2	0	0	0	0	7	40
5:45 PM	0	0	1	0	0	3	0	0	0	0	0	4	0	0	0	0	8	39
Count Total	0	0	13	4	0	34	11	0	0	1	0	29	0	0	0	0	92	0
Peak Hour	0	0	5	3	0	22	8	0	0	1	0	14	0	0	0	0	53	0

Two-Hour Count Summaries - Bikes

Interval Start	E Colfax Ave			E Colfax Ave			S 1st st			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	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
4:30 PM	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
5:00 PM	0	0	0	0	0	0	11	0	0	0	0	0	11	11
5:15 PM	0	0	0	0	0	0	6	0	0	0	0	0	6	17
5:30 PM	0	0	0	0	0	0	13	0	0	0	0	0	13	30
5:45 PM	0	0	0	0	0	0	7	0	0	0	0	0	7	37
Count Total	0	0	0	0	0	0	37	0	0	0	0	0	37	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		E Colfax Ave				E Colfax Ave				Adams St				Adams St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	29	3	0	0	0	12	16	0	0	1	0	0	9	0	32	102	0
7:15 AM		0	53	8	0	0	0	17	19	0	0	1	0	1	5	0	35	139	0
7:30 AM		0	107	15	0	0	0	20	50	0	0	1	1	0	10	0	78	282	0
7:45 AM		0	79	16	0	0	1	24	29	0	0	1	0	0	17	0	108	275	798
8:00 AM		0	30	12	0	0	0	23	10	0	1	1	0	0	10	0	49	136	832
8:15 AM		0	25	13	0	0	0	19	19	0	0	0	1	0	9	1	38	125	818
8:30 AM		0	28	8	0	0	0	9	4	0	0	0	0	0	2	0	21	72	608
8:45 AM		0	20	6	0	0	0	25	6	0	0	0	0	0	8	0	38	103	436
Count Total		0	371	81	0	0	1	149	153	0	1	5	2	1	70	1	399	1,234	0
Peak Hour	All	0	269	51	0	0	1	84	108	0	1	4	1	1	42	0	270	832	0
	HV	0	19	5	0	0	0	4	6	0	0	1	0	0	4	0	18	57	0
	HV%	-	7%	10%	-	-	0%	5%	6%	-	0%	25%	0%	0%	10%	-	7%	7%	0

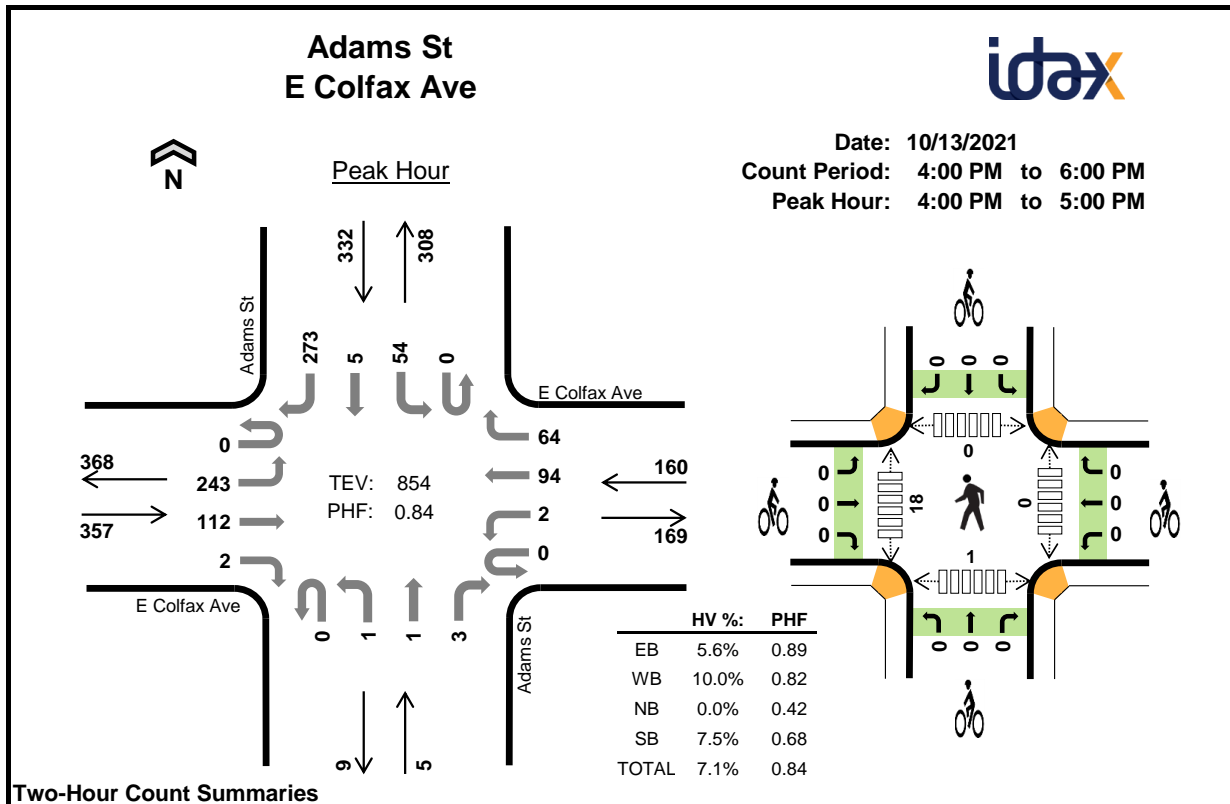
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	7	0	2	10	0	0	0	0	0	0	0	0	0	0
7:15 AM	9	3	1	6	19	0	0	0	0	0	0	5	0	0	5
7:30 AM	6	1	0	6	13	0	0	0	0	0	0	3	0	0	3
7:45 AM	5	3	0	7	15	0	0	0	0	0	0	2	0	0	2
8:00 AM	4	3	0	3	10	0	0	0	0	0	0	1	0	1	2
8:15 AM	5	6	0	7	18	0	0	0	0	0	0	1	0	0	1
8:30 AM	4	2	0	4	10	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	3	0	11	15	0	0	0	0	0	0	0	0	0	0
Count Total	35	28	1	46	110	0	0	0	0	0	0	12	0	1	13
Peak Hour	24	10	1	22	57	0	0	0	0	0	0	11	0	1	12

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	E Colfax Ave				E Colfax Ave				Adams St				Adams St				15-min Total	Rolling One Hour
	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	0	0	0	0	1	6	0	0	0	0	0	0	0	2	10	0
7:15 AM	0	9	0	0	0	0	0	3	0	0	1	0	0	0	0	6	19	0
7:30 AM	0	4	2	0	0	0	1	0	0	0	0	0	0	3	0	3	13	0
7:45 AM	0	3	2	0	0	0	1	2	0	0	0	0	0	0	0	7	15	57
8:00 AM	0	3	1	0	0	0	2	1	0	0	0	0	0	1	0	2	10	57
8:15 AM	0	5	0	0	0	0	1	5	0	0	0	0	0	0	0	7	18	56
8:30 AM	0	2	2	0	0	0	1	1	0	0	0	0	0	0	0	4	10	53
8:45 AM	0	1	0	0	0	0	2	1	0	0	0	0	0	1	0	10	15	53
Count Total	0	28	7	0	0	0	9	19	0	0	1	0	0	5	0	41	110	0
Peak Hour	0	19	5	0	0	0	4	6	0	0	1	0	0	4	0	18	57	0

Two-Hour Count Summaries - Bikes																	
Interval Start	E Colfax Ave			E Colfax Ave			Adams St			Adams St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	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		
7:30 AM	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		
8:00 AM	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		
8:30 AM	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		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		E Colfax Ave				E Colfax Ave				Adams St				Adams St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	63	27	0	0	0	24	17	0	0	0	0	0	22	2	98	253	0
4:15 PM		0	57	25	1	0	0	20	12	0	1	0	0	0	12	2	68	198	0
4:30 PM		0	62	21	1	0	0	21	17	0	0	1	2	0	10	0	56	191	0
4:45 PM		0	61	39	0	0	2	29	18	0	0	0	1	0	10	1	51	212	854
5:00 PM		0	49	24	0	0	0	25	23	0	0	0	3	0	11	1	58	194	795
5:15 PM		0	60	26	0	0	2	18	20	0	0	2	0	0	9	0	48	185	782
5:30 PM		0	65	26	1	0	0	23	22	0	2	0	0	0	12	0	49	200	791
5:45 PM		0	54	24	1	0	0	22	22	0	1	0	0	0	8	0	52	184	763
Count Total		0	471	212	4	0	4	182	151	0	4	3	6	0	94	6	480	1,617	0
Peak Hour	All	0	243	112	2	0	2	94	64	0	1	1	3	0	54	5	273	854	0
	HV	0	16	4	0	0	0	6	10	0	0	0	0	0	4	1	20	61	0
	HV%	-	7%	4%	0%	-	0%	6%	16%	-	0%	0%	0%	-	7%	20%	7%	7%	0

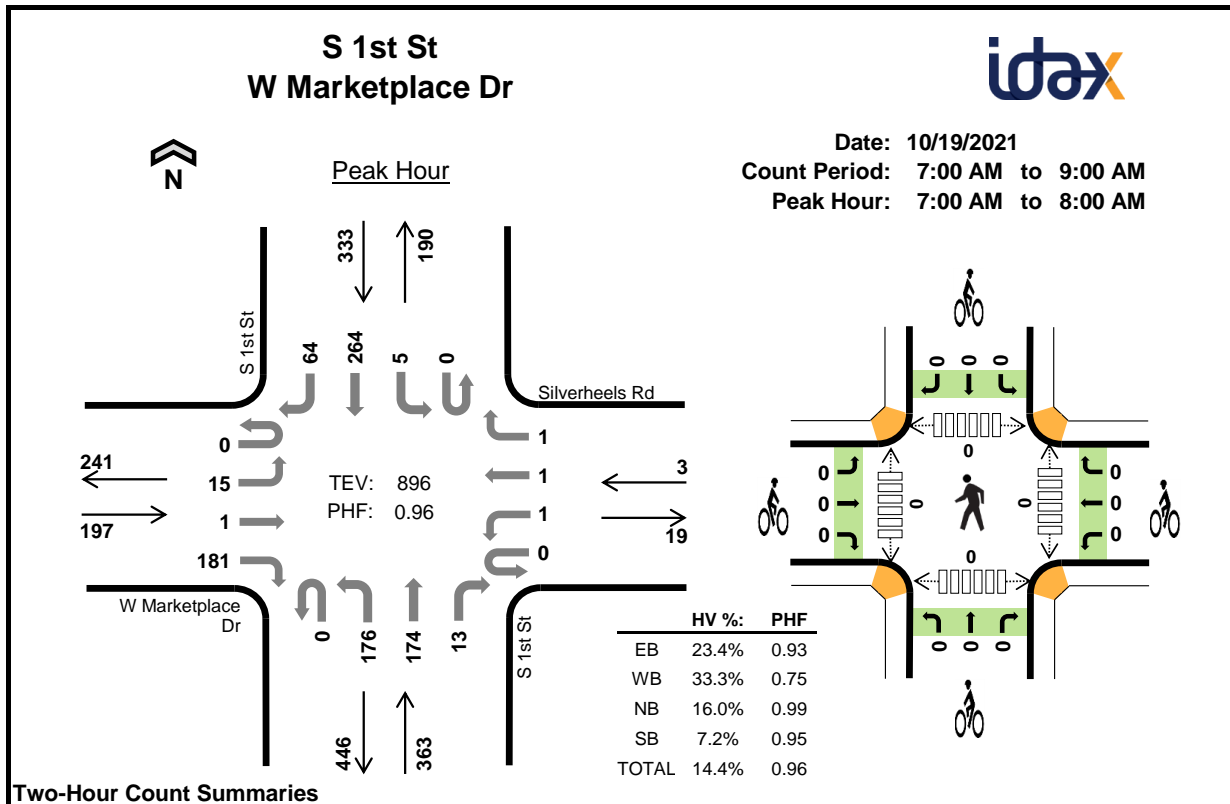
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	0	0	6	10	0	0	0	0	0	0	10	0	1	11
4:15 PM	8	4	0	5	17	0	0	0	0	0	0	8	0	0	8
4:30 PM	5	5	0	9	19	0	0	0	0	0	0	0	0	0	0
4:45 PM	3	7	0	5	15	0	0	0	0	0	0	0	0	0	0
5:00 PM	7	7	0	3	17	0	0	0	0	0	0	2	0	0	2
5:15 PM	9	7	0	4	20	0	0	0	0	0	0	0	0	0	0
5:30 PM	3	3	0	2	8	0	0	0	0	0	0	1	0	0	1
5:45 PM	3	4	0	4	11	0	0	0	0	0	0	0	0	0	0
Count Total	42	37	0	38	117	0	0	0	0	0	0	21	0	1	22
Peak Hour	20	16	0	25	61	0	0	0	0	0	0	18	0	1	19

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	E Colfax Ave				E Colfax Ave				Adams St				Adams St				15-min Total	Rolling One Hour
	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	1	0	0	0	0	0	0	0	0	0	0	1	0	5	10	0
4:15 PM	0	5	3	0	0	0	1	3	0	0	0	0	0	1	1	3	17	0
4:30 PM	0	5	0	0	0	0	2	3	0	0	0	0	0	1	0	8	19	0
4:45 PM	0	3	0	0	0	0	3	4	0	0	0	0	0	1	0	4	15	61
5:00 PM	0	7	0	0	0	0	0	7	0	0	0	0	0	1	0	2	17	68
5:15 PM	0	8	1	0	0	0	3	4	0	0	0	0	0	0	0	4	20	71
5:30 PM	0	2	1	0	0	0	2	1	0	0	0	0	0	0	0	2	8	60
5:45 PM	0	2	1	0	0	0	0	4	0	0	0	0	0	1	0	3	11	56
Count Total	0	35	7	0	0	0	11	26	0	0	0	0	0	6	1	31	117	0
Peak Hour	0	16	4	0	0	0	6	10	0	0	0	0	0	4	1	20	61	0

Two-Hour Count Summaries - Bikes																	
Interval Start	E Colfax Ave			E Colfax Ave			Adams St			Adams St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	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
4:30 PM	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
5:00 PM	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
5:30 PM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		W Marketplace Dr				Silverheels Rd				S 1st St				S 1st St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	4	0	39	0	0	0	0	0	55	28	6	0	1	60	12	205	0
7:15 AM		0	2	0	51	0	1	0	0	0	34	56	2	0	1	70	17	234	0
7:30 AM		0	6	1	43	0	0	0	1	0	42	47	2	0	1	68	18	229	0
7:45 AM		0	3	0	48	0	0	1	0	0	45	43	3	0	2	66	17	228	896
8:00 AM		0	8	0	38	0	3	1	1	0	50	37	2	0	1	47	6	194	885
8:15 AM		0	9	0	50	0	1	3	0	0	42	20	0	0	0	37	13	175	826
8:30 AM		0	4	0	37	0	0	0	1	0	39	24	2	0	0	26	11	144	741
8:45 AM		0	4	1	41	0	0	0	2	0	38	28	1	0	0	35	10	160	673
Count Total		0	40	2	347	0	5	5	5	0	345	283	18	0	6	409	104	1,569	0
Peak Hour	All	0	15	1	181	0	1	1	1	0	176	174	13	0	5	264	64	896	0
	HV	0	2	0	44	0	1	0	0	0	37	21	0	0	1	19	4	129	0
	HV%	-	13%	0%	24%	-	100%	0%	0%	-	21%	12%	0%	-	20%	7%	6%	14%	0

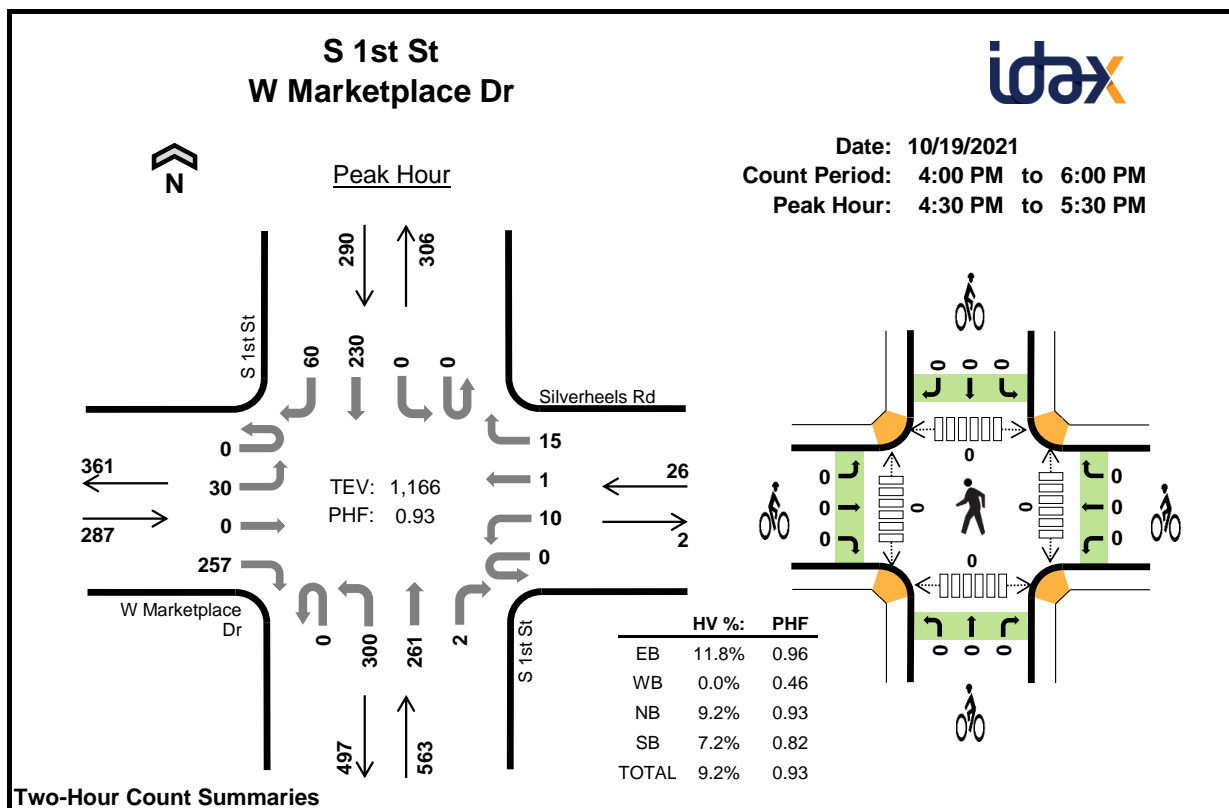
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	14	0	15	6	35	0	0	0	0	0	0	0	0	0	0
7:15 AM	7	1	18	5	31	0	0	0	0	0	0	0	0	0	0
7:30 AM	14	0	13	8	35	0	0	0	0	0	0	0	0	0	0
7:45 AM	11	0	12	5	28	0	0	0	0	0	0	0	0	0	0
8:00 AM	12	1	18	3	34	0	0	0	0	0	0	0	0	0	0
8:15 AM	16	3	10	4	33	0	0	0	0	0	0	0	0	0	0
8:30 AM	11	1	16	5	33	0	0	0	0	0	0	0	0	0	0
8:45 AM	15	2	13	4	34	0	0	0	0	0	0	0	0	0	0
Count Total	100	8	115	40	263	0	0	0	0	0	0	0	0	0	0
Peak Hour	46	1	58	24	129	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	W Marketplace Dr				Silverheels Rd				S 1st St				S 1st St				15-min Total	Rolling One Hour
	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	0	13	0	0	0	0	0	12	3	0	0	1	2	3	35	0
7:15 AM	0	0	0	7	0	1	0	0	0	9	9	0	0	0	4	1	31	0
7:30 AM	0	1	0	13	0	0	0	0	0	8	5	0	0	0	8	0	35	0
7:45 AM	0	0	0	11	0	0	0	0	0	8	4	0	0	0	5	0	28	129
8:00 AM	0	1	0	11	0	1	0	0	0	15	3	0	0	0	2	1	34	128
8:15 AM	0	3	0	13	0	1	2	0	0	9	1	0	0	0	4	0	33	130
8:30 AM	0	0	0	11	0	0	0	1	0	13	3	0	0	0	4	1	33	128
8:45 AM	0	0	0	15	0	0	0	2	0	11	2	0	0	0	4	0	34	134
Count Total	0	6	0	94	0	3	2	3	0	85	30	0	0	1	33	6	263	0
Peak Hour	0	2	0	44	0	1	0	0	0	37	21	0	0	1	19	4	129	0

Two-Hour Count Summaries - Bikes																		
Interval Start	W Marketplace Dr			Silverheels Rd			S 1st St			S 1st St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	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				
7:30 AM	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				
8:00 AM	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				
8:30 AM	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				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		W Marketplace Dr				Silverheels Rd				S 1st St				S 1st St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	6	0	52	0	3	0	0	0	67	52	0	0	0	53	13	246	0
4:15 PM		0	7	0	50	0	0	0	0	0	70	61	2	0	1	64	24	279	0
4:30 PM		0	8	0	63	0	4	0	10	0	71	68	1	0	0	74	14	313	0
4:45 PM		0	6	0	62	0	0	0	0	0	67	67	1	0	0	54	13	270	1,108
5:00 PM		0	9	0	64	0	5	0	3	0	76	61	0	0	0	43	21	282	1,144
5:15 PM		0	7	0	68	0	1	1	2	0	86	65	0	0	0	59	12	301	1,166
5:30 PM		0	4	0	64	0	0	0	1	0	62	67	0	0	0	47	16	261	1,114
5:45 PM		0	8	0	58	0	0	0	0	0	67	78	1	0	0	49	18	279	1,123
Count Total		0	55	0	481	0	13	1	16	0	566	519	5	0	1	443	131	2,231	0
Peak Hour	All	0	30	0	257	0	10	1	15	0	300	261	2	0	0	230	60	1,166	0
	HV	0	1	0	33	0	0	0	0	0	39	13	0	0	0	12	9	107	0
	HV%	-	3%	-	13%	-	0%	0%	0%	-	13%	5%	0%	-	-	5%	15%	9%	0

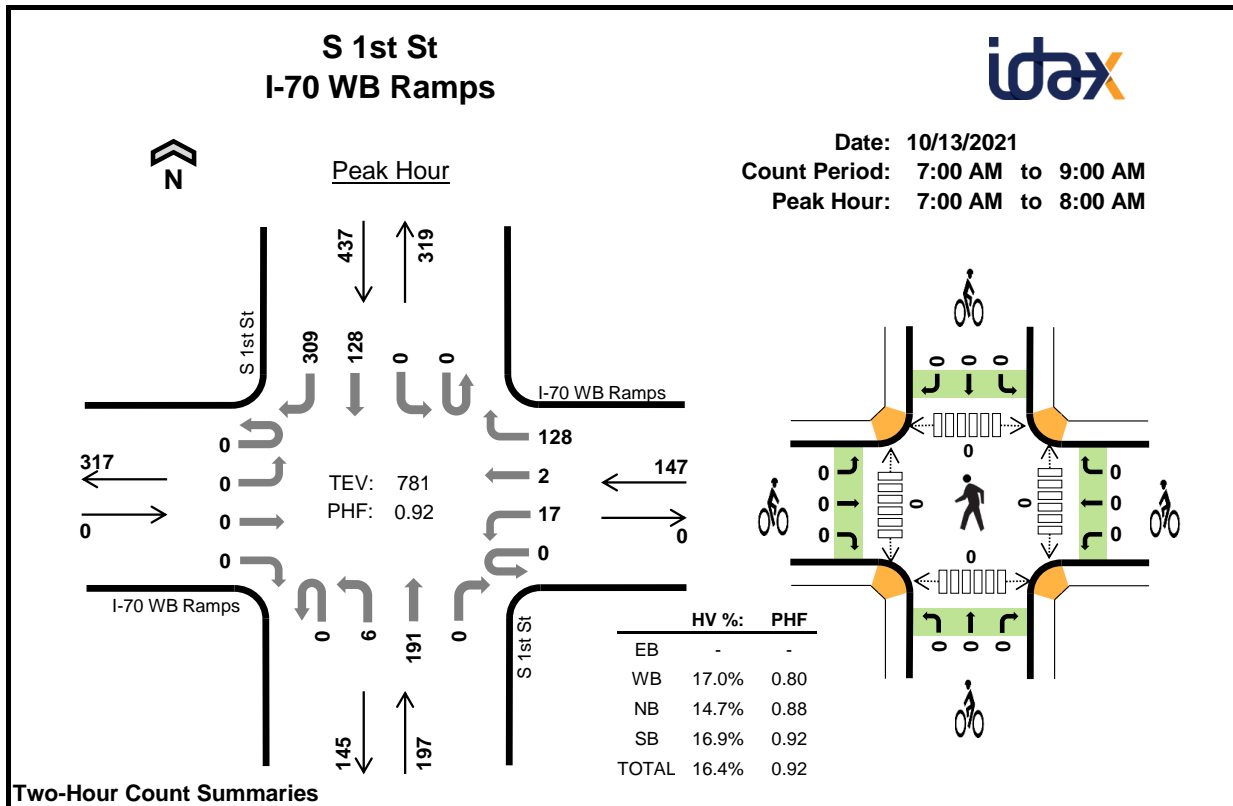
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	15	0	11	2	28	0	0	0	0	0	0	0	0	0	0
4:15 PM	7	0	18	8	33	0	0	0	0	0	0	0	0	0	0
4:30 PM	5	0	13	7	25	0	0	0	0	0	0	0	0	0	0
4:45 PM	9	0	11	6	26	0	0	0	0	0	0	0	0	0	0
5:00 PM	14	0	14	4	32	0	0	0	0	0	0	0	0	0	0
5:15 PM	6	0	14	4	24	0	0	0	0	0	0	0	0	0	0
5:30 PM	13	0	5	3	21	0	0	0	0	0	0	0	0	0	0
5:45 PM	6	0	17	3	26	0	0	0	0	0	0	0	0	0	0
Count Total	75	0	103	37	215	0	0	0	0	0	0	0	0	0	0
Peak Hour	34	0	52	21	107	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	W Marketplace Dr				Silverheels Rd				S 1st St				S 1st St				15-min Total	Rolling One Hour
	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	15	0	0	0	0	0	9	2	0	0	0	2	0	28	0
4:15 PM	0	0	0	7	0	0	0	0	0	13	4	1	0	0	5	3	33	0
4:30 PM	0	0	0	5	0	0	0	0	0	10	3	0	0	0	5	2	25	0
4:45 PM	0	0	0	9	0	0	0	0	0	9	2	0	0	0	3	3	26	112
5:00 PM	0	1	0	13	0	0	0	0	0	10	4	0	0	0	2	2	32	116
5:15 PM	0	0	0	6	0	0	0	0	0	10	4	0	0	0	2	2	24	107
5:30 PM	0	0	0	13	0	0	0	0	0	5	0	0	0	0	2	1	21	103
5:45 PM	0	0	0	6	0	0	0	0	0	14	3	0	0	0	3	0	26	103
Count Total	0	1	0	74	0	0	0	0	0	80	22	1	0	0	24	13	215	0
Peak Hour	0	1	0	33	0	0	0	0	0	39	13	0	0	0	12	9	107	0

Two-Hour Count Summaries - Bikes																		
Interval Start	W Marketplace Dr			Silverheels Rd			S 1st St			S 1st St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	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				
4:30 PM	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				
5:00 PM	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				
5:30 PM	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				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

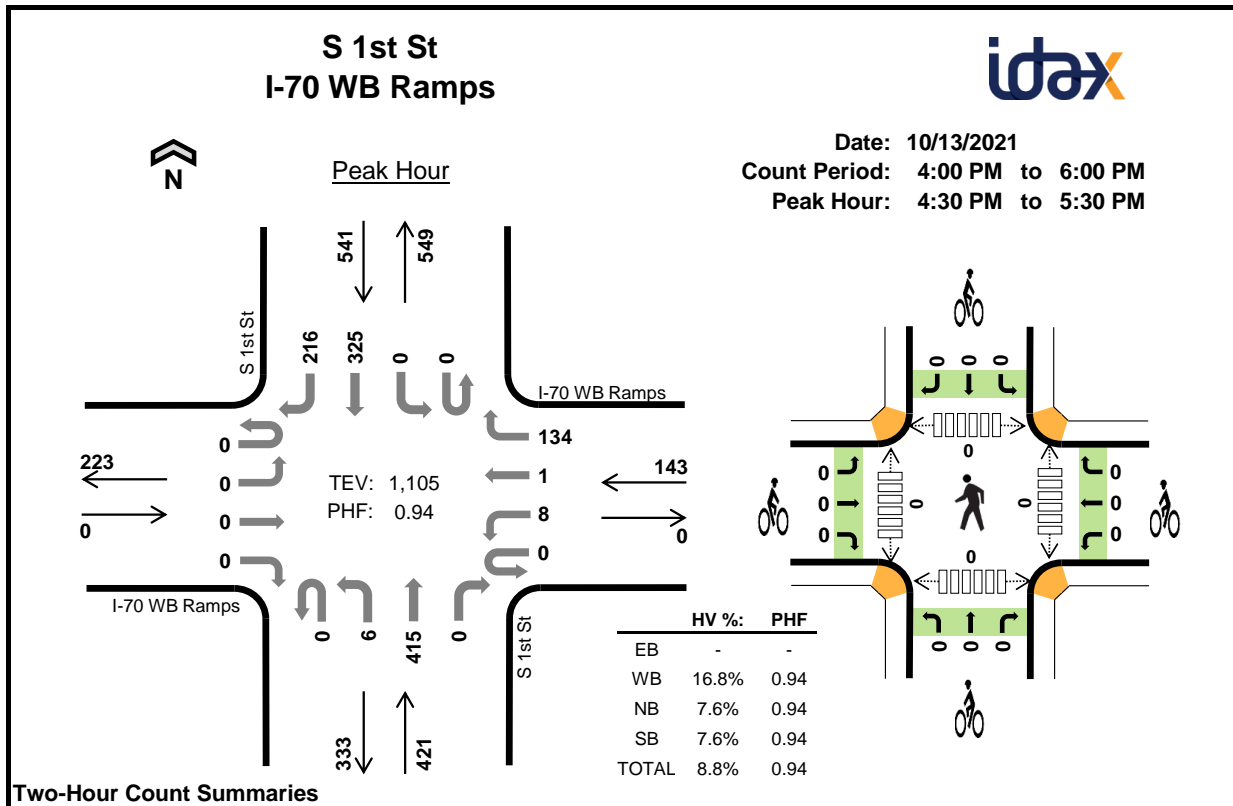


Interval Start		I-70 WB Ramps				I-70 WB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	2	0	27	0	0	56	0	0	0	24	81	190	0
7:15 AM		0	0	0	0	0	6	1	30	0	2	48	0	0	0	27	70	184	0
7:30 AM		0	0	0	0	0	3	1	31	0	1	43	0	0	0	33	83	195	0
7:45 AM		0	0	0	0	0	6	0	40	0	3	44	0	0	0	44	75	212	781
8:00 AM		0	0	0	0	0	3	0	44	0	1	42	0	0	0	29	65	184	775
8:15 AM		0	0	0	0	0	1	1	39	0	2	28	0	0	0	36	66	173	764
8:30 AM		0	0	0	0	0	2	0	33	0	0	42	0	0	0	38	53	168	737
8:45 AM		0	0	0	0	0	2	0	26	0	1	48	0	0	0	46	45	168	693
Count Total		0	0	0	0	0	25	3	270	0	10	351	0	0	0	277	538	1,474	0
Peak Hour	All	0	0	0	0	0	17	2	128	0	6	191	0	0	0	128	309	781	0
	HV	0	0	0	0	0	0	1	24	0	2	27	0	0	0	20	54	128	0
	HV%	-	-	-	-	-	0%	50%	19%	-	33%	14%	-	-	-	16%	17%	16%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
7:00 AM	0	4	6	13	23	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	6	10	20	36	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	8	4	15	27	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	7	9	26	42	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	4	8	10	22	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	7	5	18	30	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	7	11	22	40	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	5	8	18	31	0	0	0	0	0	0	0	0	0	0
Count Total	0	48	61	142	251	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	25	29	74	128	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-70 WB Ramps				I-70 WB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
	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	4	0	0	6	0	0	0	4	9	23	0
7:15 AM	0	0	0	0	0	0	1	5	0	2	8	0	0	0	6	14	36	0
7:30 AM	0	0	0	0	0	0	0	8	0	0	4	0	0	0	5	10	27	0
7:45 AM	0	0	0	0	0	0	0	7	0	0	9	0	0	0	5	21	42	128
8:00 AM	0	0	0	0	0	0	0	4	0	0	8	0	0	0	2	8	22	127
8:15 AM	0	0	0	0	0	0	1	6	0	0	5	0	0	0	4	14	30	121
8:30 AM	0	0	0	0	0	0	0	7	0	0	11	0	0	0	7	15	40	134
8:45 AM	0	0	0	0	0	1	0	4	0	0	8	0	0	0	6	12	31	123
Count Total	0	0	0	0	0	1	2	45	0	2	59	0	0	0	39	103	251	0
Peak Hour	0	0	0	0	0	0	1	24	0	2	27	0	0	0	20	54	128	0
Two-Hour Count Summaries - Bikes																		
Interval Start	I-70 WB Ramps				I-70 WB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
7:00 AM	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
7:30 AM	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
8:00 AM	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
8:30 AM	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
Count Total	0	0	0		0	0	0		0	0	0		0	0	0		0	0
Peak Hour	0	0	0		0	0	0		0	0	0		0	0	0		0	0
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		



Interval Start		I-70 WB Ramps				I-70 WB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
		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	39	0	2	89	0	0	0	79	47	258	0
4:15 PM		0	0	0	0	0	2	0	50	0	2	84	0	0	0	94	47	279	0
4:30 PM		0	0	0	0	0	2	0	35	0	0	103	0	0	0	79	60	279	0
4:45 PM		0	0	0	0	0	1	1	31	0	2	110	0	0	0	84	37	266	1,082
5:00 PM		0	0	0	0	0	3	0	32	0	1	93	0	0	0	75	62	266	1,090
5:15 PM		0	0	0	0	0	2	0	36	0	3	109	0	0	0	87	57	294	1,105
5:30 PM		0	0	0	0	0	5	0	30	0	3	108	0	0	0	69	37	252	1,078
5:45 PM		0	0	0	0	0	4	0	42	0	1	109	0	0	0	91	42	289	1,101
Count Total		0	0	0	0	0	21	1	295	0	14	805	0	0	0	658	389	2,183	0
Peak Hour	All	0	0	0	0	0	8	1	134	0	6	415	0	0	0	325	216	1,105	0
	HV	0	0	0	0	0	0	1	23	0	0	32	0	0	0	24	17	97	0
	HV%	-	-	-	-	-	0%	100%	17%	-	0%	8%	-	-	-	7%	8%	9%	0

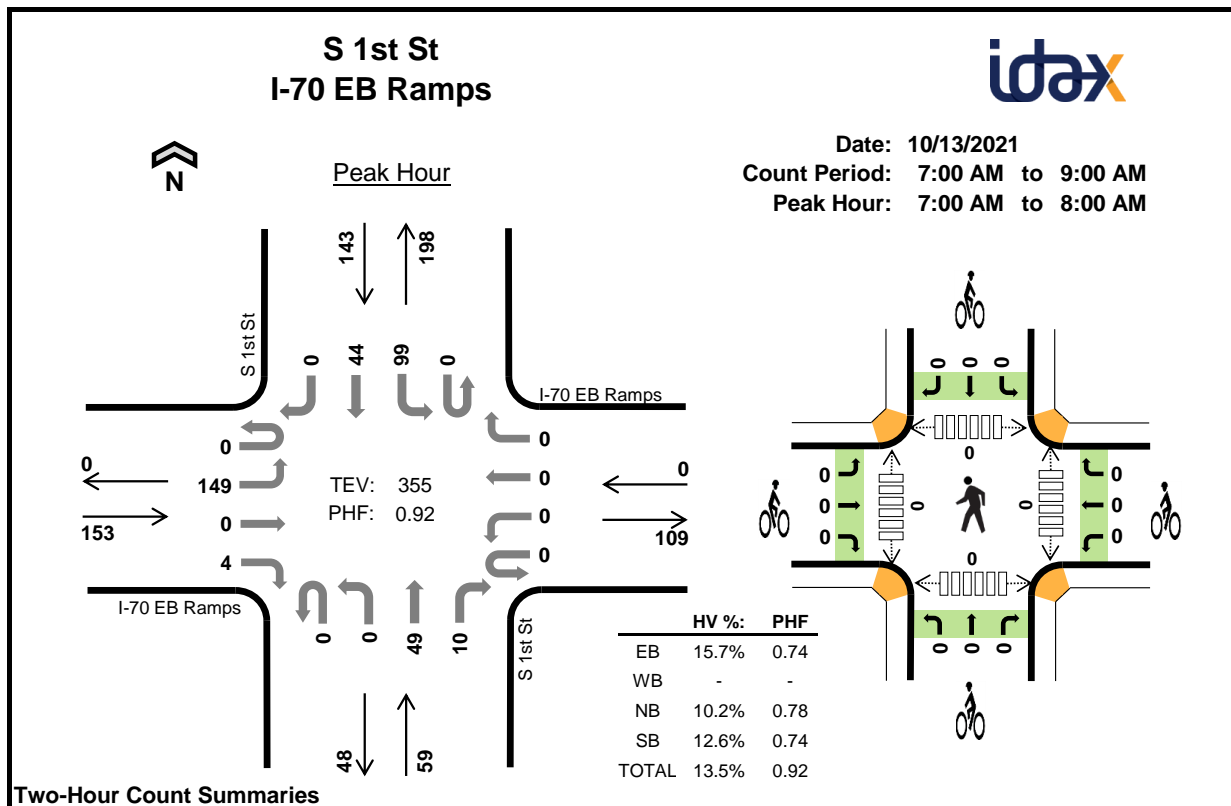
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	6	12	17	35	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	11	8	19	38	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	4	12	11	27	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	7	3	10	20	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	7	7	11	25	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	6	10	9	25	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	7	8	13	28	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	6	7	17	30	0	0	0	0	0	0	0	0	0	0
Count Total	0	54	67	107	228	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	24	32	41	97	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-70 WB Ramps				I-70 WB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
	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	6	0	1	11	0	0	0	13	4	35	0
4:15 PM	0	0	0	0	0	0	0	11	0	0	8	0	0	0	12	7	38	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	12	0	0	0	6	5	27	0
4:45 PM	0	0	0	0	0	0	1	6	0	0	3	0	0	0	7	3	20	120
5:00 PM	0	0	0	0	0	0	0	7	0	0	7	0	0	0	6	5	25	110
5:15 PM	0	0	0	0	0	0	0	6	0	0	10	0	0	0	5	4	25	97
5:30 PM	0	0	0	0	0	0	0	7	0	0	8	0	0	0	7	6	28	98
5:45 PM	0	0	0	0	0	0	0	6	0	0	7	0	0	0	11	6	30	108
Count Total	0	0	0	0	0	0	1	53	0	1	66	0	0	0	67	40	228	0
Peak Hour	0	0	0	0	0	0	1	23	0	0	32	0	0	0	24	17	97	0

Two-Hour Count Summaries - Bikes																		
Interval Start	I-70 WB Ramps			I-70 WB Ramps			S 1st St			S 1st St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	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				
4:30 PM	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				
5:00 PM	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				
5:30 PM	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				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start	I-70 EB Ramps				I-70 WB Ramps				S 1st St Northbound				S 1st St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	51	0	1	0	0	0	0	0	0	7	1	0	18	8	0	86	0
7:15 AM	0	35	0	1	0	0	0	0	0	0	15	4	0	22	11	0	88	0
7:30 AM	0	33	0	0	0	0	0	0	0	0	14	2	0	29	7	0	85	0
7:45 AM	0	30	0	2	0	0	0	0	0	0	13	3	0	30	18	0	96	355
8:00 AM	0	36	0	3	0	0	0	0	0	0	7	2	0	25	8	0	81	350
8:15 AM	0	24	0	1	0	0	0	0	0	0	9	1	0	32	7	0	74	336
8:30 AM	0	38	0	2	0	0	0	0	0	0	3	2	0	32	8	0	85	336
8:45 AM	0	35	1	2	0	0	0	0	0	0	13	3	0	40	10	0	104	344
Count Total	0	282	1	12	0	0	0	0	0	0	81	18	0	228	77	0	699	0
Peak Hour	All	0	149	0	4	0	0	0	0	0	49	10	0	99	44	0	355	0
	HV	0	24	0	0	0	0	0	0	0	5	1	0	16	2	0	48	0
	HV%	-	16%	-	0%	-	-	-	-	-	10%	10%	-	16%	5%	-	14%	0

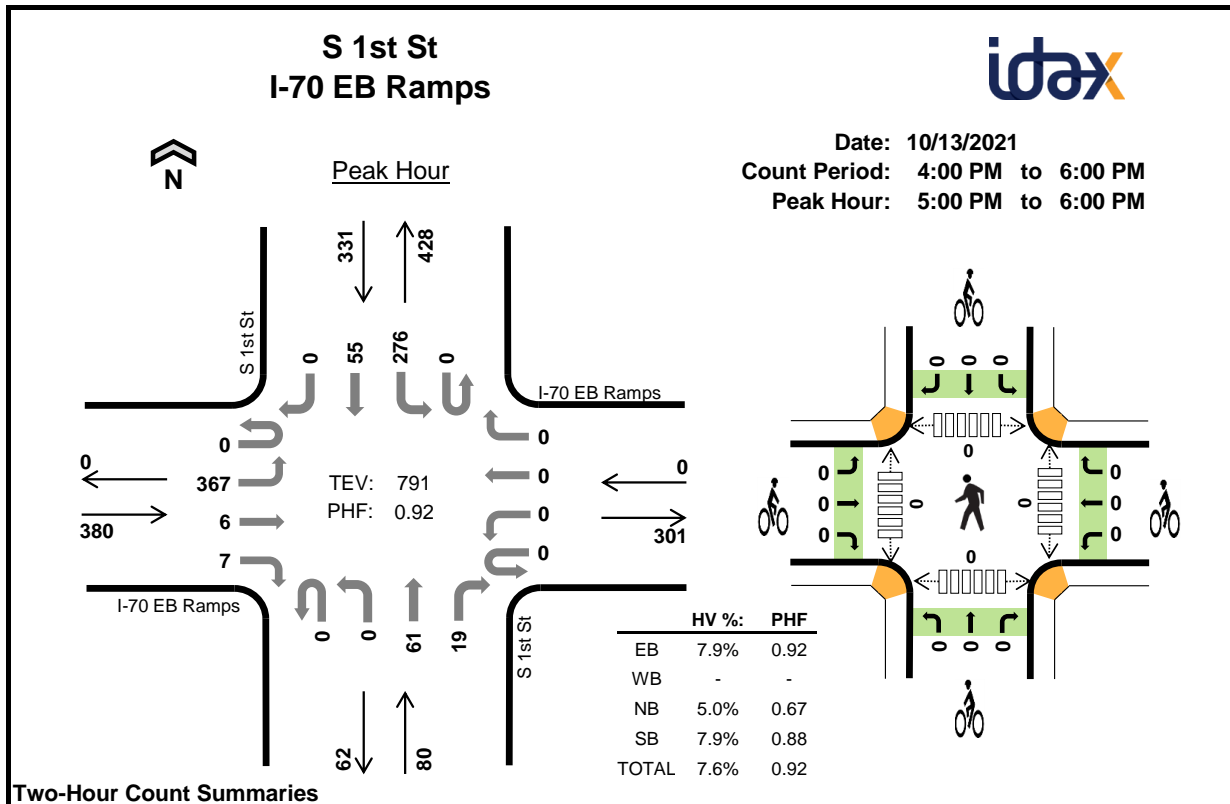
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	6	0	0	4	10	0	0	0	0	0	0	0	0	0	0
7:15 AM	7	0	3	6	16	0	0	0	0	0	0	0	0	0	0
7:30 AM	3	0	2	4	9	0	0	0	0	0	0	0	0	0	0
7:45 AM	8	0	1	4	13	0	0	0	0	0	0	0	0	0	0
8:00 AM	8	0	1	2	11	0	0	0	0	0	0	0	0	0	0
8:15 AM	5	0	1	5	11	0	0	0	0	0	0	0	0	0	0
8:30 AM	11	0	0	8	19	0	0	0	0	0	0	0	0	0	0
8:45 AM	6	0	3	10	19	0	0	0	0	0	0	0	0	0	0
Count Total	54	0	11	43	108	0	0	0	0	0	0	0	0	0	0
Peak Hour	24	0	6	18	48	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-70 EB Ramps				I-70 EB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	3	1	0	10	0
7:15 AM	0	7	0	0	0	0	0	0	0	0	3	0	0	5	1	0	16	0
7:30 AM	0	3	0	0	0	0	0	0	0	0	1	1	0	4	0	0	9	0
7:45 AM	0	8	0	0	0	0	0	0	0	0	1	0	0	4	0	0	13	48
8:00 AM	0	8	0	0	0	0	0	0	0	0	0	1	0	1	1	0	11	49
8:15 AM	0	5	0	0	0	0	0	0	0	0	0	1	0	4	1	0	11	44
8:30 AM	0	11	0	0	0	0	0	0	0	0	0	0	0	5	3	0	19	54
8:45 AM	0	6	0	0	0	0	0	0	0	0	2	1	0	9	1	0	19	60
Count Total	0	54	0	0	0	0	0	0	0	0	7	4	0	35	8	0	108	0
Peak Hour	0	24	0	0	0	0	0	0	0	0	5	1	0	16	2	0	48	0

Two-Hour Count Summaries - Bikes																		
Interval Start	I-70 EB Ramps			I-70 EB Ramps			S 1st St			S 1st St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	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			
7:30 AM	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			
8:00 AM	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			
8:30 AM	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			
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		I-70 EB Ramps				I-70 EB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	79	1	2	0	0	0	0	0	0	11	4	0	62	22	0	181	0
4:15 PM		0	75	0	3	0	0	0	0	0	0	13	3	0	75	20	0	189	0
4:30 PM		0	87	0	1	0	0	0	0	0	0	14	6	0	66	14	0	188	0
4:45 PM		0	97	0	2	0	0	0	0	0	0	15	6	0	72	14	0	206	764
5:00 PM		0	86	2	1	0	0	0	0	0	0	10	6	0	59	14	0	178	761
5:15 PM		0	87	2	3	0	0	0	0	0	0	22	8	0	81	13	0	216	788
5:30 PM		0	99	1	3	0	0	0	0	0	0	14	2	0	58	13	0	190	790
5:45 PM		0	95	1	0	0	0	0	0	0	0	15	3	0	78	15	0	207	791
Count Total		0	705	7	15	0	0	0	0	0	0	114	38	0	551	125	0	1,555	0
Peak Hour	All	0	367	6	7	0	0	0	0	0	0	61	19	0	276	55	0	791	0
	HV	0	28	1	1	0	0	0	0	0	0	3	1	0	24	2	0	60	0
	HV%	-	8%	17%	14%	-	-	-	-	-	-	5%	5%	-	9%	4%	-	8%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
4:00 PM	10	0	2	15	27	0	0	0	0	0	0	0	0	0	0
4:15 PM	7	0	1	9	17	0	0	0	0	0	0	0	0	0	0
4:30 PM	10	0	2	6	18	0	0	0	0	0	0	0	0	0	0
4:45 PM	3	0	0	10	13	0	0	0	0	0	0	0	0	0	0
5:00 PM	7	0	2	5	14	0	0	0	0	0	0	0	0	0	0
5:15 PM	10	0	0	6	16	0	0	0	0	0	0	0	0	0	0
5:30 PM	6	0	2	6	14	0	0	0	0	0	0	0	0	0	0
5:45 PM	7	0	0	9	16	0	0	0	0	0	0	0	0	0	0
Count Total	60	0	9	66	135	0	0	0	0	0	0	0	0	0	0
Peak Hour	30	0	4	26	60	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-70 EB Ramps				I-70 EB Ramps				S 1st St				S 1st St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	10	0	0	0	0	0	0	0	0	2	0	0	14	1	0	27	0
4:15 PM	0	7	0	0	0	0	0	0	0	0	1	0	0	8	1	0	17	0
4:30 PM	0	10	0	0	0	0	0	0	0	0	2	0	0	5	1	0	18	0
4:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	8	2	0	13	75
5:00 PM	0	6	0	1	0	0	0	0	0	0	1	1	0	5	0	0	14	62
5:15 PM	0	9	1	0	0	0	0	0	0	0	0	0	0	5	1	0	16	61
5:30 PM	0	6	0	0	0	0	0	0	0	0	2	0	0	6	0	0	14	57
5:45 PM	0	7	0	0	0	0	0	0	0	0	0	0	0	8	1	0	16	60
Count Total	0	58	1	1	0	0	0	0	0	0	8	1	0	59	7	0	135	0
Peak Hour	0	28	1	1	0	0	0	0	0	0	3	1	0	24	2	0	60	0

Two-Hour Count Summaries - Bikes																		
Interval Start	I-70 EB Ramps			I-70 EB Ramps			S 1st St			S 1st St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	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			
4:30 PM	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			
5:00 PM	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			
5:30 PM	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			
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

APPENDIX B

Future Traffic Projections

CDOT Growth Rate: Kiowa Creek Preserve

ROUTE	REFPT	ENDREFPT	LENGTH	UPDATEYR	AADT	YR20FACTOR	Annual Growth	DHV	DD	LOCATION
036C	83.71	88.836	4.994	2020	1900	1.35	1.51%	11.5	57	ON SH 36 COLFAX AVE W/O SH 79 W JCT 1ST ST BENNETT
036C	88.836	89.21	0.308	2020	4600	1.54	2.18%	11	57	ON SH 36 COLFAX AVE E/O SH 79 W JCT 1ST ST BENNETT
079B	1.58	8.821	7.373	2020	3300	1.24	1.08%	11	57	ON SH 79 PALMER AVE E/O 7TH ST BENNETT
079A	0	0.161	0.157	2020	5900	1.71	2.72%	11	57	ON SH 79 CONVERSE RD S/O I-70
079A	0.161	1.027	1.003	2020	9500	2.07	3.70%	11.5	57	ON SH 79 1ST ST N/O I-70 BENNETT
079A	1.027	1.24	0.216	2020	5200	1.68	2.63%	11	57	ON SH 79 1ST ST N/O BENNETT AVE BENNETT
						Average	2.30%			

APPENDIX C

Trip Generation Worksheets

Project Kiowa Creek Preserve
 Subject Trip Generation for Single-Family Detached Housing
 Designed by _____ Date November 09, 2021 Job No. 196310000
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Single-Family Detached Housing (210)

Independent Variable - Dwelling Units (X)

$$X = 651$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 220)

Average Weekday	Directional Distribution:	26% ent.	74% exit.
$\ln(T) = 0.91 \ln(X) + 0.12$	T = 410	Average Vehicle Trip Ends	
$\ln(T) = 0.91 * \ln(651) + 0.12$	107 entering	303	exiting
	107 + 303 = 410		

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 221)

Average Weekday	Directional Distribution:	63% ent.	37% exit.
$\ln(T) = 0.94 \ln(X) + 0.27$	T = 578	Average Vehicle Trip Ends	
$\ln(T) = 0.94 * \ln(651) + 0.27$	364 entering	214	exiting
	364 + 214 = 578		

Peak Hour of Generator, Saturday (200 Series Page 8)

Average Saturday	Directional Distribution:	54% ent.	46% exit.
$(T) = 0.86 (X) + 9.72$	T = 570	Average Vehicle Trip Ends	
$(T) = 0.86 * (651) + 9.72$	308 entering	262	exiting
	308 + 262 = 570		

Weekday (200 Series Page 219)

Average Weekday	Directional Distribution:	50% entering,	50% exiting
$\ln(T) = 0.92 \ln(X) + 2.68$	T = 5654	Average Vehicle Trip Ends	
$\ln(T) = 0.92 * \ln(651) + 2.68$	2827 entering	2827	exiting
	2827 + 2827 = 5654		

Project Kiowa Creek Preserve
 Subject Trip Generation for Multifamily Housing (Low-Rise)
 Designed by _____ Date November 09, 2021 Job No. 196310000
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Multifamily Housing (Low-Rise) (220)

Independent Variable - Dwelling Units (X)

$$X = 381$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 255)

$(T) = 0.31 (X) + 22.85$ $(T) = 0.31 * (381.0) + 22.85$	Directional Distribution: 24% ent. 76% exit. T = 142 Average Vehicle Trip Ends 34 entering 108 exiting 34 + 108 = 142
--	--

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 256)

$(T) = 0.43 (X) + 20.55$ $(T) = 0.43 * (381.0) + 20.55$	Directional Distribution: 63% ent. 37% exit. T = 186 Average Vehicle Trip Ends 117 entering 69 exiting 117 + 69 = 186
--	--

Weekday (200 Series Page 254)

$(T) = 6.41 (X) + 75.31$ $(T) = 6.41 * (381.0) + 75.31$	Directional Distribution: 50% ent. 50% exit. T = 2518 Average Vehicle Trip Ends 1259 entering 1259 exiting 1259 + 1259 = 2518
--	--

Project Kiowa Creek Preserved
 Subject Trip Generation for Shopping Center
 Designed by TES Date November 01, 2021 Job No. 196310000
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations
 Land Use Code - Shopping Center (>150k)(820)
 Independent Variable - 1000 Square Feet Gross Leasable Area (X)
 Gross Leasable Area = **164,000** Square Feet
 X = 164.000
 T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (800 Series Page 178)

Directional Distribution: 62% ent. 38% exit.
 $T = 0.59 * (X) + 133.55$
 $T = 0.59 * 164 + 133.55$
 T = 230 Average Vehicle Trip Ends
 143 entering 87 exiting

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (800 Series Page 179)

Directional Distribution: 48% ent. 52% exit.
 $\ln(T) = 0.72 \ln(X) + 3.02$
 $\ln(T) = 0.72 * \ln(164) + 3.02$
 T = 806 Average Vehicle Trip Ends
 387 entering 419 exiting

Weekday (800 Series Page 177)

Daily Weekday Directional Distribution: 50% entering, 50% exiting
 $T = 26.11 (X) + 5863.73$
 $T = 26.11 * 164 + 5863.73$
 T = 10146 Average Vehicle Trip Ends
 5073 entering 5073 exiting

Saturday Peak Hour of Generator (Page 183)

Average Saturday Directional Distribution: 52% ent. 48% exit.
 $\ln(T) = 0.76 \ln(X) + 3.00$
 $\ln(T) = 0.76 * \ln(164) + 3.00$
 T = 969 Average Vehicle Trip Ends
 504 entering 465 exiting

Non Pass-By Trip Volumes (Between 150 and 300k) (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 71% Non-Pass By	PM Peak Hour = 71% Non-Pass By
IN Out Total	
AM Peak 102 62 163	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak 275 298 573	
Daily 358 330 688	PM Peak Hour Rate Applied to Daily

Pass-By Trip Volumes (Between 150 and 300k) (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 29% Pass By	PM Peak Hour = 29% Pass By
IN Out Total	
AM Peak 41 25 67	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak 112 122 234	
Daily 146 135 281	PM Peak Hour Rate Applied to Daily

Non Pass-By Trip Volumes (Between 300 and 900k) (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 81% Non-Pass By	PM Peak Hour = 81% Non-Pass By
IN Out Total	
AM Peak 116 70 186	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak 313 339 653	
Daily 408 377 785	PM Peak Hour Rate Applied to Daily

Pass-By Trip Volumes (Between 300 and 900k) (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 19% Pass By	PM Peak Hour = 19% Pass By
IN Out Total	
AM Peak 27 17 44	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak 73 80 153	
Daily 96 88 184	PM Peak Hour Rate Applied to Daily

APPENDIX D

Intersection Analysis Worksheets

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	12	0	0	0	2	75	0	0	130	1
Future Vol, veh/h	2	0	12	0	0	0	2	75	0	0	130	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	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	2	0	13	0	0	0	2	82	0	0	143	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	230	230	144	236	230	82	144	0	0	82	0	0
Stage 1	144	144	-	86	86	-	-	-	-	-	-	-
Stage 2	86	86	-	150	144	-	-	-	-	-	-	-
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	725	670	903	718	670	978	1438	-	-	1515	-	-
Stage 1	859	778	-	922	824	-	-	-	-	-	-	-
Stage 2	922	824	-	853	778	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	724	669	903	707	669	978	1438	-	-	1515	-	-
Mov Cap-2 Maneuver	724	669	-	707	669	-	-	-	-	-	-	-
Stage 1	858	778	-	921	823	-	-	-	-	-	-	-
Stage 2	921	823	-	841	778	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.2		0		0.2		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1438	-	-	872	-	1515	-
HCM Lane V/C Ratio	0.002	-	-	0.018	-	-	-
HCM Control Delay (s)	7.5	0	-	9.2	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	3	0	7	1	0	0	11	152	0	0	120	4
Future Vol, veh/h	3	0	7	1	0	0	11	152	0	0	120	4
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	7	1	0	0	11	155	0	0	122	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	301	301	124	305	303	155	126	0	0	155	0	0
Stage 1	124	124	-	177	177	-	-	-	-	-	-	-
Stage 2	177	177	-	128	126	-	-	-	-	-	-	-
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	651	612	927	647	610	891	1460	-	-	1425	-	-
Stage 1	880	793	-	825	753	-	-	-	-	-	-	-
Stage 2	825	753	-	876	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	647	607	927	638	605	891	1460	-	-	1425	-	-
Mov Cap-2 Maneuver	647	607	-	638	605	-	-	-	-	-	-	-
Stage 1	873	793	-	818	747	-	-	-	-	-	-	-
Stage 2	818	747	-	869	792	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		10.7		0.5		0	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1460	-	-	820	638	1425	-
HCM Lane V/C Ratio	0.008	-	-	0.012	0.002	-	-
HCM Control Delay (s)	7.5	0	-	9.4	10.7	0	-
HCM Lane LOS	A	A	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	7	0	53	0	0	0	22	92	0	0	154	3
Future Vol, veh/h	7	0	53	0	0	0	22	92	0	0	154	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
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	8	0	58	0	0	0	24	101	0	0	169	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	320	320	-	320	321	101	172	0	0	101	0	0
Stage 1	171	171	-	149	149	-	-	-	-	-	-	-
Stage 2	149	149	-	171	172	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	633	597	0	633	596	954	1405	-	-	1491	-	-
Stage 1	831	757	0	854	774	-	-	-	-	-	-	-
Stage 2	854	774	0	831	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	625	587	-	625	586	954	1405	-	-	1491	-	-
Mov Cap-2 Maneuver	625	587	-	625	586	-	-	-	-	-	-	-
Stage 1	817	757	-	839	761	-	-	-	-	-	-	-
Stage 2	839	761	-	831	756	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		0	1.5	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1405	-	-	-	1491	-	-
HCM Lane V/C Ratio	0.017	-	-	-	-	-	-
HCM Control Delay (s)	7.6	-	-	0	0	-	-
HCM Lane LOS	A	-	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	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	6	0	42	1	0	0	57	184	0	0	148	11
Future Vol, veh/h	6	0	42	1	0	0	57	184	0	0	148	11
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	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	43	1	0	0	58	188	0	0	151	11

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	461	461	-	461	466	188	162	0	0	188	0	0
Stage 1	157	157	-	304	304	-	-	-	-	-	-	-
Stage 2	304	304	-	157	162	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	511	497	0	511	494	854	1417	-	-	1386	-	-
Stage 1	845	768	0	705	663	-	-	-	-	-	-	-
Stage 2	705	663	0	845	764	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	495	477	-	495	474	854	1417	-	-	1386	-	-
Mov Cap-2 Maneuver	495	477	-	495	474	-	-	-	-	-	-	-
Stage 1	810	768	-	676	636	-	-	-	-	-	-	-
Stage 2	676	636	-	845	764	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s			12.3		1.8		0	
HCM LOS	-		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1417	-	-	-	495	1386	-
HCM Lane V/C Ratio	0.041	-	-	-	0.002	-	-
HCM Control Delay (s)	7.6	-	-	-	12.3	0	-
HCM Lane LOS	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0	-

HCM 6th TWSC
1: Kiowa-Bennett Road (SH-79) & 38th Ave/Road A

2030 Total AM
06/13/2022

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↕	↕	↕	
Traffic Vol, veh/h	7	0	53	25	0	10	22	107	14	6	163	3
Future Vol, veh/h	7	0	53	25	0	10	22	107	14	6	163	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	500	-	-
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	8	0	58	27	0	11	24	118	15	7	179	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	374	376	-	361	362	118	182	0	0	133	0	0
Stage 1	195	195	-	166	166	-	-	-	-	-	-	-
Stage 2	179	181	-	195	196	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	583	555	0	595	565	934	1393	-	-	1452	-	-
Stage 1	807	739	0	836	761	-	-	-	-	-	-	-
Stage 2	823	750	0	807	739	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	567	543	-	585	553	934	1393	-	-	1452	-	-
Mov Cap-2 Maneuver	567	543	-	585	553	-	-	-	-	-	-	-
Stage 1	793	735	-	822	748	-	-	-	-	-	-	-
Stage 2	799	737	-	803	735	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s			10.8		1.2		0.3	
HCM LOS	-		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1393	-	-	-	655	1452	-
HCM Lane V/C Ratio	0.017	-	-	-	0.059	0.005	-
HCM Control Delay (s)	7.6	-	-	-	10.8	7.5	-
HCM Lane LOS	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0	-

HCM 6th TWSC
1: Kiowa-Bennett Road (SH-79) & 38th Ave/Road A

2030 Total PM
06/13/2022

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	6	0	42	36	0	14	57	205	43	17	174	11
Future Vol, veh/h	6	0	42	36	0	14	57	205	43	17	174	11
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	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	500	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	43	37	0	14	58	209	44	17	178	11

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	572	587	-	543	548	209	189	0	0	253	0	0
Stage 1	218	218	-	325	325	-	-	-	-	-	-	-
Stage 2	354	369	-	218	223	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	431	422	0	451	444	831	1385	-	-	1312	-	-
Stage 1	784	723	0	687	649	-	-	-	-	-	-	-
Stage 2	663	621	0	784	719	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	406	399	-	433	420	831	1385	-	-	1312	-	-
Mov Cap-2 Maneuver	406	399	-	433	420	-	-	-	-	-	-	-
Stage 1	751	714	-	658	622	-	-	-	-	-	-	-
Stage 2	624	595	-	774	710	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s			13		1.4		0.7	
HCM LOS	-		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1385	-	-	-	500	1312	-
HCM Lane V/C Ratio	0.042	-	-	-	0.102	0.013	-
HCM Control Delay (s)	7.7	-	-	-	13	7.8	-
HCM Lane LOS	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕			↕	
Traffic Vol, veh/h	8	0	57	0	0	0	23	117	0	0	198	3
Future Vol, veh/h	8	0	57	0	0	0	23	117	0	0	198	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	62	0	0	0	25	127	0	0	215	3

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	394	394	-	394	395	127	218	0	0	127	0	0
Stage 1	217	217	-	177	177	-	-	-	-	-	-	-
Stage 2	177	177	-	217	218	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	566	542	0	566	542	923	1352	-	-	1459	-	-
Stage 1	785	723	0	825	753	-	-	-	-	-	-	-
Stage 2	825	753	0	785	723	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	558	532	-	558	532	923	1352	-	-	1459	-	-
Mov Cap-2 Maneuver	558	532	-	558	532	-	-	-	-	-	-	-
Stage 1	771	723	-	810	739	-	-	-	-	-	-	-
Stage 2	810	739	-	785	723	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		0	1.3	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1352	-	-	-	1459	-	-
HCM Lane V/C Ratio	0.018	-	-	-	-	-	-
HCM Control Delay (s)	7.7	-	-	0	0	-	-
HCM Lane LOS	A	-	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0	-	-

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵			↕	
Traffic Vol, veh/h	7	0	44	1	0	0	60	235	0	0	188	12
Future Vol, veh/h	7	0	44	1	0	0	60	235	0	0	188	12
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	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	45	1	0	0	61	240	0	0	192	12
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	560	560	-	560	566	240	204	0	0	240	0	0
Stage 1	198	198	-	362	362	-	-	-	-	-	-	-
Stage 2	362	362	-	198	204	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	439	437	0	439	434	799	1368	-	-	1327	-	-
Stage 1	804	737	0	657	625	-	-	-	-	-	-	-
Stage 2	657	625	0	804	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	424	417	-	424	414	799	1368	-	-	1327	-	-
Mov Cap-2 Maneuver	424	417	-	424	414	-	-	-	-	-	-	-
Stage 1	768	737	-	627	597	-	-	-	-	-	-	-
Stage 2	628	597	-	804	733	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s			13.5		1.6		0					
HCM LOS	-		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1368	-	-	-	424	1327	-	-				
HCM Lane V/C Ratio	0.045	-	-	-	0.002	-	-	-				
HCM Control Delay (s)	7.8	-	-	-	13.5	0	-	-				
HCM Lane LOS	A	-	-	-	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0	-	-				

HCM 6th TWSC
1: Kiowa-Bennett Road (SH-79) & 38th Ave/Road A

2045 Total AM
06/13/2022

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↑	↕	↕	
Traffic Vol, veh/h	10	0	60	25	0	10	25	135	15	10	210	5
Future Vol, veh/h	10	0	60	25	0	10	25	135	15	10	210	5
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	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	500	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	65	27	0	11	27	147	16	11	228	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	468	470	-	454	456	147	233	0	0	163	0	0
Stage 1	253	253	-	201	201	-	-	-	-	-	-	-
Stage 2	215	217	-	253	255	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	505	492	0	516	501	900	1335	-	-	1416	-	-
Stage 1	751	698	0	801	735	-	-	-	-	-	-	-
Stage 2	787	723	0	751	696	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	488	478	-	505	487	900	1335	-	-	1416	-	-
Mov Cap-2 Maneuver	488	478	-	505	487	-	-	-	-	-	-	-
Stage 1	736	692	-	785	720	-	-	-	-	-	-	-
Stage 2	762	709	-	745	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		11.7	1.1	0.3
HCM LOS	-	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1335	-	-	-	577	1416	-
HCM Lane V/C Ratio	0.02	-	-	-	0.066	0.008	-
HCM Control Delay (s)	7.8	-	-	-	11.7	7.6	-
HCM Lane LOS	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0	-

HCM 6th TWSC
1: Kiowa-Bennett Road (SH-79) & 38th Ave/Road A

2045 Total PM
06/13/2022

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↕	↕	↕	
Traffic Vol, veh/h	10	0	45	40	0	15	60	260	45	20	215	15
Future Vol, veh/h	10	0	45	40	0	15	60	260	45	20	215	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	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	500	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	0	46	41	0	15	61	265	46	20	219	15




Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	685	700	-	654	661	265	234	0	0	311	0	0
Stage 1	267	267	-	387	387	-	-	-	-	-	-	-
Stage 2	418	433	-	267	274	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	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	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	362	363	0	380	383	774	1333	-	-	1249	-	-
Stage 1	738	688	0	637	610	-	-	-	-	-	-	-
Stage 2	612	582	0	738	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	338	341	-	362	360	774	1333	-	-	1249	-	-
Mov Cap-2 Maneuver	338	341	-	362	360	-	-	-	-	-	-	-
Stage 1	704	677	-	608	582	-	-	-	-	-	-	-
Stage 2	572	555	-	726	672	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s			14.8		1.3		0.6	
HCM LOS	-		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	-	423	1249	-
HCM Lane V/C Ratio	0.046	-	-	-	0.133	0.016	-
HCM Control Delay (s)	7.8	-	-	-	14.8	7.9	-
HCM Lane LOS	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1	-

Intersection

Int Delay, s/veh 2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	8	70	26	18	124
Future Vol, veh/h	45	8	70	26	18	124
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	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	10	88	33	23	155




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	306	105	0
Stage 1	105	-	-
Stage 2	201	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	686	949	-
Stage 1	919	-	-
Stage 2	833	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	674	949	-
Mov Cap-2 Maneuver	674	-	-
Stage 1	919	-	-
Stage 2	819	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	705	1467
HCM Lane V/C Ratio	-	-	0.094	0.015
HCM Control Delay (s)	-	-	10.6	7.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection

Int Delay, s/veh 1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	17	127	65	23	109
Future Vol, veh/h	26	17	127	65	23	109
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	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	18	131	67	24	112

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	325	165	0
Stage 1	165	-	-
Stage 2	160	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	669	879	-
Stage 1	864	-	-
Stage 2	869	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	656	879	-
Mov Cap-2 Maneuver	656	-	-
Stage 1	864	-	-
Stage 2	852	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	729	1375
HCM Lane V/C Ratio	-	-	0.061	0.017
HCM Control Delay (s)	-	-	10.3	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection						
Intersection Delay, s/veh	5.5					
Intersection LOS	A					
Approach	EB	WB		NB		SB
Entry Lanes	1	2		2		1
Conflicting Circle Lanes	1	1		1		1
Adj Approach Flow, veh/h	221	37		244		394
Demand Flow Rate, veh/h	225	37		248		401
Vehicles Circulating, veh/h	308	300		95		143
Vehicles Exiting, veh/h	236	43		438		194
Ped Vol Crossing Leg, #/h	0	0		0		0
Ped Cap Adj	1.000	1.000		1.000		1.000
Approach Delay, s/veh	5.8	3.5		4.2		6.3
Approach LOS	A	A		A		A
Lane	Left	Left	Right	Left	Right	Left
Designated Moves	LTR	LT	R	LT	R	LTR
Assumed Moves	LTR	LT	R	LT	R	LTR
RT Channelized						
Lane Util	1.000	0.703	0.297	0.944	0.056	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.544	4.544	4.976
Entry Flow, veh/h	225	26	11	234	14	401
Cap Entry Lane, veh/h	1008	1081	1081	1302	1302	1193
Entry HV Adj Factor	0.981	0.991	1.000	0.982	1.000	0.981
Flow Entry, veh/h	221	26	11	230	14	394
Cap Entry, veh/h	989	1071	1081	1279	1302	1170
V/C Ratio	0.223	0.024	0.010	0.180	0.011	0.336
Control Delay, s/veh	5.8	3.6	3.4	4.3	2.8	6.3
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	0	1	0	1

Intersection						
Intersection Delay, s/veh	6.0					
Intersection LOS	A					
Approach	EB	WB		NB		SB
Entry Lanes	1	2		2		1
Conflicting Circle Lanes	1	1		1		1
Adj Approach Flow, veh/h	286	39		464		304
Demand Flow Rate, veh/h	291	39		472		310
Vehicles Circulating, veh/h	234	568		133		205
Vehicles Exiting, veh/h	281	37		392		402
Ped Vol Crossing Leg, #/h	0	0		0		0
Ped Cap Adj	1.000	1.000		1.000		1.000
Approach Delay, s/veh	5.9	4.5		6.3		5.9
Approach LOS	A	A		A		A
Lane	Left	Left	Right	Left	Right	Left
Designated Moves	LTR	LT	R	LT	R	LTR
Assumed Moves	LTR	LT	R	LT	R	LTR
RT Channelized						
Lane Util	1.000	0.692	0.308	0.970	0.030	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.544	4.544	4.976
Entry Flow, veh/h	291	27	12	458	14	310
Cap Entry Lane, veh/h	1087	847	847	1258	1258	1120
Entry HV Adj Factor	0.982	0.991	1.000	0.981	1.000	0.980
Flow Entry, veh/h	286	27	12	450	14	304
Cap Entry, veh/h	1067	839	847	1235	1258	1097
V/C Ratio	0.268	0.032	0.014	0.364	0.011	0.277
Control Delay, s/veh	5.9	4.6	4.4	6.4	2.9	5.9
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	0	2	0	1

Intersection						
Intersection Delay, s/veh	11.1					
Intersection LOS	B					
Approach	EB	WB		NB		SB
Entry Lanes	1	2		2		1
Conflicting Circle Lanes	1	1		1		1
Adj Approach Flow, veh/h	238	318		507		632
Demand Flow Rate, veh/h	243	324		516		645
Vehicles Circulating, veh/h	798	476		134		422
Vehicles Exiting, veh/h	269	174		907		378
Ped Vol Crossing Leg, #/h	0	0		0		0
Ped Cap Adj	1.000	1.000		1.000		1.000
Approach Delay, s/veh	11.9	7.4		5.3		17.4
Approach LOS	B	A		A		C
Lane	Left	Left	Right	Left	Right	Left
Designated Moves	LTR	LT	R	LT	R	LTR
Assumed Moves	LTR	LT	R	LT	R	LTR
RT Channelized						
Lane Util	1.000	0.941	0.059	0.760	0.240	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.544	4.544	4.976
Entry Flow, veh/h	243	305	19	392	124	645
Cap Entry Lane, veh/h	611	921	921	1257	1257	897
Entry HV Adj Factor	0.978	0.982	1.000	0.981	0.984	0.980
Flow Entry, veh/h	238	299	19	385	122	632
Cap Entry, veh/h	598	904	921	1233	1237	880
V/C Ratio	0.397	0.331	0.021	0.312	0.099	0.719
Control Delay, s/veh	11.9	7.6	4.1	5.8	3.7	17.4
LOS	B	A	A	A	A	C
95th %tile Queue, veh	2	1	0	1	0	6

Intersection						
Intersection Delay, s/veh	22.6					
Intersection LOS	C					
Approach	EB	WB		NB		SB
Entry Lanes	1	2		2		1
Conflicting Circle Lanes	1	1		1		1
Adj Approach Flow, veh/h	331	438		1267		641
Demand Flow Rate, veh/h	337	447		1292		654
Vehicles Circulating, veh/h	930	1096		212		594
Vehicles Exiting, veh/h	318	408		1055		949
Ped Vol Crossing Leg, #/h	0	0		0		0
Ped Cap Adj	1.000	1.000		1.000		1.000
Approach Delay, s/veh	21.0	31.1		15.1		32.4
Approach LOS	C	D		C		D
Lane	Left	Left	Right	Left	Right	Left
Designated Moves	LTR	LT	R	LT	R	LTR
Assumed Moves	LTR	LT	R	LT	R	LTR
RT Channelized						
Lane Util	1.000	0.931	0.069	0.728	0.272	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.544	4.544	4.976
Entry Flow, veh/h	337	416	31	940	352	654
Cap Entry Lane, veh/h	534	524	524	1171	1171	753
Entry HV Adj Factor	0.981	0.981	0.968	0.981	0.980	0.980
Flow Entry, veh/h	331	408	30	922	345	641
Cap Entry, veh/h	525	514	507	1149	1148	738
V/C Ratio	0.631	0.794	0.059	0.803	0.301	0.869
Control Delay, s/veh	21.0	32.8	7.8	18.5	6.0	32.4
LOS	C	D	A	C	A	D
95th %tile Queue, veh	4	7	0	9	1	11

Intersection						
Intersection Delay, s/veh	6.6					
Intersection LOS	A					
Approach	EB	WB		NB		SB
Entry Lanes	1	2		2		1
Conflicting Circle Lanes	1	1		1		1
Adj Approach Flow, veh/h	272	44		314		486
Demand Flow Rate, veh/h	277	44		320		495
Vehicles Circulating, veh/h	392	377		105		182
Vehicles Exiting, veh/h	285	48		564		239
Ped Vol Crossing Leg, #/h	0	0		0		0
Ped Cap Adj	1.000	1.000		1.000		1.000
Approach Delay, s/veh	7.2	3.8		4.8		7.8
Approach LOS	A	A		A		A
Lane	Left	Left	Right	Left	Right	Left
Designated Moves	LTR	LT	R	LT	R	LTR
Assumed Moves	LTR	LT	R	LT	R	LTR
RT Channelized						
Lane Util	1.000	0.705	0.295	0.947	0.053	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.544	4.544	4.976
Entry Flow, veh/h	277	31	13	303	17	495
Cap Entry Lane, veh/h	925	1008	1008	1291	1291	1146
Entry HV Adj Factor	0.981	0.991	1.000	0.980	1.000	0.982
Flow Entry, veh/h	272	31	13	297	17	486
Cap Entry, veh/h	907	999	1008	1265	1291	1125
V/C Ratio	0.299	0.031	0.013	0.235	0.013	0.432
Control Delay, s/veh	7.2	3.9	3.7	4.9	2.9	7.8
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	0	1	0	2

Intersection						
Intersection Delay, s/veh	7.7					
Intersection LOS	A					
Approach	EB	WB		NB		SB
Entry Lanes	1	2		2		1
Conflicting Circle Lanes	1	1		1		1
Adj Approach Flow, veh/h	368	48		597		392
Demand Flow Rate, veh/h	375	48		609		399
Vehicles Circulating, veh/h	301	734		171		264
Vehicles Exiting, veh/h	362	46		505		518
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	5.4		8.1		7.5
Approach LOS	A	A		A		A
Lane	Left	Left	Right	Left	Right	Left
Designated Moves	LTR	LT	R	LT	R	LTR
Assumed Moves	LTR	LT	R	LT	R	LTR
RT Channelized						
Lane Util	1.000	0.688	0.312	0.972	0.028	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.544	4.544	4.976
Entry Flow, veh/h	375	33	15	592	17	399
Cap Entry Lane, veh/h	1015	728	728	1215	1215	1054
Entry HV Adj Factor	0.981	0.990	1.000	0.980	1.000	0.982
Flow Entry, veh/h	368	33	15	580	17	392
Cap Entry, veh/h	995	721	728	1191	1215	1035
V/C Ratio	0.369	0.045	0.021	0.487	0.014	0.379
Control Delay, s/veh	7.6	5.5	5.2	8.3	3.1	7.5
LOS	A	A	A	A	A	A
95th %tile Queue, veh	2	0	0	3	0	2

Intersection									
Intersection Delay, s/veh	9.4								
Intersection LOS	A								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	293		327		581		728		
Demand Flow Rate, veh/h	299		333		593		743		
Vehicles Circulating, veh/h	887		559		149		466		
Vehicles Exiting, veh/h	322		182		1037		426		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	9.1		8.3		6.0		12.8		
Approach LOS	A		A		A		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	R	LT	R	LT	R	LT	R	
Assumed Moves	LT	R	LT	R	LT	R	LT	R	
RT Channelized									
Lane Util	0.368	0.632	0.934	0.066	0.784	0.216	0.821	0.179	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	110	189	311	22	465	128	610	133	
Cap Entry Lane, veh/h	633	633	854	854	1240	1240	929	929	
Entry HV Adj Factor	0.979	0.979	0.982	1.000	0.980	0.977	0.980	0.977	
Flow Entry, veh/h	108	185	305	22	456	125	598	130	
Cap Entry, veh/h	620	620	838	854	1216	1211	911	908	
V/C Ratio	0.174	0.298	0.364	0.026	0.375	0.103	0.656	0.143	
Control Delay, s/veh	7.9	9.7	8.6	4.5	6.6	3.8	14.5	5.3	
LOS	A	A	A	A	A	A	B	A	
95th %tile Queue, veh	1	1	2	0	2	0	5	0	





Intersection									
Intersection Delay, s/veh	22.8								
Intersection LOS	C								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	407		438		1330		706		
Demand Flow Rate, veh/h	415		447		1357		721		
Vehicles Circulating, veh/h	957		1210		252		630		
Vehicles Exiting, veh/h	394		399		1120		1027		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	11.2		42.1		22.9		17.4		
Approach LOS	B		E		C		C		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	R	LT	R	LT	R	LT	R	
Assumed Moves	LT	R	LT	R	LT	R	LT	R	
RT Channelized									
Lane Util	0.494	0.506	0.917	0.083	0.752	0.248	0.817	0.183	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	205	210	410	37	1020	337	589	132	
Cap Entry Lane, veh/h	594	594	472	472	1129	1129	800	800	
Entry HV Adj Factor	0.979	0.981	0.981	0.973	0.981	0.979	0.980	0.977	
Flow Entry, veh/h	201	206	402	36	1000	330	577	129	
Cap Entry, veh/h	582	583	463	459	1107	1106	785	782	
V/C Ratio	0.345	0.353	0.868	0.078	0.903	0.298	0.736	0.165	
Control Delay, s/veh	11.1	11.3	45.1	8.9	28.4	6.1	19.9	6.3	
LOS	B	B	E	A	D	A	C	A	
95th %tile Queue, veh	2	2	9	0	14	1	7	1	

HCM 6th TWSC
3: Adams Street/Palmer Avenue (SH-79) & Palmer Avenue

2021 Existing AM
11/09/2021

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	358	275	37	21	40
Future Vol, veh/h	24	358	275	37	21	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	542	417	56	32	61

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	473	0	0 1059 445
Stage 1	-	-	- 445 -
Stage 2	-	-	- 614 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1089	-	- 249 613
Stage 1	-	-	- 646 -
Stage 2	-	-	- 540 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1089	-	- 241 613
Mov Cap-2 Maneuver	-	-	- 440 -
Stage 1	-	-	- 625 -
Stage 2	-	-	- 540 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13
HCM LOS			B





Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	540
HCM Lane V/C Ratio	0.033	-	-	-	0.171
HCM Control Delay (s)	8.4	-	-	-	13
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

HCM 6th TWSC
3: Adams Street/Palmer Avenue (SH-79) & Palmer Avenue

2021 Existing PM
11/09/2021

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	233	275	36	9	48
Future Vol, veh/h	75	233	275	36	9	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	277	327	43	11	57





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	370	0	804
Stage 1	-	-	349
Stage 2	-	-	455
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1189	-	352
Stage 1	-	-	714
Stage 2	-	-	639
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1189	-	326
Mov Cap-2 Maneuver	-	-	514
Stage 1	-	-	660
Stage 2	-	-	639

Approach	EB	WB	SB
HCM Control Delay, s	2	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1189	-	-	-	658
HCM Lane V/C Ratio	0.075	-	-	-	0.103
HCM Control Delay (s)	8.3	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	349	217	43	24	47
Future Vol, veh/h	28	349	217	43	24	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	92	92	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	379	236	65	36	71





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	301	0	0 732 269
Stage 1	-	-	- 269 -
Stage 2	-	-	- 463 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1260	-	- 388 770
Stage 1	-	-	- 776 -
Stage 2	-	-	- 634 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1260	-	- 375 770
Mov Cap-2 Maneuver	-	-	- 548 -
Stage 1	-	-	- 750 -
Stage 2	-	-	- 634 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1260	-	-	-	677
HCM Lane V/C Ratio	0.034	-	-	-	0.159
HCM Control Delay (s)	8	-	-	-	11.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	87	150	232	42	10	56
Future Vol, veh/h	87	150	232	42	10	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	163	252	50	12	67





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	302	0	0 648 277
Stage 1	-	-	- 277 -
Stage 2	-	-	- 371 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1259	-	- 435 762
Stage 1	-	-	- 770 -
Stage 2	-	-	- 698 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1259	-	- 399 762
Mov Cap-2 Maneuver	-	-	- 570 -
Stage 1	-	-	- 706 -
Stage 2	-	-	- 698 -

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1259	-	-	-	725
HCM Lane V/C Ratio	0.082	-	-	-	0.108
HCM Control Delay (s)	8.1	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.4

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	363	242	43	24	47
Future Vol, veh/h	28	363	242	43	24	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	92	92	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	395	263	65	36	71





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	328	0	0 775 296
Stage 1	-	-	- 296 -
Stage 2	-	-	- 479 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1232	-	- 366 743
Stage 1	-	-	- 755 -
Stage 2	-	-	- 623 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1232	-	- 354 743
Mov Cap-2 Maneuver	-	-	- 532 -
Stage 1	-	-	- 729 -
Stage 2	-	-	- 623 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1232	-	-	-	655
HCM Lane V/C Ratio	0.034	-	-	-	0.164
HCM Control Delay (s)	8	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	87	193	267	42	10	56
Future Vol, veh/h	87	193	267	42	10	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	92	92	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	210	290	50	12	67





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	340	0	0 733 315
Stage 1	-	-	- 315 -
Stage 2	-	-	- 418 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1219	-	- 388 725
Stage 1	-	-	- 740 -
Stage 2	-	-	- 664 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1219	-	- 355 725
Mov Cap-2 Maneuver	-	-	- 536 -
Stage 1	-	-	- 677 -
Stage 2	-	-	- 664 -

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1219	-	-	-	688
HCM Lane V/C Ratio	0.085	-	-	-	0.114
HCM Control Delay (s)	8.2	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.4

Intersection





Int Delay, s/veh 2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	113	509	269	113	0	156
Future Vol, veh/h	113	509	269	113	0	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	553	292	123	0	170

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	415	0	0 1153 354
Stage 1	-	-	- 354 -
Stage 2	-	-	- 799 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1144	-	- 218 690
Stage 1	-	-	- 710 -
Stage 2	-	-	- 443 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1144	-	- 194 690
Mov Cap-2 Maneuver	-	-	- 380 -
Stage 1	-	-	- 633 -
Stage 2	-	-	- 443 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1144	-	-	-	690
HCM Lane V/C Ratio	0.107	-	-	-	0.246
HCM Control Delay (s)	8.5	-	-	-	11.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1

Intersection						
Int Delay, s/veh	5.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	292	414	414	123	0	276
Future Vol, veh/h	292	414	414	123	0	276
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	317	450	450	134	0	300
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	584	0	-	0	1601	517
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	1084	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	991	-	-	-	117	558
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	324	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	991	-	-	-	80	558
Mov Cap-2 Maneuver	-	-	-	-	252	-
Stage 1	-	-	-	-	407	-
Stage 2	-	-	-	-	324	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.3	0		18.7		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	991	-	-	-	558	
HCM Lane V/C Ratio	0.32	-	-	-	0.538	
HCM Control Delay (s)	10.3	-	-	-	18.7	
HCM Lane LOS	B	-	-	-	C	
HCM 95th %tile Q(veh)	1.4	-	-	-	3.2	

Intersection

Int Delay, s/veh 2.5

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 115 525 295 115 0 160

Future Vol, veh/h 115 525 295 115 0 160

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 150 - - - 0 -

Veh in Median Storage, # - 0 0 - 2 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 125 571 321 125 0 174

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 446 0 - 0 1205 384

Stage 1 - - - - 384 -

Stage 2 - - - - 821 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1114 - - - 203 664

Stage 1 - - - - 688 -

Stage 2 - - - - 432 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1114 - - - 180 664

Mov Cap-2 Maneuver - - - - 368 -

Stage 1 - - - - 611 -

Stage 2 - - - - 432 -

Approach EB WB SB

HCM Control Delay, s 1.6 0 12.3

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1114 - - - 664

HCM Lane V/C Ratio 0.112 - - - 0.262

HCM Control Delay (s) 8.6 - - - 12.3

HCM Lane LOS A - - - B

HCM 95th %tile Q(veh) 0.4 - - - 1

Intersection

Int Delay, s/veh 5.6

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 295 460 450 125 0 280

Future Vol, veh/h 295 460 450 125 0 280

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 150 - - - 0 -

Veh in Median Storage, # - 0 0 - 2 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 321 500 489 136 0 304

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 625 0 - 0 1699 557

Stage 1 - - - - 557 -

Stage 2 - - - - 1142 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 956 - - - 101 530

Stage 1 - - - - 574 -

Stage 2 - - - - 304 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 956 - - - 67 530

Mov Cap-2 Maneuver - - - - 233 -

Stage 1 - - - - 381 -

Stage 2 - - - - 304 -

Approach EB WB SB

HCM Control Delay, s 4.2 0 20.6

HCM LOS C

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 956 - - - 530

HCM Lane V/C Ratio 0.335 - - - 0.574

HCM Control Delay (s) 10.7 - - - 20.6

HCM Lane LOS B - - - C

HCM 95th %tile Q(veh) 1.5 - - - 3.6

HCM 6th TWSC
4: 1st Street (SH-79) & Colfax Avenue (SH-36)

2021 Existing AM
11/09/2021

Intersection

Int Delay, s/veh 6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	53	37	262	45	27	229
Future Vol, veh/h	53	37	262	45	27	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	125	360	-	0	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	49	345	59	36	301

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	119
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1469
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1469
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7	16.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	337	-	-	-	1469	-
HCM Lane V/C Ratio	0.105	-	-	-	0.235	-
HCM Control Delay (s)	16.9	0	-	-	8.2	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	-	0.9	-

HCM 6th TWSC
4: 1st Street (SH-79) & Colfax Avenue (SH-36)

2021 Existing PM
11/09/2021

Intersection

Int Delay, s/veh 5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	79	73	290	58	35	251
Future Vol, veh/h	79	73	290	58	35	251
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	125	360	-	0	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	86	341	68	41	295

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	179
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1397
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1397
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	333	-	-	-	1397	-
HCM Lane V/C Ratio	0.124	-	-	-	0.244	-
HCM Control Delay (s)	17.3	0	-	-	8.4	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	-	1	-

Intersection								
Int Delay, s/veh	10.8							
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑	↗	↖	↑	↖	↗		
Traffic Vol, veh/h	62	43	590	52	31	395		
Future Vol, veh/h	62	43	590	52	31	395		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Free	Free	Free	Free	Stop	Stop		
RT Channelized	-	None	-	None	-	Free		
Storage Length	-	125	360	-	0	0		
Veh in Median Storage, #	0	-	-	0	0	-		
Grade, %	0	-	-	0	0	-		
Peak Hour Factor	76	76	92	76	76	92		
Heavy Vehicles, %	2	2	2	2	2	2		
Mvmt Flow	82	57	641	68	41	429		
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	0	0	139	0	1432	-		
Stage 1	-	-	-	-	82	-		
Stage 2	-	-	-	-	1350	-		
Critical Hdwy	-	-	4.12	-	6.42	-		
Critical Hdwy Stg 1	-	-	-	-	5.42	-		
Critical Hdwy Stg 2	-	-	-	-	5.42	-		
Follow-up Hdwy	-	-	2.218	-	3.518	-		
Pot Cap-1 Maneuver	-	-	1445	-	148	0		
Stage 1	-	-	-	-	941	0		
Stage 2	-	-	-	-	241	0		
Platoon blocked, %	-	-		-				
Mov Cap-1 Maneuver	-	-	1445	-	82	-		
Mov Cap-2 Maneuver	-	-	-	-	82	-		
Stage 1	-	-	-	-	941	-		
Stage 2	-	-	-	-	134	-		
Approach	EB		WB		NB			
HCM Control Delay, s	0		8.6		86.2			
HCM LOS					F			
Minor Lane/Major Mvmt	NBLn1		NBLn2		EBT	EBR	WBL	WBT
Capacity (veh/h)	82		-		-	-	1445	-
HCM Lane V/C Ratio	0.497		-		-	-	0.444	-
HCM Control Delay (s)	86.2		0		-	-	9.5	-
HCM Lane LOS	F		A		-	-	A	-
HCM 95th %tile Q(veh)	2.1		-		-	-	2.3	-

Intersection

Int Delay, s/veh 10.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	92	85	628	68	41	699
Future Vol, veh/h	92	85	628	68	41	699
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	125	360	-	0	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	92	85	85	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	100	683	80	48	760

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	208
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1363
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1363
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.2	68.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	102	-	-	-	1363	-
HCM Lane V/C Ratio	0.473	-	-	-	0.501	-
HCM Control Delay (s)	68.6	0	-	-	10.3	-
HCM Lane LOS	F	A	-	-	B	-
HCM 95th %tile Q(veh)	2.1	-	-	-	2.9	-

HCM 6th TWSC
4: 1st Street (SH-79) & Colfax Ave (SH-36)

2030 Total AM
06/13/2022

Intersection								
Int Delay, s/veh	53							
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑	↑	↑	↑	↑	↑		
Traffic Vol, veh/h	90	43	914	102	31	580		
Future Vol, veh/h	90	43	914	102	31	580		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Free	Free	Free	Free	Stop	Stop		
RT Channelized	-	None	-	None	-	Free		
Storage Length	-	125	360	-	0	0		
Veh in Median Storage, #	0	-	-	0	0	-		
Grade, %	0	-	-	0	0	-		
Peak Hour Factor	76	76	92	76	76	92		
Heavy Vehicles, %	2	2	2	2	2	2		
Mvmt Flow	118	57	993	134	41	630		
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	0	0	175	0	2238	-		
Stage 1	-	-	-	-	118	-		
Stage 2	-	-	-	-	2120	-		
Critical Hdwy	-	-	4.12	-	6.42	-		
Critical Hdwy Stg 1	-	-	-	-	5.42	-		
Critical Hdwy Stg 2	-	-	-	-	5.42	-		
Follow-up Hdwy	-	-	2.218	-	3.518	-		
Pot Cap-1 Maneuver	-	-	1401	-	47	0		
Stage 1	-	-	-	-	907	0		
Stage 2	-	-	-	-	100	0		
Platoon blocked, %	-	-	-	-	-	-		
Mov Cap-1 Maneuver	-	-	1401	-	~ 14	-		
Mov Cap-2 Maneuver	-	-	-	-	~ 14	-		
Stage 1	-	-	-	-	907	-		
Stage 2	-	-	-	-	~ 29	-		
Approach	EB		WB		NB			
HCM Control Delay, s	0		11.9		\$ 1415.5			
HCM LOS	F							
Minor Lane/Major Mvmt	NBLn1		NBLn2		EBT	EBR	WBL	WBT
Capacity (veh/h)	14		-		-	-	1401	-
HCM Lane V/C Ratio	2.914		-		-	-	0.709	-
HCM Control Delay (s)	\$ 1415.5		0		-	-	13.6	-
HCM Lane LOS	F		A		-	-	B	-
HCM 95th %tile Q(veh)	5.9		-		-	-	6.5	-
Notes								
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon								

HCM 6th TWSC
4: 1st Street (SH-79) & Colfax Ave (SH-36)

2030 Total PM
06/13/2022

Intersection							
Int Delay, s/veh	213.2						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑	↗	↘	↑	↘	↗	
Traffic Vol, veh/h	179	85	1084	138	41	1263	
Future Vol, veh/h	179	85	1084	138	41	1263	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	Free	
Storage Length	-	125	360	-	0	0	
Veh in Median Storage, #	0	-	-	0	2	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	85	85	92	85	85	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	211	100	1178	162	48	1373	
Major/Minor	Major1		Major2		Minor1		
Conflicting Flow All	0	0	311	0	2729	-	
Stage 1	-	-	-	-	211	-	
Stage 2	-	-	-	-	2518	-	
Critical Hdwy	-	-	4.12	-	6.42	-	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	-	
Pot Cap-1 Maneuver	-	-	1249	-	~ 23	0	
Stage 1	-	-	-	-	824	0	
Stage 2	-	-	-	-	62	0	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	-	1249	-	~ 1	-	
Mov Cap-2 Maneuver	-	-	-	-	~ 4	-	
Stage 1	-	-	-	-	824	-	
Stage 2	-	-	-	-	~ 4	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		28.4		\$ 6721.2		
HCM LOS	F						
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	4		-	-	-	1249	-
HCM Lane V/C Ratio	12.059		-	-	-	0.943	-
HCM Control Delay (s)	\$ 6721.2		0	-	-	32.4	-
HCM Lane LOS	F		A	-	-	D	-
HCM 95th %tile Q(veh)	7.8		-	-	-	17.1	-
Notes							
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon	

Timings

2030 Total AM - Improved

4: 1st Street (SH-79) & Colfax Ave (SH-36)

06/13/2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘↗	↑	↖	↗
Traffic Volume (vph)	90	43	914	102	31	580
Future Volume (vph)	90	43	914	102	31	580
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	4		3	8	2	
Permitted Phases		4				Free
Detector Phase	4	4	3	8	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	31.0	31.0	64.0	95.0	25.0	
Total Split (%)	25.8%	25.8%	53.3%	79.2%	20.8%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	Max	
Act Effect Green (s)	42.6	42.6	43.4	90.5	20.5	120.0
Actuated g/C Ratio	0.36	0.36	0.36	0.75	0.17	1.00
v/c Ratio	0.18	0.10	0.80	0.10	0.14	0.40
Control Delay	29.6	8.3	39.4	4.1	38.4	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	8.3	39.4	4.1	38.4	1.3
LOS	C	A	D	A	D	A
Approach Delay	22.7			35.2	3.5	
Approach LOS	C			D	A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 23.3

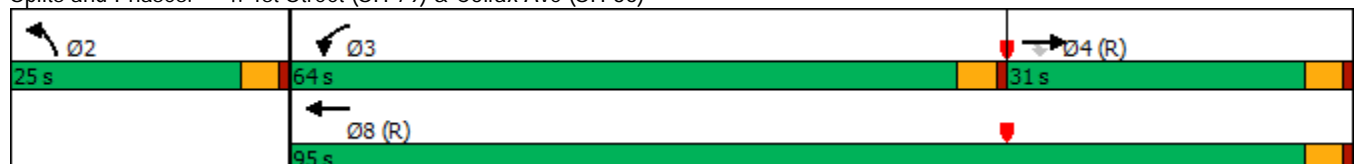
Intersection LOS: C

Intersection Capacity Utilization 44.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: 1st Street (SH-79) & Colfax Ave (SH-36)



HCM 6th Signalized Intersection Summary
4: 1st Street (SH-79) & Colfax Ave (SH-36)

2030 Total AM - Improved

06/13/2022

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↖↗	↑	↖	↗
Traffic Volume (veh/h)	90	43	914	102	31	580
Future Volume (veh/h)	90	43	914	102	31	580
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	57	993	134	41	0
Peak Hour Factor	0.76	0.76	0.92	0.76	0.76	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	734	622	1120	1411	304	
Arrive On Green	0.39	0.39	0.32	0.75	0.17	0.00
Sat Flow, veh/h	1870	1585	3456	1870	1781	1585
Grp Volume(v), veh/h	118	57	993	134	41	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1728	1870	1781	1585
Q Serve(g_s), s	4.9	2.7	32.7	2.3	2.3	0.0
Cycle Q Clear(g_c), s	4.9	2.7	32.7	2.3	2.3	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	734	622	1120	1411	304	
V/C Ratio(X)	0.16	0.09	0.89	0.09	0.13	
Avail Cap(c_a), veh/h	734	622	1713	1411	304	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.09	0.09	0.95	0.00
Uniform Delay (d), s/veh	23.6	23.0	38.5	3.9	42.2	0.0
Incr Delay (d2), s/veh	0.5	0.3	0.4	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.1	13.7	0.8	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.1	23.3	38.8	3.9	43.1	0.0
LnGrp LOS	C	C	D	A	D	
Approach Vol, veh/h	175			1127	41	A
Approach Delay, s/veh	23.8			34.7	43.1	
Approach LOS	C			C	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		25.0	43.4	51.6		95.0
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		20.5	59.5	26.5		90.5
Max Q Clear Time (g_c+l1), s		4.3	34.7	6.9		4.3
Green Ext Time (p_c), s		0.1	4.2	0.7		0.8
Intersection Summary						
HCM 6th Ctrl Delay			33.5			
HCM 6th LOS			C			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

Timings

2030 Total PM - Improved

4: 1st Street (SH-79) & Colfax Ave (SH-36)

06/13/2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘↗	↑	↘	↗
Traffic Volume (vph)	179	85	1084	138	41	1263
Future Volume (vph)	179	85	1084	138	41	1263
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	4		3	8	2	
Permitted Phases		4				Free
Detector Phase	4	4	3	8	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	32.0	32.0	64.0	96.0	24.0	
Total Split (%)	26.7%	26.7%	53.3%	80.0%	20.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	Max	
Act Effect Green (s)	37.0	37.0	50.0	91.5	19.5	120.0
Actuated g/C Ratio	0.31	0.31	0.42	0.76	0.16	1.00
v/c Ratio	0.37	0.18	0.82	0.11	0.17	0.87
Control Delay	36.5	7.6	16.5	4.3	41.4	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	7.6	16.5	4.3	41.4	10.0
LOS	D	A	B	A	D	B
Approach Delay	27.2			15.0	11.1	
Approach LOS	C			B	B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 14.5

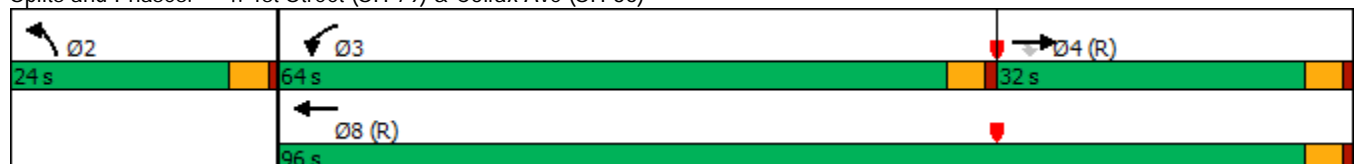
Intersection LOS: B

Intersection Capacity Utilization 55.8%

ICU Level of Service B

Analysis Period (min) 15













Splits and Phases: 4: 1st Street (SH-79) & Colfax Ave (SH-36)









HCM 6th Signalized Intersection Summary
4: 1st Street (SH-79) & Colfax Ave (SH-36)

2030 Total PM - Improved

06/13/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	179	85	1084	138	41	1263
Future Volume (veh/h)	179	85	1084	138	41	1263
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	100	1178	162	48	0
Peak Hour Factor	0.85	0.85	0.92	0.85	0.85	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	671	569	1265	1426	289	
Arrive On Green	0.36	0.36	0.61	1.00	0.16	0.00
Sat Flow, veh/h	1870	1585	3456	1870	1781	1585
Grp Volume(v), veh/h	211	100	1178	162	48	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1728	1870	1781	1585
Q Serve(g_s), s	9.8	5.2	36.9	0.0	2.8	0.0
Cycle Q Clear(g_c), s	9.8	5.2	36.9	0.0	2.8	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	671	569	1265	1426	289	
V/C Ratio(X)	0.31	0.18	0.93	0.11	0.17	
Avail Cap(c_a), veh/h	671	569	1713	1426	289	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.09	0.09	0.40	0.00
Uniform Delay (d), s/veh	27.8	26.3	21.9	0.0	43.2	0.0
Incr Delay (d2), s/veh	1.2	0.7	0.9	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	2.1	11.3	0.0	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.0	27.0	22.8	0.0	43.7	0.0
LnGrp LOS	C	C	C	A	D	
Approach Vol, veh/h	311			1340	48	A
Approach Delay, s/veh	28.4			20.0	43.7	
Approach LOS	C			C	D	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	24.0		48.4	47.6	96.0	
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s	19.5		59.5	27.5	91.5	
Max Q Clear Time (g_c+l1), s	4.8		38.9	11.8	2.0	
Green Ext Time (p_c), s	0.1		5.1	1.3	1.0	
Intersection Summary						
HCM 6th Ctrl Delay			22.2			
HCM 6th LOS			C			
Notes						

Intersection						
Int Delay, s/veh	21.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	184	170	410	127	113	311
Future Vol, veh/h	184	170	410	127	113	311
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	125	360	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	200	185	446	138	123	338
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	385	0	1230	-
Stage 1	-	-	-	-	200	-
Stage 2	-	-	-	-	1030	-
Critical Hdwy	-	-	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	-	1173	-	196	0
Stage 1	-	-	-	-	834	0
Stage 2	-	-	-	-	344	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1173	-	~ 122	-
Mov Cap-2 Maneuver	-	-	-	-	~ 122	-
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	213	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		7.6		151.7	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	122		-	-	-	1173
HCM Lane V/C Ratio	1.007		-	-	-	0.38
HCM Control Delay (s)	151.7		0	-	-	9.9
HCM Lane LOS	F		A	-	-	A
HCM 95th %tile Q(veh)	6.8		-	-	-	1.8
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection

Int Delay, s/veh 20.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	292	200	461	138	138	476
Future Vol, veh/h	292	200	461	138	138	476
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	-	125	360	-	0	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	317	217	501	150	150	517

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	534
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1034
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1034
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9	142.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	146	-	-	-	1034	-
HCM Lane V/C Ratio	1.027	-	-	-	0.485	-
HCM Control Delay (s)	142.8	0	-	-	11.7	-
HCM Lane LOS	F	A	-	-	B	-
HCM 95th %tile Q(veh)	7.8	-	-	-	2.7	-

Notes

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

Timings

4: 1st Street (SH-79) & Colfax Ave (SH-36)

2045 Total AM

06/13/2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘↗	↑	↖	↗
Traffic Volume (vph)	215	170	410	180	115	315
Future Volume (vph)	215	170	410	180	115	315
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	4		3	8	2	
Permitted Phases		4				Free
Detector Phase	4	4	3	8	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	32.0	32.0	59.0	91.0	29.0	
Total Split (%)	26.7%	26.7%	49.2%	75.8%	24.2%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	Max	
Act Effect Green (s)	60.5	60.5	21.5	86.5	24.5	120.0
Actuated g/C Ratio	0.50	0.50	0.18	0.72	0.20	1.00
v/c Ratio	0.25	0.21	0.73	0.15	0.35	0.22
Control Delay	18.6	3.2	51.1	5.7	38.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	3.2	51.1	5.7	38.1	0.3
LOS	B	A	D	A	D	A
Approach Delay	11.8			37.3	10.4	
Approach LOS	B			D	B	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 22.1

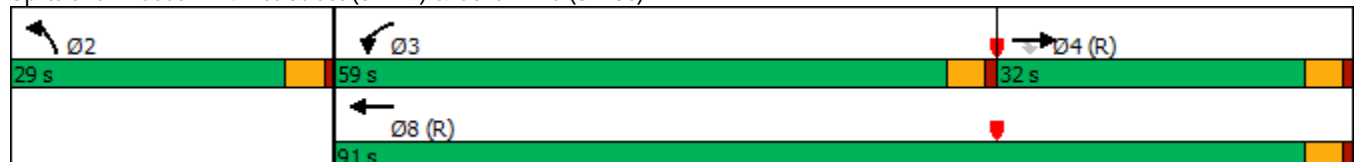
Intersection LOS: C

Intersection Capacity Utilization 40.6%

ICU Level of Service A













Analysis Period (min) 15

Splits and Phases: 4: 1st Street (SH-79) & Colfax Ave (SH-36)



HCM 6th Signalized Intersection Summary 4: 1st Street (SH-79) & Colfax Ave (SH-36)

2045 Total AM
06/13/2022

											
Movement	EBT	EBR	WBL	WBT	NBL	NBR					
Lane Configurations											
Traffic Volume (veh/h)	215	170	410	180	115	315					
Future Volume (veh/h)	215	170	410	180	115	315					
Initial Q (Qb), veh	0	0	0	0	0	0					
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00					
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00					
Work Zone On Approach	No			No	No						
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870					
Adj Flow Rate, veh/h	234	185	446	196	125	0					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92					
Percent Heavy Veh, %	2	2	2	2	2	2					
Cap, veh/h	992	840	529	1348	364						
Arrive On Green	0.53	0.53	0.26	1.00	0.20	0.00					
Sat Flow, veh/h	1870	1585	3456	1870	1781	1585					
Grp Volume(v), veh/h	234	185	446	196	125	0					
Grp Sat Flow(s),veh/h/ln	1870	1585	1728	1870	1781	1585					
Q Serve(g_s), s	8.1	7.4	14.7	0.0	7.2	0.0					
Cycle Q Clear(g_c), s	8.1	7.4	14.7	0.0	7.2	0.0					
Prop In Lane		1.00	1.00		1.00	1.00					
Lane Grp Cap(c), veh/h	992	840	529	1348	364						
V/C Ratio(X)	0.24	0.22	0.84	0.15	0.34						
Avail Cap(c_a), veh/h	992	840	1569	1348	364						
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00					
Upstream Filter(I)	1.00	1.00	0.80	0.80	0.93	0.00					
Uniform Delay (d), s/veh	15.1	15.0	43.3	0.0	40.9	0.0					
Incr Delay (d2), s/veh	0.6	0.6	3.0	0.2	2.4	0.0					
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0					
%ile BackOfQ(50%),veh/ln	3.6	2.8	5.9	0.1	3.4	0.0					
Unsig. Movement Delay, s/veh											
LnGrp Delay(d),s/veh	15.7	15.6	46.3	0.2	43.3	0.0					
LnGrp LOS	B	B	D	A	D						
Approach Vol, veh/h	419			642	125	A					
Approach Delay, s/veh	15.7			32.2	43.3						
Approach LOS	B			C	D						
Timer - Assigned Phs	2		3	4	8						
Phs Duration (G+Y+Rc), s	29.0		22.9	68.1	91.0						
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5						
Max Green Setting (Gmax), s	24.5		54.5	27.5	86.5						
Max Q Clear Time (g_c+l1), s	9.2		16.7	10.1	2.0						
Green Ext Time (p_c), s	0.3		1.7	1.8	1.2						
Intersection Summary											
HCM 6th Ctrl Delay			27.5								
HCM 6th LOS			C								
Notes											

Timings

4: 1st Street (SH-79) & Colfax Ave (SH-36)

2045 Total PM

06/13/2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘↗	↑	↘	↗
Traffic Volume (vph)	380	200	465	210	140	480
Future Volume (vph)	380	200	465	210	140	480
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	4		3	8	2	
Permitted Phases		4				Free
Detector Phase	4	4	3	8	2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	36.0	36.0	57.0	93.0	27.0	
Total Split (%)	30.0%	30.0%	47.5%	77.5%	22.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	Max	
Act Effect Green (s)	60.4	60.4	23.6	88.5	22.5	120.0
Actuated g/C Ratio	0.50	0.50	0.20	0.74	0.19	1.00
v/c Ratio	0.44	0.25	0.75	0.17	0.46	0.33
Control Delay	21.8	8.4	51.8	6.0	40.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	8.4	51.8	6.0	40.9	0.2
LOS	C	A	D	A	D	A
Approach Delay	17.2			37.6	9.4	
Approach LOS	B			D	A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 52.3%

ICU Level of Service A













Analysis Period (min) 15

Splits and Phases: 4: 1st Street (SH-79) & Colfax Ave (SH-36)



HCM 6th Signalized Intersection Summary 4: 1st Street (SH-79) & Colfax Ave (SH-36)

2045 Total PM
06/13/2022

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	380	200	465	210	140	480
Future Volume (veh/h)	380	200	465	210	140	480
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	413	217	505	228	152	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	990	839	590	1379	334	
Arrive On Green	0.53	0.53	0.29	1.00	0.19	0.00
Sat Flow, veh/h	1870	1585	3456	1870	1781	1585
Grp Volume(v), veh/h	413	217	505	228	152	0
Grp Sat Flow(s),veh/h/ln	1870	1585	1728	1870	1781	1585
Q Serve(g_s), s	16.0	9.0	16.6	0.0	9.1	0.0
Cycle Q Clear(g_c), s	16.0	9.0	16.6	0.0	9.1	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	990	839	590	1379	334	
V/C Ratio(X)	0.42	0.26	0.86	0.17	0.46	
Avail Cap(c_a), veh/h	990	839	1512	1379	334	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.80	0.80	0.24	0.00
Uniform Delay (d), s/veh	17.1	15.4	41.5	0.0	43.3	0.0
Incr Delay (d2), s/veh	1.3	0.7	3.0	0.2	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	3.4	6.6	0.1	4.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.4	16.2	44.5	0.2	44.4	0.0
LnGrp LOS	B	B	D	A	D	
Approach Vol, veh/h	630			733	152	A
Approach Delay, s/veh	17.6			30.7	44.4	
Approach LOS	B			C	D	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	27.0		25.0	68.0	93.0	
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s	22.5		52.5	31.5	88.5	
Max Q Clear Time (g_c+l1), s	11.1		18.6	18.0	2.0	
Green Ext Time (p_c), s	0.3		1.9	2.8	1.5	
Intersection Summary						
HCM 6th Ctrl Delay			26.6			
HCM 6th LOS			C			
Notes						

Intersection												
Int Delay, s/veh	14.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	269	51	0	1	84	108	1	4	1	43	0	270
Future Vol, veh/h	269	51	0	1	84	108	1	4	1	43	0	270
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	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	364	69	0	1	114	146	1	5	1	58	0	365

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	260	0	0	69	0	0	1169	1059	69	989	986	187
Stage 1	-	-	-	-	-	-	797	797	-	189	189	-
Stage 2	-	-	-	-	-	-	372	262	-	800	797	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1304	-	-	1532	-	-	170	224	994	226	248	855
Stage 1	-	-	-	-	-	-	380	399	-	813	744	-
Stage 2	-	-	-	-	-	-	648	691	-	379	399	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1304	-	-	1532	-	-	75	159	994	171	176	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	159	-	171	176	-
Stage 1	-	-	-	-	-	-	270	283	-	577	743	-
Stage 2	-	-	-	-	-	-	371	690	-	264	283	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.4	0	30	29.7
HCM LOS			D	D





Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	152	1304	-	-	1532	-	-	552
HCM Lane V/C Ratio	0.053	0.279	-	-	0.001	-	-	0.766
HCM Control Delay (s)	30	8.8	0	-	7.4	0	-	29.7
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	1.1	-	-	0	-	-	6.9





Intersection												
Int Delay, s/veh	11.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	243	112	2	2	94	64	1	1	3	54	5	273
Future Vol, veh/h	243	112	2	2	94	64	1	1	3	54	5	273
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	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	289	133	2	2	112	76	1	1	4	64	6	325

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	135	0	0	1032	904	134	869	867	150
Stage 1	-	-	-	-	-	-	712	712	-	154	154	-
Stage 2	-	-	-	-	-	-	320	192	-	715	713	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1386	-	-	1449	-	-	211	277	915	272	291	896
Stage 1	-	-	-	-	-	-	423	436	-	848	770	-
Stage 2	-	-	-	-	-	-	692	742	-	422	435	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1386	-	-	1449	-	-	109	214	915	222	225	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	109	214	-	222	225	-
Stage 1	-	-	-	-	-	-	327	337	-	656	768	-
Stage 2	-	-	-	-	-	-	437	741	-	324	337	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.6			0.1			17.6			23.3		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	292	1386	-	-	1449	-	-	582
HCM Lane V/C Ratio	0.02	0.209	-	-	0.002	-	-	0.679
HCM Control Delay (s)	17.6	8.3	0	-	7.5	0	-	23.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.8	-	-	0	-	-	5.2

Intersection												
Int Delay, s/veh	81.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	245	255	0	1	486	126	1	5	1	50	0	211
Future Vol, veh/h	245	255	0	1	486	126	1	5	1	50	0	211
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	74	74	74	74	74	74	74	74	74	74	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	266	345	0	1	657	170	1	7	1	68	0	229
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	827	0	0	345	0	0	1736	1706	345	1625	1621	742
Stage 1	-	-	-	-	-	-	877	877	-	744	744	-
Stage 2	-	-	-	-	-	-	859	829	-	881	877	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	804	-	-	1214	-	-	69	91	698	82	103	416
Stage 1	-	-	-	-	-	-	343	366	-	407	421	-
Stage 2	-	-	-	-	-	-	351	385	-	341	366	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	804	-	-	1214	-	-	21	54	698	~ 51	61	416
Mov Cap-2 Maneuver	-	-	-	-	-	-	21	54	-	~ 51	61	-
Stage 1	-	-	-	-	-	-	203	216	-	241	420	-
Stage 2	-	-	-	-	-	-	157	384	-	195	216	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.1			0			95.3			\$ 467.3		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	49	804	-	-	1214	-	-	158				
HCM Lane V/C Ratio	0.193	0.331	-	-	0.001	-	-	1.879				
HCM Control Delay (s)	95.3	11.7	0	-	8	0	-	\$ 467.3				
HCM Lane LOS	F	B	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	0.6	1.5	-	-	0	-	-	22.3				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	107.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	162	658	2	2	487	74	1	1	3	63	6	230
Future Vol, veh/h	162	658	2	2	487	74	1	1	3	63	6	230
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	84	84	84	84	84	84	84	84	84	84	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	176	783	2	2	580	88	1	1	4	75	7	250
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	668	0	0	785	0	0	1893	1808	784	1767	1765	624
Stage 1	-	-	-	-	-	-	1136	1136	-	628	628	-
Stage 2	-	-	-	-	-	-	757	672	-	1139	1137	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	922	-	-	834	-	-	53	79	393	~ 65	84	485
Stage 1	-	-	-	-	-	-	246	277	-	471	476	-
Stage 2	-	-	-	-	-	-	400	454	-	245	277	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	922	-	-	834	-	-	17	52	393	~ 47	55	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	52	-	~ 47	55	-
Stage 1	-	-	-	-	-	-	163	183	-	311	474	-
Stage 2	-	-	-	-	-	-	190	452	-	159	183	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.8			0			74			\$ 630.1		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	58	922	-	-	834	-	-	148				
HCM Lane V/C Ratio	0.103	0.191	-	-	0.003	-	-	2.244				
HCM Control Delay (s)	74	9.8	0	-	9.3	0	-	\$ 630.1				
HCM Lane LOS	F	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	0.3	0.7	-	-	0	-	-	27.5				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				
















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	259	454	0	26	835	126	1	5	15	50	0	236
Future Vol, veh/h	259	454	0	26	835	126	1	5	15	50	0	236
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	74	74	74	74	74	74	74	74	74	74	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	282	614	0	35	1128	170	1	7	20	68	0	257
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1298	0	0	614	0	0	2590	2546	614	2475	2461	1213
Stage 1	-	-	-	-	-	-	1178	1178	-	1283	1283	-
Stage 2	-	-	-	-	-	-	1412	1368	-	1192	1178	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	534	-	-	965	-	-	17	27	492	~ 20	30	~ 222
Stage 1	-	-	-	-	-	-	233	265	-	203	236	-
Stage 2	-	-	-	-	-	-	171	215	-	228	265	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	534	-	-	965	-	-	-	~ 5	492	-	5	~ 222
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 5	-	-	5	-
Stage 1	-	-	-	-	-	-	46	53	-	~ 40	203	-
Stage 2	-	-	-	-	-	-	-	185	-	~ 38	53	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	6			0.2								
HCM LOS							-			-		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	534	-	-	965	-	-	-				
HCM Lane V/C Ratio	-	0.527	-	-	0.036	-	-	-				
HCM Control Delay (s)	-	19	0	-	8.9	0	-	-				
HCM Lane LOS	-	C	A	-	A	A	-	-				
HCM 95th %tile Q(veh)	-	3	-	-	0.1	-	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	205	1266	2	37	978	74	1	1	46	63	6	265
Future Vol, veh/h	205	1266	2	37	978	74	1	1	46	63	6	265
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	84	84	84	84	84	84	84	84	84	84	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	223	1507	2	44	1164	88	1	1	55	75	7	288
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1252	0	0	1509	0	0	3398	3294	1508	3278	3251	1208
Stage 1	-	-	-	-	-	-	1954	1954	-	1296	1296	-
Stage 2	-	-	-	-	-	-	1444	1340	-	1982	1955	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	556	-	-	443	-	-	4	9	148	~ 5	9	~ 223
Stage 1	-	-	-	-	-	-	83	110	-	199	232	-
Stage 2	-	-	-	-	-	-	164	221	-	80	110	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	556	-	-	443	-	-	-	0	148	-	0	~ 223
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	83	0	-	199	154	-
Stage 2	-	-	-	-	-	-	-	147	-	-	0	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0.5								
HCM LOS							-			-		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	556	-	-	443	-	-	-				
HCM Lane V/C Ratio	-	0.401	-	-	0.099	-	-	-				
HCM Control Delay (s)	-	15.7	0	-	14	0	-	-				
HCM Lane LOS	-	C	A	-	B	A	-	-				
HCM 95th %tile Q(veh)	-	1.9	-	-	0.3	-	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Timings
5: Colfax Ave (SH-36) & Adams Street

2030 Total AM - Improved

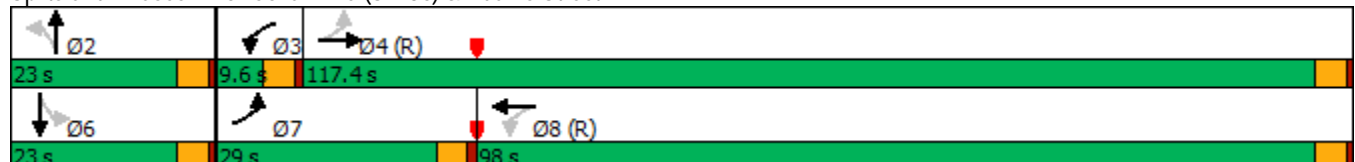
06/13/2022

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	259	454	26	835	1	5	50	0
Future Volume (vph)	259	454	26	835	1	5	50	0
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	29.0	117.4	9.6	98.0	23.0	23.0	23.0	23.0
Total Split (%)	19.3%	78.3%	6.4%	65.3%	15.3%	15.3%	15.3%	15.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
Act Effect Green (s)	122.5	114.8	100.7	95.6		18.5	18.5	18.5
Actuated g/C Ratio	0.82	0.77	0.67	0.64		0.12	0.12	0.12
v/c Ratio	0.90	0.43	0.06	1.11		0.17	0.36	0.59
Control Delay	76.8	7.5	4.8	90.4		31.3	66.2	10.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	76.8	7.5	4.8	90.4		31.3	66.2	10.9
LOS	E	A	A	F		C	E	B
Approach Delay		29.3		88.2		31.3		22.5
Approach LOS		C		F		C		C

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 58.9
Intersection Capacity Utilization 91.8%
Analysis Period (min) 15
Intersection LOS: E
ICU Level of Service F




















Splits and Phases: 5: Colfax Ave (SH-36) & Adams Street



HCM 6th Signalized Intersection Summary 5: Colfax Ave (SH-36) & Adams Street

2030 Total AM - Improved
















06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	454	0	26	835	126	1	5	15	50	0	236
Future Volume (veh/h)	259	454	0	26	835	126	1	5	15	50	0	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	282	614	0	35	1128	55	1	7	20	68	0	129
Peak Hour Factor	0.92	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	1424	0	614	1156	56	26	57	146	225	0	195
Arrive On Green	0.13	0.76	0.00	0.03	0.65	0.65	0.12	0.12	0.12	0.12	0.00	0.12
Sat Flow, veh/h	1781	1870	0	1781	1769	86	13	459	1180	1383	0	1585
Grp Volume(v), veh/h	282	614	0	35	0	1183	28	0	0	68	0	129
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1855	1652	0	0	1383	0	1585
Q Serve(g_s), s	17.6	17.5	0.0	1.0	0.0	91.5	0.0	0.0	0.0	3.9	0.0	11.7
Cycle Q Clear(g_c), s	17.6	17.5	0.0	1.0	0.0	91.5	2.3	0.0	0.0	6.1	0.0	11.7
Prop In Lane	1.00		0.00	1.00		0.05	0.04		0.71	1.00		1.00
Lane Grp Cap(c), veh/h	306	1424	0	614	0	1212	229	0	0	225	0	195
V/C Ratio(X)	0.92	0.43	0.00	0.06	0.00	0.98	0.12	0.00	0.00	0.30	0.00	0.66
Avail Cap(c_a), veh/h	359	1424	0	629	0	1212	229	0	0	225	0	195
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.3	6.4	0.0	7.9	0.0	24.9	58.6	0.0	0.0	60.2	0.0	62.7
Incr Delay (d2), s/veh	25.2	0.9	0.0	0.0	0.0	20.7	1.1	0.0	0.0	3.4	0.0	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	6.8	0.0	0.4	0.0	44.7	1.0	0.0	0.0	2.6	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.6	7.3	0.0	7.9	0.0	45.6	59.7	0.0	0.0	63.6	0.0	78.9
LnGrp LOS	E	A	A	A	A	D	E	A	A	E	A	E
Approach Vol, veh/h	896			1218			28			197		
Approach Delay, s/veh	30.0			44.5			59.7			73.6		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	23.0		8.3	118.7		23.0	24.5	102.5				
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	18.5		5.1	112.9		18.5	24.5	93.5				
Max Q Clear Time (g_c+I1), s	4.3		3.0	19.5		13.7	19.6	93.5				
Green Ext Time (p_c), s	0.1		0.0	4.9		0.4	0.4	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	41.6											
HCM 6th LOS	D											

Timings
5: Colfax Ave (SH-36) & Adams Street

2030 Total PM - Improved

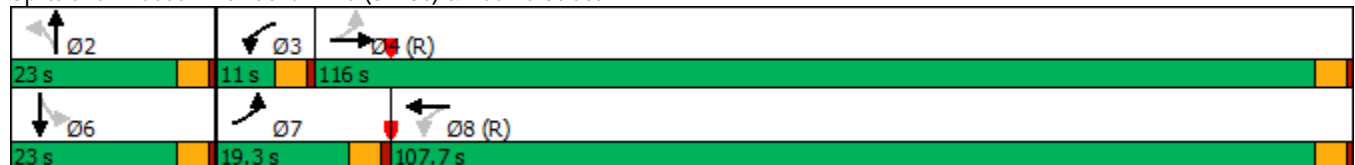
06/13/2022

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	205	1266	37	978	1	1	63	6
Future Volume (vph)	205	1266	37	978	1	1	63	6
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	19.3	116.0	11.0	107.7	23.0	23.0	23.0	23.0
Total Split (%)	12.9%	77.3%	7.3%	71.8%	15.3%	15.3%	15.3%	15.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
Act Effect Green (s)	122.5	113.9	109.3	103.2		18.5	18.5	18.5
Actuated g/C Ratio	0.82	0.76	0.73	0.69		0.12	0.12	0.12
v/c Ratio	1.00	1.07	0.36	0.99		0.32	0.48	0.79
Control Delay	105.5	63.9	20.1	45.2		19.9	72.5	35.4
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	105.5	63.9	20.1	45.2		19.9	72.5	35.4
LOS	F	E	C	D		B	E	D
Approach Delay		69.2		44.4		19.9		42.9
Approach LOS		E		D		B		D

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 56.3
Intersection Capacity Utilization 98.9%
Analysis Period (min) 15
Intersection LOS: E
ICU Level of Service F





















Splits and Phases: 5: Colfax Ave (SH-36) & Adams Street







HCM 6th Signalized Intersection Summary 5: Colfax Ave (SH-36) & Adams Street

2030 Total PM - Improved

06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	1266	2	37	978	74	1	1	46	63	6	265
Future Volume (veh/h)	205	1266	2	37	978	74	1	1	46	63	6	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	223	1507	1	44	1164	46	1	1	55	75	7	125
Peak Hour Factor	0.92	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1418	1	98	1322	52	25	6	189	215	10	187
Arrive On Green	0.05	0.76	0.76	0.03	0.74	0.74	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	1869	1	1781	1787	71	6	50	1535	1348	85	1513
Grp Volume(v), veh/h	223	0	1508	44	0	1210	57	0	0	75	0	132
Grp Sat Flow(s),veh/h/ln	1781	0	1870	1781	0	1858	1591	0	0	1348	0	1598
Q Serve(g_s), s	4.6	0.0	113.8	0.9	0.0	73.0	0.0	0.0	0.0	2.7	0.0	11.8
Cycle Q Clear(g_c), s	4.6	0.0	113.8	0.9	0.0	73.0	4.9	0.0	0.0	7.6	0.0	11.8
Prop In Lane	1.00		0.00	1.00		0.04	0.02		0.96	1.00		0.95
Lane Grp Cap(c), veh/h	248	0	1419	98	0	1374	221	0	0	215	0	197
V/C Ratio(X)	0.90	0.00	1.06	0.45	0.00	0.88	0.26	0.00	0.00	0.35	0.00	0.67
Avail Cap(c_a), veh/h	340	0	1419	125	0	1374	221	0	0	215	0	197
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.50	0.00	0.50	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	18.1	45.2	0.0	14.6	59.8	0.0	0.0	61.0	0.0	62.8
Incr Delay (d2), s/veh	11.7	0.0	36.6	3.2	0.0	8.4	2.8	0.0	0.0	4.4	0.0	16.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	56.7	1.3	0.0	30.9	2.2	0.0	0.0	2.9	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	0.0	54.7	48.4	0.0	23.0	62.6	0.0	0.0	65.4	0.0	79.5
LnGrp LOS	D	A	F	D	A	C	E	A	A	E	A	E
Approach Vol, veh/h	1731					1254		57		207		
Approach Delay, s/veh	53.7					23.8		62.6		74.4		
Approach LOS	D					C		E		E		
Timer - Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	23.0		8.7	118.3	23.0		11.5	115.5				
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5		4.5	4.5				
Max Green Setting (Gmax), s	18.5		6.5	111.5	18.5		14.8	103.2				
Max Q Clear Time (g_c+I1), s	6.9		2.9	115.8	13.8		6.6	75.0				
Green Ext Time (p_c), s	0.2		0.0	0.0	0.4		0.4	14.1				
Intersection Summary												
HCM 6th Ctrl Delay			43.7									
HCM 6th LOS			D									















Intersection												
Int Delay, s/veh	231											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	325	170	0	14	255	283	0	14	0	127	0	354
Future Vol, veh/h	325	170	0	14	255	283	0	14	0	127	0	354
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	353	185	0	15	277	308	0	15	0	138	0	385
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	585	0	0	185	0	0	1545	1506	185	1360	1352	431
Stage 1	-	-	-	-	-	-	891	891	-	461	461	-
Stage 2	-	-	-	-	-	-	654	615	-	899	891	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	990	-	-	1390	-	-	93	121	857	~ 126	150	624
Stage 1	-	-	-	-	-	-	337	361	-	581	565	-
Stage 2	-	-	-	-	-	-	456	482	-	334	361	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	990	-	-	1390	-	-	24	72	857	~ 73	89	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	72	-	~ 73	89	-
Stage 1	-	-	-	-	-	-	203	218	-	350	555	-
Stage 2	-	-	-	-	-	-	172	474	-	187	218	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7			0.2			67.9			\$ 731		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	72	990	-	-	1390	-	-	208				
HCM Lane V/C Ratio	0.211	0.357	-	-	0.011	-	-	2.514				
HCM Control Delay (s)	67.9	10.6	0	-	7.6	0	-	\$ 731				
HCM Lane LOS	F	B	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	0.7	1.6	-	-	0	-	-	43.8				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Intersection												
Int Delay, s/veh	1902.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	476	322	15	0	276	215	15	15	0	169	15	430
Future Vol, veh/h	476	322	15	0	276	215	15	15	0	169	15	430
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	517	350	16	0	300	234	16	16	0	184	16	467
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	534	0	0	366	0	0	2051	1926	358	1817	1817	417
Stage 1	-	-	-	-	-	-	1392	1392	-	417	417	-
Stage 2	-	-	-	-	-	-	659	534	-	1400	1400	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1034	-	-	1193	-	-	41	67	686	~ 60	78	636
Stage 1	-	-	-	-	-	-	176	209	-	613	591	-
Stage 2	-	-	-	-	-	-	453	524	-	~ 174	207	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1034	-	-	1193	-	-	~ 3	25	686	~ 15	29	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 3	25	-	~ 15	29	-
Stage 1	-	-	-	-	-	-	65	78	-	227	591	-
Stage 2	-	-	-	-	-	-	117	524	-	~ 51	77	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7			0			\$ 3879.6			\$ 5835.8		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	5	1034	-	-	1193	-	-	49				
HCM Lane V/C Ratio	6.522	0.5	-	-	-	-	-	13.62				
HCM Control Delay (s)	\$ 3879.6	11.9	0	-	0	-	-	\$ 5835.8				
HCM Lane LOS	F	B	A	-	A	-	-	F				
HCM 95th %tile Q(veh)	5.6	2.9	-	-	0	-	-	80.4				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Timings
5: Colfax Ave (SH-36) & Adams Street

2045 Total AM

06/13/2022

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	340	185	40	280	15	130	0
Future Volume (vph)	340	185	40	280	15	130	0
Turn Type	pm+pt	NA	pm+pt	NA	NA	Perm	NA
Protected Phases	7	4	3	8	2		6
Permitted Phases	4		8			6	
Detector Phase	7	4	3	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5
Total Split (s)	40.0	107.2	9.8	77.0	33.0	33.0	33.0
Total Split (%)	26.7%	71.5%	6.5%	51.3%	22.0%	22.0%	22.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max
Act Effect Green (s)	112.5	104.7	95.8	90.5	28.5	28.5	28.5
Actuated g/C Ratio	0.75	0.70	0.64	0.60	0.19	0.19	0.19
v/c Ratio	0.67	0.15	0.06	0.58	0.09	0.54	0.49
Control Delay	12.5	8.4	6.5	20.3	31.2	63.7	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	8.4	6.5	20.3	31.2	63.7	2.0
LOS	B	A	A	C	C	E	A
Approach Delay		11.0		19.4	31.2		17.7
Approach LOS		B		B	C		B

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.5

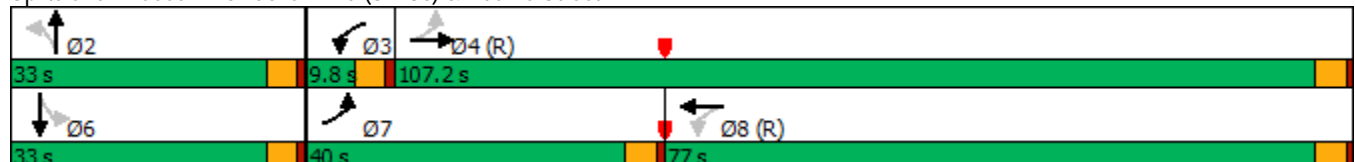
Intersection LOS: B

Intersection Capacity Utilization 85.8%

ICU Level of Service E




















Analysis Period (min) 15

Splits and Phases: 5: Colfax Ave (SH-36) & Adams Street



HCM 6th Signalized Intersection Summary 5: Colfax Ave (SH-36) & Adams Street
















2045 Total AM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	185	0	40	280	285	0	15	15	130	0	380
Future Volume (veh/h)	340	185	0	40	280	285	0	15	15	130	0	380
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	370	201	0	43	304	245	0	16	16	141	0	163
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	602	1295	0	841	603	486	0	163	163	288	0	301
Arrive On Green	0.09	0.69	0.00	0.03	0.63	0.63	0.00	0.19	0.19	0.19	0.00	0.19
Sat Flow, veh/h	1781	1870	0	1781	959	773	0	858	858	1377	0	1585
Grp Volume(v), veh/h	370	201	0	43	0	549	0	0	32	141	0	163
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1731	0	0	1716	1377	0	1585
Q Serve(g_s), s	10.5	5.6	0.0	1.3	0.0	25.8	0.0	0.0	2.3	14.1	0.0	13.9
Cycle Q Clear(g_c), s	10.5	5.6	0.0	1.3	0.0	25.8	0.0	0.0	2.3	16.4	0.0	13.9
Prop In Lane	1.00		0.00	1.00		0.45	0.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	602	1295	0	841	0	1089	0	0	326	288	0	301
V/C Ratio(X)	0.61	0.16	0.00	0.05	0.00	0.50	0.00	0.00	0.10	0.49	0.00	0.54
Avail Cap(c_a), veh/h	862	1295	0	854	0	1089	0	0	326	288	0	301
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	8.0	0.0	9.0	0.0	15.1	0.0	0.0	50.1	56.9	0.0	54.8
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.0	0.0	1.7	0.0	0.0	0.6	5.8	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.3	0.0	0.5	0.0	10.6	0.0	0.0	1.1	5.4	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	8.2	0.0	9.1	0.0	16.8	0.0	0.0	50.7	62.7	0.0	61.7
LnGrp LOS	B	A	A	A	A	B	A	A	D	E	A	E
Approach Vol, veh/h		571			592			32			304	
Approach Delay, s/veh		10.8			16.2			50.7			62.2	
Approach LOS		B			B			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		33.0	8.7	108.3		33.0	18.1	98.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		28.5	5.3	102.7		28.5	35.5	72.5				
Max Q Clear Time (g_c+I1), s		4.3	3.3	7.6		18.4	12.5	27.8				
Green Ext Time (p_c), s		0.1	0.0	1.3		1.0	1.1	4.4				
Intersection Summary												
HCM 6th Ctrl Delay			24.2									
HCM 6th LOS			C									

Timings
5: Colfax Ave (SH-36) & Adams Street

2045 Total PM

06/13/2022

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	520	365	35	315	15	15	170	15
Future Volume (vph)	520	365	35	315	15	15	170	15
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	53.0	105.4	9.6	62.0	35.0	35.0	35.0	35.0
Total Split (%)	35.3%	70.3%	6.4%	41.3%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
Act Effect Green (s)	110.5	102.8	69.4	64.3		30.5	30.5	30.5
Actuated g/C Ratio	0.74	0.69	0.46	0.43		0.20	0.20	0.20
v/c Ratio	0.87	0.33	0.08	0.75		0.50	0.74	0.72
Control Delay	39.8	10.6	13.2	43.2		36.7	74.9	11.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	39.8	10.6	13.2	43.2		36.7	74.9	11.2
LOS	D	B	B	D		D	E	B
Approach Delay		27.5		41.4		36.7		27.9
Approach LOS		C		D		D		C

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 31.5

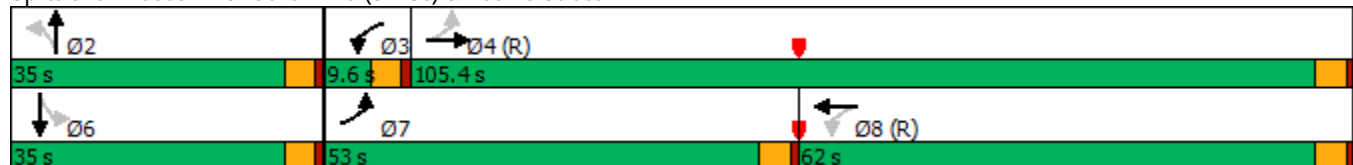
Intersection LOS: C

Intersection Capacity Utilization 99.3%

ICU Level of Service F




















Analysis Period (min) 15

Splits and Phases: 5: Colfax Ave (SH-36) & Adams Street














HCM 6th Signalized Intersection Summary 5: Colfax Ave (SH-36) & Adams Street

2045 Total PM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	365	15	35	315	215	15	15	45	170	15	465
Future Volume (veh/h)	520	365	15	35	315	215	15	15	45	170	15	465
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	565	397	16	38	342	234	16	16	49	185	16	-82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	601	1214	49	631	569	390	76	82	199	314	0	322
Arrive On Green	0.16	0.68	0.68	0.03	0.55	0.55	0.20	0.20	0.20	0.20	0.20	0.00
Sat Flow, veh/h	1781	1785	72	1781	1035	708	234	406	980	1337	1870	0
Grp Volume(v), veh/h	565	0	413	38	0	576	81	0	0	185	-66	-66
Grp Sat Flow(s),veh/h/ln	1781	0	1857	1781	0	1743	1619	0	0	1337	1870	1585
Q Serve(g_s), s	19.5	0.0	13.7	1.4	0.0	33.3	0.0	0.0	0.0	13.9	0.0	0.0
Cycle Q Clear(g_c), s	19.5	0.0	13.7	1.4	0.0	33.3	6.0	0.0	0.0	19.9	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.41	0.20		0.60	1.00		0.00
Lane Grp Cap(c), veh/h	601	0	1263	631	0	959	358	0	0	314	0	0
V/C Ratio(X)	0.94	0.00	0.33	0.06	0.00	0.60	0.23	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	899	0	1263	644	0	959	358	0	0	314	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.00	0.93	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.5	0.0	9.9	13.7	0.0	22.7	50.0	0.0	0.0	55.7	0.0	0.0
Incr Delay (d2), s/veh	12.4	0.0	0.6	0.0	0.0	2.8	1.5	0.0	0.0	7.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	0.0	5.8	0.6	0.0	14.4	2.7	0.0	0.0	7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	0.0	10.5	13.8	0.0	25.4	51.5	0.0	0.0	63.6	0.0	0.0
LnGrp LOS	C	A	B	B	A	C	D	A	A	E	A	A
Approach Vol, veh/h	978			614			81			53		
Approach Delay, s/veh	23.4			24.7			51.5			222.0		
Approach LOS	C			C			D			F		
Timer - Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	35.0		8.5	106.5		35.0	28.0	87.0				
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	30.5		5.1	100.9		30.5	48.5	57.5				
Max Q Clear Time (g_c+I1), s	8.0		3.4	15.7		21.9	21.5	35.3				
Green Ext Time (p_c), s	0.4		0.0	2.9		0.3	1.9	4.1				
Intersection Summary												
HCM 6th Ctrl Delay	31.3											
HCM 6th LOS	C											

HCM 6th TWSC
6: 1st Street (SH-79) & Marketplace Drive/Silverheels Road

2021 Existing AM
11/09/2021

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	15	1	181	1	1	1	176	174	13	5	264	64
Future Vol, veh/h	15	1	181	1	1	1	176	174	13	5	264	64
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	-	-	Free	-	-	Free	-	-	None	-	-	None
Storage Length	0	-	-	150	-	150	300	-	0	350	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1	189	1	1	1	183	181	14	5	275	67












Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	840	846	-	866	899	-	342	0	0	195	0	0
Stage 1	285	285	-	547	547	-	-	-	-	-	-	-
Stage 2	555	561	-	319	352	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	7.12	6.52	-	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	-	3.518	4.018	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	285	299	0	274	279	0	1217	-	-	1378	-	-
Stage 1	722	676	0	521	517	0	-	-	-	-	-	-
Stage 2	516	510	0	693	632	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	251	253	-	241	236	-	1217	-	-	1378	-	-
Mov Cap-2 Maneuver	339	344	-	325	310	-	-	-	-	-	-	-
Stage 1	614	673	-	443	439	-	-	-	-	-	-	-
Stage 2	437	434	-	689	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		16.4	4.1	0.1
HCM LOS	-	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	339	-	325	310	-	1378	-	-
HCM Lane V/C Ratio	0.151	-	-	0.046	-	0.003	0.003	-	0.004	-	-
HCM Control Delay (s)	8.5	-	-	16.1	-	16.1	16.7	0	7.6	-	-
HCM Lane LOS	A	-	-	C	-	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-	0	0	-	0	-	-

HCM 6th TWSC
6: 1st Street (SH-79) & Marketplace Drive/Silverheels Road

2021 Existing PM
11/09/2021

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	30	0	257	10	1	15	300	261	2	0	230	60
Future Vol, veh/h	30	0	257	10	1	15	300	261	2	0	230	60
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	-	-	Free	-	-	Free	-	-	None	-	-	None
Storage Length	0	-	-	150	-	150	300	-	0	350	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	276	11	1	16	323	281	2	0	247	65

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1176	1176	-	1207	1239	-	312	0	0	283	0	0
Stage 1	247	247	-	927	927	-	-	-	-	-	-	-
Stage 2	929	929	-	280	312	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	7.12	6.52	-	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	-	3.518	4.018	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	168	191	0	160	175	0	1248	-	-	1279	-	-
Stage 1	757	702	0	322	347	0	-	-	-	-	-	-
Stage 2	321	346	0	727	658	0	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	134	142	-	128	130	-	1248	-	-	1279	-	-
Mov Cap-2 Maneuver	198	216	-	189	190	-	-	-	-	-	-	-
Stage 1	561	702	-	239	257	-	-	-	-	-	-	-
Stage 2	237	256	-	727	658	-	-	-	-	-	-	-























Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.7		25.1		4.7		0	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1248	-	-	198	-	189	190	-	1279	-	-
HCM Lane V/C Ratio	0.258	-	-	0.163	-	0.057	0.006	-	-	-	-
HCM Control Delay (s)	8.9	-	-	26.7	0	25.2	24.1	0	0	-	-
HCM Lane LOS	A	-	-	D	A	D	C	A	A	-	-
HCM 95th %tile Q(veh)	1	-	-	0.6	-	0.2	0	-	0	-	-








Timings 6: 1st Street (SH-79) & Marketplace Drive

2030 Background AM

06/13/2022

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	17	1	1	1	1	205	331	15	6	592	74
Future Volume (vph)	17	1	1	1	1	205	331	15	6	592	74
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8			2			6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	4	4	8	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	31.0	31.0	31.0	31.0	31.0	89.0	89.0	89.0	89.0	89.0	89.0
Total Split (%)	25.8%	25.8%	25.8%	25.8%	25.8%	74.2%	74.2%	74.2%	74.2%	74.2%	74.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Efect Green (s)	8.4	8.4	8.4	8.4	8.4	102.6	102.6	102.6	102.6	102.6	102.6
Actuated g/C Ratio	0.07	0.07	0.07	0.07	0.07	0.86	0.86	0.86	0.86	0.86	0.86
v/c Ratio	0.18	0.70	0.02	0.01	0.01	0.33	0.22	0.01	0.01	0.39	0.06
Control Delay	54.8	19.2	49.0	49.0	0.0	4.8	2.3	0.7	1.8	2.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	19.2	49.0	49.0	0.0	4.8	2.3	0.7	1.8	2.9	0.6
LOS	D	B	D	D	A	A	A	A	A	A	A
Approach Delay		21.9		32.7			3.2			2.7	
Approach LOS		C		C			A			A	
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.70											
Intersection Signal Delay: 5.9						Intersection LOS: A					
Intersection Capacity Utilization 66.9%						ICU Level of Service C					
Analysis Period (min) 15											
























Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive

			
Ø2 (R)		Ø4	
89 s		31 s	
			
Ø6 (R)		Ø8	
89 s		31 s	

HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive

2030 Background AM





















06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1	211	1	1	1	205	331	15	6	592	74
Future Volume (veh/h)	17	1	211	1	1	1	205	331	15	6	592	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1	0	1	1	0	214	345	16	6	617	77
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	39		89	39		703	1691	1433	983	1691	1433
Arrive On Green	0.02	0.02	0.00	0.02	0.02	0.00	1.00	1.00	1.00	0.90	0.90	0.90
Sat Flow, veh/h	1416	1870	0	1416	1870	1585	750	1870	1585	1021	1870	1585
Grp Volume(v), veh/h	18	1	0	1	1	0	214	345	16	6	617	77
Grp Sat Flow(s),veh/h/ln	1416	1870	0	1416	1870	1585	750	1870	1585	1021	1870	1585
Q Serve(g_s), s	1.5	0.1	0.0	0.1	0.1	0.0	2.6	0.0	0.0	0.1	5.7	0.6
Cycle Q Clear(g_c), s	1.6	0.1	0.0	0.1	0.1	0.0	8.3	0.0	0.0	0.1	5.7	0.6
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	39		89	39		703	1691	1433	983	1691	1433
V/C Ratio(X)	0.20	0.03		0.01	0.03		0.30	0.20	0.01	0.01	0.36	0.05
Avail Cap(c_a), veh/h	372	413		372	413		703	1691	1433	983	1691	1433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	57.5	0.0	57.6	57.5	0.0	0.2	0.0	0.0	0.6	0.8	0.6
Incr Delay (d2), s/veh	1.1	0.3	0.0	0.0	0.3	0.0	1.1	0.3	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	57.8	0.0	57.7	57.8	0.0	1.3	0.3	0.0	0.6	1.4	0.7
LnGrp LOS	E	E		E	E		A	A	A	A	A	A
Approach Vol, veh/h	19		A	2		A	575		700			
Approach Delay, s/veh	59.3			57.7			0.7		1.3			
Approach LOS	E			E			A		A			
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+Rc), s	113.0			7.0			113.0		7.0			
Change Period (Y+Rc), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	84.5			26.5			84.5		26.5			
Max Q Clear Time (g_c+I1), s	10.3			3.6			7.7		2.1			
Green Ext Time (p_c), s	4.4			0.0			5.3		0.0			
Intersection Summary												
HCM 6th Ctrl Delay	2.0											
HCM 6th LOS	A											
Notes												



















Timings
6: 1st Street (SH-79) & Marketplace Drive

2030 Background PM

06/13/2022

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	35	0	12	1	17	349	711	2	558	70
Future Volume (vph)	35	0	12	1	17	349	711	2	558	70
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases		4		8			2		6	
Permitted Phases	4		8		8	2		2		6
Detector Phase	4	4	8	8	8	2	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	23.0	97.0	97.0	97.0	97.0	97.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	80.8%	80.8%	80.8%	80.8%	80.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	10.1	10.1	10.1	10.1	10.1	100.9	100.9	100.9	100.9	100.9
Actuated g/C Ratio	0.08	0.08	0.08	0.08	0.08	0.84	0.84	0.84	0.84	0.84
v/c Ratio	0.32	0.65	0.21	0.01	0.12	0.58	0.49	0.00	0.38	0.06
Control Delay	56.9	7.7	56.7	46.0	20.8	12.2	6.7	0.5	3.4	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	7.7	56.7	46.0	20.8	12.2	6.7	0.5	3.4	0.7
LOS	E	A	E	D	C	B	A	A	A	A
Approach Delay		12.9		36.1			8.5		3.1	
Approach LOS		B		D			A		A	
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 120										
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green										
Natural Cycle: 80										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.65										
Intersection Signal Delay: 8.0										
Intersection LOS: A										
Intersection Capacity Utilization 78.5%										
ICU Level of Service D										
Analysis Period (min) 15										
























Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive

											
Ø2 (R)										Ø4	
97 s										23 s	
											
Ø6 (R)										Ø8	
97 s										23 s	

HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive

2030 Background PM























06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	0	299	12	1	17	349	711	2	0	558	70
Future Volume (veh/h)	35	0	299	12	1	17	349	711	2	0	558	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	0	0	13	1	0	375	765	2	0	600	75
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	68		111	68		699	1662	1409	60	1662	1409
Arrive On Green	0.04	0.00	0.00	0.04	0.04	0.00	1.00	1.00	1.00	0.00	0.89	0.89
Sat Flow, veh/h	1416	1870	0	1418	1870	1585	764	1870	1585	701	1870	1585
Grp Volume(v), veh/h	38	0	0	13	1	0	375	765	2	0	600	75
Grp Sat Flow(s),veh/h/ln	1416	1870	0	1418	1870	1585	764	1870	1585	701	1870	1585
Q Serve(g_s), s	3.2	0.0	0.0	1.1	0.1	0.0	7.8	0.0	0.0	0.0	6.3	0.7
Cycle Q Clear(g_c), s	3.3	0.0	0.0	1.1	0.1	0.0	14.1	0.0	0.0	0.0	6.3	0.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	68		111	68		699	1662	1409	60	1662	1409
V/C Ratio(X)	0.34	0.00		0.12	0.01		0.54	0.46	0.00	0.00	0.36	0.05
Avail Cap(c_a), veh/h	278	288		279	288		699	1662	1409	60	1662	1409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	0.0	56.2	55.8	0.0	0.4	0.0	0.0	0.0	1.1	0.8
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.5	0.1	0.0	2.9	0.9	0.0	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.4	0.0	0.0	0.6	0.4	0.0	0.0	1.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	0.0	0.0	56.7	55.8	0.0	3.4	0.9	0.0	0.0	1.7	0.9
LnGrp LOS	E	A		E	E		A	A	A	A	A	A
Approach Vol, veh/h	38		A	14		A	1142				675	
Approach Delay, s/veh	59.1			56.6			1.7				1.6	
Approach LOS	E			E			A				A	
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+Rc), s	111.1			8.9			111.1		8.9			
Change Period (Y+Rc), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	92.5			18.5			92.5		18.5			
Max Q Clear Time (g_c+I1), s	16.1			5.3			8.3		3.1			
Green Ext Time (p_c), s	12.2			0.0			5.0		0.0			
Intersection Summary												
HCM 6th Ctrl Delay	3.3											
HCM 6th LOS	A											
Notes												


















Timings
6: 1st Street (SH-79) & Marketplace Drive

2030 Total AM

06/13/2022
























											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	31	1	1	1	1	205	501	15	6	891	99
Future Volume (vph)	31	1	1	1	1	205	501	15	6	891	99
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8			2			6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	4	4	8	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	97.5	97.5	97.5	97.5	97.5	97.5
Total Split (%)	18.8%	18.8%	18.8%	18.8%	18.8%	81.3%	81.3%	81.3%	81.3%	81.3%	81.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Efect Green (s)	8.9	8.9	8.9	8.9	8.9	102.1	102.1	102.1	102.1	102.1	102.1
Actuated g/C Ratio	0.07	0.07	0.07	0.07	0.07	0.85	0.85	0.85	0.85	0.85	0.85
v/c Ratio	0.31	0.69	0.02	0.01	0.01	0.49	0.33	0.01	0.01	0.59	0.08
Control Delay	58.9	18.5	49.0	48.0	0.0	14.1	6.1	1.5	2.0	4.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	18.5	49.0	48.0	0.0	14.1	6.1	1.5	2.0	4.8	0.5
LOS	E	B	D	D	A	B	A	A	A	A	A
Approach Delay		23.6		32.3			8.3			4.3	
Approach LOS		C		C			A			A	
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.69											
Intersection Signal Delay: 8.2						Intersection LOS: A					
Intersection Capacity Utilization 82.6%						ICU Level of Service E					
Analysis Period (min) 15											

Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive

											
Ø2 (R)											
97.5 s											
											
Ø6 (R)											
97.5 s											

HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive





















2030 Total AM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1	211	1	1	1	205	501	15	6	891	99
Future Volume (veh/h)	31	1	211	1	1	1	205	501	15	6	891	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	1	0	1	1	0	214	522	16	6	928	103
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	54		100	54		495	1676	1421	837	1676	1421
Arrive On Green	0.03	0.03	0.00	0.03	0.03	0.00	1.00	1.00	1.00	0.90	0.90	0.90
Sat Flow, veh/h	1416	1870	0	1416	1870	1585	547	1870	1585	867	1870	1585
Grp Volume(v), veh/h	32	1	0	1	1	0	214	522	16	6	928	103
Grp Sat Flow(s),veh/h/ln	1416	1870	0	1416	1870	1585	547	1870	1585	867	1870	1585
Q Serve(g_s), s	2.7	0.1	0.0	0.1	0.1	0.0	9.5	0.0	0.0	0.1	12.3	0.9
Cycle Q Clear(g_c), s	2.8	0.1	0.0	0.1	0.1	0.0	21.7	0.0	0.0	0.1	12.3	0.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	54		100	54		495	1676	1421	837	1676	1421
V/C Ratio(X)	0.32	0.02		0.01	0.02		0.43	0.31	0.01	0.01	0.55	0.07
Avail Cap(c_a), veh/h	272	281		272	281		495	1676	1421	837	1676	1421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	56.6	0.0	56.7	56.6	0.0	1.2	0.0	0.0	0.6	1.3	0.7
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	0.1	0.0	2.7	0.5	0.0	0.0	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	0.0	0.0	1.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	56.8	0.0	56.7	56.8	0.0	4.0	0.5	0.0	0.7	2.6	0.8
LnGrp LOS	E	E		E	E		A	A	A	A	A	A
Approach Vol, veh/h	33		A	2		A	752		1037			
Approach Delay, s/veh	59.7			56.8			1.5		2.4			
Approach LOS	E			E			A		A			
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+Rc), s	112.1			7.9			112.1		7.9			
Change Period (Y+Rc), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	93.0			18.0			93.0		18.0			
Max Q Clear Time (g_c+I1), s	23.7			4.8			14.3		2.1			
Green Ext Time (p_c), s	7.7			0.0			10.7		0.0			
Intersection Summary												
HCM 6th Ctrl Delay	3.1											
HCM 6th LOS	A											
Notes												





Timings
6: 1st Street (SH-79) & Marketplace Drive

2030 Total PM

06/13/2022
























										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	78	0	12	1	17	349	1232	2	979	105
Future Volume (vph)	78	0	12	1	17	349	1232	2	979	105
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases		4		8			2		6	
Permitted Phases	4		8		8	2		2		6
Detector Phase	4	4	8	8	8	2	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	97.5	97.5	97.5	97.5	97.5
Total Split (%)	18.8%	18.8%	18.8%	18.8%	18.8%	81.3%	81.3%	81.3%	81.3%	81.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	15.1	15.1	15.1	15.1	15.1	95.9	95.9	95.9	95.9	95.9
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.80	0.80	0.80	0.80	0.80
v/c Ratio	0.47	0.90	0.21	0.00	0.08	1.28	0.89	0.00	0.71	0.09
Control Delay	56.8	49.2	53.7	43.0	18.9	171.7	30.5	0.5	9.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	49.2	53.7	43.0	18.9	171.7	30.5	0.5	9.5	0.7
LOS	E	D	D	D	B	F	C	A	A	A
Approach Delay		50.8		33.8			61.6		8.6	
Approach LOS		D		C			E		A	
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 120										
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green										
Natural Cycle: 150										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 1.28										
Intersection Signal Delay: 41.3										
Intersection LOS: D										
Intersection Capacity Utilization 100.6%										
ICU Level of Service G										
Analysis Period (min) 15										

Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive

	Ø2 (R)			Ø4
97.5 s			22.5 s	
	Ø6 (R)			Ø8
97.5 s			22.5 s	

HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive























2030 Total PM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	0	299	12	1	17	349	1232	2	0	979	105
Future Volume (veh/h)	78	0	299	12	1	17	349	1232	2	0	979	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	0	0	13	1	0	375	1325	2	0	1053	113
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	138		164	138		378	1593	1350	60	1593	1350
Arrive On Green	0.07	0.00	0.00	0.07	0.07	0.00	1.00	1.00	1.00	0.00	0.85	0.85
Sat Flow, veh/h	1416	1870	0	1418	1870	1585	481	1870	1585	413	1870	1585
Grp Volume(v), veh/h	84	0	0	13	1	0	375	1325	2	0	1053	113
Grp Sat Flow(s),veh/h/ln	1416	1870	0	1418	1870	1585	481	1870	1585	413	1870	1585
Q Serve(g_s), s	7.0	0.0	0.0	1.0	0.1	0.0	79.2	0.0	0.0	0.0	23.0	1.4
Cycle Q Clear(g_c), s	7.1	0.0	0.0	1.0	0.1	0.0	102.2	0.0	0.0	0.0	23.0	1.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	138		164	138		378	1593	1350	60	1593	1350
V/C Ratio(X)	0.51	0.00		0.08	0.01		0.99	0.83	0.00	0.00	0.66	0.08
Avail Cap(c_a), veh/h	272	281		273	281		378	1593	1350	60	1593	1350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	0.0	0.0	52.0	51.5	0.0	17.5	0.0	0.0	0.0	3.0	1.4
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.2	0.0	0.0	44.5	5.2	0.0	0.0	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	0.4	0.0	0.0	15.9	2.3	0.0	0.0	6.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	0.0	0.0	52.2	51.5	0.0	62.0	5.2	0.0	0.0	5.2	1.5
LnGrp LOS	E	A		D	D		E	A	A	A	A	A
Approach Vol, veh/h	84		A	14		A	1702		1166			
Approach Delay, s/veh	57.3			52.1			17.7		4.8			
Approach LOS	E			D			B		A			
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+Rc), s	106.7			13.3			106.7		13.3			
Change Period (Y+Rc), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	93.0			18.0			93.0		18.0			
Max Q Clear Time (g_c+I1), s	104.2			9.1			25.0		3.0			
Green Ext Time (p_c), s	0.0			0.1			14.0		0.0			
Intersection Summary												
HCM 6th Ctrl Delay	14.0											
HCM 6th LOS	B											
Notes												

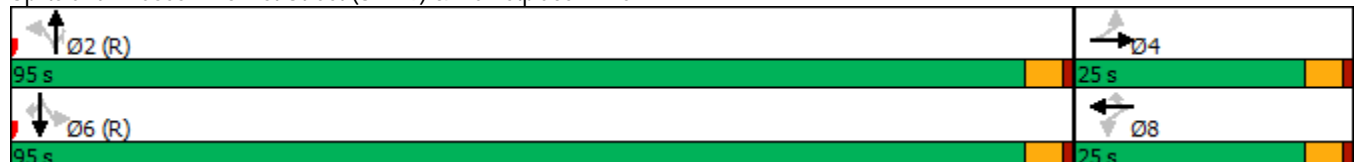
Timings
6: 1st Street (SH-79) & Marketplace Drive

2045 Background AM

06/13/2022

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	22	1	1	1	1	264	389	19	7	681	96
Future Volume (vph)	22	1	1	1	1	264	389	19	7	681	96
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8			2			6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	4	4	8	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	95.0	95.0	95.0	95.0	95.0	95.0
Total Split (%)	20.8%	20.8%	20.8%	20.8%	20.8%	79.2%	79.2%	79.2%	79.2%	79.2%	79.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Efect Green (s)	9.0	9.0	9.0	9.0	9.0	102.0	102.0	102.0	102.0	102.0	102.0
Actuated g/C Ratio	0.08	0.08	0.08	0.08	0.08	0.85	0.85	0.85	0.85	0.85	0.85
v/c Ratio	0.22	0.74	0.02	0.01	0.01	0.47	0.26	0.01	0.01	0.45	0.07
Control Delay	54.7	18.5	48.0	47.0	0.0	9.7	3.3	0.9	2.1	3.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	18.5	48.0	47.0	0.0	9.7	3.3	0.9	2.1	3.4	0.6
LOS	D	B	D	D	A	A	A	A	A	A	A
Approach Delay		21.3		31.7			5.7			3.1	
Approach LOS		C		C			A			A	
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle: 75											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.74											
Intersection Signal Delay: 7.2						Intersection LOS: A					
Intersection Capacity Utilization 78.5%						ICU Level of Service D					
Analysis Period (min) 15											
























Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive



HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive

2045 Background AM





















06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1	271	1	1	1	264	389	19	7	681	96
Future Volume (veh/h)	22	1	271	1	1	1	264	389	19	7	681	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	1	0	1	1	0	275	405	20	7	709	100
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	45		93	45		626	1685	1428	927	1685	1428
Arrive On Green	0.02	0.02	0.00	0.02	0.02	0.00	1.00	1.00	1.00	0.90	0.90	0.90
Sat Flow, veh/h	1416	1870	0	1416	1870	1585	674	1870	1585	962	1870	1585
Grp Volume(v), veh/h	23	1	0	1	1	0	275	405	20	7	709	100
Grp Sat Flow(s),veh/h/ln	1416	1870	0	1416	1870	1585	674	1870	1585	962	1870	1585
Q Serve(g_s), s	1.9	0.1	0.0	0.1	0.1	0.0	6.0	0.0	0.0	0.1	7.3	0.8
Cycle Q Clear(g_c), s	2.0	0.1	0.0	0.1	0.1	0.0	13.3	0.0	0.0	0.1	7.3	0.8
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	45		93	45		626	1685	1428	927	1685	1428
V/C Ratio(X)	0.25	0.02		0.01	0.02		0.44	0.24	0.01	0.01	0.42	0.07
Avail Cap(c_a), veh/h	301	320		301	320		626	1685	1428	927	1685	1428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.1	57.2	0.0	57.2	57.2	0.0	0.4	0.0	0.0	0.6	0.9	0.6
Incr Delay (d2), s/veh	1.4	0.2	0.0	0.0	0.2	0.0	2.2	0.3	0.0	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	57.4	0.0	57.3	57.4	0.0	2.7	0.3	0.0	0.6	1.7	0.7
LnGrp LOS	E	E		E	E		A	A	A	A	A	A
Approach Vol, veh/h	24		A	2		A	700		816			
Approach Delay, s/veh	59.4			57.3			1.2		1.6			
Approach LOS	E			E			A		A			
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	112.6			7.4			112.6			7.4		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	90.5			20.5			90.5			20.5		
Max Q Clear Time (g_c+I1), s	15.3			4.0			9.3			2.1		
Green Ext Time (p_c), s	6.2			0.0			6.6			0.0		
Intersection Summary												
HCM 6th Ctrl Delay			2.4									
HCM 6th LOS			A									
Notes												




Timings
6: 1st Street (SH-79) & Marketplace Drive

2045 Background PM

06/13/2022

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	45	0	15	1	22	450	798	3	635	90
Future Volume (vph)	45	0	15	1	22	450	798	3	635	90
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases		4		8			2		6	
Permitted Phases	4		8		8	2		2		6
Detector Phase	4	4	8	8	8	2	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	97.5	97.5	97.5	97.5	97.5
Total Split (%)	18.8%	18.8%	18.8%	18.8%	18.8%	81.3%	81.3%	81.3%	81.3%	81.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	12.4	12.4	12.4	12.4	12.4	98.6	98.6	98.6	98.6	98.6
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.10	0.82	0.82	0.82	0.82	0.82
v/c Ratio	0.33	0.87	0.26	0.01	0.13	0.86	0.56	0.00	0.45	0.07
Control Delay	53.7	29.2	56.9	44.0	17.7	33.1	9.2	0.3	4.4	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	29.2	56.9	44.0	17.7	33.1	9.2	0.3	4.4	0.7
LOS	D	C	E	D	B	C	A	A	A	A
Approach Delay		31.7		33.7			17.8		4.0	
Approach LOS		C		C			B		A	
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 120										
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green										
Natural Cycle: 110										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.87										
Intersection Signal Delay: 16.4					Intersection LOS: B					
Intersection Capacity Utilization 93.4%					ICU Level of Service F					
Analysis Period (min) 15										
























Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive

	Ø2 (R)			Ø4
97.5 s			22.5 s	
	Ø6 (R)			Ø8
97.5 s			22.5 s	

HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive

2045 Background PM























06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	0	385	15	1	22	450	798	3	0	635	90
Future Volume (veh/h)	45	0	385	15	1	22	450	798	3	0	635	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	0	0	16	1	0	484	858	3	0	683	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	85		124	85		621	1645	1394	60	1645	1394
Arrive On Green	0.05	0.00	0.00	0.05	0.05	0.00	1.00	1.00	1.00	0.00	0.88	0.88
Sat Flow, veh/h	1416	1870	0	1418	1870	1585	693	1870	1585	642	1870	1585
Grp Volume(v), veh/h	48	0	0	16	1	0	484	858	3	0	683	97
Grp Sat Flow(s),veh/h/ln	1416	1870	0	1418	1870	1585	693	1870	1585	642	1870	1585
Q Serve(g_s), s	4.0	0.0	0.0	1.3	0.1	0.0	32.1	0.0	0.0	0.0	8.3	0.9
Cycle Q Clear(g_c), s	4.1	0.0	0.0	1.3	0.1	0.0	40.4	0.0	0.0	0.0	8.3	0.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	85		124	85		621	1645	1394	60	1645	1394
V/C Ratio(X)	0.39	0.00		0.13	0.01		0.78	0.52	0.00	0.00	0.42	0.07
Avail Cap(c_a), veh/h	272	281		273	281		621	1645	1394	60	1645	1394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	0.0	0.0	55.3	54.7	0.0	1.6	0.0	0.0	0.0	1.4	0.9
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.5	0.1	0.0	9.3	1.2	0.0	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.5	0.0	0.0	1.6	0.5	0.0	0.0	1.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.7	0.0	0.0	55.8	54.8	0.0	10.9	1.2	0.0	0.0	2.1	1.0
LnGrp LOS	E	A		E	D		B	A	A	A	A	A
Approach Vol, veh/h	48		A	17		A	1345		780			
Approach Delay, s/veh	58.7			55.7			4.7		2.0			
Approach LOS	E			E			A		A			
Timer - Assigned Phs	2			4			6		8			
Phs Duration (G+Y+Rc), s	110.1			9.9			110.1		9.9			
Change Period (Y+Rc), s	4.5			4.5			4.5		4.5			
Max Green Setting (Gmax), s	93.0			18.0			93.0		18.0			
Max Q Clear Time (g_c+I1), s	42.4			6.1			10.3		3.3			
Green Ext Time (p_c), s	16.9			0.1			6.2		0.0			
Intersection Summary												
HCM 6th Ctrl Delay	5.3											
HCM 6th LOS	A											
Notes												

























Timings
6: 1st Street (SH-79) & Marketplace Drive

2045 Total AM

06/13/2022
























											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	40	5	5	5	5	265	560	20	10	980	125
Future Volume (vph)	40	5	5	5	5	265	560	20	10	980	125
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		8			2			6	
Permitted Phases	4		8		8	2		2	6		6
Detector Phase	4	4	8	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	23.0	97.0	97.0	97.0	97.0	97.0	97.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	80.8%	80.8%	80.8%	80.8%	80.8%	80.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	13.1	13.1	13.1	13.1	13.1	97.9	97.9	97.9	97.9	97.9	97.9
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11	0.82	0.82	0.82	0.82	0.82	0.82
v/c Ratio	0.27	0.85	0.08	0.02	0.03	0.82	0.38	0.02	0.02	0.67	0.10
Control Delay	51.2	39.7	47.4	44.2	8.4	46.2	11.7	4.0	2.0	11.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	39.7	47.4	44.2	8.4	46.2	11.7	4.0	2.0	11.1	0.2
LOS	D	D	D	D	A	D	B	A	A	B	A
Approach Delay		41.1		33.3			22.3			9.8	
Approach LOS		D		C			C			A	
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle: 110											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.85											
Intersection Signal Delay: 18.9					Intersection LOS: B						
Intersection Capacity Utilization 94.8%					ICU Level of Service F						
Analysis Period (min) 15											

Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive

											
97 s	23 s	97 s	23 s	97 s	23 s	97 s	23 s	97 s	23 s	97 s	23 s
											
97 s	23 s	97 s	23 s	97 s	23 s	97 s	23 s	97 s	23 s	97 s	23 s





















HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive

2045 Total AM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	5	275	5	5	5	265	560	20	10	980	125
Future Volume (veh/h)	40	5	275	5	5	5	265	560	20	10	980	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	5	0	5	5	0	276	583	21	10	1021	130
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	78		115	78		423	1652	1400	780	1652	1400
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.00	1.00	1.00	1.00	0.88	0.88	0.88
Sat Flow, veh/h	1411	1870	0	1411	1870	1585	488	1870	1585	816	1870	1585
Grp Volume(v), veh/h	42	5	0	5	5	0	276	583	21	10	1021	130
Grp Sat Flow(s),veh/h/ln	1411	1870	0	1411	1870	1585	488	1870	1585	816	1870	1585
Q Serve(g_s), s	3.5	0.3	0.0	0.4	0.3	0.0	29.9	0.0	0.0	0.2	16.9	1.3
Cycle Q Clear(g_c), s	3.8	0.3	0.0	0.7	0.3	0.0	46.8	0.0	0.0	0.2	16.9	1.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	78		115	78		423	1652	1400	780	1652	1400
V/C Ratio(X)	0.36	0.06		0.04	0.06		0.65	0.35	0.02	0.01	0.62	0.09
Avail Cap(c_a), veh/h	274	288		274	288		423	1652	1400	780	1652	1400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.99	0.99	0.99	0.79	0.79	0.79
Uniform Delay (d), s/veh	57.1	55.2	0.0	55.6	55.2	0.0	3.7	0.0	0.0	0.8	1.8	0.9
Incr Delay (d2), s/veh	1.9	0.3	0.0	0.2	0.3	0.0	7.6	0.6	0.0	0.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.2	0.0	0.2	0.2	0.0	2.4	0.3	0.0	0.0	2.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	55.6	0.0	55.7	55.6	0.0	11.3	0.6	0.0	0.9	3.2	1.0
LnGrp LOS	E	E		E	E		B	A	A	A	A	A
Approach Vol, veh/h	47		A	10		A	880		1161			
Approach Delay, s/veh	58.6			55.7			3.9		2.9			
Approach LOS	E			E			A		A			
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	110.5		9.5		110.5		9.5					
Change Period (Y+Rc), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	92.5		18.5		92.5		18.5					
Max Q Clear Time (g_c+I1), s	48.8		5.8		18.9		2.7					
Green Ext Time (p_c), s	10.3		0.1		13.3		0.0					
Intersection Summary												
HCM 6th Ctrl Delay			4.8									
HCM 6th LOS			A									
Notes												

Timings
6: 1st Street (SH-79) & Marketplace Drive

2045 Total PM
06/13/2022



										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	90	0	15	5	25	450	1320	5	1060	125
Future Volume (vph)	90	0	15	5	25	450	1320	5	1060	125
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases		4		8			2		6	
Permitted Phases	4		8		8	2		2		6
Detector Phase	4	4	8	8	8	2	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	97.5	97.5	97.5	97.5	97.5
Total Split (%)	18.8%	18.8%	18.8%	18.8%	18.8%	81.3%	81.3%	81.3%	81.3%	81.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	18.0	18.0	18.0	18.0	18.0	93.0	93.0	93.0	93.0	93.0
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.78	0.78	0.78	0.78	0.78
v/c Ratio	0.46	1.12	0.26	0.02	0.10	2.34	0.98	0.00	0.79	0.11
Control Delay	54.6	111.2	56.9	43.8	16.4	633.7	34.8	0.2	18.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	111.2	56.9	43.8	16.4	633.7	34.8	0.2	18.4	0.5
LOS	D	F	E	D	B	F	C	A	B	A
Approach Delay		100.4		32.8			186.7		16.5	
Approach LOS		F		C			F		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.34
 Intersection Signal Delay: 115.0
 Intersection Capacity Utilization 115.8%
 Analysis Period (min) 15
























Intersection LOS: F
 ICU Level of Service H

Splits and Phases: 6: 1st Street (SH-79) & Marketplace Drive

 Ø2 (R)	 Ø4
97.5 s	22.5 s
 Ø6 (R)	 Ø8
97.5 s	22.5 s

HCM 6th Signalized Intersection Summary 6: 1st Street (SH-79) & Marketplace Drive

2045 Total PM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	0	385	15	5	25	450	1320	5	0	1060	125
Future Volume (veh/h)	90	0	385	15	5	25	450	1320	5	0	1060	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	0	0	16	5	0	484	1419	5	0	1140	134
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	161		182	161		315	1569	1330	60	1569	1330
Arrive On Green	0.09	0.00	0.00	0.09	0.09	0.00	1.00	1.00	1.00	0.00	0.84	0.84
Sat Flow, veh/h	1411	1870	0	1418	1870	1585	434	1870	1585	376	1870	1585
Grp Volume(v), veh/h	97	0	0	16	5	0	484	1419	5	0	1140	134
Grp Sat Flow(s),veh/h/ln	1411	1870	0	1418	1870	1585	434	1870	1585	376	1870	1585
Q Serve(g_s), s	8.1	0.0	0.0	1.3	0.3	0.0	70.5	0.0	0.0	0.0	30.2	1.8
Cycle Q Clear(g_c), s	8.4	0.0	0.0	1.3	0.3	0.0	100.7	0.0	0.0	0.0	30.2	1.8
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	161		182	161		315	1569	1330	60	1569	1330
V/C Ratio(X)	0.55	0.00		0.09	0.03		1.53	0.90	0.00	0.00	0.73	0.10
Avail Cap(c_a), veh/h	268	281		273	281		315	1569	1330	60	1569	1330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	0.92	0.92	0.92	0.00	0.77	0.77
Uniform Delay (d), s/veh	54.1	0.0	0.0	50.7	50.3	0.0	21.8	0.0	0.0	0.0	4.0	1.7
Incr Delay (d2), s/veh	2.6	0.0	0.0	0.2	0.1	0.0	254.8	8.3	0.0	0.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	0.5	0.1	0.0	31.7	3.6	0.0	0.0	8.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	0.0	0.0	50.9	50.3	0.0	276.6	8.3	0.0	0.0	6.3	1.8
LnGrp LOS	E	A		D	D		F	A	A	A	A	A
Approach Vol, veh/h	97		A	21		A	1908				1274	
Approach Delay, s/veh	56.7			50.8			76.4				5.8	
Approach LOS	E			D			E				A	
Timer - Assigned Phs	2			4			6				8	
Phs Duration (G+Y+Rc), s	105.2			14.8			105.2				14.8	
Change Period (Y+Rc), s	4.5			4.5			4.5				4.5	
Max Green Setting (Gmax), s	93.0			18.0			93.0				18.0	
Max Q Clear Time (g_c+I1), s	102.7			10.4			32.2				3.3	
Green Ext Time (p_c), s	0.0			0.1			16.9				0.0	
Intersection Summary												
HCM 6th Ctrl Delay			48.4									
HCM 6th LOS			D									
Notes												

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Traffic Vol, veh/h	0	0	0	17	2	128	6	191	0	0	128	309
Future Vol, veh/h	0	0	0	17	2	128	6	191	0	0	128	309
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	18	2	139	7	208	0	0	139	336

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	529	697	208	475	0	-
Stage 1	222	222	-	-	-	-
Stage 2	307	475	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	510	365	832	1087	-	0
Stage 1	815	720	-	-	-	0
Stage 2	746	557	-	-	-	0
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	506	0	832	1087	-	-
Mov Cap-2 Maneuver	506	0	-	-	-	-
Stage 1	809	0	-	-	-	-
Stage 2	746	0	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	1087	-	774	-
HCM Lane V/C Ratio	0.006	-	0.206	-
HCM Control Delay (s)	8.3	0	10.9	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	0.8	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Traffic Vol, veh/h	0	0	0	8	1	134	6	415	0	0	325	216
Future Vol, veh/h	0	0	0	8	1	134	6	415	0	0	325	216
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	9	1	143	6	441	0	0	346	230

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	914	1029	441	576	0	-	0
Stage 1	453	453	-	-	-	-	-
Stage 2	461	576	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	303	234	616	997	-	0	0
Stage 1	640	570	-	-	-	0	0
Stage 2	635	502	-	-	-	0	0
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	301	0	616	997	-	-	-
Mov Cap-2 Maneuver	301	0	-	-	-	-	-
Stage 1	635	0	-	-	-	-	-
Stage 2	635	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.4	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	997	-	582	-
HCM Lane V/C Ratio	0.006	-	0.261	-
HCM Control Delay (s)	8.6	0	13.4	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	1	-

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	0	0	0	20	2	149	7	222	0	0	149	360
Future Vol, veh/h	0	0	0	20	2	149	7	222	0	0	149	360
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	22	2	162	8	241	0	0	162	391

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	615	810	241	553	0	-	0
Stage 1	257	257	-	-	-	-	-
Stage 2	358	553	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	455	314	798	1017	-	0	0
Stage 1	786	695	-	-	-	0	0
Stage 2	707	514	-	-	-	0	0
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	451	0	798	1017	-	-	-
Mov Cap-2 Maneuver	451	0	-	-	-	-	-
Stage 1	779	0	-	-	-	-	-
Stage 2	707	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	1017	-	731	-
HCM Lane V/C Ratio	0.007	-	0.254	-
HCM Control Delay (s)	8.6	0	11.6	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	1	-

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Traffic Vol, veh/h	0	0	0	9	1	156	7	483	0	0	378	251
Future Vol, veh/h	0	0	0	9	1	156	7	483	0	0	378	251
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	10	1	166	7	514	0	0	402	267

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1064	1197	514	669	0	-
Stage 1	528	528	-	-	-	-
Stage 2	536	669	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	247	186	560	921	-	0
Stage 1	592	528	-	-	-	0
Stage 2	587	456	-	-	-	0
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	244	0	560	921	-	-
Mov Cap-2 Maneuver	244	0	-	-	-	-
Stage 1	585	0	-	-	-	-
Stage 2	587	0	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	921	-	523	-
HCM Lane V/C Ratio	0.008	-	0.338	-
HCM Control Delay (s)	8.9	0	15.4	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0	-	1.5	-

HCM 6th TWSC
7: 1st Street (SH-79) & I-70 WB Ramp

2030 Total AM
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Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	20	2	192	7	350	0	0	224	584
Future Vol, veh/h	0	0	0	20	2	192	7	350	0	0	224	584
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	22	2	209	8	380	0	0	243	635
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				957	1274	380	878	0	-	-	-	0
Stage 1				396	396	-	-	-	-	-	-	-
Stage 2				561	878	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				286	167	667	769	-	0	0	-	-
Stage 1				680	604	-	-	-	0	0	-	-
Stage 2				571	366	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				282	0	667	769	-	-	-	-	-
Mov Cap-2 Maneuver				282	0	-	-	-	-	-	-	-
Stage 1				671	0	-	-	-	-	-	-	-
Stage 2				571	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				15		0.2		0				
HCM LOS				C								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR							
Capacity (veh/h)	769	-	591	-	-							
HCM Lane V/C Ratio	0.01	-	0.394	-	-							
HCM Control Delay (s)	9.7	0	15	-	-							
HCM Lane LOS	A	A	C	-	-							
HCM 95th %tile Q(veh)	0	-	1.9	-	-							

Intersection												
Int Delay, s/veh	13.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Traffic Vol, veh/h	0	0	0	9	1	286	7	874	0	0	483	567
Future Vol, veh/h	0	0	0	9	1	286	7	874	0	0	483	567
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	10	1	304	7	930	0	0	514	603

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	1760	2061	930	1117	0	-	0
Stage 1	944	944	-	-	-	-	-
Stage 2	816	1117	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	93	55	324	625	-	0	0
Stage 1	378	341	-	-	-	0	0
Stage 2	435	283	-	-	-	0	0
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	91	0	324	625	-	-	-
Mov Cap-2 Maneuver	91	0	-	-	-	-	-
Stage 1	369	0	-	-	-	-	-
Stage 2	435	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	103.1	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	625	-	301	-
HCM Lane V/C Ratio	0.012	-	1.046	-
HCM Control Delay (s)	10.8	0	103.1	-
HCM Lane LOS	B	A	F	-
HCM 95th %tile Q(veh)	0	-	11.8	-

Timings

2030 Total AM - Improved

7: 1st Street (SH-79) & I-70 WB Ramp

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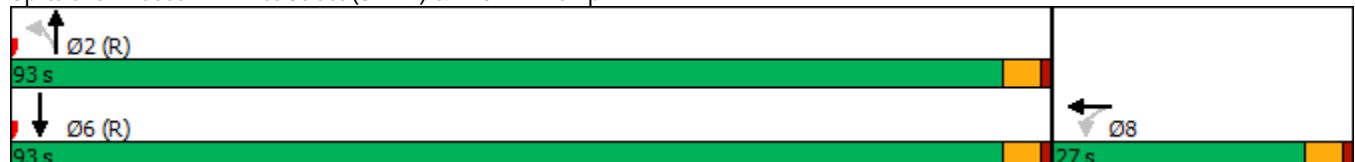


Lane Group	WBT	NBL	NBT	SBT
Lane Configurations	↔		↔	↔
Traffic Volume (vph)	2	7	350	224
Future Volume (vph)	2	7	350	224
Turn Type	NA	Perm	NA	NA
Protected Phases	8		2	6
Permitted Phases		2		
Detector Phase	8	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	27.0	93.0	93.0	93.0
Total Split (%)	22.5%	77.5%	77.5%	77.5%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	9.2		101.8	101.8
Actuated g/C Ratio	0.08		0.85	0.85
v/c Ratio	0.74		0.25	0.60
Control Delay	23.8		6.8	7.9
Queue Delay	0.0		0.6	0.0
Total Delay	23.8		7.5	7.9
LOS	C		A	A
Approach Delay	23.8		7.5	7.9
Approach LOS	C		A	A

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 10.3
Intersection Capacity Utilization 68.3%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service C
















Splits and Phases: 7: 1st Street (SH-79) & I-70 WB Ramp



HCM 6th Signalized Intersection Summary
7: 1st Street (SH-79) & I-70 WB Ramp

2030 Total AM - Improved

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	20	2	192	7	350	0	0	224	584
Future Volume (veh/h)	0	0	0	20	2	192	7	350	0	0	224	584
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				22	2	209	8	380	0	0	243	635
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				25	2	234	41	1396	0	0	349	913
Arrive On Green				0.16	0.16	0.16	1.00	1.00	0.00	0.00	1.00	1.00
Sat Flow, veh/h				151	14	1439	13	1831	0	0	458	1197
Grp Volume(v), veh/h				233	0	0	388	0	0	0	0	878
Grp Sat Flow(s),veh/h/ln				1604	0	0	1844	0	0	0	0	1655
Q Serve(g_s), s				17.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				17.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane				0.09		0.90	0.02		0.00	0.00		0.72
Lane Grp Cap(c), veh/h				261	0	0	1437	0	0	0	0	1262
V/C Ratio(X)				0.89	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.70
Avail Cap(c_a), veh/h				301	0	0	1437	0	0	0	0	1262
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.67	1.67
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.78
Uniform Delay (d), s/veh				49.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				24.8	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				74.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.5
LnGrp LOS				E	A	A	A	A	A	A	A	A
Approach Vol, veh/h					233			388			878	
Approach Delay, s/veh					74.1			0.5			2.5	
Approach LOS					E			A			A	
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	96.0			96.0			24.0					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	88.5			88.5			22.5					
Max Q Clear Time (g_c+I1), s	2.0			2.0			19.1					
Green Ext Time (p_c), s	2.8			10.2			0.4					
Intersection Summary												
HCM 6th Ctrl Delay	13.1											
HCM 6th LOS	B											

Timings

2030 Total PM - Improved

7: 1st Street (SH-79) & I-70 WB Ramp

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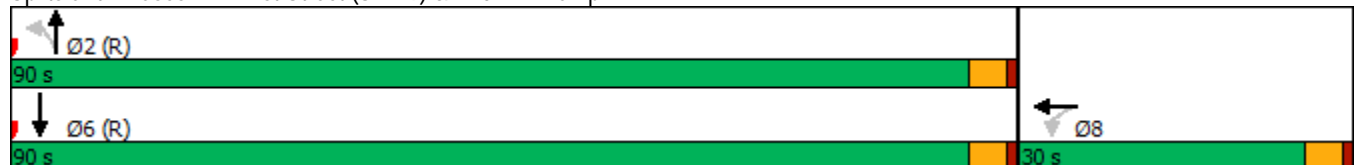


Lane Group	WBT	NBL	NBT	SBT
Lane Configurations	↔		↔	↔
Traffic Volume (vph)	1	7	874	483
Future Volume (vph)	1	7	874	483
Turn Type	NA	Perm	NA	NA
Protected Phases	8		2	6
Permitted Phases		2		
Detector Phase	8	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	30.0	90.0	90.0	90.0
Total Split (%)	25.0%	75.0%	75.0%	75.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	15.4		95.6	95.6
Actuated g/C Ratio	0.13		0.80	0.80
v/c Ratio	0.83		0.64	0.80
Control Delay	36.9		18.7	17.2
Queue Delay	0.2		39.7	1.6
Total Delay	37.1		58.4	18.8
LOS	D		E	B
Approach Delay	37.1		58.4	18.8
Approach LOS	D		E	B

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 36.9
Intersection Capacity Utilization 85.9%
Analysis Period (min) 15
Intersection LOS: D
ICU Level of Service E
















Splits and Phases: 7: 1st Street (SH-79) & I-70 WB Ramp



HCM 6th Signalized Intersection Summary
7: 1st Street (SH-79) & I-70 WB Ramp

2030 Total PM - Improved

06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	9	1	286	7	874	0	0	483	567
Future Volume (veh/h)	0	0	0	9	1	286	7	874	0	0	483	567
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				10	1	304	7	930	0	0	514	603
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				11	1	325	33	1323	0	0	560	657
Arrive On Green				0.21	0.21	0.21	1.00	1.00	0.00	0.00	1.00	1.00
Sat Flow, veh/h				51	5	1536	4	1854	0	0	784	920
Grp Volume(v), veh/h				315	0	0	937	0	0	0	0	1117
Grp Sat Flow(s),veh/h/ln				1591	0	0	1859	0	0	0	0	1705
Q Serve(g_s), s				23.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				23.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane				0.03		0.97	0.01		0.00	0.00		0.54
Lane Grp Cap(c), veh/h				337	0	0	1356	0	0	0	0	1216
V/C Ratio(X)				0.94	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.92
Avail Cap(c_a), veh/h				338	0	0	1356	0	0	0	0	1216
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.67	1.67
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.65
Uniform Delay (d), s/veh				46.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				32.7	0.0	0.0	2.9	0.0	0.0	0.0	0.0	8.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.3	0.0	0.0	1.1	0.0	0.0	0.0	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				79.2	0.0	0.0	2.9	0.0	0.0	0.0	0.0	8.7
LnGrp LOS				E	A	A	A	A	A	A	A	A
Approach Vol, veh/h					315			937			1117	
Approach Delay, s/veh					79.2			2.9			8.7	
Approach LOS					E			A			A	
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	90.1			90.1			29.9					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	85.5			85.5			25.5					
Max Q Clear Time (g_c+l1), s	2.0			2.0			25.4					
Green Ext Time (p_c), s	10.5			17.4			0.0					
Intersection Summary												
HCM 6th Ctrl Delay	15.8											
HCM 6th LOS	B											

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	25	3	192	9	286	0	0	192	463
Future Vol, veh/h	0	0	0	25	3	192	9	286	0	0	192	463
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	27	3	209	10	311	0	0	209	503
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				792	1043	311	712	0	-	-	-	0
Stage 1				331	331	-	-	-	-	-	-	-
Stage 2				461	712	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				358	229	729	888	-	0	0	-	-
Stage 1				728	645	-	-	-	0	0	-	-
Stage 2				635	436	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				353	0	729	888	-	-	-	-	-
Mov Cap-2 Maneuver				353	0	-	-	-	-	-	-	-
Stage 1				718	0	-	-	-	-	-	-	-
Stage 2				635	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				13.7		0.3		0				
HCM LOS				B								
Minor Lane/Major Mvmt		NBL	NBTWBLn1	SBT	SBR							
Capacity (veh/h)		888	-	649	-	-						
HCM Lane V/C Ratio		0.011	-	0.368	-	-						
HCM Control Delay (s)		9.1	0	13.7	-	-						
HCM Lane LOS		A	A	B	-	-						
HCM 95th %tile Q(veh)		0	-	1.7	-	-						

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	0	0	0	12	1	201	9	622	0	0	487	324
Future Vol, veh/h	0	0	0	12	1	201	9	622	0	0	487	324
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, #	-	1	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	13	1	214	10	662	0	0	518	345
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				1373	1545	662	863	0	-	-	-	0
Stage 1				682	682	-	-	-	-	-	-	-
Stage 2				691	863	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				161	115	462	779	-	0	0	-	-
Stage 1				502	450	-	-	-	0	0	-	-
Stage 2				497	372	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				158	0	462	779	-	-	-	-	-
Mov Cap-2 Maneuver				158	0	-	-	-	-	-	-	-
Stage 1				492	0	-	-	-	-	-	-	-
Stage 2				497	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				23.5		0.1		0				
HCM LOS				C								
Minor Lane/Major Mvmt		NBL	NBTWBLn1	SBT	SBR							
Capacity (veh/h)		779	-	417	-	-						
HCM Lane V/C Ratio		0.012	-	0.546	-	-						
HCM Control Delay (s)		9.7	0	23.5	-	-						
HCM Lane LOS		A	A	C	-	-						
HCM 95th %tile Q(veh)		0	-	3.2	-	-						

Timings

7: 1st Street (SH-79) & I-70 WB Ramp

2045 Total AM

06/13/2022



Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Configurations	↔	↗	↗	↗	↗
Traffic Volume (vph)	5	10	415	270	690
Future Volume (vph)	5	10	415	270	690
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	8		2	6	
Permitted Phases		2			6
Detector Phase	8	2	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.0	92.0	92.0	92.0	92.0
Total Split (%)	23.3%	76.7%	76.7%	76.7%	76.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	10.0	101.0	101.0	101.0	101.0
Actuated g/C Ratio	0.08	0.84	0.84	0.84	0.84
v/c Ratio	0.78	0.01	0.15	0.19	0.52
Control Delay	24.0	4.5	3.1	3.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	4.5	3.1	3.7	2.6
LOS	C	A	A	A	A
Approach Delay	24.0		3.1	2.9	
Approach LOS	C		A	A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 6.3

Intersection LOS: A

Intersection Capacity Utilization 74.3%

ICU Level of Service D


Analysis Period (min) 15

Splits and Phases: 7: 1st Street (SH-79) & I-70 WB Ramp



HCM 6th Signalized Intersection Summary
7: 1st Street (SH-79) & I-70 WB Ramp

2045 Total AM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔		↗	↗			↖	↖
Traffic Volume (veh/h)	0	0	0	25	5	235	10	415	0	0	270	690
Future Volume (veh/h)	0	0	0	25	5	235	10	415	0	0	270	690
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				27	5	255	11	451	0	0	293	750
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				29	5	275	456	2602	0	0	1369	1160
Arrive On Green				0.19	0.19	0.19	1.00	1.00	0.00	0.00	1.00	1.00
Sat Flow, veh/h				151	28	1427	541	3647	0	0	1870	1585
Grp Volume(v), veh/h				287	0	0	11	451	0	0	293	750
Grp Sat Flow(s),veh/h/ln				1606	0	0	541	1777	0	0	1870	1585
Q Serve(g_s), s				21.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				21.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane				0.09		0.89	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				310	0	0	456	2602	0	0	1369	1160
V/C Ratio(X)				0.93	0.00	0.00	0.02	0.17	0.00	0.00	0.21	0.65
Avail Cap(c_a), veh/h				315	0	0	456	2602	0	0	1369	1160
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.67	1.67
Upstream Filter(I)				1.00	0.00	0.00	0.80	0.80	0.00	0.00	0.69	0.69
Uniform Delay (d), s/veh				47.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				32.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				79.6	0.0	0.0	0.1	0.1	0.0	0.0	0.2	1.9
LnGrp LOS				E	A	A	A	A	A	A	A	A
Approach Vol, veh/h					287			462			1043	
Approach Delay, s/veh					79.6			0.1			1.5	
Approach LOS					E			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		92.3				92.3		27.7				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		87.5				87.5		23.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		23.1				
Green Ext Time (p_c), s		3.6				5.9		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								

Timings

7: 1st Street (SH-79) & I-70 WB Ramp

2045 Total PM

06/13/2022



Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕↕	↕	↕
Traffic Volume (vph)	5	10	1015	595	640
Future Volume (vph)	5	10	1015	595	640
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	8		2	6	
Permitted Phases		2			6
Detector Phase	8	2	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	34.0	86.0	86.0	86.0	86.0
Total Split (%)	28.3%	71.7%	71.7%	71.7%	71.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	23.7	87.3	87.3	87.3	87.3
Actuated g/C Ratio	0.20	0.73	0.73	0.73	0.73
v/c Ratio	0.88	0.02	0.42	0.47	0.51
Control Delay	51.4	16.7	28.8	10.1	2.2
Queue Delay	0.4	0.0	8.7	0.0	0.0
Total Delay	51.8	16.7	37.5	10.2	2.2
LOS	D	B	D	B	A
Approach Delay	51.8		37.3	6.0	
Approach LOS	D		D	A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 24.5

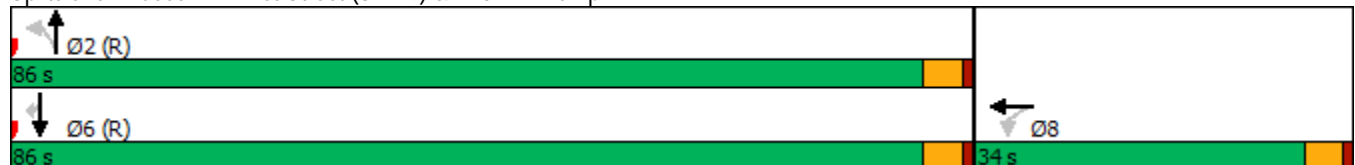
Intersection LOS: C

Intersection Capacity Utilization 92.7%

ICU Level of Service F

Analysis Period (min) 15


















Splits and Phases: 7: 1st Street (SH-79) & I-70 WB Ramp



HCM 6th Signalized Intersection Summary
7: 1st Street (SH-79) & I-70 WB Ramp

2045 Total PM

06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	15	5	335	10	1015	0	0	595	640
Future Volume (veh/h)	0	0	0	15	5	335	10	1015	0	0	595	640
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				16	5	356	11	1080	0	0	633	681
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				17	5	370	344	2414	0	0	1270	1077
Arrive On Green				0.25	0.25	0.25	1.00	1.00	0.00	0.00	1.00	1.00
Sat Flow, veh/h				68	21	1507	418	3647	0	0	1870	1585
Grp Volume(v), veh/h				377	0	0	11	1080	0	0	633	681
Grp Sat Flow(s),veh/h/ln				1596	0	0	418	1777	0	0	1870	1585
Q Serve(g_s), s				28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane				0.04		0.94	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				392	0	0	344	2414	0	0	1270	1077
V/C Ratio(X)				0.96	0.00	0.00	0.03	0.45	0.00	0.00	0.50	0.63
Avail Cap(c_a), veh/h				392	0	0	344	2414	0	0	1270	1077
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.67	1.67
Upstream Filter(I)				1.00	0.00	0.00	0.49	0.49	0.00	0.00	0.53	0.53
Uniform Delay (d), s/veh				44.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				35.3	0.0	0.0	0.1	0.3	0.0	0.0	0.7	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.8	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				80.0	0.0	0.0	0.1	0.3	0.0	0.0	0.7	1.5
LnGrp LOS				E	A	A	A	A	A	A	A	A
Approach Vol, veh/h					377			1091			1314	
Approach Delay, s/veh					80.0			0.3			1.1	
Approach LOS					E			A			A	
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	86.0			86.0			34.0					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	81.5			81.5			29.5					
Max Q Clear Time (g_c+I1), s	2.0			2.0			30.0					
Green Ext Time (p_c), s	11.2			9.4			0.0					
Intersection Summary												
HCM 6th Ctrl Delay	11.5											
HCM 6th LOS	B											

HCM 6th TWSC
8: 1st Street (SH-79) & I-70 EB Ramp

2021 Existing AM
11/09/2021

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔						↔↕			↕↔	
Traffic Vol, veh/h	149	0	4	0	0	0	0	49	10	99	44	0
Future Vol, veh/h	149	0	4	0	0	0	0	49	10	99	44	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	162	0	4	0	0	0	0	53	11	108	48	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	323	328	48				-	0	0	64	0	0
Stage 1	264	264	-				-	-	-	-	-	-
Stage 2	59	64	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	671	591	1021				0	-	-	1538	-	0
Stage 1	780	690	-				0	-	-	-	-	0
Stage 2	964	842	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	623	0	1021				-	-	-	1538	-	-
Mov Cap-2 Maneuver	623	0	-				-	-	-	-	-	-
Stage 1	780	0	-				-	-	-	-	-	-
Stage 2	895	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	12.8						0			5.2		
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	629	1538	-						
HCM Lane V/C Ratio		-	-	0.264	0.07	-						
HCM Control Delay (s)		-	-	12.8	7.5	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	1.1	0.2	-						

Intersection												
Int Delay, s/veh	100.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↗			↖	
Traffic Vol, veh/h	367	6	7	0	0	0	0	61	19	276	55	0
Future Vol, veh/h	367	6	7	0	0	0	0	61	19	276	55	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	399	7	8	0	0	0	0	66	21	300	60	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	737	747	60				-	0	0	87	0	0
Stage 1	660	660	-				-	-	-	-	-	-
Stage 2	77	87	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 386	341	1005				0	-	-	1509	-	0
Stage 1	514	460	-				0	-	-	-	-	0
Stage 2	946	823	-				0	-	-	-	-	0
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	~ 306	0	1005				-	-	-	1509	-	-
Mov Cap-2 Maneuver	~ 306	0	-				-	-	-	-	-	-
Stage 1	514	0	-				-	-	-	-	-	-
Stage 2	751	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	203.5						0		6.7			
HCM LOS	F											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT							
Capacity (veh/h)	-	-	310	1509	-							
HCM Lane V/C Ratio	-	-	1.332	0.199	-							
HCM Control Delay (s)	-	-	203.5	8	0							
HCM Lane LOS	-	-	F	A	A							
HCM 95th %tile Q(veh)	-	-	20.5	0.7	-							
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Timings

8: 1st Street (SH-79) & I-70 EB Ramp

2030 Background AM

06/13/2022



Lane Group	EBT	NBT	SBL	SBT
Lane Configurations	↔	↔		↔
Traffic Volume (vph)	0	57	115	51
Future Volume (vph)	0	57	115	51
Turn Type	NA	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	56.0	64.0	64.0	64.0
Total Split (%)	46.7%	53.3%	53.3%	53.3%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	17.9	93.1		93.1
Actuated g/C Ratio	0.15	0.78		0.78
v/c Ratio	0.70	0.05		0.16
Control Delay	58.0	3.4		4.2
Queue Delay	0.0	0.0		0.0
Total Delay	58.0	3.4		4.2
LOS	E	A		A
Approach Delay	58.0	3.4		4.2
Approach LOS	E	A		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 27.2

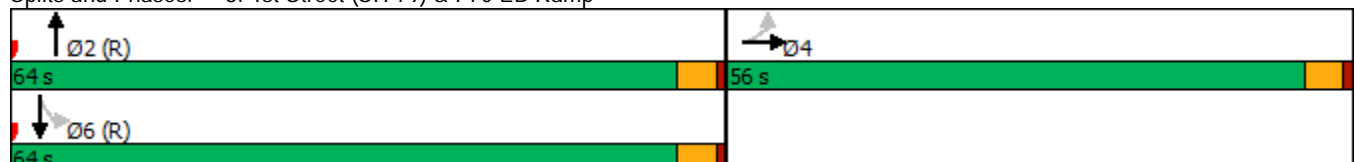
Intersection LOS: C

Intersection Capacity Utilization 33.1%

ICU Level of Service A

Analysis Period (min) 15
















Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp



HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2030 Background AM

06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	0	5	0	0	0	0	57	12	115	51	0
Future Volume (veh/h)	173	0	5	0	0	0	0	57	12	115	51	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	188	0	5				0	62	13	125	55	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	229	0	6				0	1188	249	842	362	0
Arrive On Green	0.13	0.00	0.13				0.00	0.79	0.79	1.00	1.00	0.00
Sat Flow, veh/h	1730	0	46				0	1499	314	998	457	0
Grp Volume(v), veh/h	193	0	0				0	0	75	180	0	0
Grp Sat Flow(s),veh/h/ln	1776	0	0				0	0	1814	1455	0	0
Q Serve(g_s), s	12.7	0.0	0.0				0.0	0.0	1.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.7	0.0	0.0				0.0	0.0	1.1	1.1	0.0	0.0
Prop In Lane	0.97		0.03				0.00		0.17	0.69		0.00
Lane Grp Cap(c), veh/h	235	0	0				0	0	1438	1204	0	0
V/C Ratio(X)	0.82	0.00	0.00				0.00	0.00	0.05	0.15	0.00	0.00
Avail Cap(c_a), veh/h	762	0	0				0	0	1438	1204	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.7	0.0	0.0				0.0	0.0	2.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	7.0	0.0	0.0				0.0	0.0	0.1	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	0.0				0.0	0.0	0.3	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	0.0	0.0				0.0	0.0	2.8	0.3	0.0	0.0
LnGrp LOS	E	A	A				A	A	A	A	A	A
Approach Vol, veh/h		193						75				180
Approach Delay, s/veh		57.7						2.8				0.3
Approach LOS		E						A				A
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		99.6		20.4		99.6						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		59.5		51.5		59.5						
Max Q Clear Time (g_c+I1), s		3.1		14.7		3.1						
Green Ext Time (p_c), s		0.4		1.2		1.2						
Intersection Summary												
HCM 6th Ctrl Delay			25.4									
HCM 6th LOS			C									

Timings

2030 Background PM

8: 1st Street (SH-79) & I-70 EB Ramp

06/13/2022

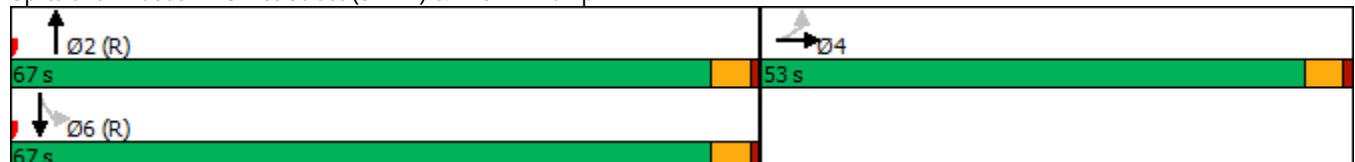


Lane Group	EBT	NBT	SBL	SBT
Lane Configurations	↔	↔		↔
Traffic Volume (vph)	7	71	321	64
Future Volume (vph)	7	71	321	64
Turn Type	NA	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	53.0	67.0	67.0	67.0
Total Split (%)	44.2%	55.8%	55.8%	55.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	38.8	72.2		72.2
Actuated g/C Ratio	0.32	0.60		0.60
v/c Ratio	0.84	0.09		0.54
Control Delay	50.7	9.9		17.8
Queue Delay	0.0	0.0		0.0
Total Delay	50.7	9.9		17.8
LOS	D	A		B
Approach Delay	50.7	9.9		17.8
Approach LOS	D	A		B

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 32.8
Intersection Capacity Utilization 59.8%
Analysis Period (min) 15
Intersection LOS: C
ICU Level of Service B
















Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp



HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2030 Background PM

06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	427	7	8	0	0	0	0	71	22	321	64	0
Future Volume (veh/h)	427	7	8	0	0	0	0	71	22	321	64	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	464	8	9				0	77	24	349	70	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	514	9	10				0	855	267	740	137	0
Arrive On Green	0.30	0.30	0.30				0.00	0.63	0.63	1.00	1.00	0.00
Sat Flow, veh/h	1716	30	33				0	1367	426	1095	220	0
Grp Volume(v), veh/h	481	0	0				0	0	101	419	0	0
Grp Sat Flow(s),veh/h/ln	1779	0	0				0	0	1794	1315	0	0
Q Serve(g_s), s	31.2	0.0	0.0				0.0	0.0	2.7	2.6	0.0	0.0
Cycle Q Clear(g_c), s	31.2	0.0	0.0				0.0	0.0	2.7	5.3	0.0	0.0
Prop In Lane	0.96		0.02				0.00		0.24	0.83		0.00
Lane Grp Cap(c), veh/h	533	0	0				0	0	1122	877	0	0
V/C Ratio(X)	0.90	0.00	0.00				0.00	0.00	0.09	0.48	0.00	0.00
Avail Cap(c_a), veh/h	719	0	0				0	0	1122	877	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.3	0.0	0.0				0.0	0.0	8.9	0.1	0.0	0.0
Incr Delay (d2), s/veh	11.8	0.0	0.0				0.0	0.0	0.2	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	0.0	0.0				0.0	0.0	1.1	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	0.0				0.0	0.0	9.1	2.0	0.0	0.0
LnGrp LOS	D	A	A				A	A	A	A	A	A
Approach Vol, veh/h	481						101			419		
Approach Delay, s/veh	52.2						9.1			2.0		
Approach LOS	D						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	79.5			40.5			79.5					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	62.5			48.5			62.5					
Max Q Clear Time (g_c+I1), s	4.7			33.2			7.3					
Green Ext Time (p_c), s	0.6			2.8			3.2					
Intersection Summary												
HCM 6th Ctrl Delay	26.8											
HCM 6th LOS	C											

Timings

8: 1st Street (SH-79) & I-70 EB Ramp

2030 Total AM

06/13/2022



Lane Group	EBT	NBT	SBL	SBT
Lane Configurations	↔	↗		↘
Traffic Volume (vph)	0	57	190	51
Future Volume (vph)	0	57	190	51
Turn Type	NA	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	56.0	64.0	64.0	64.0
Total Split (%)	46.7%	53.3%	53.3%	53.3%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	27.8	83.2		83.2
Actuated g/C Ratio	0.23	0.69		0.69
v/c Ratio	0.79	0.06		0.28
Control Delay	54.4	6.4		9.4
Queue Delay	0.0	0.0		0.0
Total Delay	54.4	6.4		9.4
LOS	D	A		A
Approach Delay	54.4	6.4		9.4
Approach LOS	D	A		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 31.4

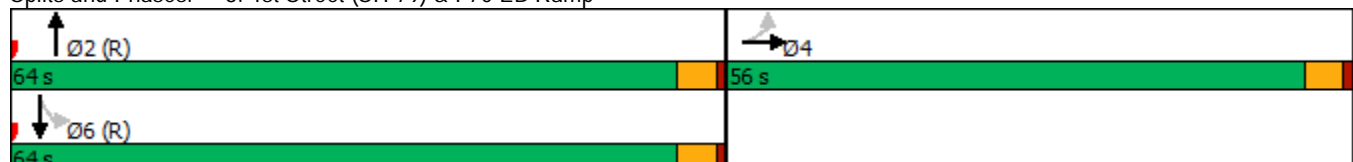
Intersection LOS: C

Intersection Capacity Utilization 44.4%

ICU Level of Service A
















Analysis Period (min) 15

Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp



HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2030 Total AM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	0	5	0	0	0	0	57	12	190	51	0
Future Volume (veh/h)	301	0	5	0	0	0	0	57	12	190	51	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	327	0	5				0	62	13	207	55	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	376	0	6				0	1065	223	831	215	0
Arrive On Green	0.21	0.00	0.21				0.00	0.71	0.71	1.00	1.00	0.00
Sat Flow, veh/h	1751	0	27				0	1499	314	1095	303	0
Grp Volume(v), veh/h	332	0	0				0	0	75	262	0	0
Grp Sat Flow(s),veh/h/ln	1778	0	0				0	0	1814	1398	0	0
Q Serve(g_s), s	21.6	0.0	0.0				0.0	0.0	1.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	21.6	0.0	0.0				0.0	0.0	1.5	1.8	0.0	0.0
Prop In Lane	0.98		0.02				0.00		0.17	0.79		0.00
Lane Grp Cap(c), veh/h	382	0	0				0	0	1288	1046	0	0
V/C Ratio(X)	0.87	0.00	0.00				0.00	0.00	0.06	0.25	0.00	0.00
Avail Cap(c_a), veh/h	763	0	0				0	0	1288	1046	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.5	0.0	0.0				0.0	0.0	5.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	6.1	0.0	0.0				0.0	0.0	0.1	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	0.0	0.0				0.0	0.0	0.6	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	0.0	0.0				0.0	0.0	5.3	0.6	0.0	0.0
LnGrp LOS	D	A	A				A	A	A	A	A	A
Approach Vol, veh/h	332						75			262		
Approach Delay, s/veh	51.6						5.3			0.6		
Approach LOS	D						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	89.7			30.3			89.7					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	59.5			51.5			59.5					
Max Q Clear Time (g_c+I1), s	3.5			23.6			3.8					
Green Ext Time (p_c), s	0.4			2.2			1.8					
Intersection Summary												
HCM 6th Ctrl Delay	26.4											
HCM 6th LOS	C											

Timings

8: 1st Street (SH-79) & I-70 EB Ramp

2030 Total PM

06/13/2022



Lane Group	EBT	NBT	SBL	SBT
Lane Configurations	↔	↔		↔
Traffic Volume (vph)	7	71	426	64
Future Volume (vph)	7	71	426	64
Turn Type	NA	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	65.0	55.0	55.0	55.0
Total Split (%)	54.2%	45.8%	45.8%	45.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	60.5	50.5		50.5
Actuated g/C Ratio	0.50	0.42		0.42
v/c Ratio	1.01	0.13		0.99
Control Delay	63.7	18.4		68.9
Queue Delay	0.0	0.0		0.0
Total Delay	63.7	18.4		68.9
LOS	E	B		E
Approach Delay	63.7	18.4		68.9
Approach LOS	E	B		E

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 62.6

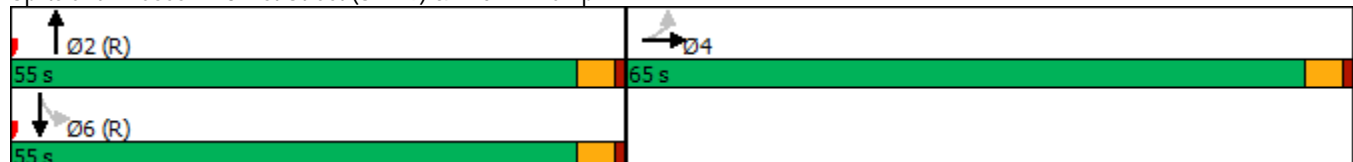
Intersection LOS: E

Intersection Capacity Utilization 87.3%

ICU Level of Service E
















Analysis Period (min) 15

Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp



HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2030 Total PM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	818	7	8	0	0	0	0	71	22	426	64	0
Future Volume (veh/h)	818	7	8	0	0	0	0	71	22	426	64	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	889	8	9				0	77	24	463	70	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	881	8	9				0	575	179	508	68	0
Arrive On Green	0.50	0.50	0.50				0.00	0.42	0.42	0.70	0.70	0.00
Sat Flow, veh/h	1746	16	18				0	1367	426	1075	163	0
Grp Volume(v), veh/h	906	0	0				0	0	101	533	0	0
Grp Sat Flow(s),veh/h/ln	1780	0	0				0	0	1794	1238	0	0
Q Serve(g_s), s	60.5	0.0	0.0				0.0	0.0	4.1	46.4	0.0	0.0
Cycle Q Clear(g_c), s	60.5	0.0	0.0				0.0	0.0	4.1	50.5	0.0	0.0
Prop In Lane	0.98		0.01				0.00		0.24	0.87		0.00
Lane Grp Cap(c), veh/h	897	0	0				0	0	755	577	0	0
V/C Ratio(X)	1.01	0.00	0.00				0.00	0.00	0.13	0.92	0.00	0.00
Avail Cap(c_a), veh/h	897	0	0				0	0	755	577	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.8	0.0	0.0				0.0	0.0	21.3	20.4	0.0	0.0
Incr Delay (d2), s/veh	32.4	0.0	0.0				0.0	0.0	0.4	22.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.8	0.0	0.0				0.0	0.0	1.8	14.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	0.0	0.0				0.0	0.0	21.7	43.2	0.0	0.0
LnGrp LOS	F	A	A				A	A	C	D	A	A
Approach Vol, veh/h		906						101			533	
Approach Delay, s/veh		62.2						21.7			43.2	
Approach LOS		E						C			D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		55.0		65.0		55.0						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		50.5		60.5		50.5						
Max Q Clear Time (g_c+I1), s		6.1		62.5		52.5						
Green Ext Time (p_c), s		0.6		0.0		0.0						
Intersection Summary												
HCM 6th Ctrl Delay			53.0									
HCM 6th LOS			D									

Timings

8: 1st Street (SH-79) & I-70 EB Ramp

2045 Background AM

06/13/2022



Lane Group	EBT	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔
Traffic Volume (vph)	0	73	148	66
Future Volume (vph)	0	73	148	66
Turn Type	NA	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	53.0	67.0	67.0	67.0
Total Split (%)	44.2%	55.8%	55.8%	55.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	21.8	89.2		89.2
Actuated g/C Ratio	0.18	0.74		0.74
v/c Ratio	0.75	0.07		0.23
Control Delay	57.2	4.6		5.3
Queue Delay	0.0	0.0		0.0
Total Delay	57.2	4.6		5.3
LOS	E	A		A
Approach Delay	57.2	4.6		5.3
Approach LOS	E	A		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 27.6

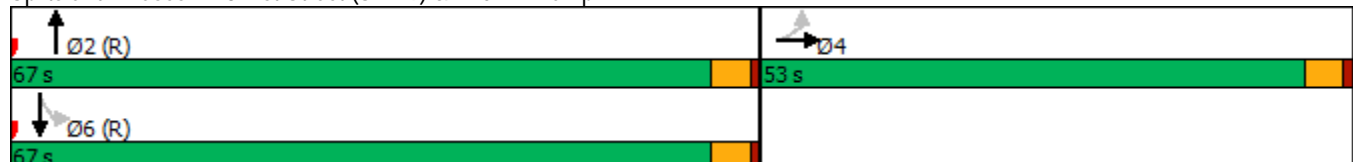
Intersection LOS: C

Intersection Capacity Utilization 38.6%

ICU Level of Service A

Analysis Period (min) 15

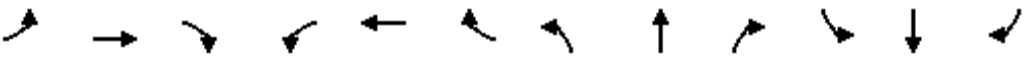
Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp



HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2045 Background AM

06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Volume (veh/h)	223	0	6	0	0	0	0	73	15	148	66	0
Future Volume (veh/h)	223	0	6	0	0	0	0	73	15	148	66	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	242	0	7				0	79	16	161	72	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	286	0	8				0	1146	232	791	345	0
Arrive On Green	0.17	0.00	0.17				0.00	0.76	0.76	1.00	1.00	0.00
Sat Flow, veh/h	1725	0	50				0	1510	306	975	454	0
Grp Volume(v), veh/h	249	0	0				0	0	95	233	0	0
Grp Sat Flow(s),veh/h/ln	1775	0	0				0	0	1815	1429	0	0
Q Serve(g_s), s	16.3	0.0	0.0				0.0	0.0	1.6	0.2	0.0	0.0
Cycle Q Clear(g_c), s	16.3	0.0	0.0				0.0	0.0	1.6	1.8	0.0	0.0
Prop In Lane	0.97		0.03				0.00		0.17	0.69		0.00
Lane Grp Cap(c), veh/h	294	0	0				0	0	1378	1136	0	0
V/C Ratio(X)	0.85	0.00	0.00				0.00	0.00	0.07	0.21	0.00	0.00
Avail Cap(c_a), veh/h	717	0	0				0	0	1378	1136	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	48.6	0.0	0.0				0.0	0.0	3.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	6.6	0.0	0.0				0.0	0.0	0.1	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.0				0.0	0.0	0.6	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	0.0				0.0	0.0	3.8	0.4	0.0	0.0
LnGrp LOS	E	A	A				A	A	A	A	A	A
Approach Vol, veh/h		249						95			233	
Approach Delay, s/veh		55.2						3.8			0.4	
Approach LOS		E						A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		95.6		24.4		95.6						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		62.5		48.5		62.5						
Max Q Clear Time (g_c+I1), s		3.6		18.3		3.8						
Green Ext Time (p_c), s		0.6		1.6		1.6						
Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									

Timings

2045 Background PM

8: 1st Street (SH-79) & I-70 EB Ramp

06/13/2022



Lane Group	EBT	NBT	SBL	SBT
Lane Configurations	↔	↔		↔
Traffic Volume (vph)	9	91	414	82
Future Volume (vph)	9	91	414	82
Turn Type	NA	NA	Perm	NA
Protected Phases	4	2		6
Permitted Phases			6	
Detector Phase	4	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	53.0	67.0	67.0	67.0
Total Split (%)	44.2%	55.8%	55.8%	55.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effect Green (s)	45.4	65.6		65.6
Actuated g/C Ratio	0.38	0.55		0.55
v/c Ratio	0.92	0.13		0.79
Control Delay	55.6	12.5		27.8
Queue Delay	0.0	0.0		0.0
Total Delay	55.6	12.5		27.8
LOS	E	B		C
Approach Delay	55.6	12.5		27.8
Approach LOS	E	B		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 39.7

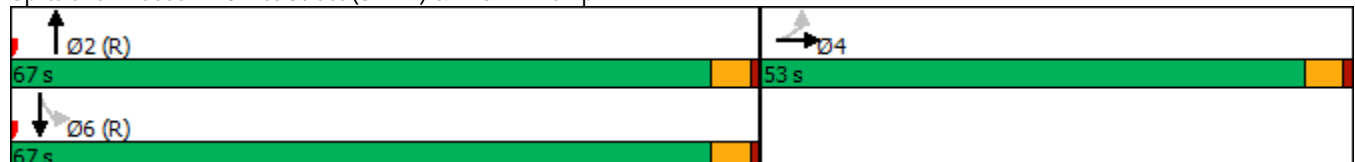
Intersection LOS: D

Intersection Capacity Utilization 73.0%

ICU Level of Service C

Analysis Period (min) 15
















Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp



HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2045 Background PM

06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	9	10	0	0	0	0	91	28	414	82	0
Future Volume (veh/h)	550	9	10	0	0	0	0	91	28	414	82	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	598	10	11				0	99	30	450	89	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	637	11	12				0	764	231	633	114	0
Arrive On Green	0.37	0.37	0.37				0.00	0.55	0.55	0.93	0.93	0.00
Sat Flow, veh/h	1718	29	32				0	1378	417	1044	206	0
Grp Volume(v), veh/h	619	0	0				0	0	129	539	0	0
Grp Sat Flow(s),veh/h/ln	1779	0	0				0	0	1795	1250	0	0
Q Serve(g_s), s	40.3	0.0	0.0				0.0	0.0	4.1	19.7	0.0	0.0
Cycle Q Clear(g_c), s	40.3	0.0	0.0				0.0	0.0	4.1	23.9	0.0	0.0
Prop In Lane	0.97		0.02				0.00		0.23	0.83		0.00
Lane Grp Cap(c), veh/h	660	0	0				0	0	995	748	0	0
V/C Ratio(X)	0.94	0.00	0.00				0.00	0.00	0.13	0.72	0.00	0.00
Avail Cap(c_a), veh/h	719	0	0				0	0	995	748	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.4	0.0	0.0				0.0	0.0	12.8	3.7	0.0	0.0
Incr Delay (d2), s/veh	19.2	0.0	0.0				0.0	0.0	0.3	5.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.7	0.0	0.0				0.0	0.0	1.7	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	0.0	0.0				0.0	0.0	13.1	9.7	0.0	0.0
LnGrp LOS	E	A	A				A	A	B	A	A	A
Approach Vol, veh/h	619								129		539	
Approach Delay, s/veh	55.6								13.1		9.7	
Approach LOS	E								B		A	
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	71.0		49.0		71.0							
Change Period (Y+Rc), s	4.5		4.5		4.5							
Max Green Setting (Gmax), s	62.5		48.5		62.5							
Max Q Clear Time (g_c+l1), s	6.1		42.3		25.9							
Green Ext Time (p_c), s	0.8		2.2		4.4							
Intersection Summary												
HCM 6th Ctrl Delay			32.1									
HCM 6th LOS			C									

Timings

8: 1st Street (SH-79) & I-70 EB Ramp

2045 Total AM

06/13/2022



Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations	←←	→	→	←	→
Traffic Volume (vph)	355	0	75	225	70
Future Volume (vph)	355	0	75	225	70
Turn Type	Perm	NA	NA	Perm	NA
Protected Phases		4	2		6
Permitted Phases	4			6	
Detector Phase	4	4	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	56.0	56.0	64.0	64.0	64.0
Total Split (%)	46.7%	46.7%	53.3%	53.3%	53.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	19.3	19.3	91.7	91.7	91.7
Actuated g/C Ratio	0.16	0.16	0.76	0.76	0.76
v/c Ratio	0.70	0.01	0.07	0.25	0.05
Control Delay	54.2	0.0	3.8	4.1	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	0.0	3.8	4.1	3.3
LOS	D	A	A	A	A
Approach Delay		52.7	3.8		3.9
Approach LOS		D	A		A

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 27.7

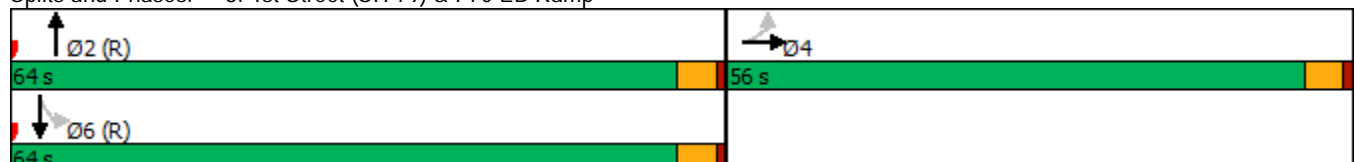
Intersection LOS: C

Intersection Capacity Utilization 74.3%

ICU Level of Service D



















Analysis Period (min) 15

Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp



HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2045 Total AM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	0	10	0	0	0	0	75	15	225	70	0
Future Volume (veh/h)	355	0	10	0	0	0	0	75	15	225	70	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	386	0	11				0	82	16	245	76	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	476	0	218				0	1197	234	1066	1473	0
Arrive On Green	0.14	0.00	0.14				0.00	0.79	0.79	1.00	1.00	0.00
Sat Flow, veh/h	3456	0	1585				0	1520	297	1297	1870	0
Grp Volume(v), veh/h	386	0	11				0	0	98	245	76	0
Grp Sat Flow(s),veh/h/ln	1728	0	1585				0	0	1817	1297	1870	0
Q Serve(g_s), s	13.0	0.0	0.7				0.0	0.0	1.5	0.5	0.0	0.0
Cycle Q Clear(g_c), s	13.0	0.0	0.7				0.0	0.0	1.5	1.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.16	1.00		0.00
Lane Grp Cap(c), veh/h	476	0	218				0	0	1431	1066	1473	0
V/C Ratio(X)	0.81	0.00	0.05				0.00	0.00	0.07	0.23	0.05	0.00
Avail Cap(c_a), veh/h	1483	0	680				0	0	1431	1066	1473	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	50.2	0.0	44.9				0.0	0.0	2.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.1				0.0	0.0	0.1	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	0.3				0.0	0.0	0.5	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	0.0	45.0				0.0	0.0	3.0	0.5	0.1	0.0
LnGrp LOS	D	A	D				A	A	A	A	A	A
Approach Vol, veh/h	397						98			321		
Approach Delay, s/veh	53.4						3.0			0.4		
Approach LOS	D						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	99.0			21.0			99.0					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	59.5			51.5			59.5					
Max Q Clear Time (g_c+I1), s	3.5			15.0			3.9					
Green Ext Time (p_c), s	0.6			1.5			1.3					
Intersection Summary												
HCM 6th Ctrl Delay	26.5											
HCM 6th LOS	C											

Timings

8: 1st Street (SH-79) & I-70 EB Ramp

2045 Total PM

06/13/2022



Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations	←←	→	→	←	→
Traffic Volume (vph)	945	10	95	520	85
Future Volume (vph)	945	10	95	520	85
Turn Type	Prot	NA	NA	Perm	NA
Protected Phases	7	4	2		6
Permitted Phases				6	
Detector Phase	7	4	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5
Total Split (s)	47.0	47.0	73.0	73.0	73.0
Total Split (%)	39.2%	39.2%	60.8%	60.8%	60.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	40.2	40.2	70.8	70.8	70.8
Actuated g/C Ratio	0.34	0.34	0.59	0.59	0.59
v/c Ratio	0.89	0.04	0.13	0.77	0.08
Control Delay	48.7	16.8	10.0	18.5	7.6
Queue Delay	0.7	0.0	0.0	0.0	0.0
Total Delay	49.4	16.8	10.0	18.5	7.6
LOS	D	B	A	B	A
Approach Delay		48.7	10.0		17.0
Approach LOS		D	A		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 34.5

Intersection LOS: C

Intersection Capacity Utilization 92.7%

ICU Level of Service F



















Analysis Period (min) 15

Splits and Phases: 8: 1st Street (SH-79) & I-70 EB Ramp










HCM 6th Signalized Intersection Summary 8: 1st Street (SH-79) & I-70 EB Ramp

2045 Total PM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 											
Traffic Volume (veh/h)	945	10	10	0	0	0	0	95	30	520	85	0
Future Volume (veh/h)	945	10	10	0	0	0	0	95	30	520	85	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	1027	11	6				0	103	17	565	92	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1117	368	201				0	942	156	790	1126	0
Arrive On Green	0.32	0.32	0.32				0.00	0.60	0.60	1.00	1.00	0.00
Sat Flow, veh/h	3456	1138	621				0	1565	258	1272	1870	0
Grp Volume(v), veh/h	1027	0	17				0	0	120	565	92	0
Grp Sat Flow(s),veh/h/ln	1728	0	1759				0	0	1824	1272	1870	0
Q Serve(g_s), s	34.3	0.0	0.8				0.0	0.0	3.4	9.5	0.0	0.0
Cycle Q Clear(g_c), s	34.3	0.0	0.8				0.0	0.0	3.4	12.9	0.0	0.0
Prop In Lane	1.00		0.35				0.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	1117	0	568				0	0	1098	790	1126	0
V/C Ratio(X)	0.92	0.00	0.03				0.00	0.00	0.11	0.72	0.08	0.00
Avail Cap(c_a), veh/h	1224	0	623				0	0	1098	790	1126	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.67	1.67	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.00	1.00	0.89	0.89	0.00
Uniform Delay (d), s/veh	39.1	0.0	27.8				0.0	0.0	10.2	0.3	0.0	0.0
Incr Delay (d2), s/veh	10.7	0.0	0.0				0.0	0.0	0.2	4.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	0.0	0.3				0.0	0.0	1.4	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	0.0	27.8				0.0	0.0	10.4	5.2	0.1	0.0
LnGrp LOS	D	A	C				A	A	B	A	A	A
Approach Vol, veh/h	1044						120			657		
Approach Delay, s/veh	49.4						10.4			4.5		
Approach LOS	D						B			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	76.7			43.3			76.7					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	68.5			42.5			68.5					
Max Q Clear Time (g_c+l1), s	5.4			36.3			14.9					
Green Ext Time (p_c), s	0.7			2.4			2.9					
Intersection Summary												
HCM 6th Ctrl Delay	30.6											
HCM 6th LOS	C											








HCM 6th TWSC
9: Kiowa-Bennett Road (SH-79) & Road A

2030 Total AM
06/13/2022

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	70	184	0	5	24	138	105	3	238	2
Future Vol, veh/h	5	0	70	184	0	5	24	138	105	3	238	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	76	200	0	5	26	150	114	3	259	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	528	582	260	506	469	150	261	0	0	264	0	0
Stage 1	266	266	-	202	202	-	-	-	-	-	-	-
Stage 2	262	316	-	304	267	-	-	-	-	-	-	-
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	461	425	779	477	492	896	1303	-	-	1300	-	-
Stage 1	739	689	-	800	734	-	-	-	-	-	-	-
Stage 2	743	655	-	705	688	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	450	416	779	423	481	896	1303	-	-	1300	-	-
Mov Cap-2 Maneuver	450	416	-	423	481	-	-	-	-	-	-	-
Stage 1	724	688	-	784	719	-	-	-	-	-	-	-
Stage 2	724	642	-	635	687	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.4		20.9			0.7			0.1			
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1303	-	-	743	429	1300	-	-				
HCM Lane V/C Ratio	0.02	-	-	0.11	0.479	0.003	-	-				
HCM Control Delay (s)	7.8	-	-	10.4	20.9	7.8	-	-				
HCM Lane LOS	A	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.4	2.5	0	-	-				








HCM 6th TWSC
9: Kiowa-Bennett Road (SH-79) & Road A

2030 Total PM
06/13/2022

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	47	260	0	7	79	298	321	11	243	5
Future Vol, veh/h	3	0	47	260	0	7	79	298	321	11	243	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	150	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	51	283	0	8	86	324	349	12	264	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	966	1136	267	812	789	324	269	0	0	673	0	0
Stage 1	291	291	-	496	496	-	-	-	-	-	-	-
Stage 2	675	845	-	316	293	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	234	202	772	298	323	717	1295	-	-	918	-	-
Stage 1	717	672	-	556	545	-	-	-	-	-	-	-
Stage 2	444	379	-	695	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	218	186	772	~ 262	298	717	1295	-	-	918	-	-
Mov Cap-2 Maneuver	218	186	-	422	433	-	-	-	-	-	-	-
Stage 1	670	663	-	519	509	-	-	-	-	-	-	-
Stage 2	410	354	-	641	661	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.8		29.5		0.9		0.4					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1295	-	-	670	427	918	-	-				
HCM Lane V/C Ratio	0.066	-	-	0.081	0.68	0.013	-	-				
HCM Control Delay (s)	8	-	-	10.8	29.5	9	-	-				
HCM Lane LOS	A	-	-	B	D	A	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.3	4.9	0	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

HCM 6th TWSC
9: Kiowa-Bennett Road (SH-79) & Road A




2045 Total AM
06/13/2022




Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	70	185	0	5	25	165	105	5	290	5
Future Vol, veh/h	5	0	70	185	0	5	25	165	105	5	290	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	76	201	0	5	27	179	114	5	315	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	621	675	318	599	563	179	320	0	0	293	0	0
Stage 1	328	328	-	233	233	-	-	-	-	-	-	-
Stage 2	293	347	-	366	330	-	-	-	-	-	-	-
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	400	376	723	413	435	864	1240	-	-	1269	-	-
Stage 1	685	647	-	770	712	-	-	-	-	-	-	-
Stage 2	715	635	-	653	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	390	366	723	362	424	864	1240	-	-	1269	-	-
Mov Cap-2 Maneuver	390	366	-	362	424	-	-	-	-	-	-	-
Stage 1	670	644	-	753	696	-	-	-	-	-	-	-
Stage 2	695	621	-	582	643	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11		26.6		0.7		0.1					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1240	-	-	684	368	1269	-	-				
HCM Lane V/C Ratio	0.022	-	-	0.119	0.561	0.004	-	-				
HCM Control Delay (s)	8	-	-	11	26.6	7.8	-	-				
HCM Lane LOS	A	-	-	B	D	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.4	3.3	0	-	-				




HCM 6th TWSC
9: Kiowa-Bennett Road (SH-79) & Road A




2045 Total PM
06/13/2022

Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↑	↗	↙	↗	
Traffic Vol, veh/h	5	0	50	260	0	10	80	355	325	15	285	5
Future Vol, veh/h	5	0	50	260	0	10	80	355	325	15	285	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	375	0	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	54	283	0	11	87	386	353	16	310	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1087	1258	313	932	907	386	315	0	0	739	0	0
Stage 1	345	345	-	560	560	-	-	-	-	-	-	-
Stage 2	742	913	-	372	347	-	-	-	-	-	-	-
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	194	171	727	~ 247	276	662	1245	-	-	867	-	-
Stage 1	671	636	-	513	511	-	-	-	-	-	-	-
Stage 2	408	352	-	648	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	178	156	727	~ 213	252	662	1245	-	-	867	-	-
Mov Cap-2 Maneuver	178	156	-	376	397	-	-	-	-	-	-	-
Stage 1	624	625	-	477	475	-	-	-	-	-	-	-
Stage 2	373	327	-	588	624	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.1		39.6		0.9		0.5					
HCM LOS	B		E									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1245	-	-	568	382	867	-	-				
HCM Lane V/C Ratio	0.07	-	-	0.105	0.768	0.019	-	-				
HCM Control Delay (s)	8.1	-	-	12.1	39.6	9.2	-	-				
HCM Lane LOS	A	-	-	B	E	A	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.4	6.3	0.1	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	23	0	149	40	0
Future Vol, veh/h	85	23	0	149	40	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	25	0	162	43	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	117	0	267	105
Stage 1	-	-	-	-	105	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1471	-	722	949
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1471	-	722	949
Mov Cap-2 Maneuver	-	-	-	-	722	-
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	867	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	722	-	-	1471	-	
HCM Lane V/C Ratio	0.06	-	-	-	-	
HCM Control Delay (s)	10.3	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	




Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	69	0	211	56	0
Future Vol, veh/h	260	69	0	211	56	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	283	75	0	229	61	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	358	0	550	321
Stage 1	-	-	-	-	321	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	496	720
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1201	-	496	720
Mov Cap-2 Maneuver	-	-	-	-	496	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	809	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		13.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	496	-	-	1201	-	
HCM Lane V/C Ratio	0.123	-	-	-	-	
HCM Control Delay (s)	13.3	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	




Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	25	0	150	40	0
Future Vol, veh/h	85	25	0	150	40	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	27	0	163	43	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	119	0	269	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1469	-	720	948
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1469	-	720	948
Mov Cap-2 Maneuver	-	-	-	-	720	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	866	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	720	-	-	1469	-	
HCM Lane V/C Ratio	0.06	-	-	-	-	
HCM Control Delay (s)	10.3	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	




Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	70	0	215	60	0
Future Vol, veh/h	260	70	0	215	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	283	76	0	234	65	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	359	0	555	321
Stage 1	-	-	-	-	321	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1200	-	493	720
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1200	-	493	720
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	805	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		13.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	493	-	-	1200	-	
HCM Lane V/C Ratio	0.132	-	-	-	-	
HCM Control Delay (s)	13.4	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

HCM 6th TWSC
11: Road A & South Middle Access

2030 Total AM
06/13/2022

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	0	77	9	0	134
Future Vol, veh/h	15	0	77	9	0	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	0	84	10	0	146
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	235	89	0	0	94	0
Stage 1	89	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	753	969	-	-	1500	-
Stage 1	934	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	753	969	-	-	1500	-
Mov Cap-2 Maneuver	753	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.9	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 753		1500	-	
HCM Lane V/C Ratio	-	- 0.022		-	-	
HCM Control Delay (s)	-	- 9.9		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	




Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	0	234	26	0	190
Future Vol, veh/h	21	0	234	26	0	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	0	254	28	0	207
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	475	268	0	0	282	0
Stage 1	268	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	548	771	-	-	1280	-
Stage 1	777	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	548	771	-	-	1280	-
Mov Cap-2 Maneuver	548	-	-	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.9	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 548		1280	-	
HCM Lane V/C Ratio	-	- 0.042		-	-	
HCM Control Delay (s)	-	- 11.9		0	-	
HCM Lane LOS	-	- B		A	-	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	




Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	0	80	10	0	135
Future Vol, veh/h	15	0	80	10	0	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	0	87	11	0	147

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	240	93	0
Stage 1	93	-	-
Stage 2	147	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	748	964	-
Stage 1	931	-	-
Stage 2	880	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	748	964	-
Mov Cap-2 Maneuver	748	-	-
Stage 1	931	-	-
Stage 2	880	-	-




Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	748	1495
HCM Lane V/C Ratio	-	-	0.022	-
HCM Control Delay (s)	-	-	9.9	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	0	235	30	0	190
Future Vol, veh/h	25	0	235	30	0	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	0	255	33	0	207
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	479	272	0	0	288	0
Stage 1	272	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	545	767	-	-	1274	-
Stage 1	774	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	545	767	-	-	1274	-
Mov Cap-2 Maneuver	545	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	545	1274	-	
HCM Lane V/C Ratio	-	-	0.05	-	-	
HCM Control Delay (s)	-	-	12	0	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	5	71	6	3	125
Future Vol, veh/h	10	5	71	6	3	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	77	7	3	136
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	223	81	0	0	84	0
Stage 1	81	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	765	979	-	-	1513	-
Stage 1	942	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	763	979	-	-	1513	-
Mov Cap-2 Maneuver	763	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		0.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	824		1513	-	
HCM Lane V/C Ratio	-	0.02		0.002	-	
HCM Control Delay (s)	-	9.5		7.4	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.1		0	-	

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	S	T
Traffic Vol, veh/h	14	7	217	17	9	176
Future Vol, veh/h	14	7	217	17	9	176
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	8	236	18	10	191
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	456	245	0	0	254	0
Stage 1	245	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	562	794	-	-	1311	-
Stage 1	796	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	557	794	-	-	1311	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11	0		0.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	619		1311	-	
HCM Lane V/C Ratio	-	0.037		0.007	-	
HCM Control Delay (s)	-	11		7.8	0	
HCM Lane LOS	-	B		A	A	
HCM 95th %tile Q(veh)	-	0.1		0	-	

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	5	75	10	5	125
Future Vol, veh/h	10	5	75	10	5	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	82	11	5	136

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	234	88	0
Stage 1	88	-	-
Stage 2	146	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	754	970	-
Stage 1	935	-	-
Stage 2	881	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	751	970	-
Mov Cap-2 Maneuver	751	-	-
Stage 1	935	-	-
Stage 2	877	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	812	1501
HCM Lane V/C Ratio	-	-	0.02	0.004
HCM Control Delay (s)	-	-	9.5	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	15	10	220	20	10	180
Future Vol, veh/h	15	10	220	20	10	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	11	239	22	11	196




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	468	250	0
Stage 1	250	-	-
Stage 2	218	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	553	789	-
Stage 1	792	-	-
Stage 2	818	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	548	789	-
Mov Cap-2 Maneuver	548	-	-
Stage 1	792	-	-
Stage 2	811	-	-




Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.4
HCM LOS	B		




Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	624	1303
HCM Lane V/C Ratio	-	-	0.044	0.008
HCM Control Delay (s)	-	-	11	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0




HCM 6th TWSC
13: Road A & North Middle Access

2030 Total AM
06/13/2022




Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	75	43	33	53	3
Future Vol, veh/h	5	75	43	33	53	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	82	47	36	58	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	190	60	61	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	799	1005	1542	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	774	1005	1542	-	-	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	4.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1542	-	987	-	-	
HCM Lane V/C Ratio	0.03	-	0.088	-	-	
HCM Control Delay (s)	7.4	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	




Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	105	130	94	79	9
Future Vol, veh/h	7	105	130	94	79	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	114	141	102	86	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	475	91	96	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	548	967	1498	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	493	967	1498	-	-	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.6	4.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1498	-	912	-	-	
HCM Lane V/C Ratio	0.094	-	0.133	-	-	
HCM Control Delay (s)	7.7	0	9.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.5	-	-	




Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	75	45	35	55	5
Future Vol, veh/h	5	75	45	35	55	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	82	49	38	60	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	199	63	65	0	-	0
Stage 1	63	-	-	-	-	-
Stage 2	136	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	790	1002	1537	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	764	1002	1537	-	-	-
Mov Cap-2 Maneuver	764	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	4.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1537	-	983	-	-	
HCM Lane V/C Ratio	0.032	-	0.088	-	-	
HCM Control Delay (s)	7.4	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	105	130	95	80	10
Future Vol, veh/h	10	105	130	95	80	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	114	141	103	87	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	478	93	98	0	-	0
Stage 1	93	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	546	964	1495	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	491	964	1495	-	-	-
Mov Cap-2 Maneuver	491	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	4.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1495	-	889	-	-	
HCM Lane V/C Ratio	0.095	-	0.141	-	-	
HCM Control Delay (s)	7.7	0	9.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.5	-	-	

Intersection						
Int Delay, s/veh	5.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	50	25	10	28	14	6
Future Vol, veh/h	50	25	10	28	14	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	27	11	30	15	7
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	63	26	0	0	41	0
Stage 1	26	-	-	-	-	-
Stage 2	37	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	943	1050	-	-	1568	-
Stage 1	997	-	-	-	-	-
Stage 2	985	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	934	1050	-	-	1568	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.1	0	5.1			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	970	1568	-	
HCM Lane V/C Ratio	-	-	0.084	0.01	-	
HCM Control Delay (s)	-	-	9.1	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

Intersection						
Int Delay, s/veh	5.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	35	14	87	43	17
Future Vol, veh/h	70	35	14	87	43	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	38	15	95	47	18
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	175	63	0	0	110	0
Stage 1	63	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	815	1002	-	-	1480	-
Stage 1	960	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	789	1002	-	-	1480	-
Mov Cap-2 Maneuver	789	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.9	0		5.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	849		1480	-	
HCM Lane V/C Ratio	-	0.134		0.032	-	
HCM Control Delay (s)	-	9.9		7.5	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.5		0.1	-	




Intersection						
Int Delay, s/veh	5.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	25	10	30	15	10
Future Vol, veh/h	50	25	10	30	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	27	11	33	16	11
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	71	28	0	0	44	0
Stage 1	28	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	933	1047	-	-	1564	-
Stage 1	995	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	924	1047	-	-	1564	-
Mov Cap-2 Maneuver	924	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.1	0		4.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 962		1564	-	
HCM Lane V/C Ratio	-	- 0.085		0.01	-	
HCM Control Delay (s)	-	- 9.1		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.3		0	-	

Intersection						
Int Delay, s/veh	5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	35	15	90	45	20
Future Vol, veh/h	70	35	15	90	45	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	38	16	98	49	22

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	185	65	0
Stage 1	65	-	-
Stage 2	120	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	804	999	-
Stage 1	958	-	-
Stage 2	905	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	777	999	-
Mov Cap-2 Maneuver	777	-	-
Stage 1	958	-	-
Stage 2	874	-	-




Approach	WB	NB	SB
HCM Control Delay, s	10	0	5.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	839	1475
HCM Lane V/C Ratio	-	-	0.136	0.033
HCM Control Delay (s)	-	-	10	7.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

Intersection						
Int Delay, s/veh	7.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	105	46	38	9	15	249
Future Vol, veh/h	105	46	38	9	15	249
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	50	41	10	16	271
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	324	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	278	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1555	-	-	-	670	1023
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	769	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	620	1023
Mov Cap-2 Maneuver	-	-	-	-	620	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	769	-
Approach	EB	WB		SB		
HCM Control Delay, s	5.2	0		10.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1555	-	-	-	987	
HCM Lane V/C Ratio	0.073	-	-	-	0.291	
HCM Control Delay (s)	7.5	0	-	-	10.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	

Intersection

Int Delay, s/veh 9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	321	50	55	26	21	351
Future Vol, veh/h	321	50	55	26	21	351
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	349	54	60	28	23	382





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	88	0	0 826 74
Stage 1	-	-	- 74 -
Stage 2	-	-	- 752 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1508	-	- 342 988
Stage 1	-	-	- 949 -
Stage 2	-	-	- 466 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1508	-	- 260 988
Mov Cap-2 Maneuver	-	-	- 260 -
Stage 1	-	-	- 722 -
Stage 2	-	-	- 466 -

Approach	EB	WB	SB
HCM Control Delay, s	7	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1508	-	-	-	853
HCM Lane V/C Ratio	0.231	-	-	-	0.474
HCM Control Delay (s)	8.1	0	-	-	13
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.9	-	-	-	2.6

Intersection





Int Delay, s/veh 7.4





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	105	46	38	9	15	249
Future Vol, veh/h	105	46	38	9	15	249
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	50	41	10	16	271

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	51	0	0 299 26
Stage 1	-	-	- 46 -
Stage 2	-	-	- 253 -
Critical Hdwy	4.14	-	- 6.84 6.94
Critical Hdwy Stg 1	-	-	- 5.84 -
Critical Hdwy Stg 2	-	-	- 5.84 -
Follow-up Hdwy	2.22	-	- 3.52 3.32
Pot Cap-1 Maneuver	1553	-	- 668 1044
Stage 1	-	-	- 971 -
Stage 2	-	-	- 766 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1553	-	- 619 1044
Mov Cap-2 Maneuver	-	-	- 619 -
Stage 1	-	-	- 900 -
Stage 2	-	-	- 766 -

Approach	EB	WB	SB
HCM Control Delay, s	5.2	0	10
HCM LOS			B





Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1553	-	-	-	1005
HCM Lane V/C Ratio	0.073	-	-	-	0.286
HCM Control Delay (s)	7.5	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2

Intersection						
Int Delay, s/veh	8.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	321	50	55	26	21	351
Future Vol, veh/h	321	50	55	26	21	351
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	349	54	60	28	23	382
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	88	0	-	0	799	44
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1506	-	-	-	323	1017
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1506	-	-	-	248	1017
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	440	-
Approach	EB	WB		SB		
HCM Control Delay, s	7	0		12.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1506	-	-	-	865	
HCM Lane V/C Ratio	0.232	-	-	-	0.467	
HCM Control Delay (s)	8.1	-	-	-	12.8	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.9	-	-	-	2.5	

Intersection						
Int Delay, s/veh	7.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	105	55	50	10	15	250
Future Vol, veh/h	105	55	50	10	15	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	60	54	11	16	272
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	65	0	-	0	318	33
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	258	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1535	-	-	-	650	1033
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1535	-	-	-	602	1033
Mov Cap-2 Maneuver	-	-	-	-	602	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	761	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.9	0		10.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1535	-	-	-	993	
HCM Lane V/C Ratio	0.074	-	-	-	0.29	
HCM Control Delay (s)	7.5	-	-	-	10.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	

Intersection

Int Delay, s/veh 9.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	325	60	65	30	25	355
Future Vol, veh/h	325	60	65	30	25	355
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	353	65	71	33	27	386

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	104	0	0 827 52
Stage 1	-	-	- 88 -
Stage 2	-	-	- 739 -
Critical Hdwy	4.14	-	- 6.84 6.94
Critical Hdwy Stg 1	-	-	- 5.84 -
Critical Hdwy Stg 2	-	-	- 5.84 -
Follow-up Hdwy	2.22	-	- 3.52 3.32
Pot Cap-1 Maneuver	1485	-	- 310 1005
Stage 1	-	-	- 925 -
Stage 2	-	-	- 433 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1485	-	- 236 1005
Mov Cap-2 Maneuver	-	-	- 236 -
Stage 1	-	-	- 705 -
Stage 2	-	-	- 433 -

Approach	EB	WB	SB
HCM Control Delay, s	6.9	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1485	-	-	-	828
HCM Lane V/C Ratio	0.238	-	-	-	0.499
HCM Control Delay (s)	8.2	-	-	-	13.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.9	-	-	-	2.8

Intersection			
Intersection Delay, s/veh	9.7		
Intersection LOS	A		
Approach	EB	WB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	332	686	426
Demand Flow Rate, veh/h	339	699	435
Vehicles Circulating, veh/h	290	82	534
Vehicles Exiting, veh/h	679	547	247
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.0	9.1	12.6
Approach LOS	A	A	B
Lane	Left	Left	Left
Designated Moves	LT	TR	LR
Assumed Moves	LT	TR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	339	699	435
Cap Entry Lane, veh/h	1027	1269	800
Entry HV Adj Factor	0.979	0.981	0.979
Flow Entry, veh/h	332	686	426
Cap Entry, veh/h	1005	1245	784
V/C Ratio	0.330	0.551	0.543
Control Delay, s/veh	7.0	9.1	12.6
LOS	A	A	B
95th %tile Queue, veh	1	4	3

Intersection			
Intersection Delay, s/veh	14.2		
Intersection LOS	B		
Approach	EB	WB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	787	792	381
Demand Flow Rate, veh/h	803	808	389
Vehicles Circulating, veh/h	259	156	495
Vehicles Exiting, veh/h	625	906	469
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	17.2	13.1	10.6
Approach LOS	C	B	B
Lane	Left	Left	Left
Designated Moves	LT	TR	LR
Assumed Moves	LT	TR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	803	808	389
Cap Entry Lane, veh/h	1060	1177	833
Entry HV Adj Factor	0.980	0.981	0.979
Flow Entry, veh/h	787	792	381
Cap Entry, veh/h	1039	1154	816
V/C Ratio	0.758	0.687	0.467
Control Delay, s/veh	17.2	13.1	10.6
LOS	C	B	B
95th %tile Queue, veh	8	6	3

Intersection			
Intersection Delay, s/veh	47.8		
Intersection LOS	E		
Approach	EB	WB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	564	716	887
Demand Flow Rate, veh/h	575	730	905
Vehicles Circulating, veh/h	345	318	534
Vehicles Exiting, veh/h	1094	602	514
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.1	16.7	95.6
Approach LOS	B	C	F
Lane	Left	Left	Left
Designated Moves	LT	TR	LR
Assumed Moves	LT	TR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	575	730	905
Cap Entry Lane, veh/h	971	998	800
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	564	716	887
Cap Entry, veh/h	952	978	784
V/C Ratio	0.592	0.732	1.131
Control Delay, s/veh	12.1	16.7	95.6
LOS	B	C	F
95th %tile Queue, veh	4	7	26

Intersection			
Intersection Delay, s/veh	240.2		
Intersection LOS	F		
Approach	EB	WB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	1495	886	1030
Demand Flow Rate, veh/h	1525	904	1051
Vehicles Circulating, veh/h	337	878	495
Vehicles Exiting, veh/h	1209	984	1287
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	270.1	299.7	145.6
Approach LOS	F	F	F
Lane	Left	Left	Left
Designated Moves	LT	TR	LR
Assumed Moves	LT	TR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	1525	904	1051
Cap Entry Lane, veh/h	979	564	833
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	1495	886	1030
Cap Entry, veh/h	959	553	816
V/C Ratio	1.558	1.604	1.262
Control Delay, s/veh	270.1	299.7	145.6
LOS	F	F	F
95th %tile Queue, veh	75	49	37

HCM 6th Roundabout
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2030 Total AM - Improved

06/13/2022

Intersection						
Intersection Delay, s/veh	9.6					
Intersection LOS	A					
Approach	EB		WB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	564		716		887	
Demand Flow Rate, veh/h	575		730		905	
Vehicles Circulating, veh/h	345		318		534	
Vehicles Exiting, veh/h	1094		602		514	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	6.5		8.9		12.1	
Approach LOS	A		A		B	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	R	L	TR
Assumed Moves	L	TR	LT	R	L	TR
RT Channelized						
Lane Util	0.553	0.447	0.732	0.268	0.381	0.619
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	318	257	534	196	345	560
Cap Entry Lane, veh/h	983	1059	1007	1084	826	902
Entry HV Adj Factor	0.981	0.980	0.980	0.980	0.980	0.980
Flow Entry, veh/h	312	252	524	192	338	549
Cap Entry, veh/h	964	1038	988	1062	809	884
V/C Ratio	0.324	0.243	0.530	0.181	0.418	0.621
Control Delay, s/veh	7.1	5.8	10.3	5.0	9.7	13.6
LOS	A	A	B	A	A	B
95th %tile Queue, veh	1	1	3	1	2	4

HCM 6th Roundabout
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2030 Total PM - Improved

























06/13/2022

Intersection						
Intersection Delay, s/veh	20.8					
Intersection LOS	C					
Approach	EB		WB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	1495		886		1030	
Demand Flow Rate, veh/h	1525		904		1051	
Vehicles Circulating, veh/h	337		878		495	
Vehicles Exiting, veh/h	1209		984		1287	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	21.5		25.2		16.1	
Approach LOS	C		D		C	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	R	L	TR
Assumed Moves	L	TR	LT	R	L	TR
RT Channelized						
Lane Util	0.576	0.424	0.548	0.452	0.321	0.679
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	878	647	495	409	337	714
Cap Entry Lane, veh/h	990	1066	602	673	856	932
Entry HV Adj Factor	0.981	0.980	0.980	0.980	0.979	0.980
Flow Entry, veh/h	861	634	485	401	330	700
Cap Entry, veh/h	971	1045	590	660	838	914
V/C Ratio	0.887	0.607	0.822	0.608	0.394	0.766
Control Delay, s/veh	28.8	11.6	32.3	16.6	9.0	19.4
LOS	D	B	D	C	A	C
95th %tile Queue, veh	12	4	8	4	2	8

Timings
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2045 Background AM

06/13/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	269	14	99	354	28	71	212	57	14	255	71
Future Volume (vph)	14	269	14	99	354	28	71	212	57	14	255	71
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	62.0	62.0	62.0	62.0	62.0	62.0	58.0	58.0	58.0	58.0	58.0	58.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%	48.3%	48.3%	48.3%	48.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	32.1	32.1	32.1	32.1	32.1	32.1	78.9	78.9	78.9	78.9	78.9	78.9
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.66	0.66	0.66	0.66	0.66	0.66
v/c Ratio	0.14	0.59	0.03	0.61	0.77	0.07	0.11	0.10	0.06	0.02	0.12	0.07
Control Delay	33.1	42.0	11.8	52.1	50.8	9.5	9.8	8.8	2.8	9.6	8.8	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	42.0	11.8	52.1	50.8	9.5	9.8	8.8	2.8	9.6	8.8	2.5
LOS	C	D	B	D	D	A	A	A	A	A	A	A
Approach Delay		40.2			48.7			8.0			7.6	
Approach LOS		D			D			A			A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 27.9

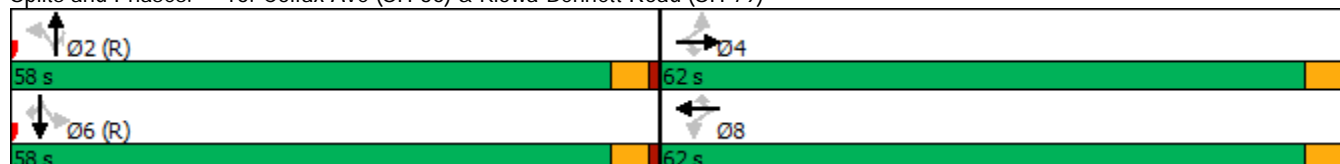
Intersection LOS: C

Intersection Capacity Utilization 49.0%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)



HCM 6th Signalized Intersection Summary
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2045 Background AM

























06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	269	14	99	354	28	71	212	57	14	255	71
Future Volume (veh/h)	14	269	14	99	354	28	71	212	57	14	255	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	292	15	108	385	30	77	230	62	15	277	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	511	433	209	511	433	699	2316	1033	782	2316	1033
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	998	1870	1585	1072	1870	1585	1027	3554	1585	1151	3554	1585
Grp Volume(v), veh/h	15	292	15	108	385	30	77	230	62	15	277	77
Grp Sat Flow(s),veh/h/ln	998	1870	1585	1072	1870	1585	1027	1777	1585	1151	1777	1585
Q Serve(g_s), s	1.7	16.1	0.8	11.6	22.6	1.7	3.7	2.9	1.7	0.6	3.5	2.1
Cycle Q Clear(g_c), s	24.3	16.1	0.8	27.7	22.6	1.7	7.2	2.9	1.7	3.5	3.5	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	511	433	209	511	433	699	2316	1033	782	2316	1033
V/C Ratio(X)	0.10	0.57	0.03	0.52	0.75	0.07	0.11	0.10	0.06	0.02	0.12	0.07
Avail Cap(c_a), veh/h	350	896	760	430	896	760	699	2316	1033	782	2316	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	37.5	32.0	49.5	39.9	32.3	9.3	7.8	7.6	8.4	7.9	7.7
Incr Delay (d2), s/veh	0.3	1.0	0.0	2.0	2.3	0.1	0.3	0.1	0.1	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.5	0.3	3.2	10.7	0.7	0.9	1.1	0.6	0.2	1.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	38.5	32.0	51.4	42.2	32.4	9.6	7.9	7.7	8.5	8.0	7.8
LnGrp LOS	D	D	C	D	D	C	A	A	A	A	A	A
Approach Vol, veh/h	322			523			369			369		
Approach Delay, s/veh	38.8			43.5			8.2			8.0		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	82.7			37.3			82.7			37.3		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	53.5			57.5			53.5			57.5		
Max Q Clear Time (g_c+I1), s	9.2			26.3			5.5			29.7		
Green Ext Time (p_c), s	2.2			2.0			2.3			3.1		
Intersection Summary												
HCM 6th Ctrl Delay	26.0											
HCM 6th LOS	C											

Timings
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2045 Background PM

06/13/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	322	77	138	261	15	107	368	92	15	261	61
Future Volume (vph)	77	322	77	138	261	15	107	368	92	15	261	61
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	69.0	69.0	69.0	69.0	69.0	69.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	31.4	31.4	31.4	31.4	31.4	31.4	79.6	79.6	79.6	79.6	79.6	79.6
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26	0.26	0.66	0.66	0.66	0.66	0.66	0.66
v/c Ratio	0.48	0.72	0.18	1.21	0.58	0.04	0.16	0.17	0.09	0.03	0.12	0.06
Control Delay	44.2	47.8	6.8	187.3	42.1	11.2	10.4	9.2	2.5	10.3	8.9	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	47.8	6.8	187.3	42.1	11.2	10.4	9.2	2.5	10.3	8.9	2.9
LOS	D	D	A	F	D	B	B	A	A	B	A	A
Approach Delay		40.6			89.4			8.3			7.9	
Approach LOS		D			F			A			A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 35.5

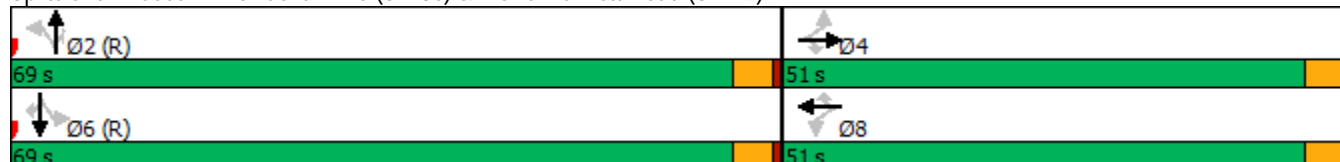
Intersection LOS: D

Intersection Capacity Utilization 53.9%

ICU Level of Service A

Analysis Period (min) 15

























Splits and Phases: 16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)



HCM 6th Signalized Intersection Summary
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2045 Background PM

06/13/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	322	77	138	261	15	107	368	92	15	261	61
Future Volume (veh/h)	77	322	77	138	261	15	107	368	92	15	261	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	350	84	150	284	16	116	400	100	16	284	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	611	517	237	611	517	677	2127	949	552	2127	949
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1079	1870	1585	1031	1870	1585	1095	3554	1585	898	3554	1585
Grp Volume(v), veh/h	84	350	84	150	284	16	116	400	100	16	284	66
Grp Sat Flow(s),veh/h/ln	1079	1870	1585	1031	1870	1585	1095	1777	1585	898	1777	1585
Q Serve(g_s), s	8.0	18.6	4.5	16.9	14.5	0.8	6.2	6.1	3.2	1.0	4.2	2.1
Cycle Q Clear(g_c), s	22.5	18.6	4.5	35.5	14.5	0.8	10.4	6.1	3.2	7.1	4.2	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	611	517	237	611	517	677	2127	949	552	2127	949
V/C Ratio(X)	0.30	0.57	0.16	0.63	0.47	0.03	0.17	0.19	0.11	0.03	0.13	0.07
Avail Cap(c_a), veh/h	348	725	614	300	725	614	677	2127	949	552	2127	949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	33.5	28.7	48.2	32.1	27.5	12.8	10.9	10.3	12.5	10.5	10.1
Incr Delay (d2), s/veh	0.6	0.9	0.1	2.8	0.6	0.0	0.5	0.2	0.2	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.6	1.8	4.5	6.6	0.3	1.6	2.4	1.2	0.2	1.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	34.3	28.9	51.0	32.6	27.5	13.3	11.1	10.5	12.6	10.6	10.2
LnGrp LOS	D	C	C	D	C	C	B	B	B	B	B	B
Approach Vol, veh/h	518			450			616			366		
Approach Delay, s/veh	34.6			38.6			11.4			10.7		
Approach LOS	C			D			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	76.3			43.7			76.3			43.7		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	64.5			46.5			64.5			46.5		
Max Q Clear Time (g_c+I1), s	12.4			24.5			9.1			37.5		
Green Ext Time (p_c), s	3.9			2.8			2.4			1.6		
Intersection Summary												
HCM 6th Ctrl Delay	23.7											
HCM 6th LOS	C											

Timings

2045 Total AM

16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

06/13/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	270	15	100	355	60	75	400	60	65	580	125
Future Volume (vph)	45	270	15	100	355	60	75	400	60	65	580	125
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	62.0	62.0	62.0	62.0	62.0	62.0	58.0	58.0	58.0	58.0	58.0	58.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%	48.3%	48.3%	48.3%	48.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	32.4	32.4	32.4	32.4	32.4	32.4	78.6	78.6	78.6	78.6	78.6	78.6
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.66	0.66	0.66	0.66	0.66	0.66
v/c Ratio	0.46	0.58	0.04	0.61	0.77	0.14	0.17	0.19	0.06	0.12	0.27	0.13
Control Delay	47.3	39.8	11.3	51.6	50.2	7.2	11.2	9.4	2.8	10.3	10.0	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	39.8	11.3	51.6	50.2	7.2	11.2	9.4	2.8	10.3	10.0	2.1
LOS	D	D	B	D	D	A	B	A	A	B	B	A
Approach Delay		39.6			45.5			8.9			8.8	
Approach LOS		D			D			A			A	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 22.3

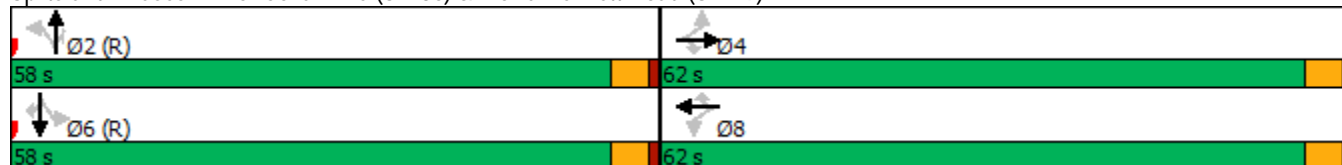
Intersection LOS: C

Intersection Capacity Utilization 58.1%

ICU Level of Service B

























Analysis Period (min) 15

Splits and Phases: 16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)



























HCM 6th Signalized Intersection Summary
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2045 Total AM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	270	15	100	355	60	75	400	60	65	580	125
Future Volume (veh/h)	45	270	15	100	355	60	75	400	60	65	580	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	293	16	109	386	65	82	435	65	71	630	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	516	437	211	516	437	463	2308	1029	633	2308	1029
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	997	1870	1585	1070	1870	1585	702	3554	1585	954	3554	1585
Grp Volume(v), veh/h	49	293	16	109	386	65	82	435	65	71	630	136
Grp Sat Flow(s),veh/h/ln	997	1870	1585	1070	1870	1585	702	1777	1585	954	1777	1585
Q Serve(g_s), s	5.7	16.1	0.9	11.7	22.6	3.7	6.8	5.9	1.8	3.9	9.1	3.9
Cycle Q Clear(g_c), s	28.3	16.1	0.9	27.8	22.6	3.7	15.8	5.9	1.8	9.7	9.1	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	516	437	211	516	437	463	2308	1029	633	2308	1029
V/C Ratio(X)	0.33	0.57	0.04	0.52	0.75	0.15	0.18	0.19	0.06	0.11	0.27	0.13
Avail Cap(c_a), veh/h	350	896	760	429	896	760	463	2308	1029	633	2308	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	37.3	31.8	49.3	39.7	32.8	12.3	8.4	7.7	10.3	9.0	8.1
Incr Delay (d2), s/veh	1.3	1.0	0.0	2.0	2.2	0.2	0.8	0.2	0.1	0.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.5	0.3	3.2	10.7	1.5	1.2	2.2	0.6	0.9	3.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	38.3	31.8	51.2	41.9	33.0	13.2	8.6	7.8	10.7	9.3	8.3
LnGrp LOS	D	D	C	D	D	C	B	A	A	B	A	A
Approach Vol, veh/h		358			560			582			837	
Approach Delay, s/veh		40.2			42.7			9.1			9.2	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.4		37.6		82.4		37.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		53.5		57.5		53.5		57.5				
Max Q Clear Time (g_c+I1), s		17.8		30.3		11.7		29.8				
Green Ext Time (p_c), s		4.2		2.1		6.0		3.2				
Intersection Summary												
HCM 6th Ctrl Delay				22.0								
HCM 6th LOS				C								

Timings
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)













2045 Total PM
06/13/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	325	80	140	265	105	110	935	95	85	720	135
Future Volume (vph)	165	325	80	140	265	105	110	935	95	85	720	135
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	51.0	51.0	51.0	51.0	51.0	51.0	69.0	69.0	69.0	69.0	69.0	69.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	32.4	32.4	32.4	32.4	32.4	32.4	78.6	78.6	78.6	78.6	78.6	78.6
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.66	0.66	0.66	0.66	0.66	0.66
v/c Ratio	0.98	0.70	0.18	1.16	0.57	0.23	0.31	0.44	0.10	0.32	0.34	0.14
Control Delay	102.6	47.6	8.4	165.5	41.0	9.7	14.2	12.2	3.5	15.9	11.0	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.6	47.6	8.4	165.5	41.0	9.7	14.2	12.2	3.5	15.9	11.0	2.3
LOS	F	D	A	F	D	A	B	B	A	B	B	A
Approach Delay		58.0			68.7			11.7			10.2	
Approach LOS		E			E			B			B	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 28.8
 Intersection Capacity Utilization 70.4%
 Analysis Period (min) 15

Splits and Phases: 16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

					
Ø2 (R)			Ø4		
69 s			51 s		
					
Ø6 (R)			Ø8		
69 s			51 s		

HCM 6th Signalized Intersection Summary
16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

2045 Total PM
06/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	325	80	140	265	105	110	935	95	85	720	135
Future Volume (veh/h)	165	325	80	140	265	105	110	935	95	85	720	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	353	87	152	288	114	120	1016	103	92	783	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	622	527	242	622	527	389	2105	939	276	2105	939
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.59	0.59	0.59	0.59	0.59	0.59
Sat Flow, veh/h	983	1870	1585	1028	1870	1585	691	3554	1585	503	3554	1585
Grp Volume(v), veh/h	179	353	87	152	288	114	120	1016	103	92	783	147
Grp Sat Flow(s),veh/h/ln	983	1870	1585	1028	1870	1585	691	1777	1585	503	1777	1585
Q Serve(g_s), s	21.1	18.6	4.7	17.1	14.6	6.2	13.2	19.6	3.4	15.3	13.8	5.0
Cycle Q Clear(g_c), s	35.6	18.6	4.7	35.8	14.6	6.2	27.0	19.6	3.4	34.9	13.8	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	622	527	242	622	527	389	2105	939	276	2105	939
V/C Ratio(X)	0.67	0.57	0.16	0.63	0.46	0.22	0.31	0.48	0.11	0.33	0.37	0.16
Avail Cap(c_a), veh/h	322	725	614	299	725	614	389	2105	939	276	2105	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	32.9	28.3	47.6	31.6	28.8	19.9	14.0	10.7	23.9	12.8	11.0
Incr Delay (d2), s/veh	4.0	0.8	0.1	2.8	0.5	0.2	2.0	0.8	0.2	3.2	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	8.6	1.8	4.6	6.7	2.4	2.3	7.9	1.2	2.1	5.5	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	33.7	28.4	50.5	32.1	29.0	21.9	14.8	10.9	27.2	13.3	11.3
LnGrp LOS	D	C	C	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h	619			554			1239			1022		
Approach Delay, s/veh	37.6			36.5			15.1			14.3		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	75.6			44.4			75.6			44.4		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	64.5			46.5			64.5			46.5		
Max Q Clear Time (g_c+l1), s	29.0			37.6			36.9			37.8		
Green Ext Time (p_c), s	11.1			2.3			8.2			1.9		
Intersection Summary												
HCM 6th Ctrl Delay	22.4											
HCM 6th LOS	C											

HCM 6th TWSC
17: Kiowa-Bennett Road (SH-79) & RIRO Access

2030 Total AM
06/13/2022

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗	↗		↗
Traffic Vol, veh/h	0	10	233	43	0	336
Future Vol, veh/h	0	10	233	43	0	336
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	253	47	0	365

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	253	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.22	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.318	-
Pot Cap-1 Maneuver	0	786	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	786	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	786
HCM Lane V/C Ratio	-	-	0.014
HCM Control Delay (s)	-	-	9.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

HCM 6th TWSC
17: Kiowa-Bennett Road (SH-79) & RIRO Access

2030 Total PM
06/13/2022

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗	↗		↗
Traffic Vol, veh/h	0	14	606	130	0	570
Future Vol, veh/h	0	14	606	130	0	570
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	659	141	0	620

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	659	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.22	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.318	-
Pot Cap-1 Maneuver	0	464	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	464	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	464
HCM Lane V/C Ratio	-	-	0.033
HCM Control Delay (s)	-	-	13
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗	↗		↗
Traffic Vol, veh/h	0	10	260	45	0	385
Future Vol, veh/h	0	10	260	45	0	385
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	283	49	0	418

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	283	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.22	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.318	-
Pot Cap-1 Maneuver	0	756	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	756	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	756
HCM Lane V/C Ratio	-	-	0.014
HCM Control Delay (s)	-	-	9.8
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗	↗		↗
Traffic Vol, veh/h	0	15	660	130	0	615
Future Vol, veh/h	0	15	660	130	0	615
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	717	141	0	668

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	717	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.22	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.318	-
Pot Cap-1 Maneuver	0	430	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	430	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

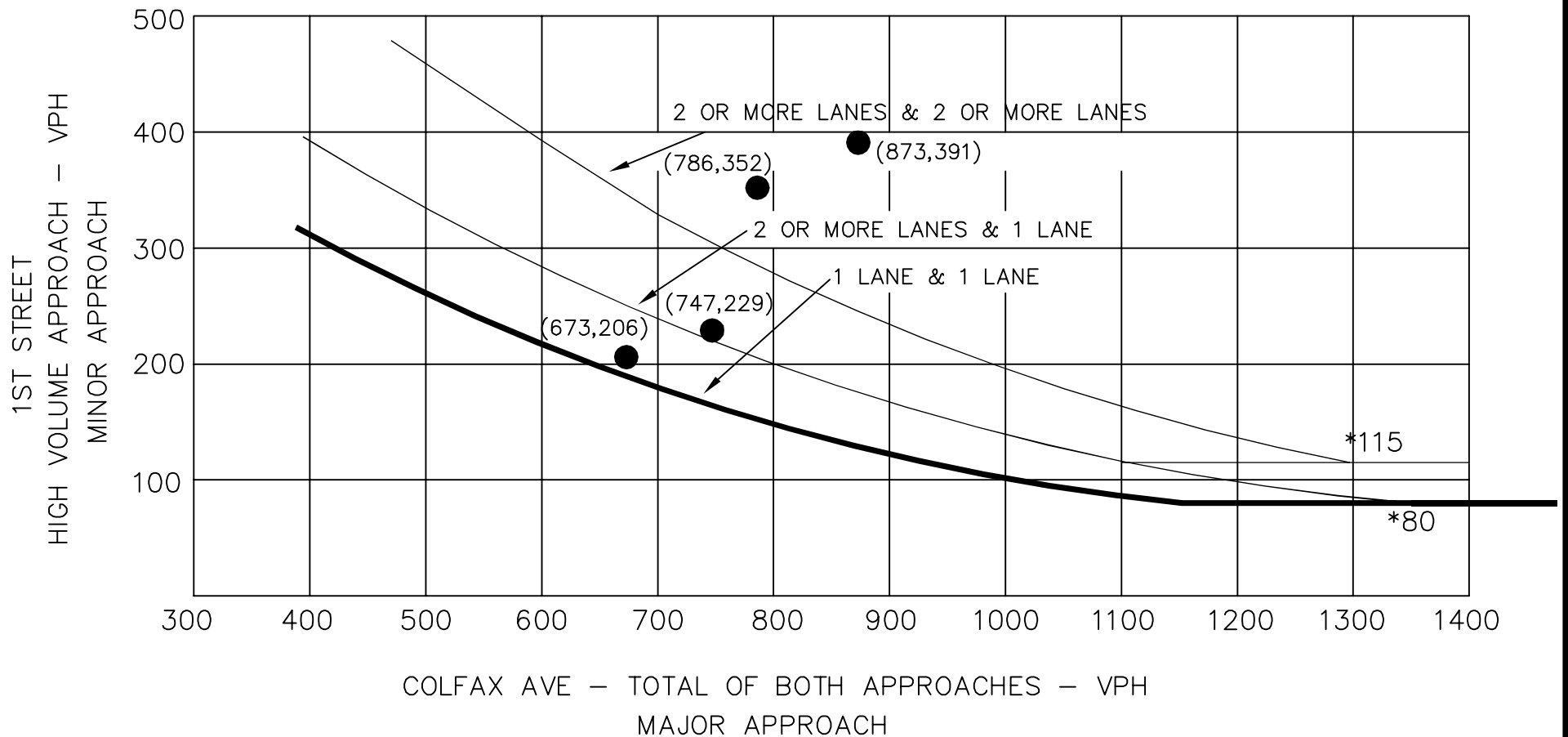
Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	430	-
HCM Lane V/C Ratio	-	0.038	-
HCM Control Delay (s)	-	13.7	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

APPENDIX E

Signal Warrant Worksheets

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

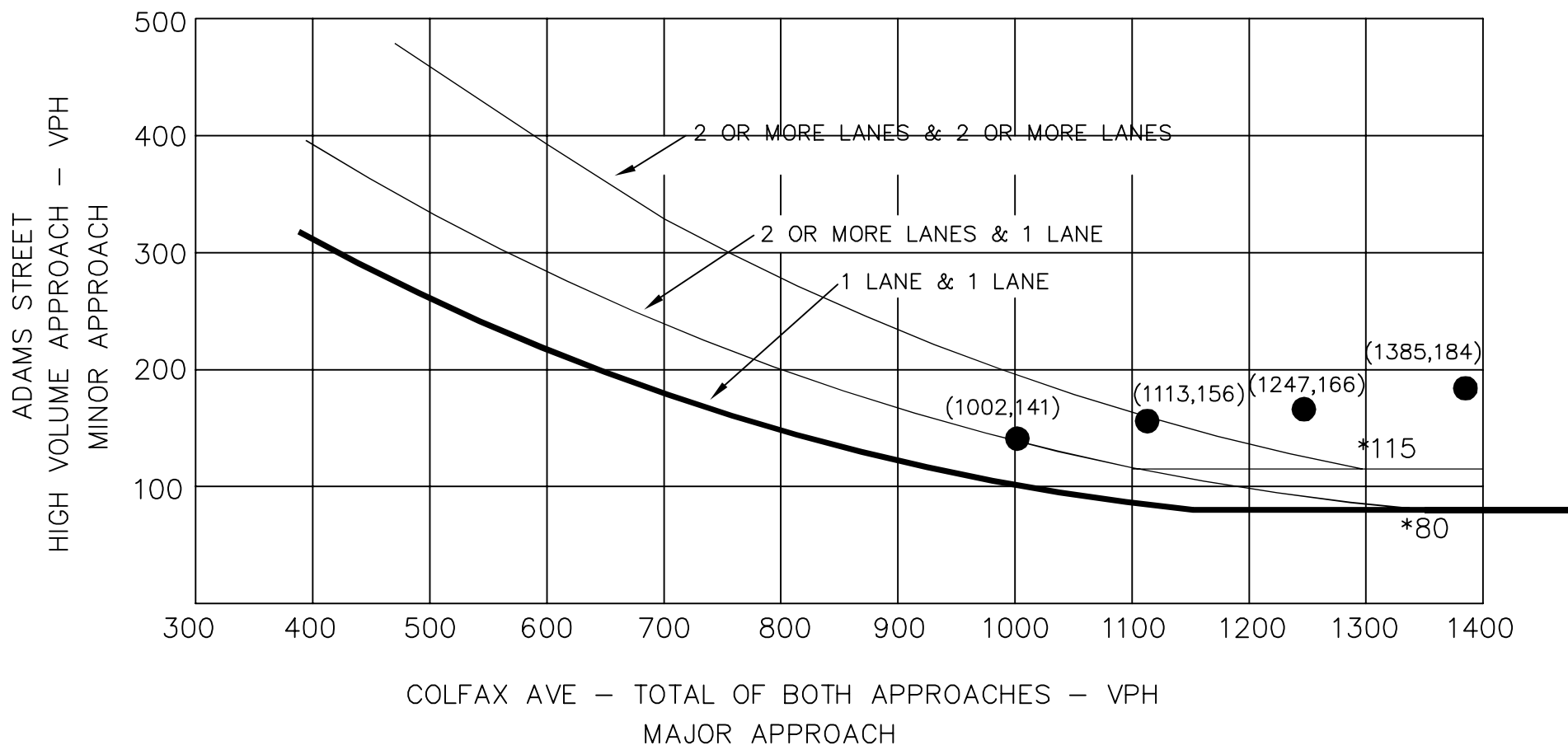
SIGNAL WARRANT ANALYSIS
COLFAX AVENUE & 1ST STREET
FOUR HOUR VOLUME WARRANT

● 2030 BACKGROUND TRAFFIC DATA POINT

Source: Manual of Uniform Traffic Control Devices 2009

FIGURE A

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

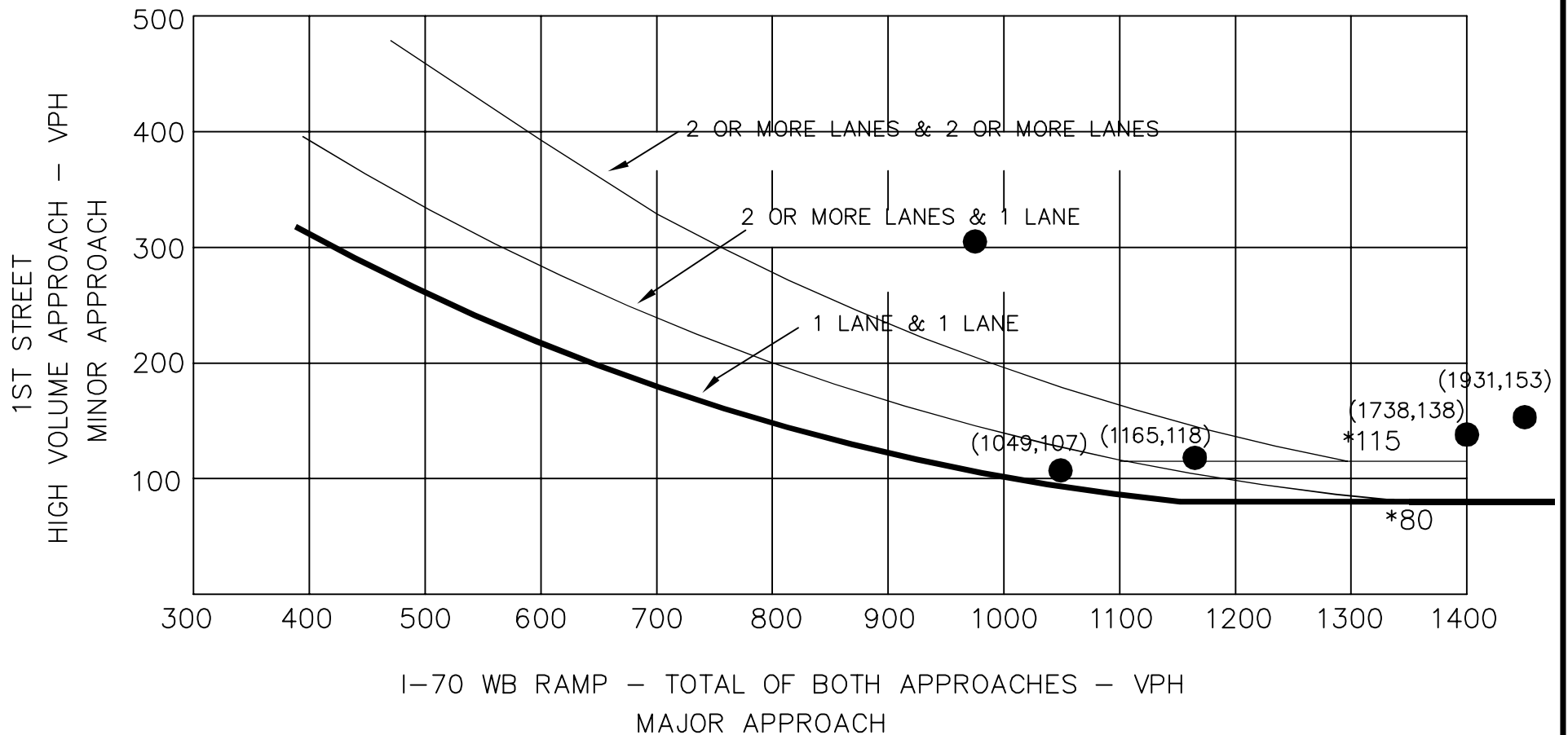
SIGNAL WARRANT ANALYSIS
COLFAX AVENUE & ADAMS STREET
FOUR HOUR VOLUME WARRANT

● 2030 BACKGROUND TRAFFIC DATA POINT

Source: Manual of Uniform Traffic Control Devices 2009

FIGURE B

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SIGNAL WARRANT ANALYSIS
I-70 WESTBOUND RAMP & 1ST ST
FOUR HOUR VOLUME WARRANT

● 2030 TOTAL TRAFFIC DATA POINT

Source: Manual of Uniform Traffic Control Devices 2009

FIGURE C

APPENDIX F

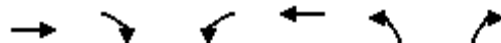
Queue Analysis Worksheets

Queues

2030 Total AM - Improved

4: 1st Street (SH-79) & Colfax Ave (SH-36)

06/13/2022



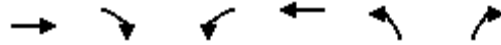
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	118	57	993	134	41	630
v/c Ratio	0.18	0.10	0.80	0.10	0.14	0.40
Control Delay	29.6	8.3	39.4	4.1	38.4	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	8.3	39.4	4.1	38.4	1.3
Queue Length 50th (ft)	63	0	351	24	30	19
Queue Length 95th (ft)	99	22	386	33	54	2
Internal Link Dist (ft)	618			1559	4937	
Turn Bay Length (ft)		125	360			
Base Capacity (vph)	661	598	1702	1405	302	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.10	0.58	0.10	0.14	0.40
Intersection Summary						

Queues

2030 Total PM - Improved

4: 1st Street (SH-79) & Colfax Ave (SH-36)

06/13/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	211	100	1178	162	48	1373
v/c Ratio	0.37	0.18	0.82	0.11	0.17	0.87
Control Delay	36.5	7.6	36.1	3.9	41.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	7.6	36.1	3.9	41.4	10.1
Queue Length 50th (ft)	128	0	409	28	30	1026
Queue Length 95th (ft)	203	38	440	42	m37	1237
Internal Link Dist (ft)	618			1559	4937	
Turn Bay Length (ft)		125	360			
Base Capacity (vph)	573	556	1702	1420	287	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.18	0.69	0.11	0.17	0.87

Intersection Summary

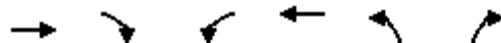
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

4: 1st Street (SH-79) & Colfax Ave (SH-36)

06/13/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	234	185	446	196	125	342
v/c Ratio	0.25	0.21	0.73	0.15	0.35	0.22
Control Delay	18.6	3.2	51.1	5.7	38.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	3.2	51.1	5.7	38.2	0.3
Queue Length 50th (ft)	99	0	151	41	94	0
Queue Length 95th (ft)	167	40	192	72	159	0
Internal Link Dist (ft)	618			1559	4937	
Turn Bay Length (ft)		125	360			
Base Capacity (vph)	939	890	1559	1342	361	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.21	0.29	0.15	0.35	0.22
Intersection Summary						

Queues

2045 Total PM

4: 1st Street (SH-79) & Colfax Ave (SH-36)

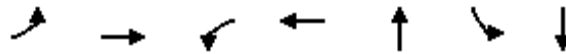
06/13/2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	413	217	505	228	152	522
v/c Ratio	0.44	0.25	0.75	0.17	0.46	0.33
Control Delay	21.8	8.4	51.8	6.0	41.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	8.4	51.8	6.0	41.0	0.2
Queue Length 50th (ft)	198	35	185	57	101	0
Queue Length 95th (ft)	311	90	228	m79	m108	m0
Internal Link Dist (ft)	618			1559	4937	
Turn Bay Length (ft)		125	360			
Base Capacity (vph)	937	860	1501	1373	331	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.25	0.34	0.17	0.46	0.33
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Queues
5: Colfax Ave (SH-36) & Adams Street

2030 Total AM - Improved

06/13/2022



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	282	614	35	1298	28	68	257
v/c Ratio	0.90	0.43	0.06	1.11	0.17	0.36	0.59
Control Delay	76.8	7.5	4.8	90.4	31.3	66.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	7.5	4.8	90.4	31.3	66.2	10.9
Queue Length 50th (ft)	218	198	5	~1476	7	62	0
Queue Length 95th (ft)	#368	193	9	#1223	30	92	11
Internal Link Dist (ft)		1559		1205	168		133
Turn Bay Length (ft)	150		150			150	
Base Capacity (vph)	338	1426	572	1166	163	191	435
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.43	0.06	1.11	0.17	0.36	0.59

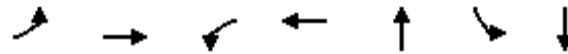
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Colfax Ave (SH-36) & Adams Street

2030 Total PM - Improved

06/13/2022



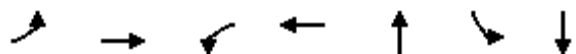
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	223	1509	44	1252	57	75	295
v/c Ratio	1.00	1.07	0.36	0.99	0.32	0.48	0.79
Control Delay	105.5	63.9	20.1	45.2	19.9	72.5	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.5	63.9	20.1	45.2	19.9	72.5	35.4
Queue Length 50th (ft)	170	~1653	7	1103	2	69	86
Queue Length 95th (ft)	#350	#1699	26	#1330	40	118	169
Internal Link Dist (ft)		1559		1205	168		133
Turn Bay Length (ft)	150		150			150	
Base Capacity (vph)	224	1414	126	1269	177	156	375
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.07	0.35	0.99	0.32	0.48	0.79

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Colfax Ave (SH-36) & Adams Street

2045 Total AM
06/13/2022



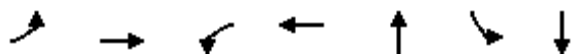
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	370	201	43	614	32	141	413
v/c Ratio	0.66	0.14	0.06	0.57	0.11	0.64	0.51
Control Delay	19.1	1.3	6.8	8.2	27.4	60.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	1.3	6.8	8.2	27.4	60.9	2.2
Queue Length 50th (ft)	49	10	6	81	11	103	0
Queue Length 95th (ft)	158	15	20	163	40	#175	0
Internal Link Dist (ft)		1559		1205	168		133
Turn Bay Length (ft)	150		150			150	
Base Capacity (vph)	614	1420	724	1086	295	222	815
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.14	0.06	0.57	0.11	0.64	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Colfax Ave (SH-36) & Adams Street

2045 Total PM
06/13/2022



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	565	413	38	576	81	185	521
v/c Ratio	0.90	0.29	0.07	0.57	0.66	0.99	0.78
Control Delay	36.8	3.4	10.3	13.2	48.0	114.5	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	3.4	10.3	13.2	48.0	114.5	13.8
Queue Length 50th (ft)	194	53	9	146	23	145	11
Queue Length 95th (ft)	#403	71	27	255	#102	#295	133
Internal Link Dist (ft)		1559		1205	168		133
Turn Bay Length (ft)	150		150			150	
Base Capacity (vph)	648	1431	550	1013	123	187	670
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.29	0.07	0.57	0.66	0.99	0.78

Intersection Summary












95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

2030 Total AM

6: 1st Street (SH-79) & Marketplace Drive

06/13/2022

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	32	221	1	1	1	214	522	16	6	928	103
v/c Ratio	0.31	0.69	0.02	0.01	0.01	0.49	0.33	0.01	0.01	0.59	0.08
Control Delay	58.9	18.5	49.0	48.0	0.0	14.1	6.1	1.5	2.0	4.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	18.5	49.0	48.0	0.0	14.1	6.1	1.5	2.0	4.8	0.5
Queue Length 50th (ft)	24	1	1	1	0	70	221	1	0	143	0
Queue Length 95th (ft)	55	75	6	6	0	156	321	m6	3	314	9
Internal Link Dist (ft)		437		554			1078			4937	
Turn Bay Length (ft)			150		150	300			350		
Base Capacity (vph)	211	424	125	279	249	437	1585	1349	725	1585	1363
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.52	0.01	0.00	0.00	0.49	0.33	0.01	0.01	0.59	0.08
Intersection Summary											
m Volume for 95th percentile queue is metered by upstream signal.											

Queues

2030 Total PM

6: 1st Street (SH-79) & Marketplace Drive

06/13/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	84	322	13	1	18	375	1325	2	1053	113
v/c Ratio	0.47	0.90	0.21	0.00	0.08	1.28	0.89	0.00	0.71	0.09
Control Delay	56.8	49.2	53.7	43.0	18.9	171.7	30.5	0.5	9.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	49.2	53.7	43.0	18.9	171.7	30.5	0.5	9.5	0.7
Queue Length 50th (ft)	60	106	9	1	0	~297	996	0	354	0
Queue Length 95th (ft)	112	#256	30	6	22	m#390	m1085	m0	505	12
Internal Link Dist (ft)		437		554			1078		4937	
Turn Bay Length (ft)			150		150	300				
Base Capacity (vph)	211	393	74	279	252	294	1489	1267	1489	1288
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.82	0.18	0.00	0.07	1.28	0.89	0.00	0.71	0.09

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
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- m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

6: 1st Street (SH-79) & Marketplace Drive

06/13/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	291	5	5	5	276	583	21	10	1021	130
v/c Ratio	0.27	0.85	0.08	0.02	0.03	0.82	0.38	0.02	0.02	0.67	0.10
Control Delay	51.2	39.7	47.4	44.2	8.4	45.7	11.2	3.8	2.0	11.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	39.7	47.4	44.2	8.4	45.7	11.2	3.8	2.0	11.1	0.2
Queue Length 50th (ft)	30	75	4	4	0	193	311	3	1	277	0
Queue Length 95th (ft)	64	175	16	15	6	#339	453	m8	3	355	0
Internal Link Dist (ft)		437		554			1078			4937	
Turn Bay Length (ft)			150		150	300			350		
Base Capacity (vph)	216	407	87	287	255	336	1519	1295	633	1519	1315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.71	0.06	0.02	0.02	0.82	0.38	0.02	0.02	0.67	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

6: 1st Street (SH-79) & Marketplace Drive

06/13/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	97	414	16	5	27	484	1419	5	1140	134
v/c Ratio	0.46	1.12	0.26	0.02	0.10	2.34	0.98	0.00	0.79	0.11
Control Delay	54.6	111.2	56.9	43.8	16.4	633.4	33.2	0.0	18.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	111.2	56.9	43.8	16.4	633.4	33.2	0.0	18.4	0.5
Queue Length 50th (ft)	70	~257	11	3	0	~609	1145	0	377	0
Queue Length 95th (ft)	126	#459	35	16	27	#805	#1417	m0	511	2
Internal Link Dist (ft)		437		554			1078		4937	
Turn Bay Length (ft)			150		150	300				
Base Capacity (vph)	210	371	62	279	260	207	1443	1229	1443	1256
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	1.12	0.26	0.02	0.10	2.34	0.98	0.00	0.79	0.11

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
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- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

2030 Total AM - Improved

7: 1st Street (SH-79) & I-70 WB Ramp

06/13/2022



Lane Group	WBT	NBT	SBT
Lane Group Flow (vph)	233	388	878
v/c Ratio	0.74	0.25	0.60
Control Delay	23.8	6.8	7.9
Queue Delay	0.0	0.6	0.0
Total Delay	23.8	7.5	7.9
Queue Length 50th (ft)	18	95	310
Queue Length 95th (ft)	96	220	330
Internal Link Dist (ft)	448	381	1078
Turn Bay Length (ft)			
Base Capacity (vph)	475	1555	1471
Starvation Cap Reductn	0	803	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.49	0.52	0.60
Intersection Summary			

Queues

2030 Total PM - Improved

7: 1st Street (SH-79) & I-70 WB Ramp

06/13/2022



Lane Group	WBT	NBT	SBT
Lane Group Flow (vph)	315	937	1117
v/c Ratio	0.83	0.64	0.80
Control Delay	36.9	18.7	17.2
Queue Delay	0.2	39.7	1.6
Total Delay	37.1	58.4	18.8
Queue Length 50th (ft)	90	531	489
Queue Length 95th (ft)	182	m529	#940
Internal Link Dist (ft)	448	381	1078
Turn Bay Length (ft)			
Base Capacity (vph)	498	1472	1401
Starvation Cap Reductn	0	599	2
Spillback Cap Reductn	15	40	138
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.65	1.07	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

7: 1st Street (SH-79) & I-70 WB Ramp

06/13/2022



Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	287	11	451	293	750
v/c Ratio	0.78	0.01	0.15	0.19	0.52
Control Delay	24.0	4.5	3.1	3.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	4.5	3.1	3.7	2.6
Queue Length 50th (ft)	24	1	16	48	45
Queue Length 95th (ft)	110	9	76	105	96
Internal Link Dist (ft)	448		381	1078	
Turn Bay Length (ft)		50			
Base Capacity (vph)	524	910	2978	1567	1451
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.01	0.15	0.19	0.52
Intersection Summary					

Queues

2045 Total PM

7: 1st Street (SH-79) & I-70 WB Ramp

06/13/2022



Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	377	11	1080	633	681
v/c Ratio	0.88	0.02	0.42	0.47	0.51
Control Delay	51.4	16.7	28.8	10.1	2.2
Queue Delay	0.4	0.0	8.7	0.0	0.0
Total Delay	51.8	16.7	37.5	10.2	2.2
Queue Length 50th (ft)	188	6	454	237	43
Queue Length 95th (ft)	299	m9	524	m273	m36
Internal Link Dist (ft)	448		381	1078	
Turn Bay Length (ft)		50			
Base Capacity (vph)	500	488	2574	1355	1337
Starvation Cap Reductn	0	0	1457	0	0
Spillback Cap Reductn	11	0	317	56	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.02	0.97	0.49	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2030 Total AM

8: 1st Street (SH-79) & I-70 EB Ramp

06/13/2022

	→	↑	↓
Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	332	75	262
v/c Ratio	0.79	0.06	0.28
Control Delay	54.4	6.4	9.4
Queue Delay	0.0	0.0	0.0
Total Delay	54.4	6.4	9.4
Queue Length 50th (ft)	234	14	70
Queue Length 95th (ft)	308	38	148
Internal Link Dist (ft)	219	702	381
Turn Bay Length (ft)			
Base Capacity (vph)	768	1265	931
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.43	0.06	0.28
Intersection Summary			

Queues

2030 Total PM

8: 1st Street (SH-79) & I-70 EB Ramp

06/13/2022



Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	906	101	533
v/c Ratio	1.01	0.13	0.99
Control Delay	63.7	18.4	68.9
Queue Delay	0.0	0.0	0.0
Total Delay	63.7	18.4	68.9
Queue Length 50th (ft)	~708	39	369
Queue Length 95th (ft)	#990	76	m#640
Internal Link Dist (ft)	219	702	381
Turn Bay Length (ft)			
Base Capacity (vph)	894	768	536
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.01	0.13	0.99

Intersection Summary

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Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

8: 1st Street (SH-79) & I-70 EB Ramp

06/13/2022



Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	386	11	98	245	76
v/c Ratio	0.70	0.01	0.07	0.25	0.05
Control Delay	54.2	0.0	3.8	4.1	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	0.0	3.8	4.1	3.3
Queue Length 50th (ft)	147	0	14	28	8
Queue Length 95th (ft)	189	0	33	76	m24
Internal Link Dist (ft)		219	702		381
Turn Bay Length (ft)	150			300	
Base Capacity (vph)	1473	1191	1394	987	1423
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.01	0.07	0.25	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

8: 1st Street (SH-79) & I-70 EB Ramp

06/13/2022



Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	1027	22	136	565	92
v/c Ratio	0.89	0.04	0.13	0.77	0.08
Control Delay	48.7	16.8	10.0	16.3	6.0
Queue Delay	48.3	0.0	0.1	0.0	0.0
Total Delay	97.0	16.8	10.0	16.3	6.0
Queue Length 50th (ft)	376	6	38	310	9
Queue Length 95th (ft)	462	24	69	494	m27
Internal Link Dist (ft)		219	702		381
Turn Bay Length (ft)	150			300	
Base Capacity (vph)	1215	617	1071	736	1099
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	286	0	260	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.11	0.04	0.17	0.77	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

06/13/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	49	293	16	109	386	65	82	435	65	71	630	136
v/c Ratio	0.46	0.58	0.04	0.61	0.77	0.14	0.17	0.19	0.06	0.12	0.27	0.13
Control Delay	47.3	39.8	11.4	51.6	50.2	7.2	11.2	9.4	2.8	10.3	10.0	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	39.8	11.4	51.6	50.2	7.2	11.2	9.4	2.8	10.3	10.0	2.1
Queue Length 50th (ft)	36	215	2	74	276	0	23	64	0	19	98	0
Queue Length 95th (ft)	m0	319	m11	125	343	30	60	112	20	50	165	27
Internal Link Dist (ft)		696			577			472			2225	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	191	892	766	317	892	792	472	2319	1059	597	2319	1084
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.33	0.02	0.34	0.43	0.08	0.17	0.19	0.06	0.12	0.27	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

16: Colfax Ave (SH-36) & Kiowa-Bennett Road (SH-79)

06/13/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	179	353	87	152	288	114	120	1016	103	92	783	147
v/c Ratio	0.98	0.70	0.18	1.16	0.57	0.23	0.31	0.44	0.10	0.32	0.34	0.14
Control Delay	102.6	47.6	8.4	165.5	41.0	9.7	14.2	12.2	3.5	15.9	11.0	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.6	47.6	8.4	165.5	41.0	9.7	14.2	12.2	3.5	15.9	11.0	2.3
Queue Length 50th (ft)	~148	280	10	~140	194	15	36	181	4	28	127	0
Queue Length 95th (ft)	m188	m321	m31	#231	238	50	100	314	32	86	226	30
Internal Link Dist (ft)		696			577			472			2225	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	262	721	665	189	721	667	390	2318	1067	287	2318	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.49	0.13	0.80	0.40	0.17	0.31	0.44	0.10	0.32	0.34	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX G

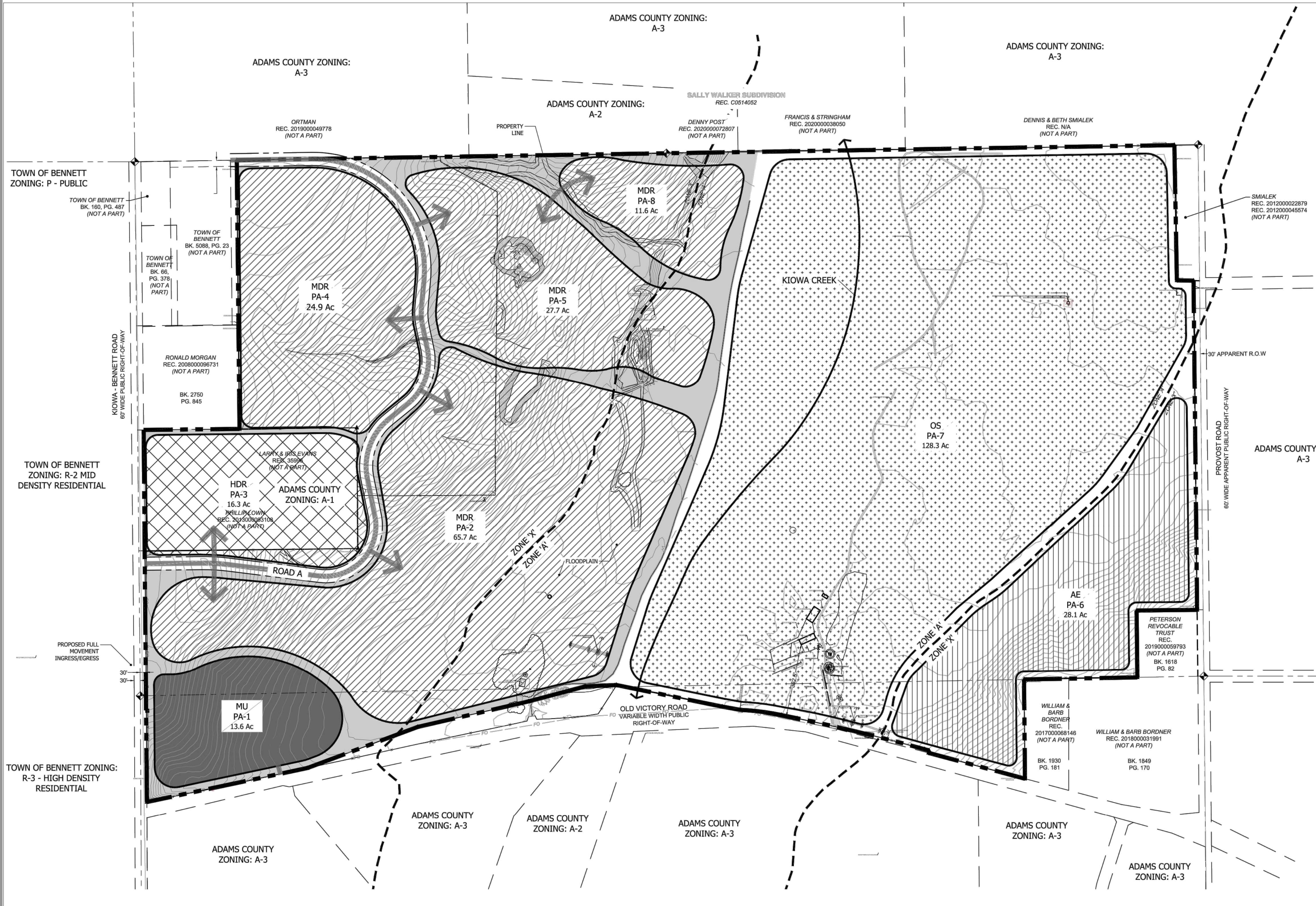
Conceptual Site Plan

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 2 OF 7



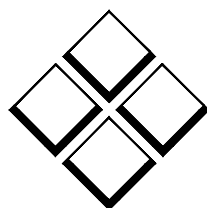
KIOWA CREEK PRESERVE

PD - ZONING SUMMARY TABLE

	PLANNING AREA	AREA (ACRES)	COMMERCIAL (SQ.FT.)	ZONING	ZONING DESCRIPTION	% OF TOTAL	MAX. RESIDENTIAL DENSITY (DU/AC)	RESIDENTIAL UNITS
	PA-1	13.6	164,000	MU	Mixed Use District	4.2%	20	136
	PA-2	65.7		MDR	Medium Density Residential District	20.4%	5	329
	PA-3	16.3		HDR	High Density Residential District	5.1%	15	245
	PA-4	24.9		MDR	Medium Density Residential District	7.7%	5	125
	PA-5	27.7		MDR	Medium Density Residential District	8.6%	5	139
	PA-6	28.1		AE	Agriculture - Education	8.7%		
	PA-8	11.6		MDR	Medium Density Residential District	3.6%	5	58
	Total Planning Area		132.1					
	OPEN SPACE							
	PA-7	128.3		OS	Agriculture: Park/ Open Space	39.9%		
	Public ROW	5.5				1.7%		
	TOTAL PD AREA		321.7			100.0%		1030

- ROAD CIRCULATION
- FLOODPLAIN
- PROPERTY LINE

SCALE: NTS



VOGEL & ASSOCIATES
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

ZONE DISTRICT PLAN

Scale: N/A
Date: NOVEMBER 9, 2021
Revision Date:

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 1 OF 7

LEGAL DESCRIPTION:

A PARCEL OF LAND BEING A PORTION OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 26, THENCE N 89°04'52" E, ALONG THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 505.53 FEET TO THE NORTHEAST CORNER OF THAT DEED RECORDED IN BOOK 5088, PAGE 23, IN THE RECORDS OF THE ADAMS COUNTY CLERK AND RECORDER'S OFFICE, AND THE POINT OF BEGINNING;
THENCE N 89°04'52" E, CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 2131.00 FEET TO THE NORTH QUARTER CORNER OF SAID SECTION 26;
THENCE N 89°05'05" E, ALONG THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 26, A DISTANCE OF 2519.12 FEET TO THE NORTHWEST CORNER OF THOSE DEEDS RECORDED AT RECEPTION NOS. 2012000045574 & 2012000022879, SAID ADAMS COUNTY RECORDS;
THENCE S 01°03'51" E, ALONG THE WEST LINE OF SAID DEEDS, A DISTANCE OF 671.30 FEET;
THENCE S 89°07'59" E, ALONG THE SOUTH LINE OF SAID DEEDS, A DISTANCE OF 82.50 FEET TO A POINT BEING 30.00 FEET WEST OF THE EAST LINE OF THE NE 1/4 OF SAID SECTION 26;
THENCE S 00°37'19" E, ALONG A LINE BEING 30.00 FEET WEST OF AND PARALLEL TO THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 26, A DISTANCE OF 1632.35 FEET TO A POINT ON THE NORTH LINE OF THAT DEED RECORDED AT RECEPTION NO. 2019000059793, SAID ADAMS COUNTY RECORDS;
THENCE ALONG THE NORTH AND WEST LINES OF SAID DEED, THE FOLLOWING TWO (2) COURSES:

1. S 89°22'41" W, A DISTANCE OF 300.00 FEET;
2. S 00°37'19" E, A DISTANCE OF 332.51 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 26, ALSO BEING A POINT ON THE NORTH LINE OF THAT DEED RECORDED AT RECEPTION NO. 2018000031991, SAID ADAMS COUNTY RECORDS;

THENCE S 88°56'30" W, ALONG THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 26, A DISTANCE OF 562.00 FEET TO THE NORTHWEST CORNER OF THAT SPECIAL WARRANTY DEED RECORDED AT RECEPTION NO. 2017000068146, SAID ADAMS COUNTY RECORDS;
THENCE S 00°33'05" E, ALONG THE WEST LINE OF SAID DEED, A DISTANCE OF 490.63 FEET TO A POINT ON THE NORTH LINE OF THE OLD VICTORY ROAD RIGHT-OF-WAY;
THENCE N 75°03'29" W, ALONG SAID NORTH LINE, A DISTANCE OF 495.19 FEET TO THE SOUTHEAST CORNER OF THAT DEED RECORDED IN BOOK 4575, PAGE 808;
THENCE ALONG THE NORTH LINE OF SAID DEED, THE FOLLOWING FIVE (5) COURSES:

1. N 15°26'33" E, A DISTANCE OF 12.16 FEET;
2. N 74°33'27" W, A DISTANCE OF 22.81 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 10,040.00 FEET, A CENTRAL ANGLE OF 03°42'44" AND AN ARC LENGTH OF 650.50 FEET;
4. N 78°16'11" W, A DISTANCE OF 80.55 FEET TO A POINT OF CURVATURE;
5. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1,290.00 FEET, A CENTRAL ANGLE OF 09°06'20" AND AN ARC LENGTH OF 205.01 FEET TO A POINT ON THE NORTH LINE OF THE OLD VICTORY ROAD RIGHT-OF-WAY;

THENCE ALONG THE NORTH LINE OF SAID OLD VICTORY ROAD RIGHT-OF-WAY, THE FOLLOWING SEVEN (7) COURSES:

1. N 79°51'44" W, A DISTANCE OF 90.66 FEET;
2. N 78°29'52" W, A DISTANCE OF 535.92 FEET;
3. S 87°28'06" W, A DISTANCE OF 155.86 FEET;
4. S 75°11'48" W, A DISTANCE OF 290.21 FEET;
5. S 77°04'37" W, A DISTANCE OF 563.24 FEET;
6. S 69°38'15" W, A DISTANCE OF 584.13 FEET;
7. S 78°04'46" W, A DISTANCE OF 813.15 FEET TO A POINT BEING 30.00 FEET EAST OF THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 26, AND A POINT ON THE EAST LINE OF THE KIOWA-BENNETT ROAD RIGHT-OF-WAY;

THENCE N 00°16'23" W, ALONG THE EAST LINE OF SAID KIOWA-BENNETT ROAD RIGHT-OF-WAY, AND ALONG A LINE BEING 30.00 FEET EAST OF AND PARALLEL TO THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 525.38 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 26;
THENCE N 00°35'24" W, ALONG THE EAST LINE OF SAID KIOWA-BENNETT ROAD RIGHT-OF-WAY, AND ALONG A LINE BEING 30.00 FEET EAST OF AND PARALLEL TO THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 715.50 FEET;

THENCE N 89°13'20" E, A DISTANCE OF 10.00 FEET TO THE SOUTHWEST CORNER OF LOT 2, LANCASTER RANCH SUBDIVISION FILING NO. 2, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. B1028280, SAID ADAMS COUNTY RECORDS;
THENCE N 00°35'24" W, ALONG THE WEST LINE OF SAID LOT 2 AND ALONG A LINE BEING 40.00 FEET EAST OF THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 280.56 FEET TO THE SOUTHWEST CORNER OF LOT 1, SAID LANCASTER RANCH SUBDIVISION FILING NO. 2;
THENCE ALONG THE SOUTH, EAST AND NORTH LINES OF SAID LOT 1, THE FOLLOWING THREE (3) COURSES:
1. N 89°13'20" E, A DISTANCE OF 1045.91 FEET;
2. N 00°13'45" W, A DISTANCE OF 319.02 FEET;
3. S 89°15'06" W, A DISTANCE OF 582.39 FEET TO THE SOUTHEAST CORNER OF THAT DEED RECORDED AT RECEPTION NO. 2008000096731, SAID ADAMS COUNTY RECORDS;

THENCE N 00°35'24" W, A DISTANCE OF 1335.12 FEET TO THE POINT OF BEGINNING.

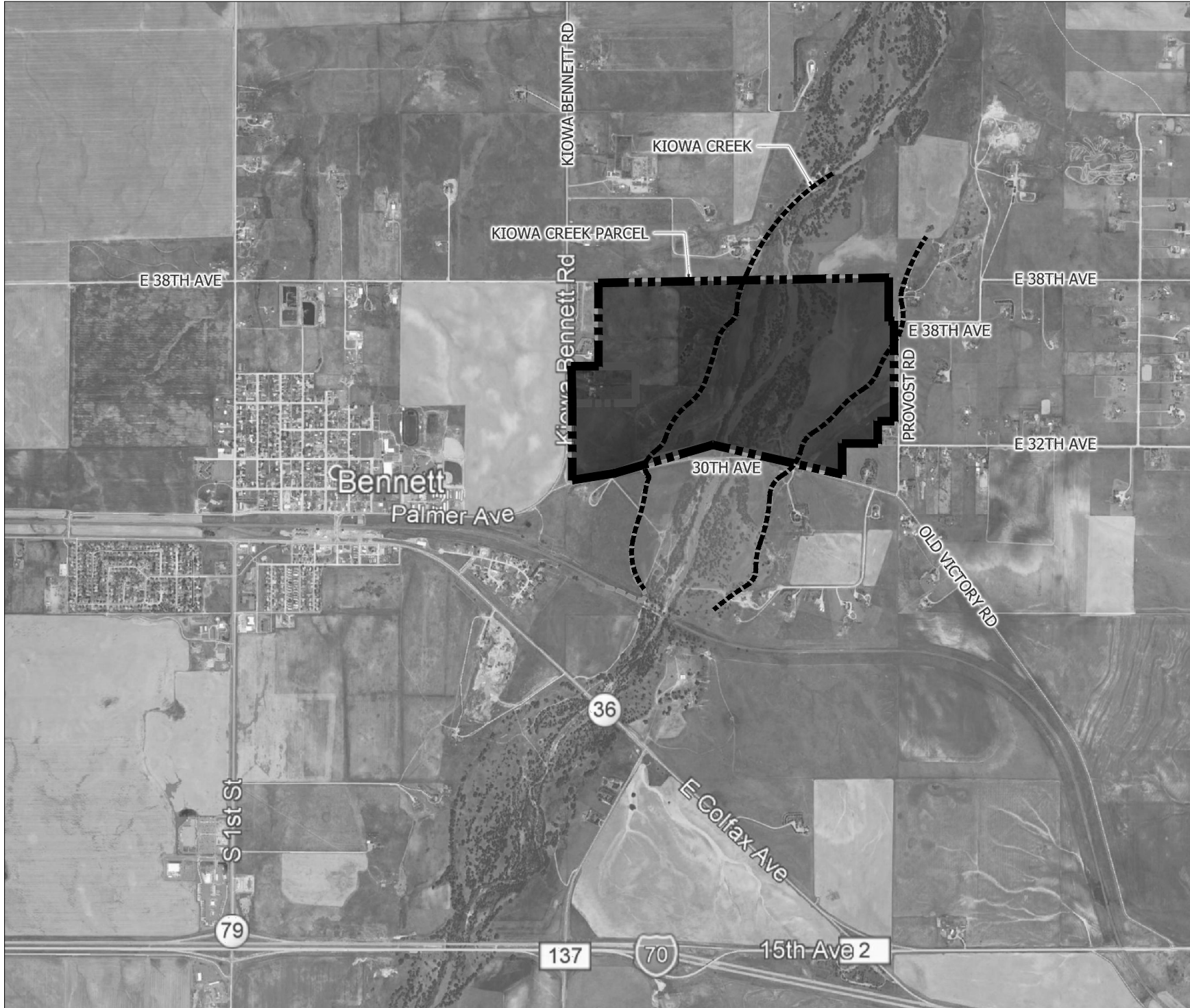
CONTAINING AN AREA OF 13,672,432 SQUARE FEET, OR 313.876 ACRES, MORE OR LESS.

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH P.M., BEING ASSUMED TO BEAR N 89°04'52" E, FROM THE NORTHWEST CORNER OF SAID SECTION 26, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP STAMPED "PLS 14108", IN A RANGE BOX, TO THE NORTH QUARTER CORNER OF SAID SECTION 26, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP, STAMPED "PLS 11389", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

PROVIDED ADDRESS

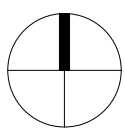
PER TITLE COMMITMENT NO. K70608564, PREPARED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY,
WITH AN EFFECTIVE DATE OF MARCH 27, 2019 AT 5:00 P.M.

TBD VACANT, BENNETT, CO 80102



VICINITY MAP

SCALE:NTS



It appears there are two different property ownership entities. Please provide signature lines and information for both.

Type out the owner's name and title, if officer of the ownership entity.

OWNER ACKNOWLEDGEMENT

BY SIGNING THIS ODP, THE OWNER ACKNOWLEDGES AND ACCEPTS ALL OF THE REQUIREMENTS AND INTENT SET FORTH HEREIN.

OWNER

Need a notary signature block here.

TOWN OF BOARD TRUSTEES APPROVAL

APPROVED BY THE TOWN BOARD OF TRUSTEES OF THE TOWN OF BENNETT, COLORADO THIS _____ DAY OF _____, 20____ BY ORDINANCE NO. _____.

MAYOR

ATTEST: TOWN CLERK

COUNTY CLERK AND RECORDER CERTIFICATE:

THIS PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF ADAMS COUNTY,

COLORADO, AT _____ O'CLOCK, _____ M, THIS _____ DAY OF _____, 20____.

RECEPTION NUMBER _____ IN FILE _____ AT MAP NUMBER _____.

ADAMS COUNTY CLERK AND RECORDER

DEPUTY

Delete File and Map Number, no longer required.

SHEET INDEX

SHEET 1 OF 7:
COVER SHEET

SHEET 2 OF 7:
ZONE DISTRICT PLAN

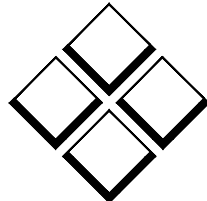
SHEET 3 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
INTRODUCTION

SHEET 4 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
HIGH DENSITY RESIDENTIAL (HDR), PA-3
MEDIUM DENSITY RESIDENTIAL (MDR), PA-2, PA-4, PA-5 and PA-8

SHEET 5 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
MEDIUM DENSITY RESIDENTIAL (MDR), PA-2, PA-4, PA-5 and PA-8
MIXED-USE DISTRICT (MU), PA-1
OPEN SPACE AND TRAILS (OS), PA-7

SHEET 6 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
OPEN SPACE AND TRAILS (OS), PA-7
AGRICULTURE EDUCATION (AE), PA-6

SHEET 7 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
LAND USE MATRIX TABLE



VOGEL & ASSOCIATES
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

PLANNER:

VOGEL & ASSOCIATES
Contact: Jeff Vogel
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

ENGINEER:

CORE CONSULTANTS INC.
Contact: Thomas M. Girard
3473 South Broadway
Englewood, Colorado 80113
303-703-4444

SURVEYOR:

CORE CONSULTANTS INC.
Contact: Jeff Anton
3473 South Broadway
Englewood, Colorado 80113
303-703-4444

OWNER:

KIOWA CREEK PRESERVE, LLC
HERDSMAN CAPITAL, LLC
PO Box 543
Bennett, CO 80102

KIOWA CREEK PRESERVE (ODP) - COVER SHEET

Scale: N/A

Date: MARCH 1, 2022

Revision Date:

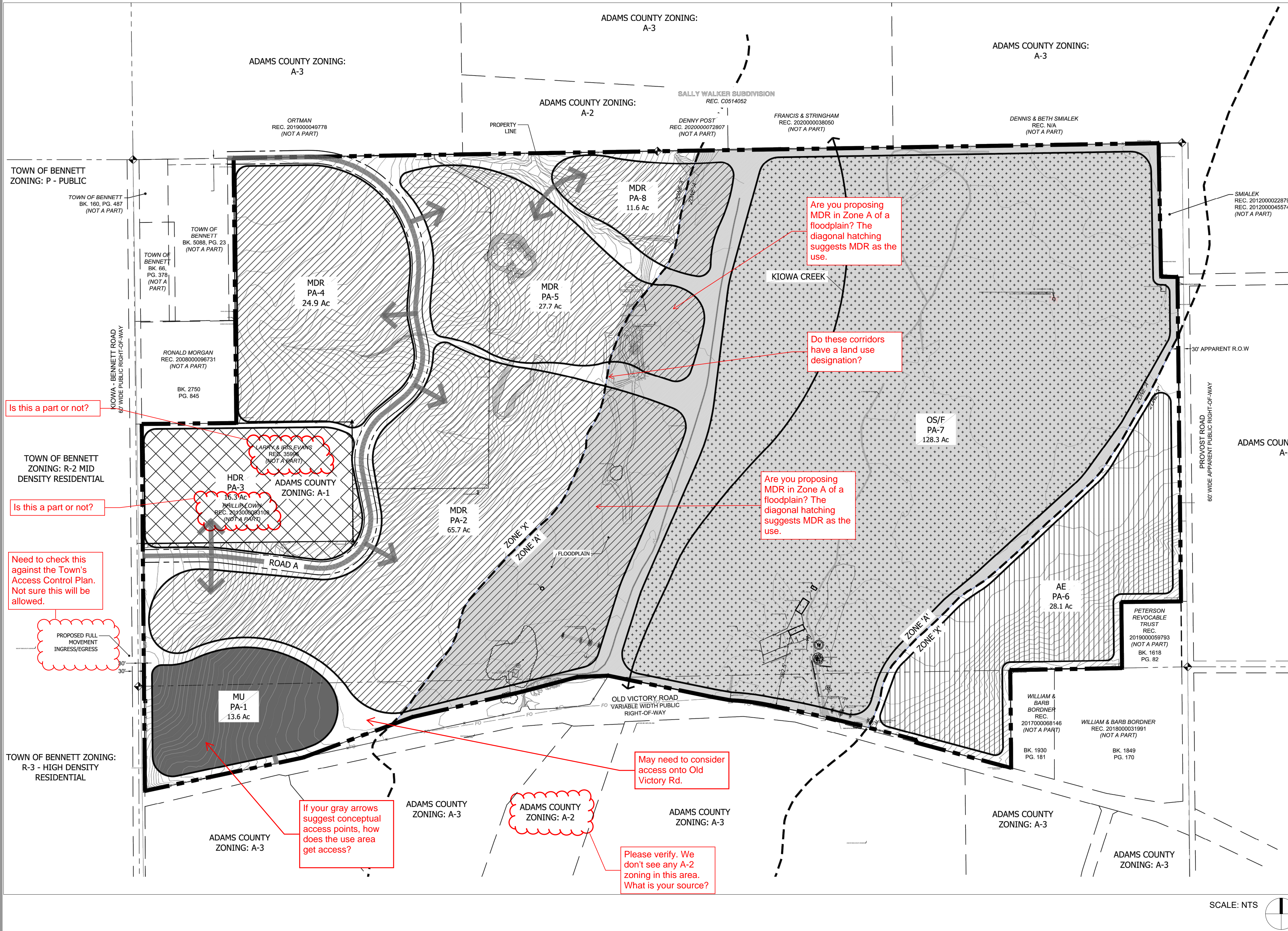
Page 353

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 2 OF 7



KIOWA CREEK PRESERVE							
PD - ZONING SUMMARY TABLE							
	PLANNING AREA	AREA (ACRES)	COMMERCIAL (SQ.FT.)	ZONING	ZONING DESCRIPTION	% OF TOTAL	MAX. RESIDENTIAL DENSITY (DU/AC)
	PA-1	13.6	164,000	MU	Mixed Use District	4.2%	20
	PA-2	65.7		MDR	Medium Density Residential District	20.4%	5
	PA-3	16.3		HDR	High Density Residential District	5.1%	15
	PA-4	24.9		MDR	Medium Density Residential District	7.7%	5
	PA-5	27.7		MDR	Medium Density Residential District	8.6%	5
	PA-6	28.1		AE	Agriculture - Education	8.7%	
	PA-8	11.6		MDR	Medium Density Residential District	3.6%	5
	Total Planning Area	132.1					
	OPEN SPACE						
	PA-7	128.3		OS/F	Agriculture: Park/ Open Space/Floodplain	39.9%	
	Public ROW	5.5				1.7%	
	TOTAL PD AREA	321.7	164,000			100.0%	1030

- ROAD CIRCULATION
- FLOODPLAIN
- PROPERTY LINE

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 3 OF 7

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

INTRODUCTION:

OVERVIEW

KIOWA CREEK PRESERVE IS A PROPERTY THAT IS APPROXIMATELY 321 ACRES, LOCATED IN THE TOWN OF BENNETT. THE PROPERTY IS PART OF ADAMS COUNTY AND INCLUDES SIGNIFICANT GEOGRAPHIC FEATURES SUCH AS KIOWA CREEK, A MAJOR RIPARIAN CORRIDOR RUNNING NORTH AND SOUTH THROUGH THE PARCEL. THE PROJECT IS ENVISIONED TO BE A COHESIVE MASTER PLANNED COMMUNITY CONSISTING OF MIXED LAND USES INCLUDING RESIDENTIAL AND OPEN SPACE PLANNING AREAS. THE PARK/OPEN SPACE LAND INCLUDES PRESERVATION OF THE RIPARIAN CORRIDOR THAT SURROUNDS KIOWA CREEK. KIOWA CREEK PRESERVE OUTLINE DEVELOPMENT PLAN REPRESENTS THE FOLLOWING INTEGRATED PLANNING PRINCIPLES THAT REINFORCE TO THE CHARACTER OF THE SITE AND FUTURE GROWTH OF THE TOWN:

PRINCIPLE ONE: PRESERVE/ PROTECT NATURAL GEOGRAPHIC FEATURES AND OPEN SPACE. INCLUDING THE SITE'S MAIN RIPARIAN CORRIDOR AND SURROUNDING FLOODPLAIN ZONE.

PRINCIPLE TWO: IDENTIFY AND SUSTAIN GREEN INFRASTRUCTURE THROUGH PROGRESSIVE AND INTENTIONAL MEANS OF ARCHITECTURE AND SITE DESIGN THAT COMPLEMENT THE SITE.

PRINCIPLE THREE: ENHANCE COMMUNITY CONNECTIVITY WITH BOTH VEHICULAR AND PEDESTRIAN CIRCULATION.

PRINCIPLE FOUR: ESTABLISH A DIVERSITY OF HOUSING TYPES INCLUDING HIGH DENSITY RESIDENTIAL (HDR); SINGLE FAMILY ATTACHED AND MEDIUM DENSITY RESIDENTIAL (MDR);SINGLE FAMILY DETACHED

INTENT

KIOWA CREEK PRESERVE IS PLANNED TO ALLOW FOR A GREATER FLEXIBILITY OF DEVELOPMENT THAT IS SITE SPECIFIC TO ALLOW FOR THE PRESERVATION OF GEOGRAPHIC FEATURES, CONNECTIVITY TO THE TOWN AND TO ENCOURAGE FUTURE DEVELOPMENT PATTERNS WITHIN ADAMS COUNTY AND THE TOWN OF BENNETT. THIS INCLUDES A VARIETY OF MIXED-USE AND RESIDENTIAL LAND USES THAT WILL BE LOCATED WITHIN A PEDESTRIAN-ORIENTED COMMUNITY CONSISTING OF INTERCONNECTED TRAIL SYSTEMS, WALKABLE STREETS AND COMMUNITY PARKS/PRESERVED OPEN SPACE.

THIS MIXED USE COMMUNITY WILL PROVIDE SERVICES AND HOUSING ALTERNATIVES FOR A MULTI-GENERATIONAL POPULATION. THE KIOWA CREEK RIPARIAN CORRIDOR ALLOWS FOR A LARGE PORTION OF THE PROPERTY TO BE PRESERVED AS OPEN SPACE AND THE CREATION OF PEDESTRIAN FRIENDLY TRAILS.

THE PROPOSED TRAIL NETWORK IS DESIGNED TO CONNECT TO THE REGIONAL TRAIL SYSTEM SURROUNDING THE SITE AND THE TOWN OF BENNETT. KIOWA CREEK PRESERVE HAS A MIXED-USE PLANNING AREA LOCATED ON THE CORNER OF THE SITE PROVIDING VISIBILITY FROM THE KIOWA - BENNETT ROAD AND OLD VICTORY ROAD. CONNECTIONS TO THIS COMMUNITY WILL HELP INTEGRATE THE FUTURE COMMERCIAL, RETAIL AND RESIDENTIAL EXPANSION SURROUNDING KIOWA CREEK PRESERVE.

PLANNED DEVELOPMENT ZONING

THE KIOWA CREEK PRESERVE OUTLINE DEVELOPMENT PLAN (ODP) IS INTENDED TO PROVIDE A DEVELOPMENT PATTERN THAT WILL CREATE A FRAMEWORK FOR FUTURE GROWTH SURROUNDING THE SITE. THIS ODP INCLUDES A MIX OF RESIDENTIAL, MIXED-USE AND OPEN SPACE PLANNING AREAS. THE MIX OF RESIDENTIAL, MIXED-USE ALONG WITH OPEN SPACE AND TRAILS WILL ACCOMMODATE WIDE RANGES OF USERS, SERVICES AND HOUSING OPPORTUNITIES. THE KIOWA CREEK PRESERVE ODP PROVIDES DEVELOPMENT STANDARDS THAT REINFORCE THE PLANNING PRINCIPLES ABOVE.

DENSITY TRANSFER

DENSITY MAY BE TRANSFERRED TO A PLANNING AREA UP TO 30% OF THE DENSITY OF THE RECEIVING PLANNING AREA IF SUFFICIENT ROADWAY, WATER AND SEWER CAPACITY ARE AVAILABLE. TRANSFERS EXCEEDING 30% WILL REQUIRE A MAJOR AMENDMENT TO THE OUTLINE DEVELOPMENT PLAN.

LAND USE PLANNING OVERVIEW:

OVERALL DEVELOPMENT PROGRAM

THE KIOWA CREEK PRESERVE ODP IS CREATED TO ESTABLISH A LAND USE PATTERN AND STANDARDS THAT WILL INTEGRATE WITH THE NATURAL FEATURES OF THE SITE AND ADVANCE COMMUNITY OBJECTIVES. THE DESIGN STANDARDS OUTLINED ENSURE GOALS AND OBJECTIVES ASSOCIATED WITH EACH DISTRICT ARE ACHIEVED.

KIOWA CREEK PRESERVE IS PLANNED AS A VITAL AND BALANCED MIXED USE COMMUNITY THAT IS BASED ON INTEGRATED PLANNING AND DESIGN PRINCIPLES. PRINCIPLES THAT INCLUDE PRESERVATION OF THE NATURAL FEATURES OF THE SITE AND MAINTAIN THE INTEGRITY OF THE FLOODPLAIN THAT IS ALIGNED THROUGH THE SITE, A PLANNING APPROACH THAT FOCUSES ON COMMUNITY CONNECTIVITY THAT INCLUDES WELL-CONNECTED SYSTEMS OF LAND USE, RECREATIONAL OPEN SPACE, AND TRAILS THAT ACCOMMODATE THE NEEDS OF A MULTI-GENERATIONAL POPULATION.

THE PLANNING AREAS OUTLINED IN THIS ODP REPRESENT THE PROPOSED DISTRICTS DESCRIBED IN THIS DEVELOPMENT GUIDE, INCLUDING THE PEDESTRIAN LOT AND BUILDING STANDARDS CREATED SPECIFICALLY FOR EACH DISTRICT. THERE WILL BE TWO MAIN ACCESS POINTS ALONG KIOWA-BENNETT ROAD THAT WILL BE ESTABLISHED AND MAINTAINED THROUGHOUT DEVELOPMENT OF THE ENTIRE SITE.

RESIDENTIAL DEVELOPMENT

PLANNING AREAS 2 THROUGH 5 ARE PLANNED FOR BOTH MEDIUM DENSITY RESIDENTIAL (MDR) AND HIGH DENSITY RESIDENTIAL (HDR) USES. THE PURPOSE OF CREATING A VARIETY OF RESIDENTIAL ZONING DISTRICTS IS TO CREATE AN OPPORTUNITY FOR DIVERSE HOUSING THAT WILL ALLOW FOR A MULTI-GENERATIONAL AND DIMENSIONAL POPULATION. KIOWA CREEK PRESERVE'S RESIDENTIAL NEIGHBORHOOD IS CONFIGURED WITHIN A DEVELOPMENT PATTERN THAT INCLUDES INTERCONNECTED PEDESTRIAN-ORIENTED STREETS, WALKABLE PARCELS AND CONNECTIVITY TO THE PRESERVED PARK/OPEN SPACE ON SITE.

THE STREET CONFIGURATION IS PLANNED TO ALLOW FOR A MULTI-MODAL TRANSPORTATION PROGRAM INCLUDING BICYCLE, PEDESTRIAN, VEHICLE AND TRANSIT ALTERNATIVES. THE STREET CONFIGURATION INCLUDES TWO PROPOSED FULL MOVEMENT INGRESS/EGRESS ACCESS POINTS THAT CONNECT TO KIOWA - BENNETT ROAD.

MIXED USE

PLANNING AREA 1 IS INTENDED TO BE CONFIGURED TO ACCOMMODATE A MIX OF USES, INCLUDING 164,000 SQUARE FEET OF COMMERCIAL SPACE.THE PROPOSED MIXED-USE (MU) DISTRICT IS CREATED TO SERVE AS A COMMUNITY AND REGIONAL FOCAL POINT. BUSINESS AND RETAIL THAT ARE WITHIN PLANNING AREA 1 WILL OFFER A DIVERSE RANGE OF SERVICES TO BENEFIT THE COMMUNITY.

THIS PLANNING AREA IS WITHIN A HIGH VISIBILITY AREA LOCATED AT THE SOUTH WEST CORNER OF THE PROPERTY ALONG KIOWA-BENNETT ROAD AND OLD VICTORY ROAD. THIS LOCATION IS SURROUNDED BY RESIDENTIAL USES AND WILL PROVIDE CONVENIENCE TO KIOWA CREEK PRESERVE RESIDENTS AND THE REGION.

SITE ANALYSIS:

EXISTING CONDITIONS AND ENVIRONMENTALLY SIGNIFICANT AREAS

THE APPROXIMATELY 321 ACRES THAT MAKE UP THE KIOWA CREEK PRESERVE ODP, IS COMPROMISED OF ONE CONTIGUOUS PARCEL. KIOWA BENNETT ROAD (60' PUBLIC ROW) NORTH/SOUTH ON THE WEST SIDE OF THE PROPERTY WITH PROVOST ROAD (60' ROW) RUNNING NORTH/SOUTH ON THE EAST PROPERTY LINE. THE LEGAL DESCRIPTION IS INCLUDED ON SHEET 1 OF 7 OF THIS ODP SET. THE SITE IS ENCLOSED BY AGRICULTURE FENCING ON ALL SIDES, A COUPLE 2-TRACK DIRT ROADS AND MOSTLY NATIVE UNDISTURBED VEGETATION WITH POCKETS OF DENSE FOLIAGE AND DECIDUOUS TREES. CURRENTLY THERE ARE NO RESIDENTS OR DEVELOPMENT ON THE PROPERTY. ALMOST HALF OF THE SITE IS WITHIN A DELINEATED 100-YEAR FLOODPLAIN ZONE THAT IS PART OF KIOWA CREEK THUS SERVES AS A VITAL RIPARIAN CORRIDOR. THIS CORRIDOR AND SURROUNDING FLOODPLAIN IS INTENDED TO BE PROTECTED AND PRESERVED AS OPEN SPACE. THE PARK/OPEN SPACE PLANNING AREA THAT INCLUDES PART OF THE FLOODPLAIN ZONE WILL BE DESIGNED TO PRESERVE THE NATURAL LAND AND GEOGRAPHICAL CHARACTERISTICS OF THE RIPARIAN CORRIDOR.

GENERAL SITE CONDITIONS:

PLANNING AREA BOUNDARIES

THE SEVEN PLANNING AREAS LOCATED WITHIN THE KIOWA CREEK PRESERVE ODP ARE SHOWN ON THE ZONE DISTRICT PLAN ON SHEET 2 OF 7. THIS PLAN ILLUSTRATES THE FOLLOWING FIVE ZONE DISTRICTS: HIGH DENSITY RESIDENTIAL (HDR), MEDIUM DENSITY RESIDENTIAL (MDR), MIXED-USE (MU), OPEN SPACE (OS) AND AGRICULTURE EDUCATION (AE). FINAL PLANNING AREA BOUNDARIES, ROAD ALIGNMENTS, INGRESS/EGRESS POINTS AND OPEN SPACE CALCULATIONS WILL BE ESTABLISHED WITH THE FINAL PLAT.

PLANNING AREA ACREAGES AND THE BOUNDARIES SHOWN ON THE ZONE DISTRICT PLAN ARE PRELIMINARY AND SUBJECT TO CHANGE WITH DETAILED PLANNING. INDIVIDUAL PLANNING AREA ACREAGES CAN CHANGE UP TO 20%.

SCHEDULE OF DEVELOPMENT, PROPOSED PHASING AND VESTING

THE PROJECT WILL BE DEVELOPED IN PHASES BASED ON LOGICAL GROWTH, INFRASTRUCTURE EXTENSION AND AVAILABILITY OF UTILITY SERVICE OF THE SITE. AS ILLUSTRATED ON THE ZONE DISTRICT PLAN, SHEET 2 OF 7, THE SITE WILL HAVE TWO POINTS OF ACCESS ALONG KIOWA - BENNETT ROAD, WHICH WILL INFLUENCE THE PHASING PLAN.

SPECIAL FINANCIAL DISTRICTS

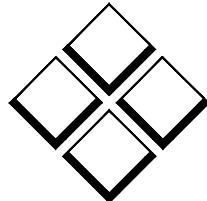
IT IS ANTICIPATED THAT THIS DEVELOPMENT WILL REQUIRE THE FORMATION OF COMMERCIAL, RESIDENTIAL AND RECREATIONAL METROPOLITAN DISTRICTS UTILIZED TO DESIGN, FINANCE AND IMPLEMENT INFRASTRUCTURE REQUIRED. THIS WILL INCLUDE WATER, SEWER, UTILITIES AND OTHER PUBLIC IMPROVEMENTS TO THE SITE.

END OF SECTION

DEVELOPMENT STANDARDS AND GUIDELINES

Introduction

Scale: N/A
Date: MARCH 1, 2022
Revision Date:



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REINFORCE
(someone might want
to do a technical edit
of your language)

This needs to be consistent with the language in the annexation agreement. This will require administrative approval and an amendment to the ODP document, that will eventually get recorded. Transfers may require additional review and analysis by the town engineer, town traffic engineer, Bennett-Watkins Fire and other agencies.

May very well need
access onto Old
Victory Rd. TBD

What is a
"dimensional
population?"

OR PLATS

Need to be consistent with the annexation agreement. Needs approval of the Zoning Administrator. Add language that adjustments may require additional review and analysis by the town engineer, town traffic engineer, Bennett-Watkins Fire and other agencies.

Maybe Old Victory Rd.
TBD

Are there three
different kinds of
metro districts? Aren't
they more generic
and can include all of
those land uses?

It may be in here, if not, should have a general reference to the sign regulations in the Bennett Municipal Code.

DEVELOPMENT STANDARDS AND GUIDELINES

INTRODUCTION

FOLLOWING ARE DESCRIPTIONS OF THE 7 PLANNING AREAS INCLUDING: AN INTENT STATEMENT, DEVELOPMENT PROGRAM, LAND USES, STANDARDS & SETBACKS AND GUIDELINES.

HIGH DENSITY RESIDENTIAL DISTRICT (HDR)
PLANNING AREA 3

INTENT
LOCATED WITHIN THE NORTH WEST QUADRANT OF THE PROPERTY AND ADJACENT TO KIOWA BENNETT RD, PLANNING AREA 3 IS INTENDED TO BE DEVELOPED INTO A HIGH DENSITY RESIDENTIAL NEIGHBORHOOD. THE HIGH DENSITY RESIDENTIAL DISTRICT IS INTENDED TO BE COMPOSED OF SINGLE FAMILY ATTACHED HOMES INCLUDING TOWNHOMES, CLUSTER DEVELOPMENT AND PATIO HOMES.

DEVELOPMENT PROGRAM
THE INTENT IS TO INCORPORATE A RESIDENTIAL PROGRAM THAT CONSISTS OF A VARIETY OF SINGLE FAMILY ATTACHED AND MULTI-FAMILY HOUSING TYPES. PLANNING AREA 3 WILL OFFER A VARIETY OF ARCHITECTURAL STYLES/MODELS THAT WILL ACCOMMODATE DIVERSE RESIDENTS/USERS. THIS NEIGHBORHOOD WILL BE PLANNED TO REINFORCE CONNECTIVITY TO THE ADJACENT PLANNING AREAS AND THE CENTRAL OPEN SPACE SYSTEM.

PERMITTED LAND USES - HDR DISTRICT
THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE HDR SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - HDR DISTRICT
THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX		
HIGH DENSITY RESIDENTIAL DISTRICT (HDR)		
STANDARDS		HDR
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	45 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		2,400 SF FOR SFD, N/A FOR OTHER MULTI-FAMILY RESIDENTIAL
MINIMUM LOT WIDTH		40 FT FOR SFD, NONE FOR OTHER MULTI-FAMILY RESIDENTIAL
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
MINIMUM UNOBSTRUCTED OPEN SPACE		20%
DENSITY - MAXIMUM		25 DU/AC
SETBACKS		
PARKING LOT SETBACKS		10 FT WITH LANDSCAPE BUFFER (1)
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
REAR SETBACK	(PRINCIPAL STRUCTURE)	15 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)

See CORE's comments re: setbacks in this table and all other tables given their requirement for front lot electric utility easements.

KIOWA CREEK PRESERVE
OUTLINE DEVELOPMENT PLAN
PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO
SHEET 4 OF 7

MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	10 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	20 FT
	GARAGE SETBACK	N/A (2)
NOTES:		
(1) 0 FT SETBACK IF NO OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK BACK REQUIRED		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES
SITE PLANNING/ CONNECTIVITY:

- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREA 3 SHOULD PROVIDE SIDEWALKS ALONG ALL STREETS AND PRIVATE STREETS, PARKING LOTS EXCLUDED.
- ACCESS SHALL BE PROVIDED AND MAINTAIN CONNECTED TO THE ADJACENT KIOWA-BENNETT ROAD.
- KIOWA CREEK PRESERVE IS PLANNED TO INCLUDE A SERIES OF INTEGRATED AND PEDESTRIAN-ORIENTED RESIDENTIAL PLANNING AREAS.
- ESTABLISH WALKABLE NEIGHBORHOODS WITH CONVENIENT ACCESS TO MIXED-USE CENTERS, EMPLOYMENT CENTERS, TRANSIT AND OPEN SPACE.
- ENCOURAGE A DIVERSITY OF HOUSING TYPES AND HUMAN-SCALE ARCHITECTURE THAT WILL ENHANCE SOCIAL INTERACTION AND PEDESTRIAN ACTIVITY.
- INTERCONNECTED STREETS AND TRAFFIC PATTERNS USING ESTABLISHED BLOCK PATTERNS THAT ENCOURAGE CONNECTIVITY FOR VEHICLES AND PEDESTRIANS.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- A ZERO LOT LINE MAY BE UTILIZED WHEN A MAINTENANCE EASEMENT AND SIDE YARD EASEMENT ARE SUBJECT TO U.B.C. REQUIREMENTS
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS. SEE SEC. 16-2-610. -PARKING SPACE REQUIREMENTS FOR RESIDENTIAL DISTRICT REQUIREMENTS.

LANDSCAPE REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 7 - LANDSCAPE STANDARDS. FOLLOW TOWN CODE FOR ALL ITEMS IN SEC. 16-2-710.- SEC. 16-2-795 FOR MINIMUM DESIGN GUIDELINES REQUIRED.

LIGHTING REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 8 - LIGHTING STANDARDS. SEE SEC. 16-2-840 - DESIGN STANDARDS FOR LIGHTING REQUIREMENTS

MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)
PLANNING AREAS 2, 4 AND 5

INTENT
PLANNING AREAS 2, 4 AND 5 ARE CENTRALLY LOCATED IN BETWEEN HIGH DENSITY RESIDENTIAL PLANNING AREAS AND TO ADJACENT PLANNING AREAS AND THE CENTRAL OPEN SPACE PLANNING AREAS. THE MEDIUM DENSITY RESIDENTIAL DISTRICT IS INTENDED TO BE COMPOSED OF SINGLE FAMILY ATTACHED HOMES INCLUDING SINGLE FAMILY DETACHED DUPLEXES. THE NEIGHBORHOOD WILL INCLUDE PEDESTRIAN CONNECTIONS TO THE OPEN SPACE SYSTEM. POCKET PARKS WILL BE INTEGRATED WITHIN NEIGHBORHOODS TO SERVE AS FOCAL POINTS AND GATHERING AREAS.

DEVELOPMENT PROGRAM

THE DESIGN GOAL IS TO CREATE A WALKABLE NEIGHBORHOOD THAT OFFERS MULTIPLE TYPES OF HOUSING TO CREATE A DIVERSE COMMUNITY. THE MDR PLANNING AREAS WILL BE FOCUSED ON BUILDING COMMUNITY CHARACTER THROUGH THE USE OF WALKABLE STREETS, POCKET PARKS AND TRAIL SYSTEMS.

PERMITTED LAND USES - MDR DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MDR SPECIFIC USE TYPE.

LOT AND BUILDING STANDARDS - MDR DISTRICT
THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX		
MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)		
STANDARDS		MDR
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	35 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		3,500 SF
MINIMUM LOT WIDTH		30 FT
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		70%
DENSITY - MAXIMUM		8 DU/AC
SETBACKS		
GARAGE SETBACKS (GARAGE DOOR TO SIDEWALK)		20 FT
	(SIDE LOADED GARAGES)	10 FT
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	10 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
REAR SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	10 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	20 FT
	GARAGE SETBACK	N/A (2)
NOTES:		
(1) 0 FT SETBACK IF NO OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK BACK REQUIRED		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES
SITE PLANNING/ CONNECTIVITY:

- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREAS 2,4,5 ,AND 8 SHOULD PROVIDE SIDEWALKS THROUGHOUT THE NEIGHBORHOOD AND ON ALL STREETS AND PRIVATE STREETS.
- PEDESTRIAN ACCESS SHOULD CONNECT TO ADJACENT PLANNING AREA DISTRICTS AND THE OPEN SPACE SYSTEM.
- BUILDING DESIGN AND ORIENTATION SHOULD BE PLANNED TO INTEGRATE WITH THE NATURAL SITE CHARACTERISTICS AND TO MAXIMIZE SOLAR EXPOSURE.
- A ZERO LOT LINE MAY BE UTILIZED WHEN A MAINTENANCE EASEMENT AND SIDE YARD EASEMENT ARE SUBJECT TO U.B.C. REQUIREMENTS
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- SINGLE FAMILY DETACHED (SFD) FRONT LOADED GARAGES REQUIRE A MINIMUM 18' DRIVEWAY FROM THE GARAGE FACE TO THE BACK OF WALK. SFD FRONT LOADED GARAGES WITH NO WALK REQUIRE A MINIMUM 20; DRIVEWAY FROM THE GARAGE FACE TO THE ASPHALT. SFD FRONT LOADED GARAGES LOCATED ON CORNER LOTS SHALL BE LOCATED 20' FROM POINT OF CURB RETURN

MDR CONT. ON SHEET 5 OF 7

DEVELOPMENT STANDARDS AND GUIDELINES

High Density Residential (HDR) Medium Density Residential (MDR)	Scale: N/A	
	Date: MARCH 1, 2022	
	Revision Date:	Page 356

- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS. SEE SEC. 16-2-610. DISTRICT REQUIREMENTS.

LANDSCAPE REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 7 - LANDSCAPE STANDARDS. FOLLOW TOWN CODE FOR ALL ITEMS IN SEC. 16-2-710.- SEC. 16-2-795 FOR MINIMUM DESIGN GUIDELINES REQUIRED.

LIGHTING REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 8 - LIGHTING STANDARDS. SEE SEC. 16-2-840 - DESIGN STANDARDS FOR LIGHTING REQUIREMENTS.

END OF SECTION

MIXED USE DISTRICT (MU)
PLANNING AREA 1

INTENT
THIS MIXED USE ZONE DISTRICT IS LOCATED WITHIN THE SOUTHWEST QUADRANT OF THE PROPERTY AT THE CORNER OF KIOWA-BENNETT ROAD AND OLD VICTORY ROAD. IT IS A VISIBLE SITE WITH CONVENIENT ACCESS. THIS MIXED-USE DISTRICT IS PLANNED TO ACCOMODATE COMMERCIAL, OFFICE, AND RETAIL USERS TO THE SITE. PREDOMINANTLY A COMMERCIAL FOCUS, THIS DISTRICT REQUIRES AT LEAST 50% OF ITS AREA TO BE USED FOR RETAIL, CIVIC, OFFICE OR OTHER COMMERCIAL USES. THE REMAINDER OF THE AREA MAY BE USED FOR RESIDENTIAL.

DEVELOPMENT PROGRAM
THE INTENT IS CREATE A VIBRANT MIXED USE CENTER THAT REINFORCES THE WALKABILITY AND CONNECTIVITY TO ADJACENT RESIDENTIAL NEIGHBORHOODS. THIS DISTRICT WILL BE VISUALLY AND PHYSICALLY CONNECTED UTILIZING PEDESTRIAN FRIENDLY WALKS AND STREETS. THE INTENT IS TO CREATE A VIBRANT MIXED USE CENTER THAT WILL SERVE AS A COMMUNITY AND REGIONAL FOCAL POINT. SITE AND ARCHITECTURAL COMPONENTS SHOULD BE CONFIGURED TO REINFORCE THE PUBLIC REALM. BUILDINGS SHALL BE ORIENTED TO ENCOURAGE PEDESTRIAN ACTIVITY AND SCREEN SERVICES. PLAZAS AND POCKET PARKS SHOULD BE INCORPORATED TO SERVE AS GATHERING AREAS. ACCESS AND PARKING SHOULD BE CONFIGURED TO PROVIDE EFFICIENCY AND SAFETY FOR MOTORISTS AND PEDESTRIANS.

RESIDENTIAL AND COMMERCIAL MIXED-USE
IF RESIDENTIAL LAND USES ARE DEVELOPED IN THE MIXED-USE PLANNING AREA, RETAIL, COMMERCIAL AND SERVICES WILL BE LIMITED TO PRINCIPAL USES THAT ARE COMPATIBLE WITH THE RESIDENTIAL NEIGHBORHOOD. IF RESIDENTIAL USES ARE NOT DEVELOPED IN THE MIXED-USE PLANNING AREA, A LIST OF ADDITIONAL PERMITTED USES AND DESIGN STANDARDS FOR NON-RESIDENTIAL USES APPLY.

COMMERCIAL LAND USES IN SUPPORT OF RESIDENTIAL DEVELOPMENT
WHERE COMMERCIAL DEVELOPMENT AND RESIDENTIAL USES ARE COMBINED, THE COMMERCIAL AND RESIDENTIAL USES MAY BE LOCATED IN THE SAME BUILDING OR ON ADJACENT LOTS. HORIZONTAL AND VERTICAL MIXED-USE IS PERMITTED. THE INTENT FOR THIS MIXED-USE DISTRICT IS TO COMBINE THE SUPPLY AND DEMANDS OF COMMERCIAL SERVICES, GOODS AND EMPLOYMENT WITH THE RESIDENTIAL SUPPLY AND DEMANDS OF THE COMMUNITY. BY CREATING OPPORTUNITIES FOR SERVICES, EMPLOYMENT AND ACTIVITY, THE RESIDENTIAL COMMUNITY WILL THRIVE OFF OF THE COMMERCIAL DEVELOPMENT AND THE COMMERCIAL DEVELOPMENT WILL ENCOURAGE A SUSTAINABLE RESIDENTIAL NEIGHBORHOOD BOTH PHYSICALLY AND FUNCTIONALLY.

KIOWA CREEK PRESERVE
OUTLINE DEVELOPMENT PLAN
PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO
SHEET 5 OF 7

PERMITTED LAND USES - MU DISTRICT
THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MU SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - MU DISTRICT
THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

MIXED-USE DEVELOPMENT STANDARDS MATRIX		
MIXED-USE DISTRICT (MU)		
STANDARDS - COMMERICAL & RETAIL USES		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	50 FT
	(ACCESSORY STRUCTURE)	30 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
MAXIMUM FLOOR AREA RATIO - COMMERICAL		.7:1
SETBACKS - COMMERICAL & RETAIL		
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	15 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	5 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	15 FT
	(ACCESSORY STRUCTURE)	5 FT
STANDARDS - RESIDENTIAL		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	45 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
DENSITY - MAXIMUM		25 DU/ AC
SETBACKS - RESIDENTIAL		MU
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
GARAGE		N/A (2)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	10 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	0 FT
	(ACCESSORY STRUCTURE)	5 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	5 FT
NOTES:		
(1) REFER TO TOWN OF BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS, FOR REQUIREMENTS AND DESIGN STANDARDS.		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES
SITE PLANNING/ CONNECTIVITY:

- RETAIL, COMMERCIAL AND RESIDENTIAL USES SHALL PROVIDE PEDESTRIAN CONNECTIONS TO ALLOW VISITORS AND USERS TO CIRCULATE BETWEEN THE VARIOUS DEVELOPMENTS.
- DEVELOP BUILDING SITE LANDSCAPING THAT REINFORCES CONNECTIONS TO BUILDING ENTRANCES, COMMUNITY AMENITIES AND GREEN SPACE AREAS.
- ALL BUILDINGS WILL BE ARTICULATED ON ALL FOUR SIDES WITH VARIATIONS IN MATERIALS, CREATIVE ENTRY TREATMENTS AND FACADE COMPONENTS THAT HELP ESTABLISH BUILDING SCALE AND VARYING COMPOSITION.
- SHARED PARKING IS ENCOURAGED TO MAXIMIZE DENSITY AND USERS - SEE PARKING REQUIREMENTS BELOW.
- A ZERO LOT LINE MAY BE UTILIZED WHEN A MAINTENANCE EASEMENT AND SIDE YARD EASEMENT ARE SUBJECT TO U.B.C. REQUIREMENTS
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED

- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS. SEE SEC. 16-2-610. -PARKING SPACE REQUIREMENTS FOR RESIDENTIAL DISTRICT REQUIREMENTS.

LANDSCAPE REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS. FOLLOW TOWN CODE FOR ALL ITEMS IN SEC. 16-2-710.- SEC. 16-2-795 FOR MINIMUM DESIGN GUIDELINES REQUIRED.

LIGHTING REQUIREMENTS:
REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 8 - LIGHTING STANDARDS. SEE SEC. 16-2-840 - DESIGN STANDARDS FOR LIGHTING REQUIREMENTS.

END OF SECTION

OPEN SPACE AND TRAILS (OS)
PLANNING AREA 7

INTENT
PLANNING AREA 7 IS INDENTED TO PROVIDE A LARGE CONTIGUOUS OPEN SPACE AREA THAT WILL CONSIST OF EXISTING NATURAL DRAINAGE CORRIDORS AND THE KIOWA CREEK RIPARIAN AREA. THIS AREA WILL BE USED FOR PRESERVATION, PROVIDE PASSIVE AND ACTIVE RECREATION. PEDESTRIAN TRAIL CONNECTIONS, VISUAL AMENITIES THAT BENEFIT THE COMMUNITY WILL BE INCORPORATED IN THIS DISTRICT.

DEVELOPMENT PROGRAM
KIOWA CREEK PRESERVE INCORPORATES A PLANNING APPROACH THAT PRESERVES THE NATURAL TOPOGRAPHY AND SIGNIFICANT GEOGRAPHICAL FEATURES OF THE LAND WITHIN THE SITE. CLUSTERING OF PLANNING AREAS IS UTILIZED TO PRESERVE APPROXIMATELY A 128 ACRES OF OPEN SPACE.

PARK, OPEN SPACE AND TRAIL CONNECTIONS ARE CREATED TO ENHANCE THE RESIDENTIAL DISTRICTS IN KIOWA CREEK PRESERVE PLANNED DEVELOPMENT. THE PROJECT SHALL BE REINFORCED THROUGH VARIOUS WALKABLE TRAIL CONNECTIONS TO ALL PLANNING AREAS.

PERMITTED LAND USES - OS DISTRICT
THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE OS SPECIFIC USE TYPE COLUMN.

TRAIL CONNECTIONS
ALONG WITH THE OPEN SPACE PLANNING AREA KIOWA CREEK PRESERVE WILL INCLUDE A HIERARCHY OF TRAILS. COMMUNITY CONNECTIVITY WITHIN KIOWA CREEK PRESERVE WILL INCLUDE CREATING A WELL CONNECTED SYSTEM OF PEDESTRIAN-FRIENDLY TRAILS. THIS SYSTEM WILL INCLUDE REGIONAL, COMMUNITY AND NEIGHBORHOOD TRAILS. THIS OPEN SPACE AREA SHALL SERVE AS AN AMENITY FOR THE SURROUNDING NEIGHBORHOODS WITHIN AND ADJACENT TO THIS PLANNED DEVELOPMENT. CONNECTIONS TO THIS PRESERVATION AREA WILL BE COORDINATED WITH THE TOWN OF BENNETT.

OS CONT. ON SHEET 6 OF 7



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Please check all references to the UBC. Not sure of any community in Colorado still on the UBC.

DEVELOPMENT STANDARDS AND GUIDELINES

Medium Density Residential (MDR),
Mixed Use District (MU)
Open Space and Trails (OS)

Scale: N/A
Date: MARCH 1, 2022
Revision Date:

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 6 OF 7

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:
SETBACKS AND DEVELOPMENT CRITERIA WILL BE FURTHER DEFINED AND DETERMINED AT THE TIME OF FINAL PLAT.

- NO FENCING OR PERMANENT STRUCTURES SHALL BE PERMITTED WITHIN THE 100 YEAR FLOODPLAIN ZONE.
- AGRICULTURAL BUILDINGS ~~HALL~~ HAVE THE FOLLOWING MAXIMUM HEIGHTS:
BARNs 50 FEET
SILOS 75 FEET

"SHALL?" Please
have someone
conduct a technical
writing edit of this
document.

AGRICULTURE - EDUCATION (AE)
PLANNING AREA 6

INTENT
THE DESIGN INTENT OF THE AE DISTRICT IS TO DESIGNATE AN AREA TO ACCOMMODATE LAND USES RELATED TO AGRICULTURE, EDUCATION, NATURAL RESOURCES AND LAND MANAGEMENT. EDUCATION IS ENCOURAGED TO INCLUDE HANDS ON LEARNING EXPERIENCE OF PROGRAMS SUCH AS CROP CULTIVATION, LIVESTOCK MANAGEMENT AND HORTICULTURE. PLANNING AREA 6 WILL INCLUDE TRAILS, PARKS AND OPEN SPACE WHICH WILL BE ACCESSIBLE AND CONNECTED TO THE CENTRAL TRAIL SYSTEM. THE FLUID CONNECTION/ AWARENESS TO THE AGRICULTURE - EDUCATION DISTRICT IS VITAL FOR THE OVERALL VISION OF KIOWA CREEK PRESERVE.

DEVELOPMENT PROGRAM
CREATE A VARIETY OF DEVELOPMENT PROGRAMMING INCLUDING BUT NOT LIMITED TO, GREENHOUSES, INDOOR ARENAS, BARNS AND EVENT SPACES. PROGRAMS DIRECTED TO PROMOTE EDUCATION RELATING TO SUSTAINABILITY, LAND MANAGEMENT AND PRESERVATION. THIS PLANNING AREA IS ENCOURAGED TO BE USED FOR GROUPS SUCH AS LOCAL FFA CHAPTERS AS WELL AS GENERAL YOUTH EDUCATION SUCH AS 4-H ORGANIZATIONS. LAND USES AND FACILITIES WILL BE INCORPORATED WITHIN THIS DISTRICT TO ACHIEVE THE NEEDS FOR INDIVIDUAL AND GROUPS TO EXPERIENCE HANDS ON LEARNING AND EDUCATION. SAFE, FUNCTIONAL, AESTHETICALLY CREATIVE AND WELL ORGANIZED DESIGN WILL MAKE THIS PLANNING AREA INTO A FOCAL POINT WITHIN KIOWA CREEK PRESERVE AND REGION.

PERMITTED LAND USES - AE DISTRICT
THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE AE SPECIFIC USE TYPE COLUMN.

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING:
SETBACKS AND DEVELOPMENT CRITERIA WILL BE FURTHER DEFINED AND DETERMINED DURING THE SITE PLAN REVIEW AND PLAT PROCESS.

- AGRICULTURAL BUILDINGS ~~HALL~~ HAVE THE FOLLOWING MAXIMUM HEIGHTS:
BARNs 50 FEET
SILOS 75 FEET

"SHALL?" Please
have someone
conduct a technical
writing edit of this
document.

END OF SECTION

KIOWA CREEK PRESERVE

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 7 OF 7

LAND USE CLASSIFICATION	SPECIFIC USE TYPE						
AGRICULTURAL USES		MU	MDR	HDR	F	OS	AE
Agriculture or Ranch Use	Agriculture / Crop Cultivation	-	-	-	X	X	X
	Ranching (By Special Review)	-	-	-	-	X	X
	Agriculture as an Interim Use	X	X	X	X	X	X
	Community Gardens	X	X	X	X	X	X
Accessory Structures	Accessory Structures for Agriculture/ Ranching Operations	-	X	-	-	X	X
Animals / Livestock	Farm or Ranch Animal Center	-	-	-	-	X	X
	Rodeos	-	-	-	-	X	X
	Commercial Stables / Private Stables - Less than 30,000 Sq Ft	-	-	-	-	X	X
	Livestock Feed Lots	-	-	-	-	-	-
Horticulture and Nurseries	Greenhouse/nursery/tree production (with no outdoor storage)	-	-	-	-	X	X
	Outdoor Nursery / Tree Production	-	-	-	X	X	X
	Greenhouse/nursery/tree production (with outdoor storage)	-	-	-	-	-	X
Markets	Farmers Markets / Seasonal Farmers Markets	X	-	-	-	X	X

GENERAL LAND USE GUIDELINES NOTES:

1. NO STRUCTURES OR FENCES SHALL BE CONSTRUCTED WITHIN THE 100 YEAR FLOODPLAIN. MEDIUM DENSITY PLANNING AREAS 2.5, & 8 EXTEND INTO THE 100-YEAR FLOODPLAIN. AREAS LOCATED WITHIN THE FLOODPLAIN SHALL COMPLY WITH THE FLOODPLAIN LAND USE DESIGNATION AND RESTRICTIONS. USES WITHIN THE F-ZONE MUST BE EVALUATED BY THE TOWN ADMINISTRATOR FOR FINAL DETERMINATION ON WHETHER THE USE IS ALLOWABLE.

2. PRIVATE STABLE MAY BE PERMITTED ON MEDIUM DENSITY RESIDENTIAL LOTS THAT ARE A MINIMUM OF 2.5 ACRES.

3. OUTDOOR SKATEBOARD PARKS CAN BE CONSTRUCTED IN CONJUNCTION WITH PUBLIC PARKS.

4. ONLY PUBLIC FACILITIES SHALL BE CONSTRUCTED ON DEDICATED PUBLIC OPEN SPACE.

5. AGRICULTURE USES SHALL BE PERMITTED AS AN INTERIM USE FOR ALL PLANNING AREAS UNTIL THE TIME OF FINAL PLAT.

LEGEND

X PRINCIPAL PERMITTED USE

A ACCESSORY USE

- EXCLUDED USE

LAND USE

MU - MIXED USE

MDR- MEDIUM DENSITY RESIDENTIAL

HDR - HIGH DENSITY RESIDENTIAL

F - FLOOD PLAIN

OS - OPEN SPACE

AE - AGRICULTURE - EDUCATION

MIXED USE (MU): PREDOMINANTLY A COMMERCIAL FOCUS. THIS DISTRICT REQUIRES AT LEAST 50% OF ITS AREA TO BE USED FOR RETAIL, CIVIC, OFFICE OR OTHER NON-RESIDENTIAL USES. THE REMAINDER OF THE AREA MAY BE USED FOR RESIDENTIAL, OPEN SPACE PLAZAS, COURTYARDS AND OTHER PEDESTRIAN ENHANCING ELEMENTS SHALL BE ENCOURAGED. MAXIMUM 0.7 FAR & MAXIMUM 164,000 SQ. FT. COMMERCIAL SPACE.

MEDIUM DENSITY RESIDENTIAL (MDR): THE INTENT IS TO ALLOW FOR SINGLE FAMILY DETACHED HOMES THAT CAN HAVE A MINIMUM LOT SIZE OF 3,500 SQ. FT.

HIGH DENSITY RESIDENTIAL (HDR): THE INTENT IS TO ALLOW FOR SINGLE FAMILY, SINGLE FAMILY ATTACHED HOMES AND MULTI-FAMILY UNITS.

FLOOD PLAIN (F): THE INTENT IS TO ACCOMMODATE AREAS FOR THE CONVEYANCE AND STORAGE OF STORMWATER. FLOOD PLAIN IS DEFINED AS THE FLOOD OF 100 YEAR FREQUENCY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

OPEN SPACE (OS): THE INTENT IS TO PROVIDE FOR PASSIVE AND ACTIVE RECREATION AND VISUAL AMENITIES FOR THE BENEFIT OF THE COMMUNITY.

AGRICULTURE - EDUCATION (AE): THE INTENT IS TO PRESERVE THIS LAND AND TO CREATE SUSTAINABLE AND ENVIRONMENTALLY PROTECTIVE LAND USES AND DEVELOPMENT PROGRAMMING THAT ENCOURAGES THE TEACHING OF AGRICULTURE, NATURAL RESOURCES AND LAND MANAGEMENT.

COMMERCIAL USES		MU	MDR	HDR	F	OS	AE
Animal Services	Doggie day care centers, animal boarding and training (indoor)	X	-	-	-	-	X
	Veterinary offices or clinics	X	-	-	-	-	-
Automobile Parking	Automobile parking lot	A	A	A	-	A	-
	Private park & ride lot, car pool lot or equivalent	X	-	-	-	X	X
Building Materials & Services (Retail)	All other similar uses (plumbing, electrical, lumber and building equipment-without outdoor storage)	X	-	-	-	-	-
	Landscape equipment, hardscape materials (without outdoor storage)	X	-	-	-	-	X
Eating and Drinking Establishments	Bar, tavern	X	-	-	-	-	-
	Catering services	X	-	-	-	-	-
	Restaurant with or without drive-thru / up	X	-	-	-	-	-
Office	Administrative and or Executive Offices	X	-	-	-	-	-
	Business or professional (including medical / dental office / clinics)	X	-	-	-	-	-
	Consulting Services Offices	X	-	-	-	-	-
	Courier services	X	-	-	-	-	-
	Corporate Headquarters / Offices	X	-	-	-	-	-
	Financial Institutions	X	-	-	-	-	-
	General Office / Temporary Offices	X	-	-	-	-	-
	Home Occupations	X	-	-	-	-	-
	Home / Land Sales Office	X	X	X	-	-	-
	Investment and Insurance Offices	X	-	-	-	-	-
Personal Services	Massage therapy office / clinics	X	-	-	-	-	-
	Instructional services, studios	X	-	-	-	-	-
Recreation / Amusement Facilities	Amusement Parks	-	-	-	-	-	-
	Small Theaters/ Performance centers (Outdoor Performances)	X	-	-	-	-	-
	Bowling, Billiards, Movie theaters and Similar uses	X	-	-	-	-	-
	Drive-in Theater	-	-	-	-	-	-
	Health clubs	X	-	-	-	-	-
	Parks	X	X	X	X	X	X
	Public and Private Golf Courses and Related Facilities	X	-	-	-	X	-
	Outdoor recreation	X	X	X	X	X	X
	Outdoor Skateboard Parks	X	-	-	-	X	-
	Community / Neighborhood Recreation Center	X	X	X	-	X	-
Retail	Auto Sales and Repair	X	-	-	-	-	-
	Convenience store / grocery store (includg fuel sales)	X	-	-	-	-	-
	Department Store	X	-	-	-	-	-
	Furniture / Appliance Store	X	-	-	-	-	-
	Grocery store (greater than 5,000 sq. ft.)	X	-	-	-	-	-
	Ground floor retail with office or residential on upper levels	X	-	-	-	-	-
	Retail (less than 40,000 sq.ft.)	X	-	-	-	-	-
	Retail (greater than 40,000 sq.ft. but less than 80,000 sq.ft.)	X	-	-	-	-	-
	Retail (greater than 80,000 sq.ft.)	X	-	-	-	-	-
	Liquor Sales	X	-	-	-	-	-
Repair Services (Not Including Vehicles)	Neighborhood Retail (e.g., delicatessen, retail bakery, specialty food market, coffee shop)	X	-	-	-	-	X
	Furniture or major household appliance repair	-	-	-	-	-	-
Telecommunications Facilities, Antennas, and Cell Towers	Machinery sales, excluding truck trailers, heavy equipment, and farm machinery	X	-	-	-	-	X
	Antennas for commercial/industrial use accessory to principal use	-	-	-	-	X	-
Vehicle / Equipment Sales and Services	Commercial Antennas and Radio Towers (height and location to be reviewed and approved by county)	X	-	-	-	X	-
	Radio or television broadcasting facilities/offices	X	-	-	-	-	-
Visitor Accommodations	Automobile, RV's, trailer and camper rentals	-	-	-	-	-	-
	Automobile washing facility	X	-	-	-	-	-
	Limited equipment rental (U-Haul type business)	X	-	-	-	-	-
	Major vehicle/equipment repair (includes auto body repair, paint shops, and incidental sales of parts)	-	-	-	-	-	-
	Motor vehicle dealer / sales, new and used RV's, trailers, and campers)	X	-	-	-	-	-
Automobile Services	Automobile fuel service stations	X	-	-	-	-	-
	Hotel or motel lodging establishments	X	-	-	-	-	X
	Campground	-	-	-	X	X	X

INDUSTRIAL USES		MU	MDR	HDR	F	OS	AE
Outdoor Storage	Outdoor parking and storage of vehicles, except self-storage/mini storage	-	-	-	-	-	-
	Above ground oil and gas operations storage tanks	X	X	X	-	X	-
Oil and Gas	Oil and gas operations	X	X	X	-	X	-
PUBLIC, INSTITUTIONAL & CIVIC USES		MU	MDR	HDR	F	OS	AE
Ambulance Service	Garage and office for ambulance service	X	X	X	-	-	-
Clubs and Lodges	Private lodge or club (excluding guns)	X	-	-	-	-	X
Community Services	Events center less than 15,000 sq. ft.	X	-	-	-	X	X
	Events center greater than 15,000 sq. ft.	-	-	-	-	-	X
Day Care Facilities, Adult or Child	Child care center	X	-	-	-	-	-
	Adult day care center	X	-	-	-	-	-
Fire	Fire Stations	X	X	X	-	-	-
Hospitals	Hospital	X	-	-	-	-	-
	Outpatient surgical centers	X	-	-	-	-	-
Office and Recreation	Public administrative office or service building	X	-	-	-	X	-
	Public park or recreational facilities	X	X	X	-	X	X
Religious Institutions	Church or religious institution	X	-	-	-	-	-
Educational Facilities	Public Schools	X	X	X	-	X	X
	Private business, trade, and vocation schools	X	-	-	-	-	X
Transportation Facilities	Public Transportation Terminals / Parking	X	-	-	-	-	X
	Private automobile parking lots or parking garages as a principal use	X	-	-	-	-	-
Utilities	Reservoirs or Aquifers recharge areas	X	X	X	X	X	X
	Electrical Substations	X	X	X	-	X	X
	Public Utility Office	X	-	-	-	-	-
	Solar Fields	X	X	X	-	X	X
	Wastewater Treatment Plants	X	X	X	-	X	X
	Water Treatment / Storage	X	X	X	-	X	-
	Water Storage (Reservoirs)	X	X	X	X	X	X
	Water Wells	X	X	X	X	X	X
	Wind Energy Conversion Systems (Windmills)	X	X	X	-	X	X
		X	X	X	-	X	X
RESIDENTIAL USES		MU	MDR	HDR	F	OS	AE
Single Family Attached	Single Family Attached including townhomes, cluster development, and patio homes	X	-	X	-	-	-
	Single Family Detached Duplexes	X	X	X	-	-	-
Single Family Detached	Single Family Detached lots less than 0.5 acres	-	X	X	-	-	-
	Single Family Detached lots greater than 0.5 acres	-	X	X	-	-	-
Multi - Family	Multi-family including rental and for sale units	X	-	X	-	-	-
	Live / Work Units	X	-	X	-	-	-
Senior Housing	Primary residence for persons 55 years of age or older	X	X	X	-	-	-
	Recreation, medical, religious, laundry and / or caretaker facilities, and other building(s) and use(s) customarily appurtenant to the permitted use	-	X	X	-	-	-
Mobile Home	Mobile Home for Residential Purposes	-	-	-	-	-	-
	Supervisory, management and / or other facilities for the operation and/or maintenance of the manufactured home/mobile home park.	-	-	-	-	-	-

Should add a reference to group homes, consistent with the Bennett Municipal Code and the CRS.

Because of FCC and state legislation, this entire section should reference the Bennett Municipal Code.

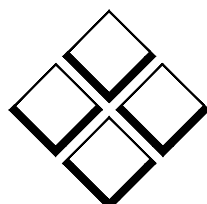
DEVELOPMENT STANDARDS AND GUIDELINES

Land Use Matrix Tables

Scale: N/A

Date: MARCH 1, 2022

Revision Date:



VOGEL & ASSOCIATES

475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288



Engineering Review Memo

To: Stephen Hebert, AICP, Bennett Planning & Economic Development Manager
From: Dan Giroux, PE, Engineering Consultant to the Town
Date: Wednesday, May 18, 2022
Case: Kiowa Creek Preserve Annexation and Zoning / Cases 22.15 and 22.16
Subject: Engineering Review

Per the request of the Town of Bennett, Terramax, Inc. has reviewed the application materials for the proposed Kiowa Creek Preserve Annexation and Zoning. This review does not relieve the applicant from meeting the Town's requirement that the development comply with all Town Codes and Standards.

I have the following comments to offer on the application materials:

Water Supply

- The property and potential development on the property would be subject to the Town of Bennett's raw water supply guidelines and requirements, including governing development impact fees, and groundwater rights credits or reimbursement policies.
- The property development will require the support of additional groundwater well and water tank storage development, through a Town water campus site.
 - Current Town water campus area sizing requirements are four (4) acres in size, and as close to square as feasible.
- More information would be developed as the property makes its way through next steps of technical analysis and detail, should the Town view the Annexation & Zoning application favorably.

Water Distribution System

- The property is adjacent to multiple pending water distribution main connection points to the immediate west, at State Highway 79.
- Connections to multiple mains is desired for greatest independent redundancy of Town water delivery to proposed development on the property.

Sanitary Sewer System / Wastewater Treatment

- The property is adjacent to multiple pending gravity sanitary sewer collection main connection points to the immediate west, at State Highway 79.
- Although capacity in these pending sanitary sewer mains may allow for minor early-start/early-phase development of parts of the Kiowa Creek Preserve property, it is expected that the great majority of the property will require service by means of an "East 38th Avenue" gravity sanitary sewer transmission main, as the applicant's engineer has identified and outlined.
 - East 38th Avenue may not be paved this year, and there may be time to design and install this sanitary sewer transmission main ahead of paving with some early-project design efforts and focus.

- Development of the Kiowa Creek Preserve property with the proposed Zoning will require expansion of the Town's Water Reclamation Facility at East 38th Avenue.
 - The Town is currently conducting detailed pre-design technical studies for expansion of the existing WRF to support additional development, while also addressing improved effluent water quality, and especially treatment to quality levels supporting highly flexible and robust reuse water programs.
- The Kiowa Creek Preserve development would support the WRF expansion via Wastewater Development Impact Fees.
 - These Fees are evaluated regularly by Town Staff, and reviewed with the Town Board of Trustees, to ensure the Town is collecting appropriate development fees to support required WRF expansion and upgrades.
- The Town should consider participating in phased upsizing design of the proposed northeast Wastewater Lift Station, and related (non-phased) upsizing of the proposed Kiowa Creek parallel sanitary sewer interceptor, in order to potentially serve other future development within the Kiowa Creek basin.

Access

- The property is immediately adjacent to Old Victory Way within Adams County, and State Highway 79, also within Adams County.
- The Town should consider and evaluate the prior success and benefit of split-jurisdiction rights-of-way annexations within Adams County, and whether annexation of the full rights-of-way for adjacent roads is more desirable and practical.
- Accommodation for future State Highway 79 and Old Victory Way realignments, widenings, intersections, and improvements, including right-of-way set-asides, should be provided by the development.
- Road system access, improvements, connections and traffic impact management will be the subject of significant detailed technical analysis, proposals and design as the property goes through ensuing entitlement review, including Sketch Plan and Subdivision, should the Town view the Annexation & Zoning application favorably.

Stormwater Management

- The property features significant regulatory Kiowa Creek floodplain areas, as the applicant has identified and recognized.
- The Town has adopted National Flood Insurance Program (NFIP) floodplain administration ordinances, which would govern proposed floodplain activities and all proposed development.
- The Town would work with the developer on any proposed floodplain amendments, modifications, and development, including for public improvement facilities, as might be indicated.
- It is anticipated that stormwater and floodplain management challenges can be successfully addressed for potential development on the property.

Steve, this concludes my engineering review of the application materials for the proposed Kiowa Preserve Annexation and Zoning by the applicant. Please let me know if you have any questions, or require additional information pertaining to the submitted information, or my review.

9191 Jamaica Street
Englewood, CO 80112
United States
T +1.303.771.0900

www.jacobs.com

Subject Kiowa Creek Preserve Annexation and Zoning Referral Package

Attention Steve Hebert, AICP, Bennett Planning & Economic Development Manager
 Sara Aragon, Community Development Manager

From Mike Heugh, PE
 Town Traffic Engineer

Date May 12, 2022

Copies to Dan Giroux, PE, Town Engineer

Kiowa Creek Preserve Traffic Impact Statement (Nov 2021) – Town Traffic Comments

1. High level response, how does this potential development traffic affect SH-79 & Morgan Way design waiver analysis?
2. Section 3.2, please add a discussion about UPRR crossing north of US-36 on Adams St.
3. Section 3.2, please remove all references to Silverheels Rd. This road has been reconstructed and named Marketplace Dr. Adams County GIS has updated aerials if you are looking to add an aerial.
4. Figure 2, what do the "C" stand for at intersection 6?
5. Volumes in figures 4 & 5 show an increase from existing at intersections 3, 4, 5. Was there a rerouting of vehicles through these intersections due to the connection to intersection 16? (i.e. what was once a SBR at Adams & Colfax is now a WBT.)
6. Future conditions at intersection 16 is planned to have a 4th leg that extends Edward Ave to Colfax from SH-79. A redistribution of traffic will need to take place with this connection. Please update figures and analysis to reflect this. A meeting may need to be scheduled to agree on the details of this.
7. Figures 8 & 9, please provide estimated ADT for SH-79 adjacent to the development. Recommendations of roadway type (based on town standards) should be made for these adjacent roadways. Analysis should match recommended roadway section.
8. Section 5.2, the addition of a NBR at 38th & SH-79 will be complicated by the existing cemetery at the intersection. KH has provided conceptual exhibits of the intersection for Bennett Ranch auxiliary lanes. Given the NBR recommendation of this report, revisiting the conceptual design of the intersection might be prudent.
9. Section 5.2, please update the Marketplace & SH-79 discussion that construction of the signal is currently underway and will be put into operation once MUTCD signal warrants are met. Update 2030 & 2045 analysis & results to just show signalized results.

10. Table 8, for stop-controlled please report the LOS for all left turn movements since all approaches have exclusive lanes. Eastbound approach should be revised to thru and left.
11. On all LOS tables, there are rows that show overall LOS at the intersection once signalized? Does this equate that all critical movements operated LOS D or better?
12. Under Project Accesses, intersection 15 is recommended to be a single lane since a single lane approach works operationally. However, the final typical section of the access road will need to meet Town standards. Please revise text to include.
13. Can you remind how the NBL at Road A and Kiowa-Bennett Rd is 355'+160' since that's not CDOT standard?
14. Figure 9 show the SBL at intersection 9 is 10 veh in 2045 which would trigger at SBL aux lane but one is not recommended. Why?
15. Several of the analyzed intersections were recommended to be signalized due to project related traffic. Are these recommendations being paid for by the project?

STATE OF COLORADO

Traffic & Safety

Region 1

2829 W. Howard Place

Denver, Colorado 80204



COLORADO
Department of Transportation

Project Name: **Kiowa Creek Preserve**

Print Date: 5/12/2022

Highway:

079

Mile Marker:

Drainage Comments:

SBL - 5/4/2022

I have reviewed the Kiowa Creek Preliminary Drainage Report and have no comments at this time. Both historic and proposed drainage is away from SH 79 and to Kiowa Creek.

Environmental Comments:

Planning: No Concerns

WQ: Applicant needs to ensure that basin's A-1, A-2 and A-3 do not touch CDOT ROW

Info for the applicant/contractor: Kiowa Creek is subject to Section 404 - the stream and any wetlands. The riparian area has suitable habitat for nesting raptors. Kiowa Creek may also provide suitable habitat for the federally threatened Preble's meadow jumping mouse (there is a lack of data for this area).

The Permittee shall complete a stormwater management plan (SWMP) which must be prepared with good engineering, hydrologic, and pollution control practices and include at a minimum the following components: qualified stormwater manager; spill prevention and response plan; materials handling; potential sources of pollution; implementation of control measures; site description; and site map.

In addition, the Permittee shall comply with all local/state/federal regulations and obtain all necessary permits. Permittee shall comply with CDOT's MS4 Permit. When working within a local MS4 jurisdictional boundary, the permittee shall obtain concurrence from the local MS4 that the local MS4 will provide construction stormwater oversight. The local MS4 concurrence documentation shall be retained with the SWMP.

Clear Zone: It is the responsibility of the engineer/architect who stamps the plans to ensure that: any new landscaping/trees are outside of the clear zones for any State Highway/CDOT ROW and that the new landscaping/trees do not interfere with site lines from any State Highway/CDOT ROW.

Landscape: Any new or changes to existing landscaping within CDOT ROW must be reviewed and approved by CDOT. Landscaping plans should be submitted and should include details of all proposed plant species and seed mixes/ratios. The Kiowa Creek Zoning document shows high density residential development immediately adjacent to (east of) the SH 79 ROW. Has the developer considered potential noise impacts from traffic on SH 79? I would like to see an analysis of traffic noise impacts to future planned receptors in this area.

Traffic Comments:

The intersection labeled 17 (Kiowa-Bennett Rd R/O access) seems like it would likely need a design waiver due to the spacing with the proposed roundabout at Old Victory. It seems like all the traffic could be accommodated by the Road A entrance. This access should be removed.

The Road A access should be a 3/4 access with restrictions of leftbound out. Full movement access should be spread out by half a mile to account that one day they might be signalized. 38th connects many different parcels of land and Road A only connects to Bennett ranch and this development.

Select link analysis of the regional model should be used to determine the distribution of traffic of a developed this size. Please validate the distribution.

The I-70 EB ramps does have a project to signalize that intersection. I believe that it is going to AD soon. This intersection could be assumed to be signalized in 2030.

Bennett Ranch is making improvements to intersections 38th / SH-79 and Road A / SH-79 that are not reflected in this TIS.

The addition of the right turn lane at 38th / SH-79 and is going to take a lot. The left turn that Bennett Ranch is putting in is using up a lot of the existng ROW. The right turn is required by the code and we do want it in. Yet before I approve anything I want this evaluated. We have to many we will put it in and then when they start designing it the developer is saying that they can't do it.

CDOT does note have ITE trip Generation 1th ed. We will verify trips on the next submittal.

The SBL at Road A /SH-79 will need a left turn deceleration lane. It is over 40 MPH and 10 vph.

Is 38th Ave on the eastside of SH-79 a public roadway? This seems like a private roadway for the cemetery.

Reserve right for other comments once I see the select link analysis for distribution of trips and the impacts it has on other parts of the network.

JAI 5-10-2022

Right of Way Comments:

JAD Comment: Survey has no comment regarding the annexation. If acquisitions, changes to ROW, or other ROW impacts occur on the CDOT system, they will need to be reviewed and the proper process followed at that time.

Resident Engineer Comments:

5/4/22 CLJ

-Recommend coordinating with Bennett Farms developer (NW corner of SH-79 & Palmer/Old Victory) as they are making some improvements to SH-79 and 38th.

-Any work done in CDOT ROW must conform to CDOT standards.

-Please refer to the State Highway Access Code for turn lane requirements.

-ROW will need to be preserved/dedicated for the future improvements of SH-79. I sent the ROW plans to David Dixon to share with the developer. Let me know if CAD files are needed and I can share those as well.

Permits Comments:

No comments at this time. **RLW May 6 2022.**

The preferred alternative for SH 79 and the ACP shows SH 79 to veer east of the existing alignment from a point north of Old Victory Rd, and that a 4-way intersection with Old Victory Rd would be at a 90-degree angle. Please ensure this ODP recognizes the need for a 90-degree connection and slightly adjust the RoW as needed abutting PA 1.

The Transportation Master Plan for the Town of Bennett will identify what the cross section should be for SH 79 north of Colfax. What is the planned width for Hwy 79? Half of that RoW should be dedicated east of the existing centerline. The PEL for SH 79 called for a 4-lane highway with a divided center median, 5-ft shoulders to accommodate bicyclists and a detached 8-ft multi-use path on both sides. Currently, the ODP is showing a deficient 80-ft of (total?) RoW

Please show all approved roadway locations/connections with SH 79 approved for the Bennett Ranch development to the west, so that we can see how the local roadways in Kiowa Creek will align. We also wish to see the associated spacing of roadway connections.

Show that the proposed collector road "A" aligns with Roosevelt Avenue in Bennett Ranch. A new State Highway Access Permit is required for that access to Hwy 79 and all auxiliary lanes will be required to be constructed before use.

The Town would be advised to ensure all accesses along SH 79 adhere to the ACP. Any major changes would require an amendment to the ACP, but the ACP and accompanying IGA are not complete as of today. The ODP says a full movement to be located between Road A, and Old Victory Road – this type of access would warrant a concurrent amendment to the ACP.

The final draft of the Access Control Plan (ACP) shows that the 3 residences Identified as BE 23, BE 24, and BE 25 are to remain as single-family access driveways. Any additional accesses in PA3 must adhere to minimum access spacing as defined by the Access Code and/or the ACP.

I am very uneasy about the ODP request to allow up to 30% density transfers. That much traffic density and associated peak hour shifting of traffic could impact signal warrants, etc. Changing from a detached to attached product also changes minimum setbacks. A standard setback is recommended from SH 79 with a built-in noise buffer by the developer. CDOT requests analysis with density transfers to determine any impacts to State Highway.

The ODP should include a roadway cross-section of SH 79. Generally, this ODP does not address buffering of homes or other noise-sensitive uses abutting SH 79 and we would support either greater setbacks of homes, and/or a buffer to the abutting highway.

See red lines

RS 04-27-22

CDOT will not be responsible for mitigating noise or vibrations due to highway improvements, maintenance, or operations associated with this development and new acceleration lanes.

MC 5-10-22

Other Comments:

No objections to the proposed annexation. Access to State Highways will be permitted in reference to the State Highway Access Code and the Bennett Access Control Plan.

--Steve Loeffler, 5-9-2022



Steve Hebert <shebert@bennett.co.us>

RE: Kiowa Creek Preserve Annexation and Zoning Referral

1 message

Brooks Kaufman <BKaufman@core.coop>
To: Steve Hebert <shebert@bennett.co.us>

Wed, May 11, 2022 at 2:28 PM

Steve

CORE Electric approves the annexation but does not approve the zoning referral. Effective July 1, 2022; CORE Electric Cooperative will require a 15-foot utility easement along all roadways, front lot and side lots adjacent to roadways. CORE Electric Cooperative will no longer install electric facilities within rear lot utility easements. The proposed setbacks do not meet CORE Electric 15-foot utility easement requirements.

Respectfully

Brooks Kaufman

Lands and Rights of Way Manager

800.332.9540 MAIN

720.733.5493 DIRECT

303.912.0765 MOBILE

www.core.coop.

From: Town of Bennett Planning <planning@bennett.co.us>**Sent:** Thursday, April 21, 2022 2:30 PM**To:** LBajelan@adcogov.org; Karl Smalley <ksmalley@adcogov.org>; United States Postal Service <sarah.e.zawatzki@usps.gov>; Bennett School District 29J ATTN: Robin Purdy <robinp@bsd29j.com>; Bennett School District 29J: ATTN: Jennifer West <jenniferw@bsd29j.com>; Bennett School District 29J: ATTN: Keith Yaich

Page 367

<keithy@bsd29j.com>; Robin Price <rprice@bennett.co.us>; Daymon Johnson <djohnson@bennett.co.us>; Bennett Rec District <director@bennettrec.org>; Victoria Flamini <VictoriaFlamini@bennettfirerescue.org>; Bennett Watkins Fire Rescue <calebconnor@bennettfirerescue.org>; Marilyn Cross - CDOT <Marilyn.Cross@state.co.us>; Colorado Department of Transportation (CDOT) Assistant Access Manager <david.dixon@state.co.us>; JGutierrez@summitutilitiesinc.com; GVanderstraten@summitutilitiesinc.com; Eastern Slope Rural Telephone <patw@esrta.com>; I-70 Regional Economic Advancement Partnership <lxc.strategies@gmail.com>; Brooks Kaufman <BKaufman@core.coop>; Jehn Water Consultants Inc <gburke@jehnwater.com>; Melinda Culley <melinda@kellypc.com>; Daniel Giroux <dangiroux@terramax.us>; Steve Hebert <shebert@bennett.co.us>; Heugh, Michael <Michael.Heugh@jacobs.com>

Subject: Kiowa Creek Preserve Annexation and Zoning Referral

CAUTION:

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello All,

Below is a Dropbox link for the Kiowa Creek Preserve annexation and zoning application documents. We appreciate your review and comments. Please send your comments back via this email address or by mail to Town Hall by May 12, 2022. You will note some documents, e.g. the Impact Report, also refer to the Bennett Farms annexation and zoning applications. They are two separate applications but are being processed by the same applicant at the same time.

<https://www.dropbox.com/scl/fo/jhte01j3uvwytfcpghcp/h?dl=0&rlkey=7jlgot9zvs9kaxz8lkqzcfcc9>

If you have any questions, please email or call Steve Hebert at shebert@bennett.co.us or the phone number below.



Planning Department
207 Muegge Way | Bennett CO, 80102
(303)644-3249 | planning@bennett.co.us
townofbennett.colorado.gov



CORE MARKUP COMMENTS KIOWA CREEK PRESERVE-ODP 5-11-22.pdf
9154K



Steve Hebert <shebert@bennett.co.us>

Re: referral letters

1 message

Keith Yaich <KeithY@bsd29j.com>

Mon, May 16, 2022 at 2:00 PM

To: Savannah Vickery <svickery@bennett.co.us>

Cc: Steve Hebert <shebert@bennett.co.us>

Please see my answers below in red.

Thanks for your time. hated to ask.

I appreciate this.

Keith

Keith Yaich
CFO-Treasurer to the Board
[615 7th Street](#)
Bennett, CO 80102
720-810-0584 cell
303-644-3234 ext 8204 office
303-644-4121 fax
GO TIGERS!!!

"It's not wanting to win that makes you a winner; It's refusing to fail."

Peyton Manning

From: Savannah Vickery <svickery@bennett.co.us>**Sent:** Monday, May 16, 2022 1:56 PM**To:** Keith Yaich <KeithY@bsd29j.com>**Cc:** Steve Hebert <shebert@bennett.co.us>**Subject:** Re: referral letters

Hi Keith,

The more recent referrals sent to the school district and their sent/due dates for prioritization are:

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Muegge Farms PA-1 Sketch Plan - Sent 4/22 - Due 5/13 **no comment at this time. would like cash-in lieu**

Kiowa Creek Preserve Annexation and Zoning - Sent 4/21 - Due 5/12 **no comment at this time**

Bennett Farms Annexation and Zoning - Sent 4/21 - Due 5/12 **no comment at this time**

Shops at Bennett, Major Subdivision Plat - Sent 3/14 - Due 4/4 **no comment at this time**

If you need any older than that please let me know. All of these referrals were sent to your email, but I can re-send any if needed.

On Mon, May 16, 2022 at 9:16 AM Keith Yaich <KeithY@bsd29j.com> wrote:

thank you!!!

Keith Yaich
CFO-Treasurer to the Board
[615 7th Street](#)
Bennett, CO 80102
720-810-0584 cell
303-644-3234 ext 8204 office
303-644-4121 fax
GO TIGERS!!!

"It's not wanting to win that makes you a winner; It's refusing to fail."

Peyton Manning

From: Steve Hebert <shebert@bennett.co.us>
Sent: Thursday, May 12, 2022 4:25 PM
To: Savannah Vickery <svickery@bennett.co.us>
Cc: Keith Yaich <KeithY@bsd29j.com>
Subject: Fwd: referral letters

Savannah,

Can you help Keith sort out what referrals we might be expecting from the school district? I am guessing the Bennett Farms and Kiowa Creek Preserve annexations and zonings, as well as the Muegge Farms PA-6 sketch plan. Any others?



Steve Hebert, AICP
Planning & Economic Development Manager
207 Muegge Way | Bennett CO, 80102
(303)644-3249 ext. 1030 | shebert@bennett.co.us
townofbennett.colorado.gov

----- Forwarded message -----

From: **Keith Yaich** <KeithY@bsd29j.com>
Date: Wed, May 11, 2022 at 11:15 AM
Subject: referral letters
To: Steve Hebert <shebert@bennett.co.us>

Hey buddy,

Jen was in an accident and told me that I needed do some referrals

Can you please remind me of what's due?

thanks,
Keith

Keith Yaich
CFO-Treasurer to the Board
[615 7th Street](#)
Bennett, CO 80102
720-810-0584 cell
303-644-3234 ext 8204 office
303-644-4121 fax
GO TIGERS!!!

"It's not wanting to win that makes you a winner; It's refusing to fail."

Peyton Manning

--



Savannah Vickery | *Community Development Coordinator*
207 Muegge Way | Bennett CO, 80102
(303)644-3249 ext.1032 | svickery@bennett.co.us
townofbennett.colorado.gov



Planning Town Of Bennett <planning@bennett.co.us>

RE: Kiowa Creek Preserve Annexation and Zoning Referral

1 message

Karl Smalley <KSmalley@adcogov.org>
To: Town of Bennett Planning <planning@bennett.co.us>

Thu, Apr 21, 2022 at 8:09 PM

The Adams County Sheriff's Office has no objection to this project.

Karl Smalley, Commander

Adams County Sheriff's Office

Strasburg, Co 80136

From: Town of Bennett Planning <planning@bennett.co.us>
Sent: Thursday, April 21, 2022 2:30 PM
To: Layla Bajelan <LBajelan@adcogov.org>; Karl Smalley <KSmalley@adcogov.org>; United States Postal Service <sarah.e.zawatzki@usps.gov>; Bennett School District 29J ATTN: Robin Purdy <robinp@bsd29j.com>; Bennett School District 29J: ATTN: Jennifer West <jenniferw@bsd29j.com>; Bennett School District 29J: ATTN: Keith Yaich <keithy@bsd29j.com>; Robin Price <rprice@bennett.co.us>; Daymon Johnson <djohnson@bennett.co.us>; Bennett Rec District <director@bennettrec.org>; Victoria Flamini <VictoriaFlamini@bennettfireescue.org>; Bennett Watkins Fire Rescue <calebconnor@bennettfireescue.org>; Marilyn Cross - CDOT <Marilyn.Cross@state.co.us>; Colorado Department of Transportation (CDOT) Assistant Access Manager <david.dixon@state.co.us>; JGutierrez@summitutilitiesinc.com; GVanderstraten@summitutilitiesinc.com; Eastern Slope Rural Telephone <patw@esrta.com>; I-70 Regional Economic Advancement Partnership <lxc.strategies@gmail.com>; Brooks Kaufman <BKaufman@core.coop>; Jehn Water Consultants Inc <gburke@jehnwater.com>; Melinda Culley <melinda@kellypc.com>; Daniel Giroux <dangiroux@terramax.us>; Steve Hebert <shebert@bennett.co.us>; Heugh, Michael <Michael.Heugh@jacobs.com>
Subject: Kiowa Creek Preserve Annexation and Zoning Referral

Please be cautious: This email was sent from outside Adams County

Hello All,

Below is a Dropbox link for the Kiowa Creek Preserve annexation and zoning application documents. We appreciate your review and comments. Please send your comments back via this email address or by mail to Town Hall by May 12, 2022. You will note some documents, e.g. the Impact Report, also refer to the Bennett Farms annexation and zoning applications. They are two separate applications but are being processed by the same applicant at the same time.

<https://www.dropbox.com/scl/fo/jhte01j3uvwyfcpghcp/h?dl=0&rlkey=7jlgot9zvs9kaxz8lkqzcfcc9>

If you have any questions, please email or call Steve Hebert at shebert@bennett.co.us or the phone number below.

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Planning Department

207 Muegge Way | Bennett CO, 80102
(303)644-3249 | planning@bennett.co.us
townofbennett.colorado.gov

2021 TOWN OF BENNETT COMPREHENSIVE PLAN



INTRODUCTION

The Town of Bennett, Colorado is a rapidly evolving community on the high plains of Eastern Adams and Arapahoe Counties. Bennett residents enjoy the pleasures of small-town living, clean air, room to breathe and welcoming neighbors. While the Town's incorporated area is currently 5.9 square miles, Bennett is the shopping and service hub for over twenty thousand residents along the eastern Interstate 70 (I-70) corridor. Our residents have a unique mixture of rural and urban highlights, surrounded by ranchland and farmland; but only 25 miles from Denver and the alpine recreation of the Rocky Mountains only an hour's drive away. The major transportation network creates a transportation nexus ideal for influential development and economic vitality.

Bennett's community leaders are visionary and willing to take bold steps to secure the Town's future. As the Town continues to attract significant land development interest, it recognizes the guiding principles for public and private land development need to be updated to reflect our community's vision and regional planning interests. In the 2015 Comprehensive Plan, the Town identified a 91.4 square mile "**Area of Planning Interest**." While this planning area continues to influence what happens in Bennett, this 2021 update redefines the surrounding planning areas. The amended "**Area of Planning Influence**" is defined as an area that influences the Town's ability to provide services and grow; but, it does not align with annexation interests. More specifically, the Area of Planning Interest includes unincorporated infill properties within Bennett, contiguous properties and properties within a logical service area, ideal for future annexation for the Town. The Area of Planning Interest is further categorized into three focus areas for potential annexation. The areas are number based on the continuity for infrastructure, resources and services for the community. Each area describes the Town's primary vision for key expansion and includes specific goals and policies that will guide future planning and development in these areas. The Area of Planning Interest reflects a 30.2 square mile area for likely near-term development.

Bennett's plans for growth are matched by its objective to effectively master plan infrastructure and introduce a portfolio of water resources, including renewable and reuse water supplies. The prospect for expansion associated with the Town's recently adopted Capital Asset Inventory Master Plan is a fundamental tenet of this comprehensive plan.

Bennett is committed to responsible planned development; economic vitality; high-quality public services, resilient infrastructure, programs and policies; and the continued expansion of a healthy community. The 2021 Town of Bennett Comprehensive Plan is a focused update of the Town's 2012 and 2015 Comprehensive Plans. The updated 2021 Comprehensive Plan process involved master planning and public engagement efforts, including:

- The recently modernized Town of Bennett website, providing a page dedicated to master planning and guiding documents for public transparency.
- An update to the Town's social media and public information approach to provide details on upcoming meetings, meeting summaries, draft documents, and public comment forums.
- Adoption of the Capital Asset Inventory Master Plan (CAIMP), which lays the groundwork for the supporting infrastructure and resiliency of our community.
- In-person Engage.Shape.Build public forums with one-on-one conversations, educational presentations and community input boards.
- Adams County, Arapahoe County and Colorado Air and Space Port master planning efforts.
- Work sessions with the Adams County and Arapahoe County planning staff, the Bennett Planning Commission and Town Board.
- Public hearings before the Bennett Planning Commission and Town Board.

STRUCTURE AND USE OF THE PLAN

The 2021 Town of Bennett Comprehensive Plan Update is structured around nine planning themes - Neighborhoods, Economic Opportunity, Open Lands, Transportation, Services and Infrastructure, Community Health, Annexation, Community Partnerships and Resiliency. In addition, there is defined Area of Planning Influence and a focus on our Area of Planning Interest.

Each planning theme contains an achievable goal, key strategy, catalyst action, and one or more policy directives:

- An **achievable goal** is a statement of an ideal condition that can be accomplished. An achievable goal is supported by one or more key strategies, catalyst actions, and/or policy directives;
- A **key strategy** is a statement of a specific approach directed toward the achievement of a goal;
- A **catalyst action** is a statement of an initiative that will enhance the success of reaching an achievable goal. The Plan Monitoring section (page 20) identifies the short-term, mid-term, and long-term time frames established for the implementation of catalyst actions; and
- A **policy directive** is a statement consistent with a strategy to prescribe, restrict or otherwise guide or direct action.

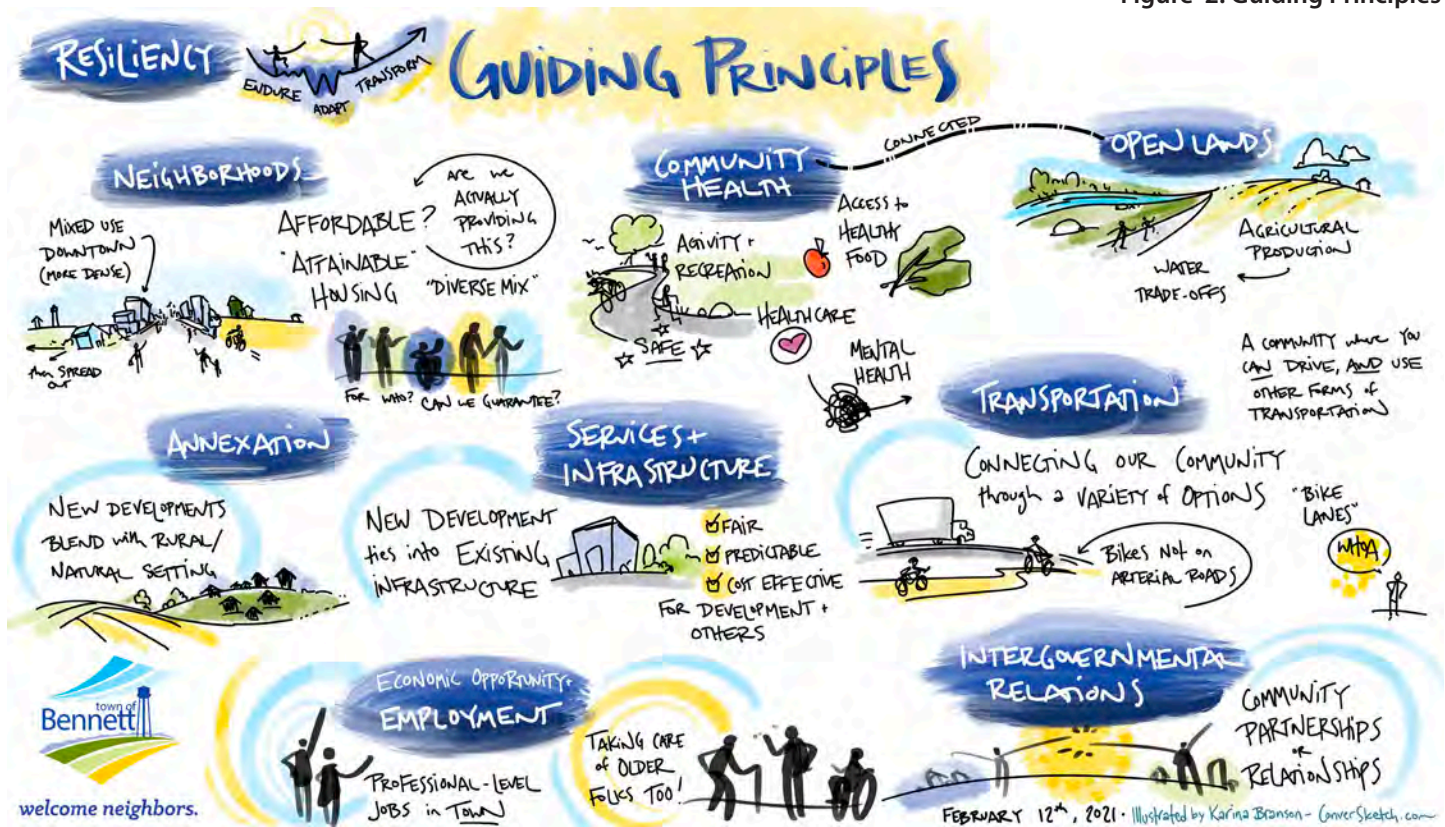
This plan is intended to provide elected and appointed officials, residents, business owners, landowners, project applicants, community partners and other stakeholders a broad policy tool for guiding decisions concerning growth and future land uses. As the Area of Planning Influence is regional in scale, plan implementation will require intergovernmental coordination and an additional level of public policy guidance and in-depth study. The focus areas, achievable goals, key strategies, catalyst actions and policy directives detailed within this document serve as the first generation of what is anticipated to be an ongoing, dynamic planning process. To further support the nine planning themes, the Board adopted a vision statement (Figure 1) and twelve guiding principles, as shown on page 3 (Figure 2), to establish our core values or standards to guide decision-making now and into the future.

Overall, this plan has been created to give successive public bodies a common framework for addressing land-use issues and set forth policies that foster a distinctive sense of place unique to Bennett. The plan is concluded by a summarized culmination and desired outcome accountability and tracking system within the plan monitoring section of this document.

Figure 1: Vision Statement



Figure 2: Guiding Principles



1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.
5. Commit to being good partners with other community agencies and organizations through; collaboration, leveraging funding, needs planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.
6. Foster an attractive community that retains residents in all stages of life through attainable housing, continuing education and a robust job market.
7. Preserve and protect natural open space and other areas that have environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.

COMMUNITY PROFILE

The Town of Bennett incorporated in 1930 and has steadily grown into a thriving and self-sustaining community with an excellent public school system and a growing hub for goods and services along the eastern I-70 corridor. The Town boasts over twelve miles of walking and biking trails, numerous parks, a community center, a recreation center and over 200 acres of protected open spaces. Currently, there are over 1,200 acres of land approved for development within the Town boundaries. Over half of that land being located within an Enterprise and Foreign Trade Zone, making Bennett a rising community with many attractive attributes for land developers and growing businesses.

Like many communities in rural Colorado, Bennett has an agricultural history and culture and has remained relatively small. However, since 2015, it is estimated the population has grown 33%, from 2,587 to approximately 3,200 persons by 2021 (Based on Water Account Data). The primary contributor to this increased population was the approval of new residential developments and a high demand for quality housing. In addition, two major annexations were approved during that period. Developing the Capital Asset Inventory Master Plan was a major policy change resulting in the expansion of the portfolio of water resources and identification of major infrastructure needs, providing the Town with the

capacity to accomodate development and responsibly absorb the impacts of growth. The below demographic information chart was provided by The Retail Coach, an economic development consulting firm.

While the incorporated 5.89 square miles of the Town is relatively small, Bennett is the service hub for the surrounding rural region. The total population of the trade area is currently over 20,000 and still growing. This population supports some of the nation's largest retail chains in Bennett, including King Soopers, Tractor Supply and Love's. Over 112 local business owners have called Bennett home for multiple generations. Bennett continues to cultivate a business-friendly community through our code and development processes. A stress-free commute also provides a significant labor shed of over 1.7 million workers within a 50-mile (approximately one-hour) radius, Figure 3. This, along with various workforce training and education programs, underline the Town's strong workforce pipeline available for economic vitality and expansion.

Visionary leaders in Bennett understand the importance of balancing "green spaces," unpopulated areas that help humans connect to their environment, with a built community that plays into its residents' overall happiness and mental well-being. Overall, the Town is committed to a community built with small-town character that is happy, connected, safe and innovative with the opportunity to live well and thrive.

Table 1: Community Demographic Profile

Population (2020 Census)	3,017
Population (2026 Estimate*)	6,694
Population (2010 Census)	2,308
Population Growth 2010-2020	24%
Trade Population (Service Hub Area*)	20,644
Median Age*	36.12
Median Household Income*	\$80,093
Households*	951

Table 2: Commute Times

Colorado Air and Space Port	10 Minutes
Denver International Airport	20 Minutes
Downtown Denver	25 Minutes
Denver Tech Center	35 Minutes
Rocky Mountains	50 Minutes
Hospital	20 Minutes

*Data Provided by The RetailCoach, August 2021.

Figure 3: Radius Map



SUMMARY OF PROJECTED GROWTH

The purpose of this section is to support the Town's projected growth by providing population and land use density projections over a long-term period as a basis for community resilience, economic indicators, mixed housing products and preservation of open lands. The research has been multi-faceted, first compiling and analyzing zoning data to project land uses and densities within the Town boundaries, assembling current population data unique Bennett to establish a population growth rate, and absorption assumptions to project up to date timelines.

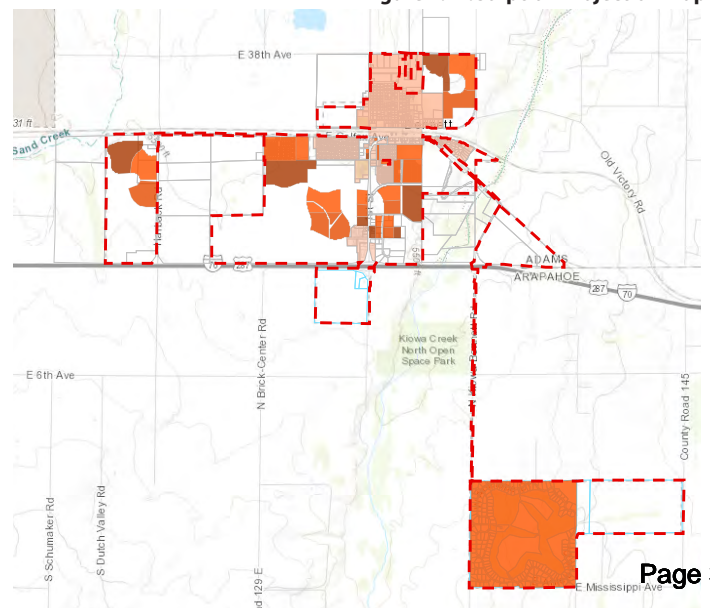
It is estimated that the Town currently has 1,200 acres of undeveloped land potential. These properties were identified through planning records, current zoning maps, landowner discussions, active applications and embedded in the Capital Improvements Planning and Development Project Status modules hosted in ArcGIS Online and updated on a case-by-case basis. The data was separated into residential versus non-residential development. In order to make comparable estimates for various development types, the projections are now assessed through the Single-Family Equivalent (S.F.E.) method, which considers the size of the property and the number of bedrooms in residential properties and restrooms in commercial properties to determine the estimated equivalence of impact of that proposed development. At the time of the CAIMP development, one S.F.E. was equivalent to 2.71 persons per household. Therefore, developments with more than one S.F.E. are allotted proportionally more impact in each tier. This methodology provides the framework for estimated equivalency in mixed-use products and growth projections, all of which is critical to future water planning for the Town's renewable water project.

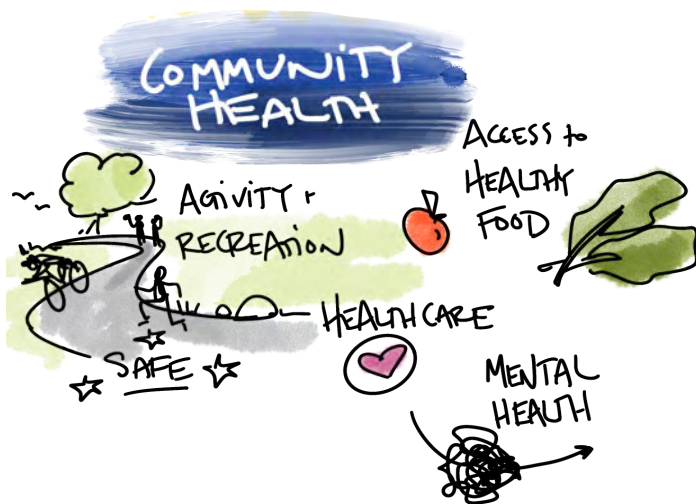
Next, the unique Bennett population summary was analyzed using data from the State Demography Office, input from the State Demographer's staff, the relevant Census data, and various discussions with the CAIMP team. Through this process, the potential for residential and commercial growth is significant in the Town based upon the property owner and developer interviews regarding the current market interests. The anticipation for growth is a result of three major contributing factors seen across the State. The first factor is the current and increasing population growth in the State, the second is the expansion and population increase in Metro Denver, and last the increase in housing prices that pushes buyers into surrounding areas such as Bennett. Bennett's residential market has been proven by prominent home builders with steady housing absorption rates over the last three years.

Finally, the absorption data was compiled through the developer interviews to determine and verify the information compiled in Geographical Information System (G.I.S). All absorption projections are based upon the developer's best estimate of how the market will respond. In the past ten years, all of Bennett's residential home market has been small infill until 2017 when LGI began to construct new homes and platted 250 new home sites. At the end of 2020, approximately 80% of these homes had certificates of occupancy. In 2021 the Town has five residential developments in various stages of construction with 948 platted lots and issued 129 certificates of occupancy. The 2021 absorption rate equates to approximately 14 SFE's per month.

The growth rates proposed were reviewed and vetted by the technical team and the Town leadership to determine Bennett's appropriate projected growth rate. Updating the growth projection models annually will be essential to the community's asset management and planning needs. The creation of CAIMP, the new G.I.S. framework, gives staff and consultants the ability to map land planning within an infrastructure model providing streamlined results for development and population projections. At the time of CAIMP, the Town's population is expected to reach 12,581 persons by the year 2029, which equates to approximately 4,358 S.F.E.'s (residential, industrial and commercial). The desired employment opportunities aligned job and housing expansion to reflect balanced growth in Bennett's future, reinforce one of the core concepts of the plan, which calls for neighborhood and employment centers with ample opportunities to live, work, and play locally.

Figure 4: Absorption Projection Map





Bennett is committed to providing a healthy, happy and safe lifestyle for all. Our capacity to plan and guide development through recreational activity, access to healthy food and healthcare initiatives reflect this commitment. On August 13, 2019, the Town adopted a robust Parks, Trails and Open Space Master Plan. This plan established a vision for the Town over the next ten years, giving the tool necessary to manage and enhance existing parks and plan for future parks, open spaces and trail connections throughout the community. This visioning process was an opportunity to update existing Town plans, including the previous 2009 Parks, Trails and Open Space Master Plan. Bennett has developed a multi-use trail that extends from the residential core of the community to the local shopping center, enabling safer pedestrian and bicycle grocery trips as well as improved

railroad crossings through the main HWY 79 and 36 intersection. Additionally, the primary grocer located within the incorporated Town, coupled with the relative population of Bennett, makes its progress in providing accessible healthy food options impressive.

An overarching objective for Bennett's community health is to increase residents' opportunities to make healthy food, mental health awareness and physical activity choices by implementing sustainable policies and practices for the built environment. As such, there is a strong emphasis on community health as an underlying principle to the Town of Bennett Comprehensive Plan. In particular, the Board has identified the desire to enhance community health by promoting healthcare recruitment strategies and incentives, as guided by the economic development assistance policy. Healthcare is highly recognized as a critical quality of life factor impacting the retention and attraction of Bennett residents and the workforce. Furthermore, healthcare is more important than just the services they provide. Access to high-quality, affordable health care institutions affects the workforce and community resiliency. Healthy, longer-living workers are more productive and happier. The more productive and happier your workforce is, the more they are likely to stay and invest in their community.

Achievable Goal: To promote healthy eating and active living.

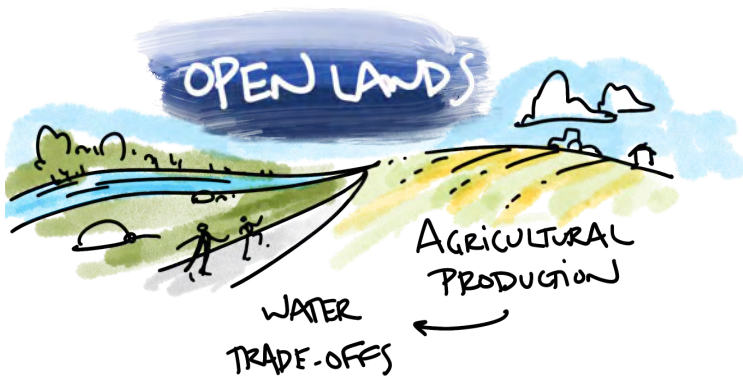
Key Strategy: Increase public health resources through partnerships with organizations such as: Tri-County Health Department, LiveWell Colorado, the Colorado Health Foundation and others as a model healthy community initiative.

Catalyst Action: Conduct an assessment of local and regional plans adopted by the Town, Adams and Arapahoe County and other regional governing bodies to link trail systems and open space.

Policy Directive: The Town shall ensure the creation of a built environment that supports healthy options for physical activity and good nutrition as foundations for sustainable health.

Policy Directive: The Town shall implement recommendations from the 2019 Parks and Open Space Master Plan to provide for the recreational and tourism needs of residents and visitors to encourage other sports or other recreational activities along with the commercial facilities supporting such uses.





The bulk of the Planning Area of Interest consists of open lands, characterized by sizeable agricultural landholdings with pockets of very low density, large lot residential areas. The area also includes four major (one hundred year event) floodplains that serve as natural drainage and riparian corridors. During the May 2021 Engage.Shape.Build public input meeting, it was evident that our residents place a high value on their environment and strongly desire the preservation of a rural lifestyle.

Unique among other communities in Colorado, Bennett's availability of open land creates a promising impact for development along with the preservation of the natural environment that will later define the physical character and image of the rural community. The extensive network of trails, open space corridors and conservation areas weaves through the fabric of each development application, connecting with parks, neighborhoods, schools, community facilities, employment centers and activity districts. Identifying rural preservation areas within new developments helps the Town assure residents access to a range of recreation opportunities and benefit from the protection of sensitive environmental habitats, water bodies and view corridors. Additionally, it is duly noted that preservation of open space provides a water trade-off, as these land areas will drastically reduce the overall water impact. Overall, this open lands effort connects residents to regional trails, neighboring jurisdiction open space and water sustainability for planned density developments. Since 2015, the Board of Trustees has taken several steps that aid in preserving open space. First, by the Code

adoption of land dedication requirements. Dedication requirements at the time of subdivision allow for the dedication of vacant land for the purposes of public parks, trails, open space, public facilities or recreational purposes. Next, by taking ownership over Bennett Regional Park and Open Space containing 193 acres. The property was previously a privately owned 18-hole golf course named "Antelope Hills" and now supports Recreation, Relatively Natural Habitat and Open Space conservation values. In particular, the property provides public access to open space and for outdoor recreation and trail connections from the Antelope Hills Community to the Kiowa Creek North Open Space and surrounding rural areas for the use and enjoyment of the general public. In addition, since taking ownership of the property in April 2013, all of the concrete trail systems from the golf course have been removed, and replantation of early-seral plants and weeds mitigation to restore historical conditions of a healthy short-grass prairie system have been completed. As a result, this well-established conservation easement now protects all 193 acres of Bennett Regional Park and Open Space. Finally, the Town recently entered into an option to purchase agreement to preserve approximately 156 acres of native creek habitat within the floodplain, serving as a natural drainage and riparian corridor within the Northern Kiowa Creek Preserve.

In summary, while the Town has made significant strides in the preservation of open space, it is recognized that in order to maintain the rural character of the area, subdivided lots created should be screened, clustered or distributed in such a manner as to minimize visual and environmental impacts and maximize the use of existing roads and utilities, and that continued efforts for public acquisition of open space property should be prioritized whenever possible.

Achievable Goal: To protect and preserve the rural nature of open lands.

Key Strategy: Identify parcels with the Focus Areas for potential open space acquisition.

Catalyst Action: Work with Arapahoe County's Open Space Master Planning efforts to redefine their North Open Space parcel and identify the trail linkage program for connectivity with the Town's trail system.

Policy Directive: The Town shall encourage future open space acquisitions and identify preservation efforts, as a way to protect their natural values.





The Summary of Projected Growth (page 5) notes demand in the next ten years for 4,358 additional S.F.E.'s within the Area of Planning Interest. Providing a balanced mix of housing opportunities in the Town will continue to be a focus of planning efforts in each development. Ensuring that a wide range of incomes, age groups and lifestyle choices are accommodated, will reinforce the Town's desire to be a place in which to live and work, inclusive of all.

A guiding principle of this plan is to develop neighborhood centers that allow for a mix of land uses with increases in densities, which is a departure from the historical growth pattern in the corridor. Benefits of concentrated mixed-use development include an efficient land use pattern that increases transportation choices, reduces energy consumption, promotes water conservation and offers more opportunities for social interaction. In addition, the Town will pursue a variety of strategies to maintain the affordable housing stock that currently exists comparable to the Denver Metro area.

Neighborhood centers are characterized by a core of civic, educational, entertainment, office and retail uses that support surrounding residential uses of varying types and densities. Each center's development will vary in density and intensity from large master-planned neighborhoods on the within the Area of Planning Interest to smaller in-fill projects within the Town's core.

In 2021, the Town commenced draft updates to its Chapter 16 Land Use Code, inclusive of zoning regulations and the adoption of interactive Zoning and Development maps. To foster new and in-fill development, the interactive maps and revamped applicants guides now provide real-time information to developers and are intended to offer transparent and streamlined development process.



Achievable Goal: To provide diverse housing types at various densities and a mix of appropriate land uses.

Key Strategy: Foster innovative infrastructure practices, site planning, and mixed-use development patterns.

Catalyst Action: Prepare design guidelines and transition the Town's existing PD's and outdated zoning districts into one of the new zoning districts.

Policy Directive: The Town shall encourage master-planned, mixed-use development in concentrated centers.



Annexation Focus Areas 1, 2, and 3 correspond to the three-mile annexation boundaries;

- The timing of annexation in each Focus Area will be dependent on the ability to provide infrastructure and services to the property. Conversely, resources underlying lands rich in water supply, open space and/or other Town desired resources, may provide an opportunity for prioritization of annexation; and
- Through various planning efforts, the Town will seek to strike a balance among the many competing demands on land by creating development patterns that are orderly and rational, provide the greatest benefits for individuals and the community as a whole and avoid nuisance conflicts between land uses.

A fundamental principle forming the basis for the Town's annexation policy is that annexation is an agreement between a willing landowner and a willing local government. Therefore, the Town and property owner should enter into a pre-annexation agreement as a precursor to any annexation. Pre-annexation agreements establish the conditions of annexation and provide the Town and property owner with a set of negotiated obligations upon annexation.

Three annexation growth areas are outlined in Figure 5 below, and referenced herein as Focus Areas, all within the Planning Area of Interest. These growth areas are intended to provide guidance, not an obligation, or priority for future annexation by the Town or landowners. In general, these are areas that may be candidates for annexation. Additional considerations include:

- With minor exceptions, Colorado annexation statutes limit the extension of a municipal boundary to no more than three miles within any one year. In general,

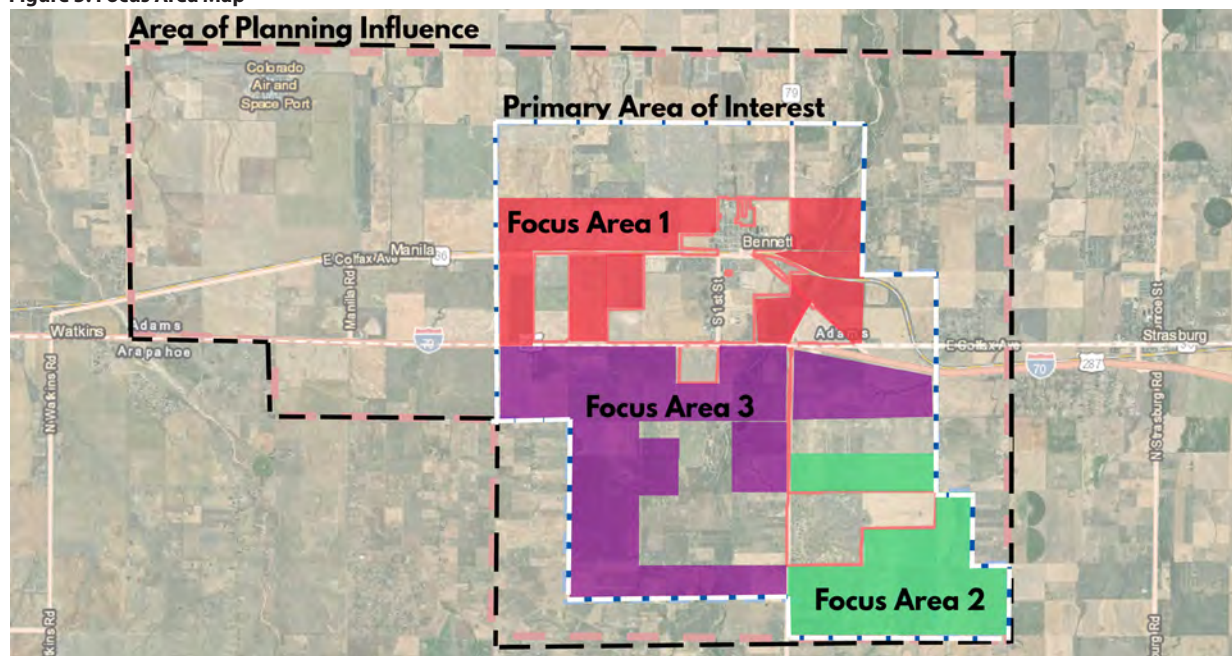
Achievable Goal: To support the development of Bennett as a healthy community with interconnected employment and neighborhood centers.

Key Strategy: Utilize incorporated lands and public rights-of-way to establish continuity for future annexation of land on a prioritized basis.

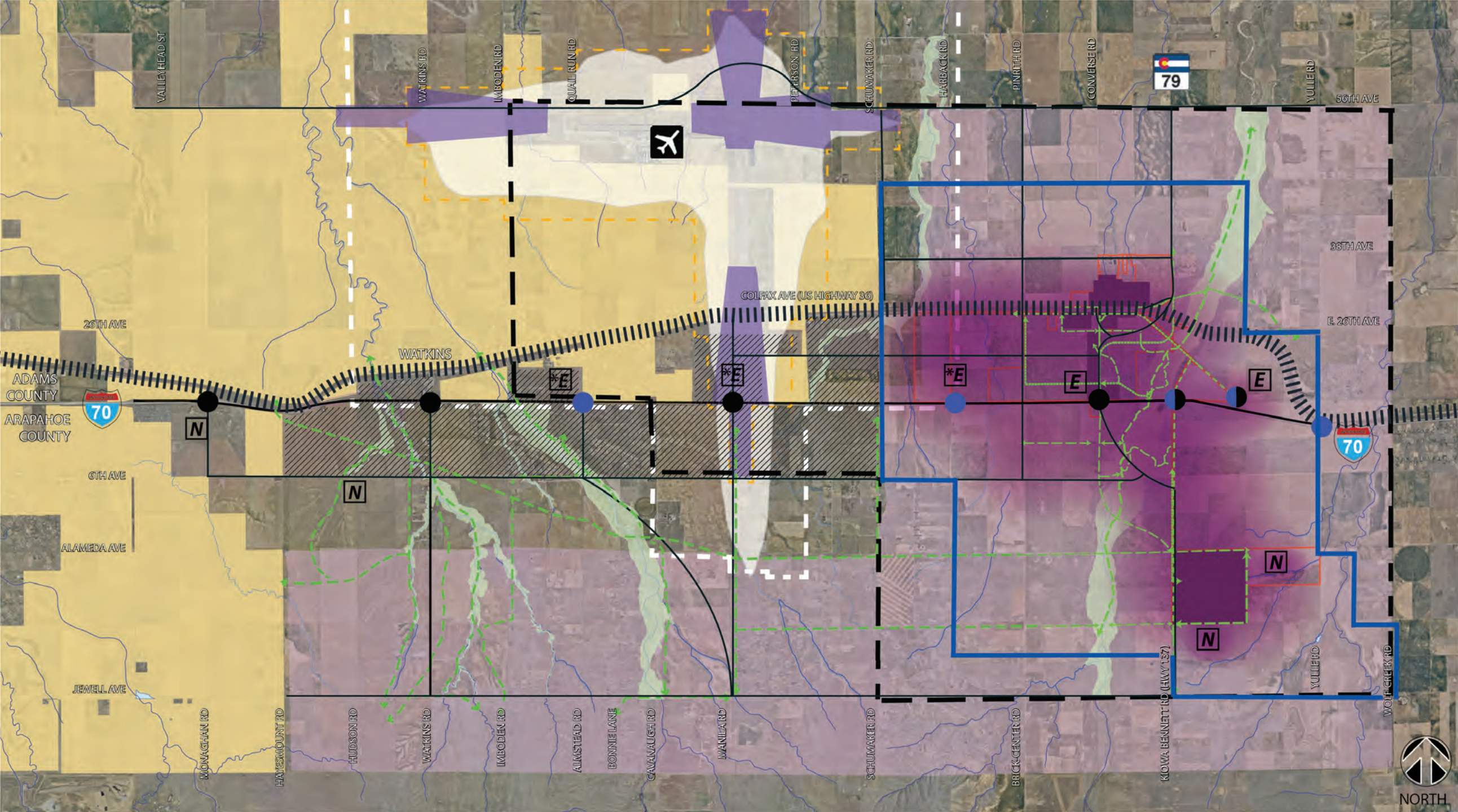
Catalyst Action: Update on an annual basis the Town's Three Mile Area Plan that serves to support Colorado statutory provision C.R.S. § 31-12-105, which requires that a municipality have a plan in place prior to the annexation of any land.

Policy Directive: Existing rural residential subdivisions in all annexation priority areas shall not be considered for annexation, unless critically in need of sewer and/or water service due to environmental concerns, failing septic systems, or poor water quality or quantity.

Figure 5: Focus Area Map

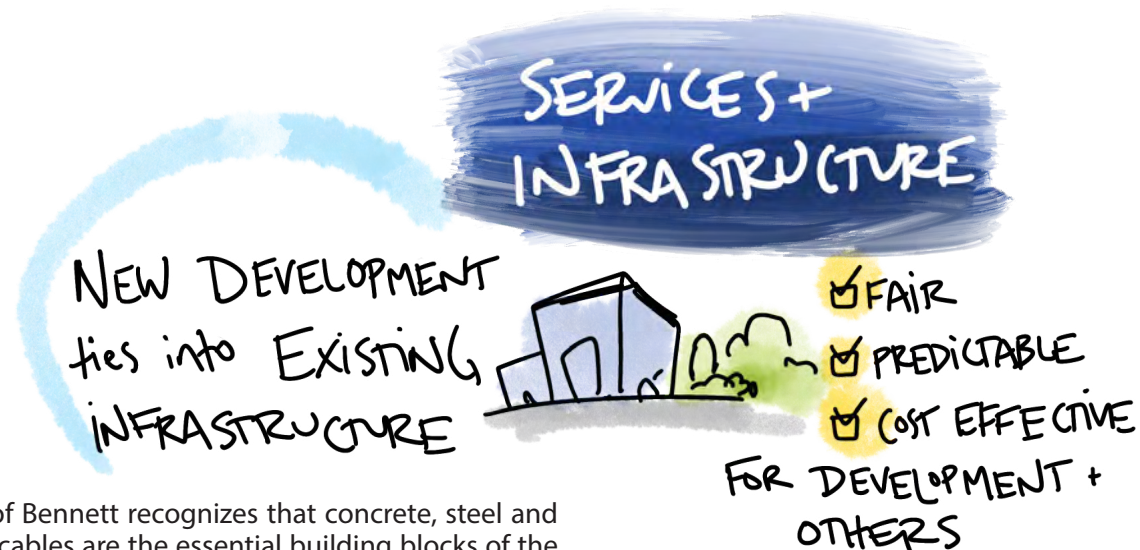


PREFERRED PLANNING PRINCIPLES MAP



Legend

	Area of Planning Interest		Colorado Air and Space Port		Freeway		Established Municipal Area		Employment Center
	Area of Planning Influence		Airport Influence Zone		State Highway		Developing Municipal Area		* Subject to Airport Influence Zone restrictions
	Town of Bennett		Airport Restriction Area #1		Union Pacific Railroad		Rural/ Rural Preservation		Neighborhood Center
	City of Aurora		Airport Restriction Area #2		Existing Interchange		Natural Resource Area		Proposed Arterial
	Aurora Strategic Area		55 DNL Noise Contour		Proposed Interchange				Proposed Regional Trail



The Town of Bennett recognizes that concrete, steel and fiber-optic cables are the essential building blocks of the economy. Infrastructure enables trade, powers businesses, connects workers to their jobs, creates opportunities for communities and sustains us from an unpredictable economy. From private investment in telecommunication systems, broadband networks, freight railroads, energy projects, and pipelines to the Town's responsibility of transportation, water, buildings, facilities, and parks, infrastructure is the backbone of a viable community and a healthy economy.

A primary focus of Bennett infrastructure is to plan, protect and construct sustainable and resilient infrastructure for current and future residents of Bennett. A thorough assessment of current assets and prospects for growth associated with a renewable water supply is a fundamental tenet of the 2019 Capital Asset Inventory Master Plan, otherwise referred to as CAIMP. In December 2019, the Town of Bennett Board of Trustees adopted a resolution approving the CAIMP as guiding principles for which infrastructure will be assessed, planned, designed, and constructed. CAIMP affirms Bennett's commitment to responsible planned development, resiliency, economic vitality and a program for public improvements to protect quality of life for its residents. CAIMP provides appointed and elected officials, landowners, project applicants, and other stakeholders with a broad policy tool for guiding decisions concerning capital infrastructure for current and future Town assets.

CAIMP was a targeted update of the Town's 2003 B.B.C. Research & Consulting Impact Fee Study, 2008 R.T.W. Water-Wastewater Master Plan and Rate Study, and the 2014 Impact Fee Update. The Town's senior staff, Terramax, Inc., Aqua Engineering, Jehn Water Consultants, Inc., Northline G.I.S., PureCycle, Kendrick Consulting, Inc., Norris Design, and SM Rocha, LLC. made up the consulting team responsible for the development of this robust master plan. Additionally, public forums were hosted to provide residential input and historical data.

Through previous assignments and communications with Bennett's stakeholders, this planning approach recognizes the Town's burgeoning Geographic Information System (GIS) vision and commitment. This new ESRI GIS program provides an avenue for more dynamic, flexible and useful living documents for master planning and capital improvements. While many master plans and capital improvement programs are destined to become obsolete quickly, GIS holds the potential to work directly against this factor, by remaining in regular and active use, reviewed and updated by Town staff and Town policy directives.



CAIMP underscored the need to "quantify the reasonable impacts of the proposed development." As Bennett considers new initiatives to complement the need for a diverse mix of land uses and services, the Town recognizes the desire from developers to diversify housing products and development phasing. Bennett took steps to assess impacts based on development types equivalent to a typical single-family resident living in Bennett. Impacts are now assessed through the Single-Family Equivalent (S.F.E.) method, which is proportionate to the size of the property, bedrooms of residential or restrooms of commercial to determine the estimated equivalence of impact of that proposed development.

Finally, to be successful, capital improvement planning must be an ongoing activity. The progress matrix within CAIMP provides an essential plan monitoring tool specific to services and infrastructure, that identifies timeframes for the accomplishment of catalyst actions in congruence with the Comprehensive Plan.



Natural, technological and human-caused hazards take a high toll on communities, but better managing disaster risks can reduce the costs of lives, livelihoods and quality of life. The Town recognizes that planning and implementing prioritized measures can strengthen resiliency, improve a community's ability to continue or restore vital services in a more timely way and build back better after damaging events. One of the primary objectives of this Plan update is to prepare the Town for future events, minimize risk and assure recovery if disasters occur.

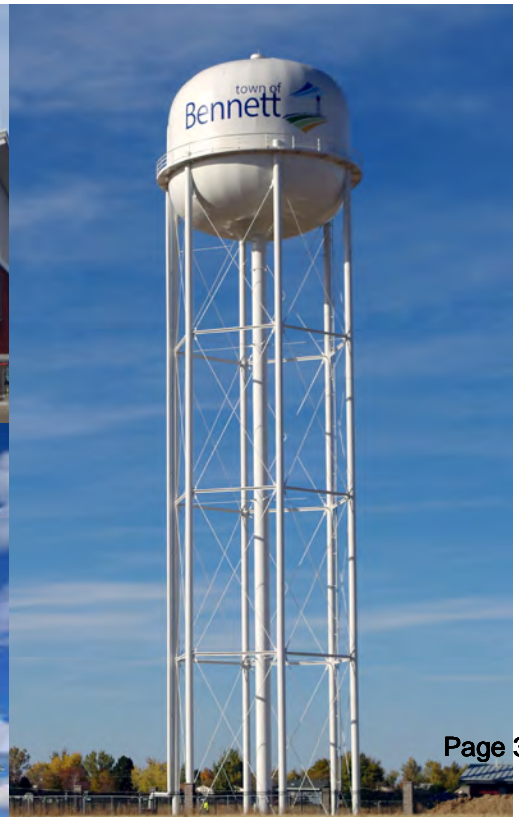
The plan provides a practical and flexible approach to help Bennett improve resilience by setting priorities and allocating resources to manage risks for prevailing hazards. Early identification of the planning process, which includes working examples, will help to illustrate the elements of resiliency. Furthermore, the Town will gather resources to characterize the social and economic dimensions of the community, dependencies and cascading consequences, and building and infrastructure performance. Finally, the implementation of resiliency guides can assist integration of consistent resiliency goals into economic development, zoning, mitigation and planning activities that impact buildings, utilities and other infrastructure system needs.

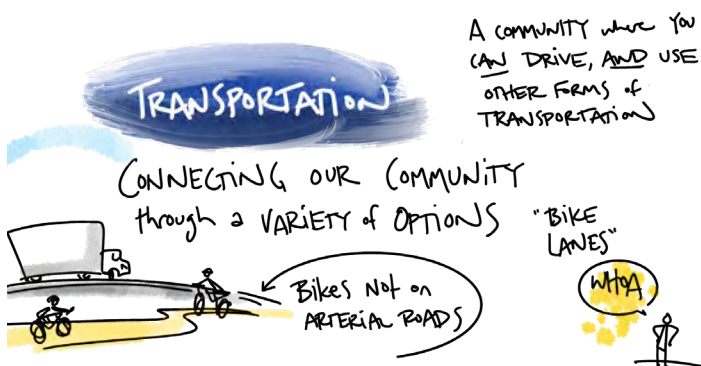
Achievable Goal: Create the next-step process to help the Town think through and plan for its social and economic needs, their particular hazard risks and recovery of the built environment.

Key Strategy: Setting performance goals for vital social functions—healthcare, education and public safety—and supporting buildings and infrastructure systems - transportation, energy, communications, and water and wastewater.

Catalyst Action: Create the action-oriented resiliency companion report to help the Town follow a guided and researched process, including providing a series of customizable templates and additional resources if a hazard occurs.

Policy Directive: The community's social and economic needs and functions should drive goal-setting for how the built environment performs and providing a comprehensive method to align community priorities and resources with resilience goals.





Bennett is one of the most accessible communities in the Denver area. The transportation network includes Interstate 70 (I-70), US Highway 36 (US 36), State Highway 79 (SH 79), as well as the Union Pacific Railroad. In addition, Bennett's proximity to Denver International Airport (DIA), the Colorado Air and Space Port, and E-470 Public Highway Authority creates transportation connections ideal for responsible development and economic vitality. Furthermore, the extensive network of trails weaving through our parks, neighborhoods, schools, community facilities, employment centers and activity districts provide the framework for a safe multi-modal transportation network.

The regional highway system's condition and functionality significantly impact the Town's existing and future roadway systems. The two primary access points off I-70 (I-70/Kiowa-Bennett Road and I-70/SH 79) currently provide convenient access to the community. The Town recognizes that as the community grows these main entry points will require significant improvements.

In 2015, the Town of Bennett passed a successful sales tax and bond measure for an additional 1% sales tax and completely reconstructed most of the streets in Bennett and made crucial repairs to the existing concrete streets. This sales tax does not sunset but will continue to be a primary funding source to make future improvements and repairs to our system.

Several studies addressing transportation needs inform this comprehensive plan, including the SH 79 PEL Study, the Access Control Plan, the Downtown Bennett Planning Study, the Grade Separation Preliminary Feasibility Study, the Adams County Transportation Plan and the Arapahoe County Transportation Plan.

Key recommendations reflected include:

- The realignment of SH 79 east of Bennett, which begins south of 38th Avenue and ends just north of I-70.
- Constructing new interchanges on I-70 at Quail Run Road, Harback Road and Yulle Road and improving the existing SH79 and Kiowa-Bennett Road interchanges.

A key next step is creating a Master Transportation Plan (MTP). The MTP will guide the Town's policy development, and the delivery of services, prioritize transportation projects, outline opportunities and generate a strategic action plan for the next ten years. In addition, the MTP will review and outline expansion opportunities for roadway, transit and other cutting-edge transportation opportunities, including a multi-modal transportation network of bike lanes and trails, and future public transit elements:

- Express bus service to the Denver metro area, as the majority of the Area of Planning Interest is currently located outside the existing Denver Regional Transportation District (RTD) boundary; and
- The initiation of a local bus circulator or trolley service that will give residents the ability to travel between neighborhood and employment centers.
- Potential transit improvements that extend beyond the 2040 planning horizon could include:
- Commuter rail service to RTD's planned East Corridor commuter rail line using either the existing Union Pacific rail line or new rail installed in the I-70 median; and
- A high speed rail station located at an I-70 interchange in the Area of Planning Influence, with service from Denver.

Achievable Goal: To provide a safe, efficient, and connected multi-modal transportation network.

Key Strategy: Improve vehicular access, traffic circulation and public safety at interstate highway interchanges accessing Bennett.

Catalyst Action: Completion of a master transportation plan for the Town of Bennett and incorporating the plan into the Town's GIS systems.

Policy Directive: The Town shall work with DRCOG, CDOT, RTD and other regional transportation entities to coordinate development of a multi-modal transportation system.





The Town's economic development strategy intends to strengthen and grow the Town's employment base, support existing and new retail business and foster redevelopment of our Downtown. The Comprehensive Plan supports a full range of business growth opportunities within the Town from inception to expansion to provide a healthy environment for business development. There is a unique opportunity with the amount of land available to both nurture existing businesses and accommodate new businesses. Identifying land uses and development that will complement the Town's rich service base is a key focus as the Town grows and attracts new businesses.

The Area of Planning Influence is part of the Colorado Air and Space Port industrial space submarket, which is projected to capture 77.6 percent of the new growth in industrial space and ultimately represent 32 percent of the total industrial space in the Denver metropolitan area. In addition, there are over 2,400 acres of open land available for development within the Area of Planning Interest. Thus, available land is one of Bennett's most significant assets for recruiting business and employment opportunities.

The Town commits to targeting new opportunities and expansion of existing businesses that diversify our economic base and continue to strengthen the fiscal health of our community while respecting our natural resources and our unique small-town feel. The Town of Bennett Economic Development Assistance (EDA) policy is intended to customize economic development assistance based upon the need of the project and meet long-term community goals by creating a vibrant, economically healthy community.

The concentration for development into employment centers is a key component of the recruitment strategy for the Town. These employment centers are proposed along the I-70 Corridor at major interchanges, parallel to the Union Pacific Railroad; and near E-470, SH 79 and 56th Avenue with excellent access to DIA and Colorado Air and Space Port. The employment centers are intended to accommodate commercial and industrial land uses, including large-scale warehousing, manufacturing, outdoor storage, distribution and trans-loading facilities. Other supporting uses could include hotels, restaurants, child care centers and small-scale retail.

As growth continues into the eastern I-70 Corridor region, Bennett finds ways to balance economic development with the community's desire to maintain its rural and agricultural character. Since 2013, the "Bennett Community Market" has been an agricultural attraction along the I-70 Corridor and partner of recent agritourism initiatives. The Bennett retail community has grown from one primary grocer to a diverse economic service base for the Eastern Corridor. The retail development efforts reflect Bennett's ongoing commitment to maintain its agricultural heritage, stimulate economic development and foster healthy lifestyle choices.

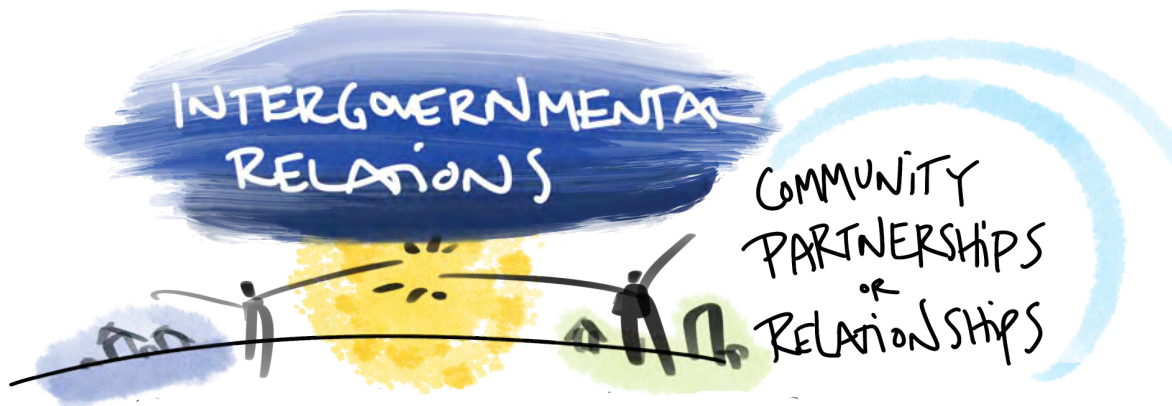
Achievable Goal: To enhance the sales tax and employment base of the Town by attracting and retaining commercial and industrial development.

Key Strategy: Identify and preserve land for Town Centre Concept and parallel Mainstreet.

Catalyst Action: Finalize and implement the next steps in the Strategic Economic Development Plan to determine advantages and priorities for attracting a variety of new commercial and industrial development into identified employment center locations that will meet the daily needs of area workers.

Policy Directive: The Town shall proactively annex and zone land for employment centers.





Both the Planning Influence Area and Area of Planning Interest for the 2021 Comprehensive Plan include areas of unincorporated Arapahoe and Adams Counties and the City of Aurora. These three jurisdictions, along with the Town of Bennett, the Bennett School Districts, the Bennett Fire Protection District, Anythink Library District, and the Bennett Recreation District, are major stakeholders in ensuring coordinated regional planning. The Town renewed local focus in this 2021 update, working to ensure all local special districts were included in the planning process as well as updating Intergovernmental Agreements with these entities to identify future expectations for growth and partnership.

Both Adams County and Arapahoe County updated long-range planning documents relative to the Bennett area including the Colorado Air and Space Port Subarea Plan and the Watkins-Bennett Area Vision Study. In addition, the City of Aurora completed a comprehensive plan update in 2009. While Bennett's influence planning area excludes the City of Aurora, there is a minimal direct impact on the desired annexation of these parcels. The overarching goal is to develop partnerships that encourage new growth into all adjacent areas that contemplate reduced impacts to the Town, County's and City and maximize access to services and existing infrastructure for residents and businesses. The Town is also interested in pursuing joint planning for the Colorado Air and Space Port in combination with the County's Subarea Plan.



During the development of the 2019 Capital Asset Inventory Master Plan, the Town initiated a process to coordinate its planning principles with major stakeholders. As a result, several important issues have been identified that could ultimately form the basis for one or more intergovernmental agreements, including:

- A governance structure for regional infrastructure improvements that include water, wastewater, transportation and open lands preservation;
- Revenue sharing from future commercial and industrial development;
- Joint development standards in anticipation of future annexation;
- Regulatory changes to the Space Port influence zone framework; and
- Common interest in urban growth area in Bennett.

Achievable Goal: To create a cooperative framework for regional land use planning in the eastern I-70 corridor.

Key Strategy: Promote the coordination of local and regional plans through active participation and leadership in the Colorado Air and Space Port and the updates to the Adams County and Arapahoe County comprehensive plans.

Catalyst Action: Renew or Create Intergovernmental Agreements (IGA's) as needed between/among local partners such as the Bennett/Watkins Fire Protection District, Bennett 27J School District, Bennett Parks and Recreation District, and the Anythink Library District.

Catalyst Action: Integrate additional county offices into Town facilities to foster the efficient provision of coordinated local government services for area residents.

Policy Directive: The Town shall work with DRCOG, the City of Aurora, Adams County and Arapahoe County on matters of inter-jurisdictional concern.

PREFERRED PLANNING PRINCIPLES

During the initial major revision to the Comprehensive Plan in 2011, the Town laid out a conceptual planning framework that is consistent with the Town's vision and guiding principles.

This 2021 update redefined the planning areas, shown in Figure 5 on page 9, and are as defined below:

1. The Area of Planning Interest, which includes the Town of Bennett and an unincorporated planning area within Adams and Arapahoe counties; and
2. The Area of Planning Influence, a potential growth area within the I-70 Corridor that may impact the Area of Planning Interest that includes the community of Watkins, Colorado Air and Space Port, and an undeveloped portion of northeast Aurora.

The Town's Planning Principles are categorized into four planning definitions:

Established Municipal Area

That portion of the existing incorporated Town of Bennett, which for the most part is a well developed and mature built environment with adequate services and infrastructure capability. This area also includes the Main Street- Downtown and Old Town areas proposed for redevelopment in the Town Centre Land Use Concept, as shown on page 19.

Developing Municipal Area

Areas where development is either contiguous to Established Municipal areas or where a stand-alone neighborhood or employment centers are contemplated. Developing Municipal areas are characterized by direct access to I-70 and proposed arterial roadways and transit, and the potential for targeted delivery of infrastructure and urban services.

Rural/ Rural Preservation

For the Area of Planning Interest, this area includes existing rural residential neighborhoods, large lot development, very low density cluster development and large agricultural land holdings that desire to remain rural or rural in character. The Open Lands element calls for a number of mechanisms to protect and/or preserve these areas.

Natural Resource Area

Areas that are the within designated one-hundred year flood plains. Natural Resource areas represent significant value to current and future residents in terms of open space, trail systems, passive recreation, flood control, water quality and water supply.

The assumptions derived from the 1999 comprehensive plan that shaped the preparation of the 2012 comprehensive plan and each subsequent plan update that remain relevant today are:

- Residential and commercial development is inevitable and will continue due to regional growth pressures, proximity to transportation infrastructure and availability of services;
- Adams County, Arapahoe County and the City of Aurora recognize Bennett's interest in development issues; and
- Distinction can be made between varying levels of development within Bennett's geographic area of interest.

The Town envisions a healthy, sustainable community where residents can live, work and play locally, setting Bennett and its proximity to the I-70 corridor apart from a conventional development pattern and being unique for the needs of current and future residents. Key elements of the Plan include:

- Future land development is concentrated in mixed use, master-planned neighborhood and employment centers wrapped with agricultural lands and very low density rural development;
- The open land between neighborhood and employment centers becomes a valuable community asset, with a regional trail system along riparian corridors providing important recreational and environmental linkages;
- Access, mobility and circulation are improved as development occurs, with future transit providing service between neighborhood and employment centers while additional options are explored;
- An efficient service and infrastructure delivery system limits capital and operating costs, easing the fiscal burden of existing and future residents;
- Intergovernmental Agreements (IGA's) between/ among Arapahoe County, Adams County, Aurora, to address coordination of land use issues, public financing districts, joint development standards, capital investment policies, and potential for revenue sharing; and
- Intergovernmental Agreements (IGA's) as needed between/among local partners such as the Bennett/ Watkins Fire Protection District, Bennett 27J School District, Bennett Parks and Recreation District, and the Anythink Library District.

The 2021 update will continue to reference guiding principles outlined in the 2010 Downtown Planning Study. This study is still a viable opportunity for the Town to analyze and explore future possibilities for infill development and redevelopment of Bennett north of I-70. The Town Centre Land Use Concept Plan (Figure 7) calls for increased residential density near the historic center of the Town, allowing for diverse housing opportunities that will appeal to both young adults and the increasing retirement age population. Lower density residential opportunities are reserved for the outlying edges of the Town Centre. Employment center, light industrial and commercial uses are focused along the SH 79 and SH 36 highway corridors. The Town Centre land use categories are defined as:

Main Street – Downtown

The Main Street - Downtown focuses attention on a pedestrian-oriented environment where accessibility and visibility are key. Retail is anticipated on a smaller scale with the buildings on the street creating energy and vitality through art, food, music, and entertainment. Residential uses may include single family attached and small multi-family, live/work units, and vertical mixed use with ground floor retail. See the Downtown Conceptual Plan in Figure 6, below.

Old Town

Old Town is the historic commercial center of Bennett. This area is bisected by the railway line where transportation continues to allow easy access to farming goods and services. This historic core continues to be a vital area for affordable and accessible commercial properties. Expanding upon the Main Street - Downtown theme, street improvements are envisioned where sidewalks, street trees, lighting, and parking all create an urban spine that revitalizes this important commercial center.

Commercial Mixed Use Corridor

These areas are adjacent to the realignment of SH 79 and SH 36 (E. Colfax Avenue) serving a high volume of vehicular traffic on a regional route including semi-tractor trailers. Residential is secondary and needs to be compatible with the commercial uses along this corridor.

Mixed Residential

Mixed Residential neighborhoods will contain a variety of housing types and densities, combined with non-residential secondary land uses that are complementary and supportive. These areas should meet a wide variety of every-day living needs, encourage walking to gathering places and services, and integrate into the larger community. Other supporting land uses, such as parks and recreation areas, religious institutions, and schools may be included in Mixed Residential areas.

Low Residential

Low density residential uses are typically less than 5 dwelling units per acre and comprised of single-family detached housing. Low Residential areas are intended to provide housing to accommodate a wide range of price ranges, from affordable single-family starter homes to custom home neighborhoods managed by homeowner associations.

Freeway Commercial

Freeway commercial land uses accommodate larger scale retail uses and cater to a regional population traveling along the I-70 and SH 79 corridors. As the principal gateway to Bennett, this area needs to provide continuity between the larger scale regional development and the smaller scale commercial and residential areas of Bennett progressing from I-70 along SH79 into Main Street.

Light Industrial

The Light Industrial area on the northern edge of the town core allows of a wide variety of industrial land uses that contribute to the employment base. The light industrial centers should integrate buildings, outdoor spaces, and transportation facilities, with minimal levels of dust, fumes, odors, refuse, smoke, vapor, noise, lights, and vibrations.

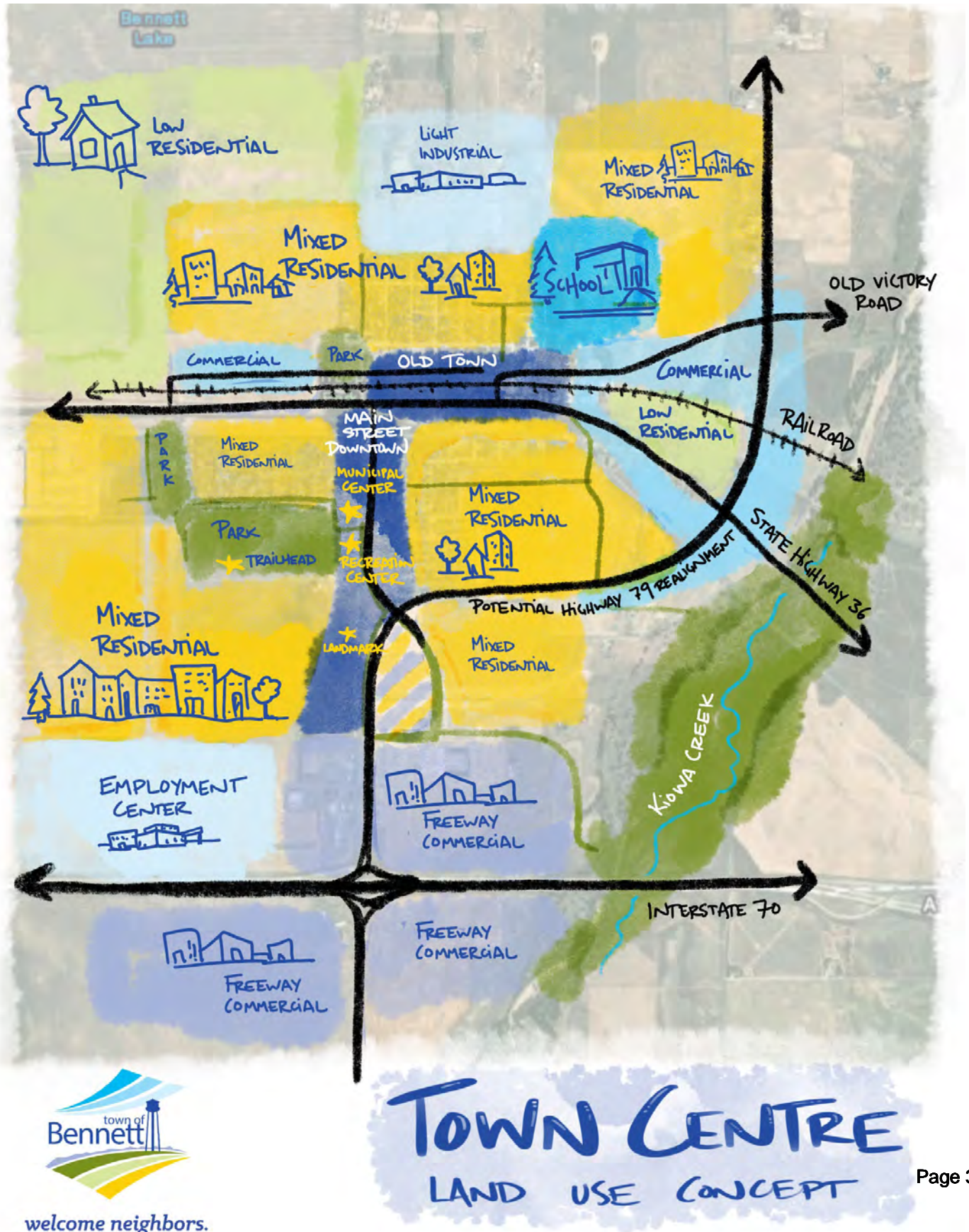
Employment Center

The Employment Center proposed near the I-70/SH79 interchange is intended to serve as a location for non-residential commercial and industrial uses in a campus-style, business park configuration. See page 15 for additional details on employment centers.

Figure 6: Downtown Conceptual Plan



Figure 7: Town Centre Land Use Concept Plan



PLAN MONITORING

To be successful, planning must be an ongoing activity. Plan monitoring involves establishing accountability tools for tracking progress over time. The progress matrix (below) is a basic plan monitoring tool that identifies timeframes for the accomplishment of catalyst actions: short-term (annual to three years), midterm (three to five years), and long-term (five years and beyond).

Plan monitoring is a dynamic process. Key strategies, catalyst actions, and policy directives should be reviewed on an annual basis and refined with changing circumstances. As data become available, indicators or other specific measures that monitor the accomplishment of achievable goals should be established for each plan theme. Finally, the entire plan document should be considered for public review and updated five years from its adoption.

Progress Matrix

Catalyst Action	Completion Timeframe	% Complete
Update on an annual basis the Town's Three Mile Area Plan that serves to support Colorado statutory provision C.R.S. § 31-12-105, which requires that a municipality have a plan in place prior to the annexation of any land.	Short-term	___%
Completion of a master transportation plan for the Town of Bennett and incorporating the plan into the Town's GIS systems.	Short-term	___%
Renew or Create Intergovernmental Agreements (IGA's) as needed between/among local partners such as the Bennett/Watkins Fire Protection District, Bennett 27J School District, Bennett Parks and Recreation District, and the Anythink Library District.	Short-term	___%
Integrate additional county offices into Town facilities to foster the efficient provision of coordinated local government services for area residents.	Mid-term	___%
Update design guidelines and transition the Town's existing PD's and outdated zoning districts into one of the new zoning districts.	Mid-term	___%
Finalize and implement the next steps in the Strategic Economic Development Plan to determine advantages and priorities for attracting a variety of new commercial and industrial development into identified employment center locations.	Mid-term	___%
Conduct an assessment of local and regional plans adopted by the Town, Adams and Arapahoe County and other regional governing bodies to link trail systems and open space.	Long-term	___%
Create the action-oriented resiliency companion report to help the Town follow a guided and researched process, including providing a series of customizable templates and additional resources if a hazard occurs.	Long-term	___%
Work with Arapahoe County's Open Space Master Planning efforts to redefine their North Open Space parcel and identify the trail linkage program for connectivity with the Town's trail system.	Long-term	___%

Acknowledgements

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Gina Burke, Jehn Water Consultants, Inc.

Regional Planning Partners

Dave Ruppel, Colorado Air and Space Port
Bob Lewan, Colorado Air and Space Port
Jan Yeckes, Arapahoe County
Loretta Daniel, Arapahoe County
Jen Rutter, Adams County
Jenni Grafton, Adams County

Illustrations by Karina Branson of ConverSketch

Special thanks to the **Department of Local Affairs** for their generous funding of the project, and to the citizens who participated in the public workshops.

BENNETT PLANNING AND ZONING COMMISSION

RESOLUTION NO. 2022-11

A RESOLUTION RECOMMENDING APPROVAL OF ZONING FOR PROPERTY ANNEXED TO THE TOWN OF BENNETT KNOWN AS THE KIOWA CREEK ANNEXATION NOS. 1-3 AND RECOMMENDING APPROVAL OF AN OUTLINE DEVELOPMENT PLAN FOR SUCH PROPERTY

WHEREAS, there has been submitted to the Planning and Zoning Commission of the Town of Bennett a request for approval of zoning for certain property, known as the Kiowa Creek Annexation Nos. 1-3 (the “Kiowa Creek Annexation”), was filed with the Board of Trustees of the Town of Bennett; and

WHEREAS, the landowner of the property requested a Planned Development (PD) zoning classification and has submitted an Outline Development Plan (ODP) in connection with the zoning request; and

WHEREAS, all materials related to the proposed ODP have been reviewed by Town Staff and found to be in compliance with Town of Bennett zoning ordinances and related Town ordinances, regulations, and policies; and

WHEREAS, after a duly-noticed public hearing, at which evidence and testimony were entered into the record, the Planning and Zoning Commission recommends that the proposed zoning and ODP be approved.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING AND ZONING COMMISSION OF THE TOWN OF BENNETT, COLORADO:

Section 1. The Planning and Zoning Commission hereby recommends approval of the proposed zoning of Planned Development (PD) for the property annexed to the Town and known as the Kiowa Creek Annexation Nos. 1-3 to the Town of Bennett.

Section 2. The Planning and Zoning Commission hereby recommends approval of the proposed Kiowa Creek Outline Development Plan, subject to the following condition of approval:

A. Before recording the Outline Development Plan, the applicant shall make minor modifications directed by Town Staff, the Town Attorney and the Town Engineer.

PASSED AND ADOPTED THIS 27th DAY OF JUNE 2022.

ATTEST:

Chairperson

Secretary

Suggested Motion

I move to approve Resolution No. 2022-11 - A resolution recommending approval of zoning for property annexed to the Town of Bennett known as the Kiowa Creek Annexation Nos. 1-3 and recommending approval of an Outline Development Plan for such property.

**QUASI-JUDICIAL PUBLIC HEARING SCRIPT
(PLANNING COMMISSION)**

CHAIR: I will now open the public hearing on the following application: An application for Case No. 22.18 - Bennett Farms Planned Development - PD Zoning

The purpose of the hearing is to provide a public forum for all interested parties who wish to comment on an application before the Commission. If you wish to speak please write your name and address on the sign-up sheet or in the chat box and you will be called on.

The Procedure for the public hearing will be as follows:

FIRST, there will be a presentation by the Town staff.

NEXT, we will have a presentation by the applicant.

After these two presentations we will allow people who signed up to speak for up to 3 minutes each. Please **DO NOT REPEAT** points made by others. It is fine to say, "I agree with the previous speaker's comments". Please direct your comments to the Commission, not the applicant or Town staff.

After receiving public comments, we will allow the applicant an opportunity to respond.

NEXT, the Planning Commission members may ask questions of anyone who testified.

I will then close the public hearing and no further testimony or other evidence will be received. The Planning Commission will discuss the matter and may take some kind of action.

Public hearings are recorded for the public record. All testimony must be presented, after you give your full name and address.

CHAIR: Do we have proper notification?

[Secretary to confirm on record notice has been provided]

Do any Commission members have any disclosures?

[Commissioners to disclose conflicts of interests, ex parte contacts, etc]

Town staff, please introduce the applicant and provide your staff report.

[Staff presentation]

Will the applicant or the applicant's representative present the application?

[Applicant presentation]

Do any of the Commissioners have questions of the applicant or Town staff?

[Question and Answer]

CHAIR: I will now open the public comment portion of the public hearing. For those wishing to speak, please clearly state your name and address for the record.

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Has anyone signed up to speak at this public hearing?

[If more than one person has signed in, call them in order.]

Is there any interested party in the audience that has not signed up but who wishes to speak regarding the application?

[Additional public comment]

If there is no more public comment, I will now close the public comment portion of the public hearing.

CHAIR: Does the applicant wish to respond to any of the comments?

[Opportunity for applicant to provide any rebuttal evidence]

CHAIR: Before we turn to Commissioner questions and deliberation, I want to state that the documents included within the record for this public hearing include all application materials submitted by the applicant; all materials included in the Planning Commission packets; any PowerPoint or other presentations given tonight; all written referral and public comments received regarding the application; the public comment sign-up sheet; the public posting log and photographs of the notice, and the Town's subdivision and zoning ordinances and other applicable regulations. Does anyone have any objection to inclusion of these items in the record?

CHAIR: I will now close the public hearing and the Planning Commission members will deliberate on the evidence presented. During deliberations, Commission members may ask questions of Town staff, but no further public comment or other testimony or evidence will be received.

Who would like to begin?

Who is next?

Any other questions or comments

[If anyone believes the applicable criteria have not been met, then please explain why so we have those reasons for the record.]

CHAIR: We have a draft Resolution in front of us and I would entertain a motion.

We have a motion on the floor by Commissioner _____ and a second by Commissioner _____ to approve Planning and Zoning Commission Resolution No. 2022-10.

May we have a Roll-Call vote?

Motion carries/fails.

STAFF REPORT



welcome neighbors.

TO: Members of the Planning and Zoning Commission
FROM: Steve Hebert, Planning and Economic Development Manager
DATE: June 27, 2022
SUBJECT: Case No. 22.18 – Bennett Farms Planned Development – PD Zoning

Applicant/Representative(s): Kiowa Creek Preserve Holdings, LLC and Herdsman Capital, LLC – Russell McLennan / Vogel & Associates – Jeff Vogel

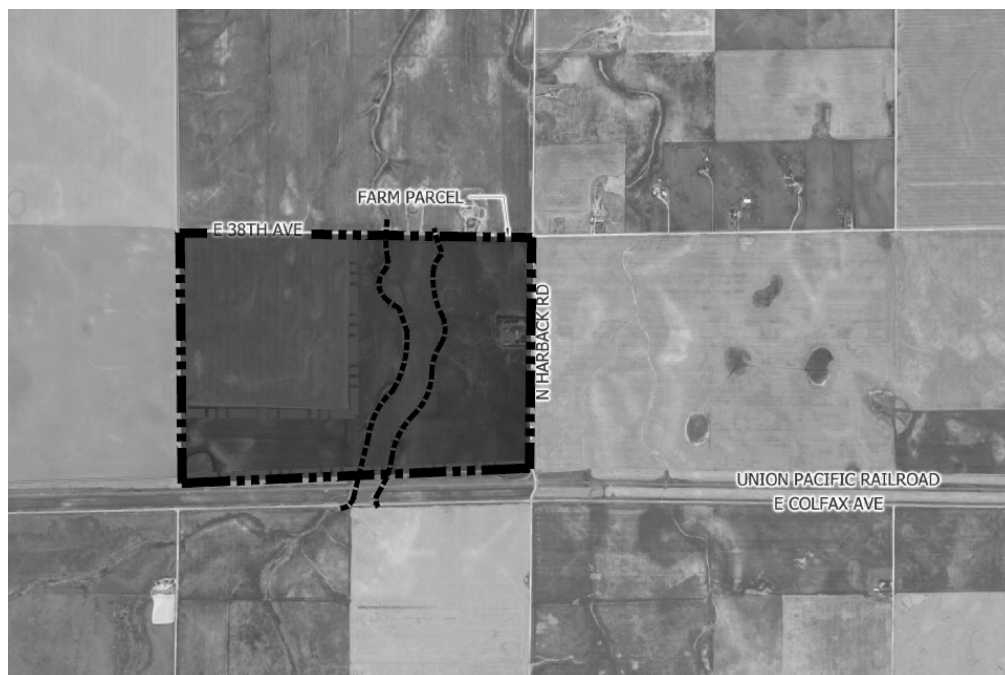
Location: Northwest Corner of E. Colfax Ave. and Harback Rd.

Purpose: Zone 405.7 Acres to Planned Development – PD District

Background

The applicants have petitioned the Town of Bennett to annex approximately 405.7 acres into the Town. (See Case No. 22.17.) The property is located northwest of East Colfax Avenue and Harback Road, north of the Union Pacific Railroad right-of-way. See the vicinity map below.

If the annexation is approved by the Board of Trustees, the applicant proposes 405.7 acres be zoned Planned Development (PD) District. The properties are currently zoned A-3 (Agricultural) in unincorporated Adams County. The property owners are Kiowa Creek Preserve Holdings, LLC and Herdsman Capital, LLC. An Outline Development Plan (ODP) must be approved along with the PD zoning. The proposed ODP serves as the governing zoning document, outlining permitted land uses, a maximum of 3,540 residential units at various densities, approximately 1 million sq. ft. of non-residential space, maximum building height, building setbacks, etc. The annexation and zoning will be considered by the Board of Trustees on June 28, 2022.



Summary of the Annexation and Initial Zoning Process

In Colorado, annexation into a municipality can take place in three ways: (1) landowner petition; (2) annexation election; or (3) unilateral annexation of an enclave or municipal-owned land. In this case, the landowners have submitted a petition to annex. Once the Town Board of Trustees has concluded that the annexation petition complies with state statute, a public hearing is scheduled for the Board to consider the annexation. If a zoning application is submitted concurrently, as in this case, the Planning and Zoning Commission shall also hold a public hearing to consider the zoning application. The Commission does not take action or make a recommendation on the annexation petition, just the zoning request.

Site Characteristics

The 405.7-acre Bennett Farms property is bordered on the north by East 38th Avenue, on the east by Harback Road and on the south by the Union Pacific Railroad right-of-way, just north of East Colfax Avenue. The western boundary is adjacent to the Transport Colorado property, which is in the City of Aurora. The property has been used over the years for agricultural purposes. An entrance into the property is located along Harback Road, which provide access to the existing farm headquarters. This headquarters includes a single-family home, silos, a barn and other accessory uses. The natural rolling topography of the land generally descends to the natural Lost Creek drainage corridor that is located in the center of the property and flows north to south. Vegetation consists of crops and native grasses. The delineated floodplain zone is approximately 42 acres and bisects the property north to south.

Proposed Zoning and Project Description

The applicant proposes zoning the property to Planned Development (PD) District. The zoning will only go into effect if the Town Board approves the annexation and the zoning.

The proposed Bennett Farms Outline Development Plan (ODP) proposes the following:

Planning Area	Area (Acres)	Commercial (Sq. Ft.)	Zoning	Zoning Description	% of Total	Maximum Residential Density	Resid. Units
PA-1	23.4		MDR	Medium Density Resid.	5.8	7	164
PA-2	13.8		MDR	Medium Density Resid.	3.4	5	69
PA-3	5.6		MDR	Medium Density Resid.	1.4	7	39
PA-4	9.2		OS	Open Space	2.3	0	0
PA-5	6.5		MDR	Medium Density Resid.	1.6	7	46
PA-6	16.6	216,929	MU	Mixed Use District	4.1	20	332
PA-7	33.6		HDR	High Density Resid.	8.3	20	672
PA-8	17.4		MDR	Medium Density Resid.	4.3	7	122
PA-9	42.4		F	Floodplain	10.5	0	0
PA-10	25.6		MDR	Medium Density Resid.	6.3	5	128
PA-11	24.9		MDR	Medium Density Resid.	6.1	7	174
PA-12	25.4		MDR	Medium Density Resid.	6.3	7	178
PA-13	6.0		OS	Open Space	1.5	0	0
PA-14	23.5		MDR	Medium Density Resid.	5.8	5	118

Planning Area	Area (Acres)	Commercial (Sq. Ft.)	Zoning	Zoning Description	% of Total	Maximum Residential Density	Resid. Units
PA-15	32.2		MDR	Medium Density Resid.	7.9	5	161
PA-16	13.5		MDR	Medium Density Resid.	3.3	7	95
PA-17	28.2	368,500	MU	Mixed Use District	7.0	20	564
PA-18	14.0	182,900	MU	Mixed Use District	3.5	20	280
PA-19	19.9	260,000	MU	Mixed Use District	4.9	20	398
Total Plan Area	381.7						
Floodplain	42.4		F		10.5		
Community Amenity	15.2		OS		3.7		
Public ROW	24				5.9		
Total PD Area	405.7	1,028,329			100%		3,540

Applicant's Intent

The following is an overview from the Outline Development Plan:

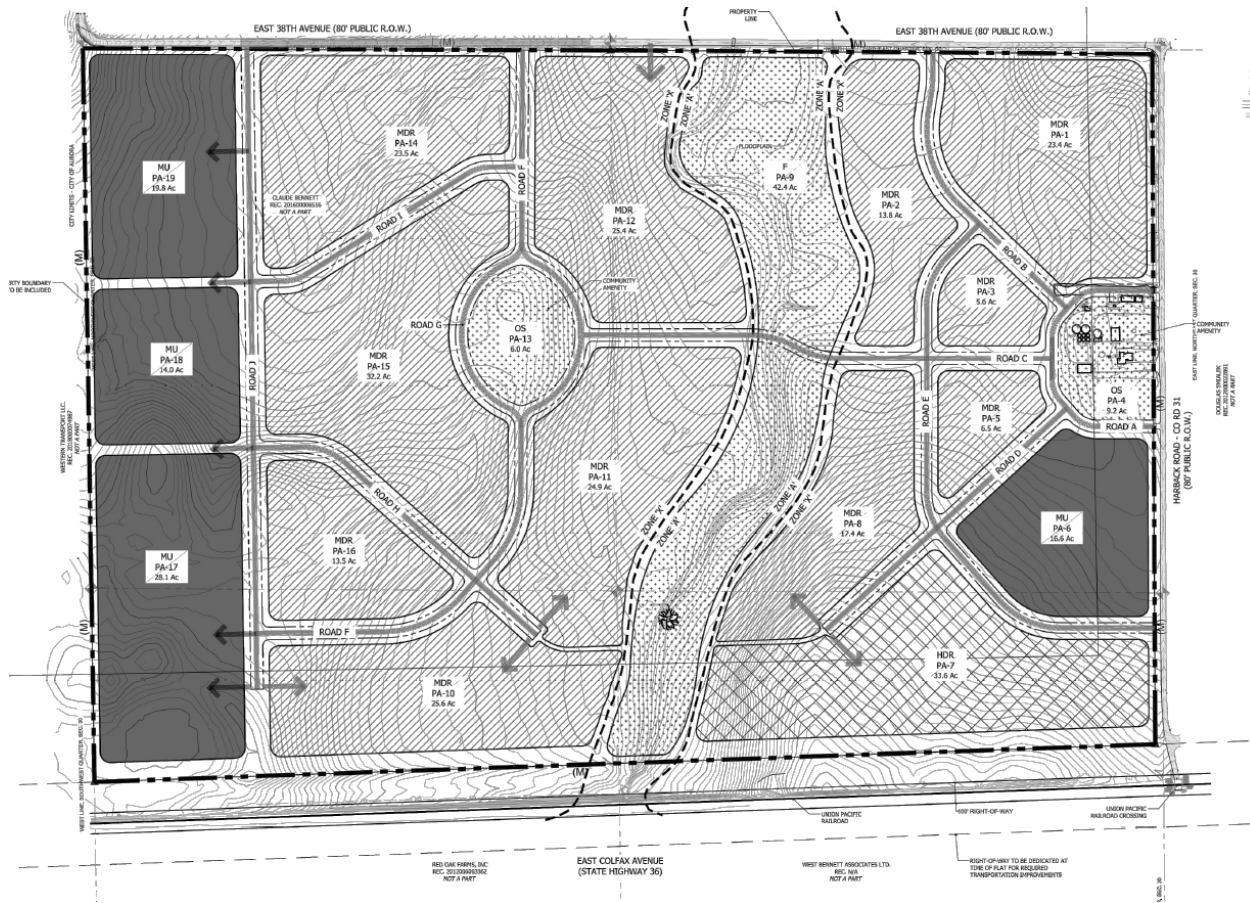
"Utilizing the existing physical characteristics and integrating planning principles, the intent is to create a mixed-use community that will have enduring value to the Town of Bennett and region. This community will be comprised of interconnected neighborhoods, mixed use centers and amenities.

The existing farm headquarters, mixed use centers and a hierarchy of proposed parks will serve as community gathering areas. Mixed use areas are integrated to provide a variety of uses and to serve as a land use transition from the future Transport Project. Residential uses are located and configured to accommodate a diversity of housing types. This mixed use community will provide services and housing alternative for a multi-generational population."

The Outline Development Plan (ODP)

The ODP graphic plan is shown on the following page. The Medium Density Residential areas are distributed throughout the site from north to south. The High Density Residential subarea is located in the southeast corner of the project. Mixed use areas are located along the western boundary and along Harback Road. There is a 6-acre central park in the middle of the project, an open space corridor along the Lost Creek drainage way and an open space community space around the historic farm buildings.

Most future uses will require a subdivision plat, which must be reviewed by the Planning and Zoning Commission and approved by the Town Board of Trustees. Future Final Development Plans (FDPs) must also be reviewed and approved by the Board of Trustees prior to development. More detailed plans for access, street design, water, sewer, stormwater, other utilities, landscaping, building elevations and materials, etc. will be required and reviewed at these subsequent stages.



Surrounding Zoning and Land Use

The property is surrounded by a variety of different zone districts, current land uses and expected future land uses. The property to the north is zoned A-3 in unincorporated Adams County. It is currently an active agricultural use. The property to the east is zoned A-3 and is home to a 415-acre solar farm. Land west and northwest of the Bennett Farms property is zoned I-2, Industrial in the City of Aurora. The property is part of the PortColorado project on the east side of the Colorado Air and Space Port (CASP). The CASP is approximately 2 miles northwest of Bennett Farms. Finally, the property south of Bennett Farms includes the Union Pacific Railroad right-of-way and the master planned Prospect Ridge property. The Prospect Ridge zoning encompasses 375 acres and allows 1,495 residential units and 10 acres of neighborhood commercial. See the table below and a subsection of the Town of Bennett Zoning Map on the following page.

Direction	Zone District	Land Use
North	A-3 (Unincorporated)	Agricultural, Large Lot Residential
East	A-3 (Unincorporated)	Solar Farm
South	Planned Development - PD for Prospect Ridge in Bennett and A-3 (Unincorporated)	Vacant, Future Mixed Use Prospect Ridge Community
West	I-2 - Industrial District in the City of Aurora	Vacant, Future Industrial

Bypass”, currently underway with preliminary design activities that the Town is managing and participating in.

- The Western Bypass is being evaluated for capacity requirements to accommodate development at Bennett Farms, along with other western Bennett potential development areas.
- For Bennett Farms, the Western Bypass would be accessed via a regional “Lost Creek Lift Station” and transmission force main east along East 38th Avenue, to gravity outfall near or east of the Penrith Road future alignment.
- The Lost Creek Lift Station would need to be sited on the Bennett Farms property, and somewhat adjacent to the Lost Creek main channel and low point for maximum efficiency and service area.
- The Town should consider participating in phased upsizing design of the potential Lost Creek Lift Station and East 38th Avenue force main, as well as related (non-phased) upsizing of the proposed Lost Creek service area primary sanitary sewer interceptors, in order to potentially serve other future development within the Lost Creek basin.
- Development of the Bennett Farms property with the proposed Zoning will require expansion of the Town’s Water Reclamation Facility at East 38th Avenue.
 - The Town is currently conducting detailed pre-design technical studies for expansion of the existing WRF to support additional development, while also addressing improved effluent water quality, and especially treatment to quality levels supporting highly flexible and robust reuse water programs.
- The Bennett Farms development would support the WRF expansion via Wastewater Development Impact Fees.
 - These Fees are evaluated regularly by Town Staff, and reviewed with the Town Board of Trustees, to ensure the Town is collecting appropriate development fees to support required WRF expansion and upgrades.

Stormwater Management

- The property features significant regulatory Lost Creek floodplain areas, as the applicant has identified and recognized.
- The Town has adopted National Flood Insurance Program (NFIP) floodplain administration ordinances, which would govern proposed floodplain activities and all proposed development.
- The Town would work with the developer on any proposed floodplain amendments, modifications, and development, including for public improvement facilities, as might be indicated, and especially including roadway crossings with bridge or box culvert treatments.
- It is anticipated that stormwater and floodplain management challenges can be successfully addressed for potential development on the property.

Access, Traffic Impacts and Timing of Development Relative to Improvements

- The property is immediately adjacent to Harback Road and East 38th Avenue within Adams County, which would be subject to maintenance as governed by an Intergovernmental Agreement (IGA) with the County.
- Town ownership, with operation and maintenance obligations and costs, along East 38th Avenue may require evaluation, and additional cost assessment to Bennett Farms and other significant west Bennett users of the road.

- Potential and viable westerly and southerly access to and from the property will require significant consideration and evaluation, particularly in terms of reviewing UPRR crossing.
- Street widenings, upgraded intersections, and other improvements, including right-of-way set-asides, will be required at subsequent stages of the development.
- Road system access, improvements, connections and traffic impact management will be the subject of significant detailed technical analysis, proposals and design as the property goes through ensuing subdivision and development review, should the Town view the annexation and zoning application favorably.

Fire and Rescue

The property lies within the Bennett-Watkins Fire Rescue (BWFR) Authority District. The developer shall confer with Bennett Fire Protection District and ensure that the proposed development conforms to adopted (IFC) fire code standards, adequate water delivery systems and fire flow, adequate access, treatment of the wildland-urban interface and other requirements of the District. The Town will continue its practice of referring development applications to the District to ensure the District's comments are addressed at the appropriate stage of development.

Gas, Electric and Telecommunications

Gas will be available from Colorado Natural Gas. Electric power will be available from CORE Electric Cooperative and telecommunications will be available from Eastern Slope and Comcast.

School District

The Bennett School District 29J has no comment at this time. Development of the project will be subject to the Bennett Municipal Code and the Intergovernmental Agreement (IGA) Concerning Land Dedications or Payments in Lieu for School Purposes, in effect at the time of subdivision platting.

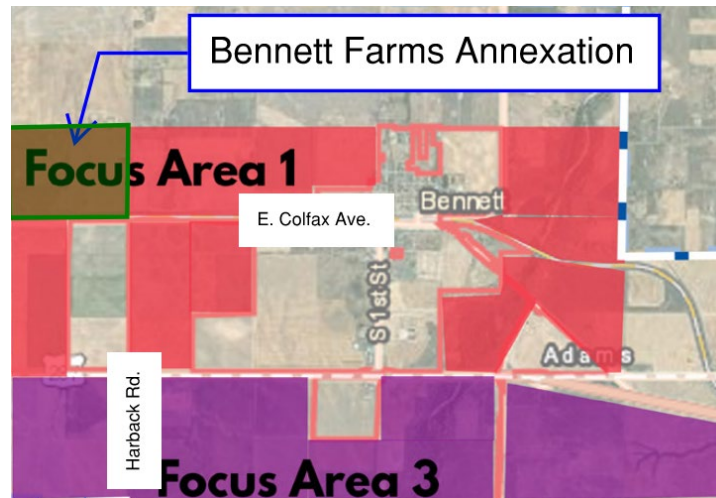
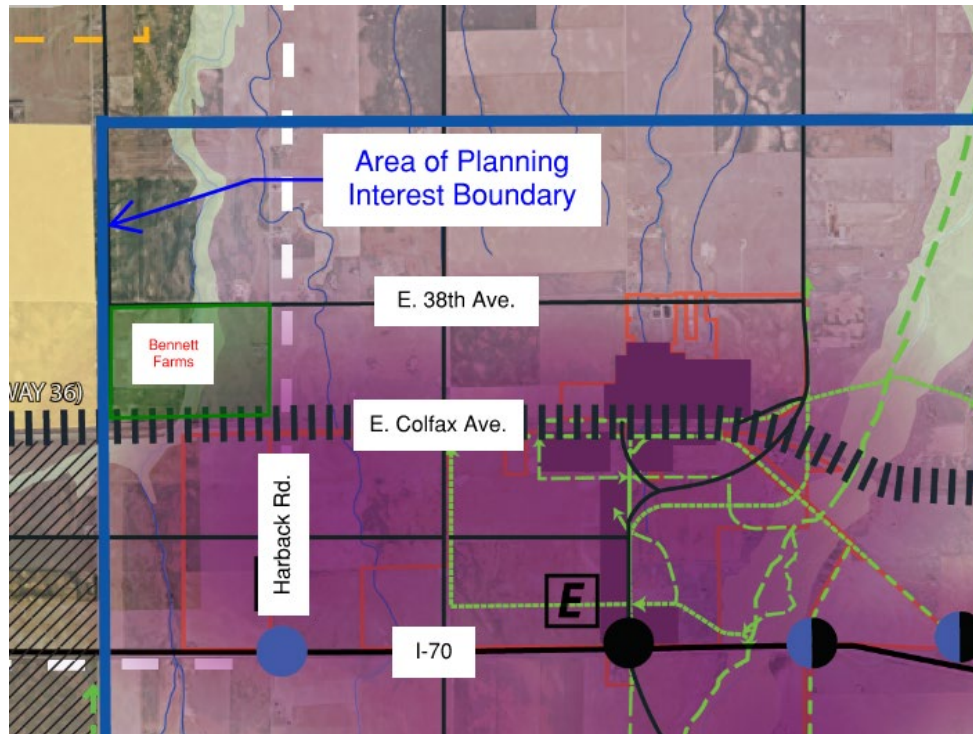
Staff Analysis and Findings

Consistency with the Comprehensive Plan and the Three-Mile Plan

The subject property is within the Area of Planning Interest in the 2021 Comprehensive Plan. The Area of Planning Interest includes unincorporated infill properties within Bennett, contiguous properties and properties within a logical service area, ideal for future annexation and development in the Town.

Within the Comprehensive Plan's Area of Planning Interest, growth areas are identified as Focus Areas. These focus areas are intended "to provide guidance, not an obligation or priority, for future annexation by the Town or landowners." The Bennett Farms property is in Focus Area 1, as shown on the map below.

See a subsection of the Comprehensive Plan map and the Focus Area map on the following page.



The proposed zoning is **compatible with the Town of Bennett Three-Mile Plan**, most recently adopted in January 2022. The Three-Mile Plan is a compilation of several Town adopted plans, policies and studies, including the following:

- a) 2021 Comprehensive Plan
- b) 2019 Capital Asset Inventory Master Plan
- c) 2019 Parks, Trails and Open Space Master Plan
- d) 2019 Arts and Cultural Master Plan
- e) 2011 Regional Trail Plan
- f) 2010 Downtown Planning Study
- g) 2013 Planning and Environmental Linkages Report

Comprehensive Plan Principles

The Comprehensive Plan includes twelve principles that provide guidance to elected and appointed officials, residents, business and land owners, project applicants, community partners and stakeholders concerning growth and future land uses. They are outlined below.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.	Y	The proposed zoning includes access to the existing vehicular transportation network. Internal and external pedestrian and bicycle connections can be established at the time of subdivision plat. In addition, preservation of the Lost Creek corridor will allow for eventual trail connections, not just for Bennett Farms but other neighborhoods as well. Location along the Colfax Avenue corridor may present future public transit opportunities.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.	Y	The ODP proposes a mix of residential densities, along with non-residential commercial and light industrial uses. The commercial and light industrial uses can provide services to not just the Bennett Farms project, but also the Prospect Ridge property to the south. An important aspect of the mixed use subareas on the west edge is the opportunity to accommodate employers in the growing employment center around the Colorado Air and Space Port. In addition, the ODP includes the preservation of open space and accommodates cultural uses in Planning Area 4 around the original farm headquarters.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.	NA	This area is not part of the Town Center.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.	Y	The residential sub-zone districts offer a mix of unit types and densities including high density residential that might include both apartments and condominiums, all accommodating a diverse housing stock.
5. Commit to being good partners with other community agencies and organizations through collaboration, leveraging funding and planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.	Y	The Town of Bennett and the future developers and builders will have the opportunity to collaborate with all service providers. Increased assessed valuation will result in additional property tax revenues to the various special districts. In addition, in response to the recently proposed Colorado Air and Space Port Subarea Plan, the ODP shows non-residential uses on the west end of the project, which are more compatible with activities in and around the Space Port.
6. Foster an attractive community that retains residents in all stages of life	Y	With the mixed-use zoning proposed, working with future homebuilders and commercial developers, there will be an opportunity to promote attainable

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
through attainable housing, continuing education and a robust job market.		housing. The employment uses on the west side of the project have the opportunity to provide jobs to the local community.
7. Preserve and protect natural open space and other areas that have environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.	Y	Setting aside 42 acres of the Lost Creek open space, park and floodplain area is an important step in preservation of areas with environmental significance. The flood hazard area will also be managed by the Town pursuant to the Municipal Code. The annexation of the property includes dedication of valuable groundwater resources.
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.	Y	The zoning accommodates non-residential uses, which may include community gardens, farmers' markets and traditional grocery stores. The 48 acres of open space (PA-9 and PA – 13), as well as local parks and trails, offer opportunities for outdoor physical activities.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.	Y	The zoning contemplates the management of the floodplain, pursuant to municipal code, which will minimize flood damage. The developer will have the opportunity to work with Bennett-Watkins Fire on the wildland-urban interface and minimize the threat of wildfires.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.	Y	The Bennett Farms property is bordered on three sides by non-agricultural zoning or land uses, including industrial, residential and a solar farm. Nevertheless, the applicant has focused on preservation of rural character and activities in PA-4 where the main farm buildings still exist. This area can accommodate cultural activities related to the communities rural character.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.	Y	The Bennett Farms property is contiguous to existing Town of Bennett boundaries, with infrastructure and services within a reasonable distance, consistent with the Town's Capital Asset Inventory Master Plan (CAIMP).
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.	Y	The annexation agreement, along with provisions of the ODP and the Bennett Municipal Code, decisions can be predictable and assure equitable cost-sharing.

Overall Staff Finding: Staff finds the proposed zoning is consistent with the goals and policies of the Comprehensive Plan and the Three-Mile Area Plan.

Consistency with the Intent of the Zoning Code

Staff Finding: Staff finds the proposed zoning is consistent with the purpose of the Bennett Land Use Code, including the following items outlined in Section 16-1-50:

- (1) Implement the Town's goals, policies, plans, and programs to preserve and enhance the quality of life of its citizens and to promote economic vitality of its businesses;
- (2) Promote superior land use, design and design flexibility;
- (3) Support the development of Bennett as a model healthy community of interconnected employment and neighborhood centers;
- (4) Maintain and enhance a quality residential environment in the Town;
- (5) Provide a diversity of housing types at various densities;
- (6) Enhance the sales tax and employment base of the Town by attracting and retaining commercial and industrial development;
- (7) Provide adequate services and facilities to support existing and projected areas of population and growth;
- (8) Promote logical extensions of and efficient use of the Town's infrastructure;
- (9) Protect and preserve the rural nature of open lands;
- (10) Ensure that the fiscal impact of subdivision and development is borne by those parties who receive the benefits therefrom;
- (11) Support programs and help provide facilities that meet the recreational, cultural, public safety and educational needs of the community.

Consistency with the Planned Development Review Criteria in Section 16-2-350

Per Section 16-2-350, The Planning Commission and Board of Trustees shall consider the following in making their decision for approval, approval with conditions or denial of a PD.

Staff Finding: Based on discussion throughout this staff report and how the Outline Development Plan has been drafted, Staff finds the proposed Planned Development zoning meets the criteria in Section 16-2-350 outlined below. Some of the criteria will be further reviewed at the time of Final Development Plans.

- (1) The proposed PD District is compatible with present development in the surrounding area and will not have a significant, adverse effect on the surrounding area;
- (2) The proposed PD District is consistent with the public health, safety and welfare, as well as efficiency and economy in the use of land and its resources;
- (3) The proposed PD District is consistent with the overall direction and intent of this Article and the intent and policies of the Comprehensive Plan and other pertinent policy documents of the Town;
- (4) The proposed PD District provides for a creative and innovative design which could not otherwise be achieved through other standard zoning districts.
- (5) The PD provides adequate circulation in terms of the internal street circulation system, designed for the type of traffic generated, for separation from living areas, convenience, safety, access and noise and exhaust control.
- (6) The PD provides functional open space in terms of practical usability and accessibility, and optimum preservation of natural features, including trees and drainage areas, recreation, views, natural stream courses, bodies of water and wetlands.
- (7) To the extent practicable, the PD provides variety in terms of housing types, housing size, densities, facilities and open space.

- (8) The PD provides for pedestrian and bicycle traffic in terms of safety, separation, convenience, access, destination and attractiveness.
- (9) Services, including utilities, fire, police protection and other such services are available or can be made available to adequately serve the development.
- (10) No structures in the PD shall encroach on a floodplain except as permitted by the Town's floodplain ordinance.
- (11) Visual relief and variety of visual sightings shall be located within the PD through building placement, shortened or interrupted street vistas, visual access to open space and other design methods.

Referral Agency Review and Comments

The proposed Bennett Farms zoning application was sent to several referral agencies for comment, including:

- | | |
|-------------------------------------|--------------------------------|
| 1. Town Planning | 6. CORE Electric Cooperative |
| 2. Town Engineer | 7. Colorado Natural Gas |
| 3. Town Traffic Engineer | 8. Bennett School District 29J |
| 4. Colorado Dept. of Transportation | 9. Adams County Planning |
| 5. Bennett-Watkins Fire Rescue | 10. Adams County Sheriff |

None of the agencies that responded have any objections to the proposed zoning. However, many of them, including the Town Engineer, Town Traffic Engineer, CDOT, Bennett-Watkins Fire, Bennett School District 29J and CORE Electric Cooperative, will require more analysis at the time of subdivision platting.

Public Comment

Notice of the June 27, 2022 Planning and Zoning Commission hearing and the June 28, 2022 Board of Trustees hearing was published in the Eastern Colorado News, posted on the subject property and sent to all property owners within 300 feet of the property. No formal comments have been submitted to date.

Summary of Staff Findings and Recommendation on PD Zoning

Staff finds the proposed zoning is consistent with:

- the goals and policies of the Comprehensive Plan and the Three-Mile Area Plan;
- the purpose of the Bennett Land Use Code outlined in Section 16-1-50; and
- the Planned Development approval criteria outlined in Section 16-2-350

Staff recommends the Planning and Zoning Commission adopt Resolution No. 2022-10 recommending approval of the proposed zoning of Planned Development (PD) for the property annexed to the Town and known as the Bennett Farms Nos. 1 and 2 to the Town of Bennett and approval of the proposed Bennett Farms Outline Development Plan, subject to the following condition:

1. Before recording the outline development plan, the applicant shall make minor modifications as directed by Town Staff, the Town Attorney and the Town Engineer.

Attachments

1. Staff PowerPoint Presentation (PDF)
2. Land Use Application
3. Letter of Intent/Narrative
4. Bennett Farms Outline Development Plan (ODP)
5. Comprehensive Plan Guiding Principles Commentary
6. Bennett Farms Traffic Memorandum
7. Combined Staff and Referral Agency Comments
8. Bennett 2021 Comprehensive Plan
9. Proposed Resolution No. 2022-10



Case No. 22.18 Bennett Farms Zoning

Planning and Zoning Commission

June 27, 2022

Steve Hebert, Planning & Economic Development Manager

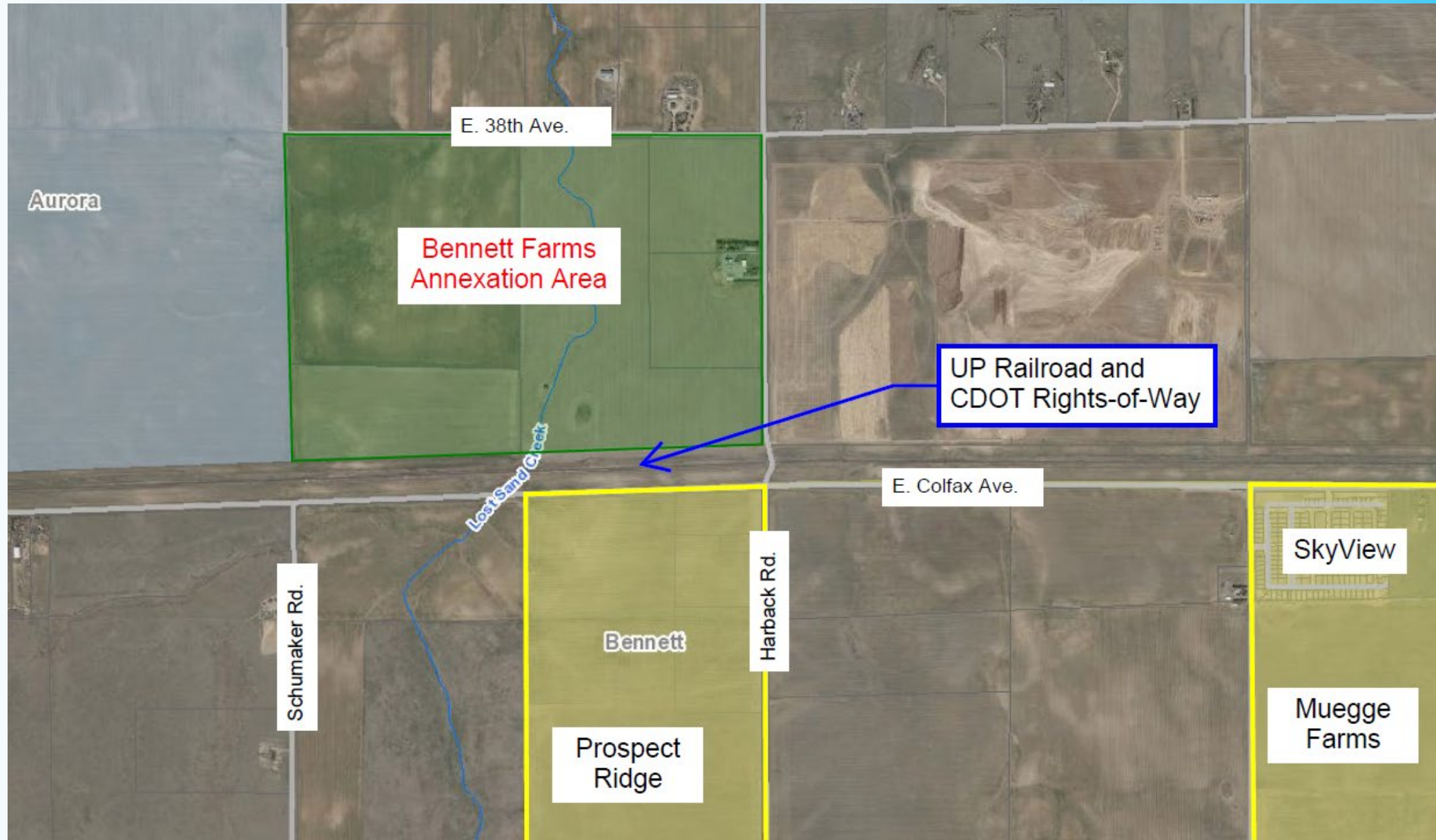
This PowerPoint presentation is a summary of the staff report to the Planning and Zoning Commission, dated June 27, 2022.

Proposed Zoning to PD – Planned Development

- Proposal to zone 405.7 acres
- Currently unincorporated, zoned A-3 in Adams County
- Board of Trustees to consider annexation petition on June 28, 2022
- Proposed zoning is PD-Planned Development



Bennett Farms Property



Bennett Farms ODP

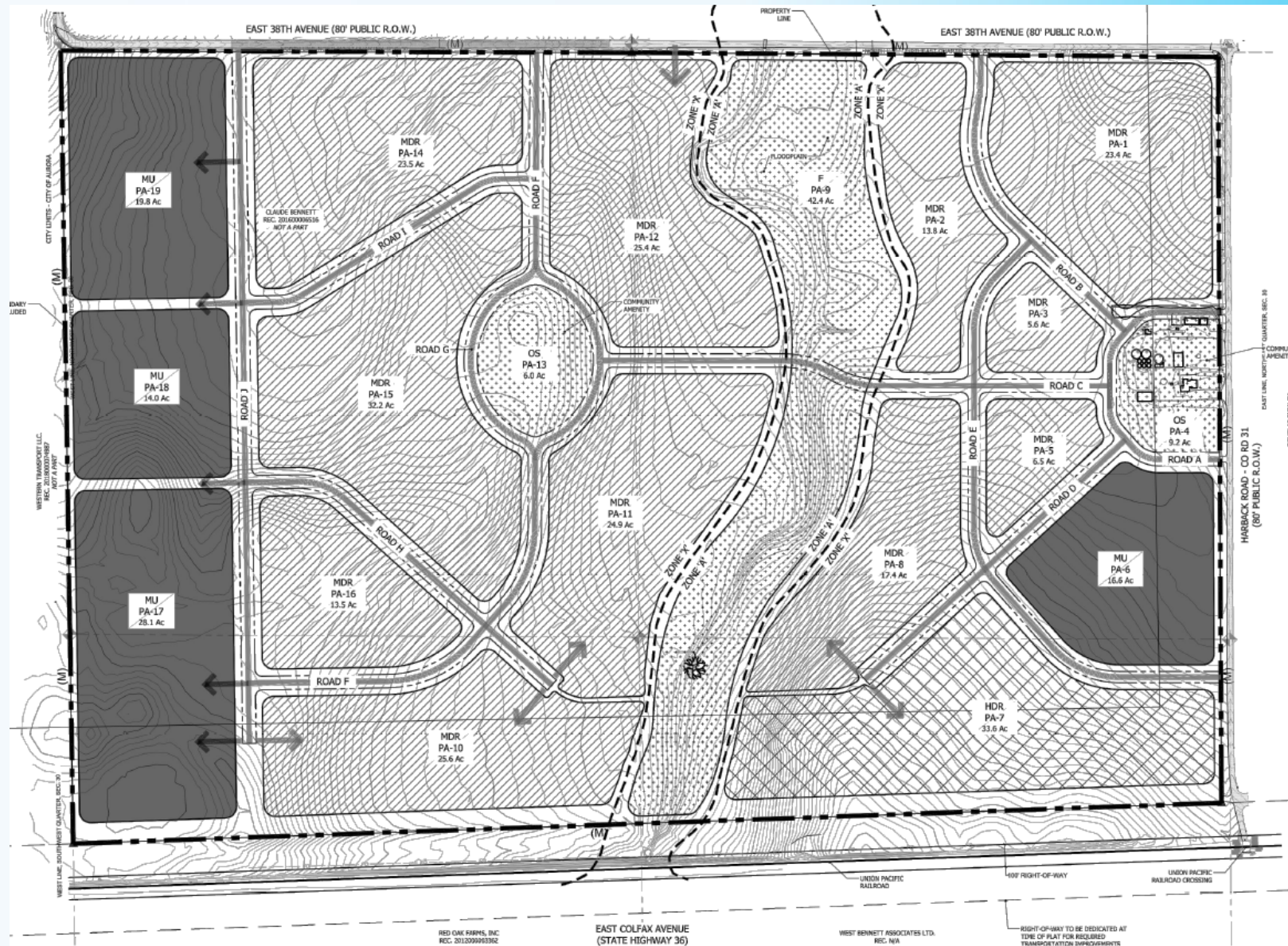
- 3,540 residential units
- 5-20 dwelling units/acre
 - Single-family detached
 - Single-family attached
 - Multi-family
- 1,028,329 sq. ft. commercial/light industrial/mixed use
- 57 acres floodplain, parks and open space
- Community cultural element



Bennett Farms Land Use Chart

Planning Area	Area (Acres)	Commercial (Sq. Ft.)	Zoning	Zoning Description	% of Total	Maximum Residential Density	Resid. Units
PA-1	23.4		MDR	Medium Density Resid.	5.8	7	164
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PA-3	5.6		MDR	Medium Density Resid.	1.4	7	39
PA-4	9.2		OS	Open Space	2.3	0	0
PA-5	6.5		MDR	Medium Density Resid.	1.6	7	46
PA-6	16.6	216,929	MU	Mixed Use District	4.1	20	332
PA-7	33.6		HDR	High Density Resid.	8.3	20	672
PA-8	17.4		MDR	Medium Density Resid.	4.3	7	122
PA-9	42.4		F	Floodplain	10.5	0	0
PA-10	25.6		MDR	Medium Density Resid.	6.3	5	128
PA-11	24.9		MDR	Medium Density Resid.	6.1	7	174
PA-12	25.4		MDR	Medium Density Resid.	6.3	7	178
PA-13	6.0		OS	Open Space	1.5	0	0
PA-14	23.5		MDR	Medium Density Resid.	5.8	5	118
PA-15	32.2		MDR	Medium Density Resid.	7.9	5	161
PA-16	13.5		MDR	Medium Density Resid.	3.3	7	95
PA-17	28.2	368,500	MU	Mixed Use District	7.0	20	564
PA-18	14.0	182,900	MU	Mixed Use District	3.5	20	280
PA-19	19.9	260,000	MU	Mixed Use District	4.9	20	398
Total Plan Area	381.7						
Floodplain	42.4		F		10.5		
Community Amenity	15.2		OS		3.7		
Public ROW	24				5.9		
Total PD Area	405.7	1,028,329			100%		3,540

Proposed Outline Development Plan (ODP)



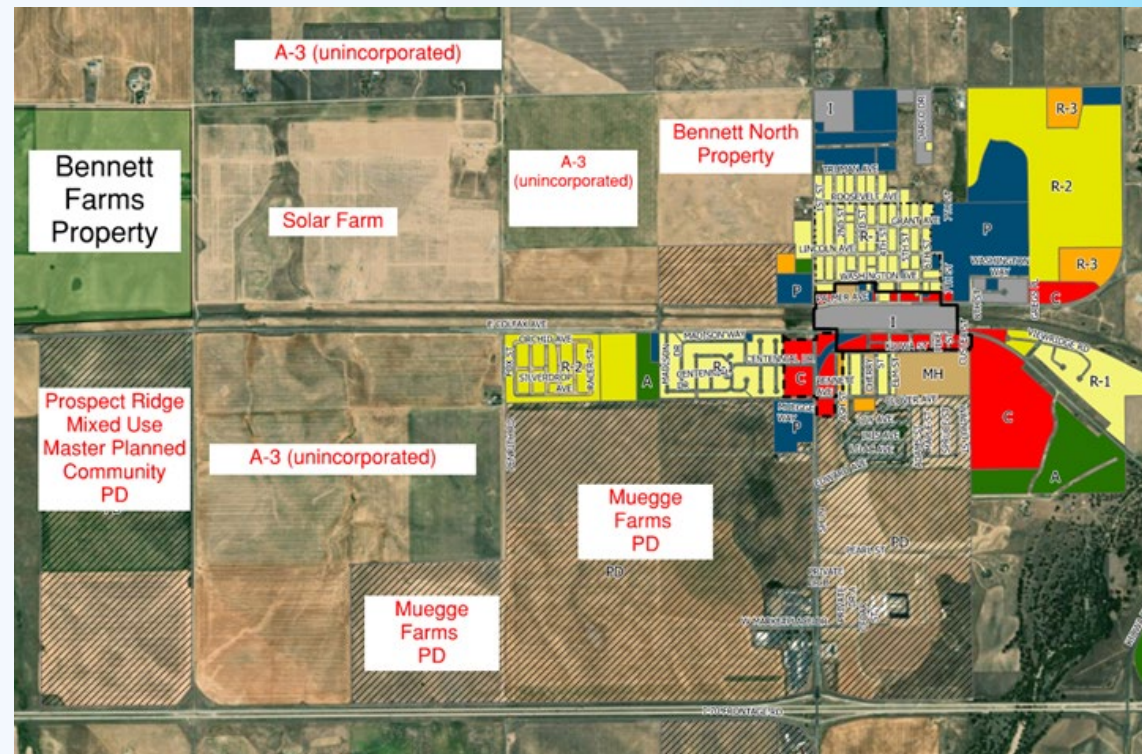
Applicant's Intent

The ODP includes the following description of the Bennett Farms proposal:

- Create a mixed-use community that will have enduring value to the Town of Bennett and region.
- Comprised of interconnected neighborhoods, mixed use centers and amenities.
- Existing farm headquarters, mixed use centers and a hierarchy of proposed parks will serve as community gathering areas.
- Mixed use areas are integrated to provide a variety of uses and to serve as a land use transition from the future Transport Project.
- Residential uses are located and configured to accommodate a diversity of housing types.
- Mixed use community will provide services and housing alternative for a multi-generational population.

Surrounding Zoning and Land Use

Direction	Zone District	Land Use
North	A-3 (Unincorporated)	Agricultural, Large Lot Residential
East	A-3 (Unincorporated)	Solar Farm
South	Planned Development - PD for Prospect Ridge in Bennett and A-3 (Unincorporated)	Vacant, Future Mixed Use Prospect Ridge Community
West	I-2 - Industrial District in the City of Aurora	Vacant, Future Industrial

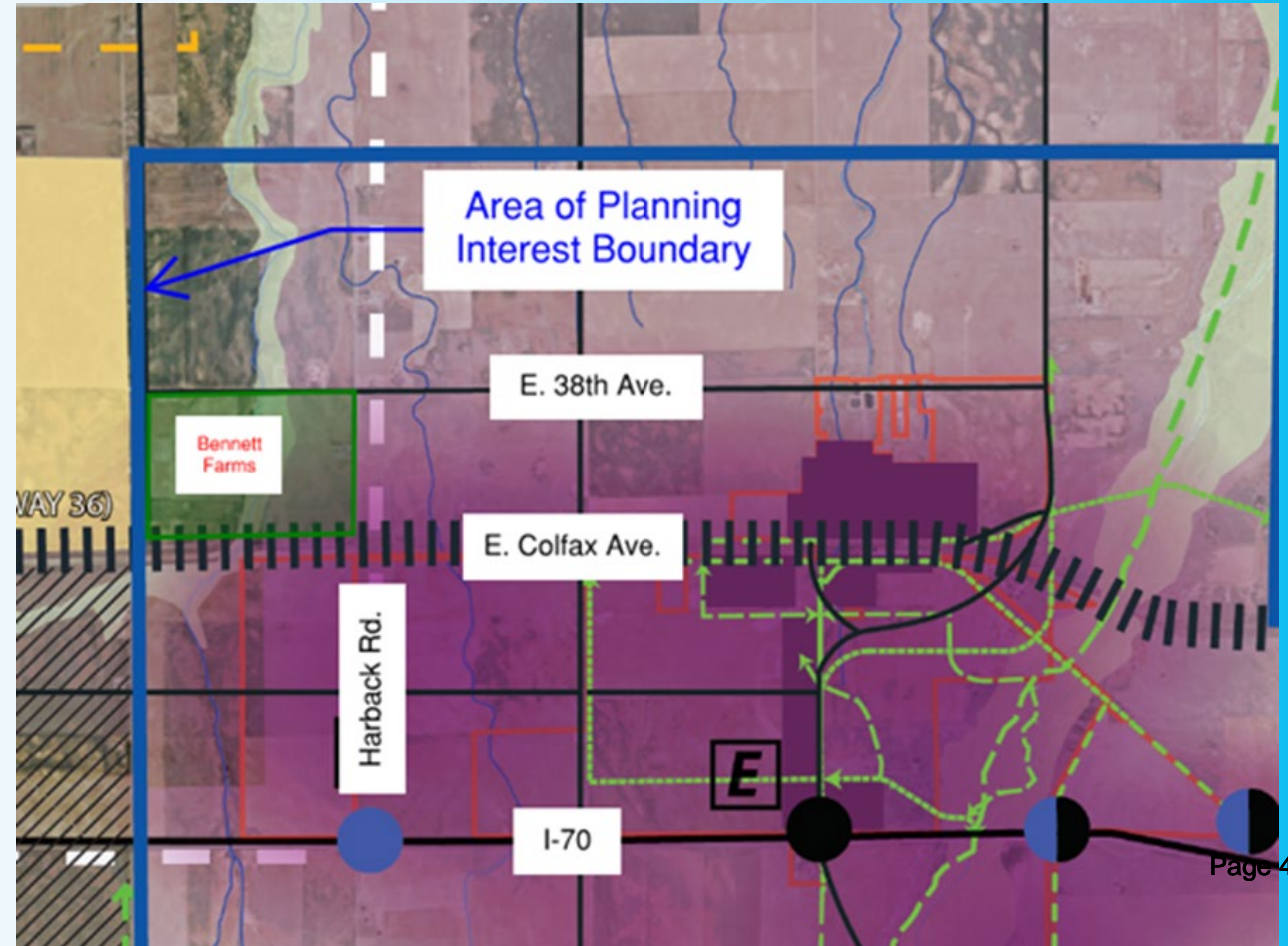


Availability of Public Infrastructure

- If the property is annexed and zoned, future subdivision plats and subdivision agreements will require the developer to design, finance and construct both onsite and offsite improvements.
 - Water and Sewer – Town of Bennett (with onsite and offsite improvements)
 - Regional Stormwater – Metro District or HOA, TBD at time of subdivision
 - Fire Protection – Bennett-Watkins Fire Rescue (consistent with IFC and other standards)
 - Access – Harback Rd. and E. 38th Ave, connecting to E. Colfax Ave.
 - Law Enforcement – Adams County Sheriff
 - Electricity – CORE Electric Cooperative (with onsite and offsite improvements)
 - Natural Gas – Colorado Natural Gas
 - Telecom – Eastern Slope Technologies or Comcast
 - Bennett School District 29J (school site or cash-in-lieu TBD)

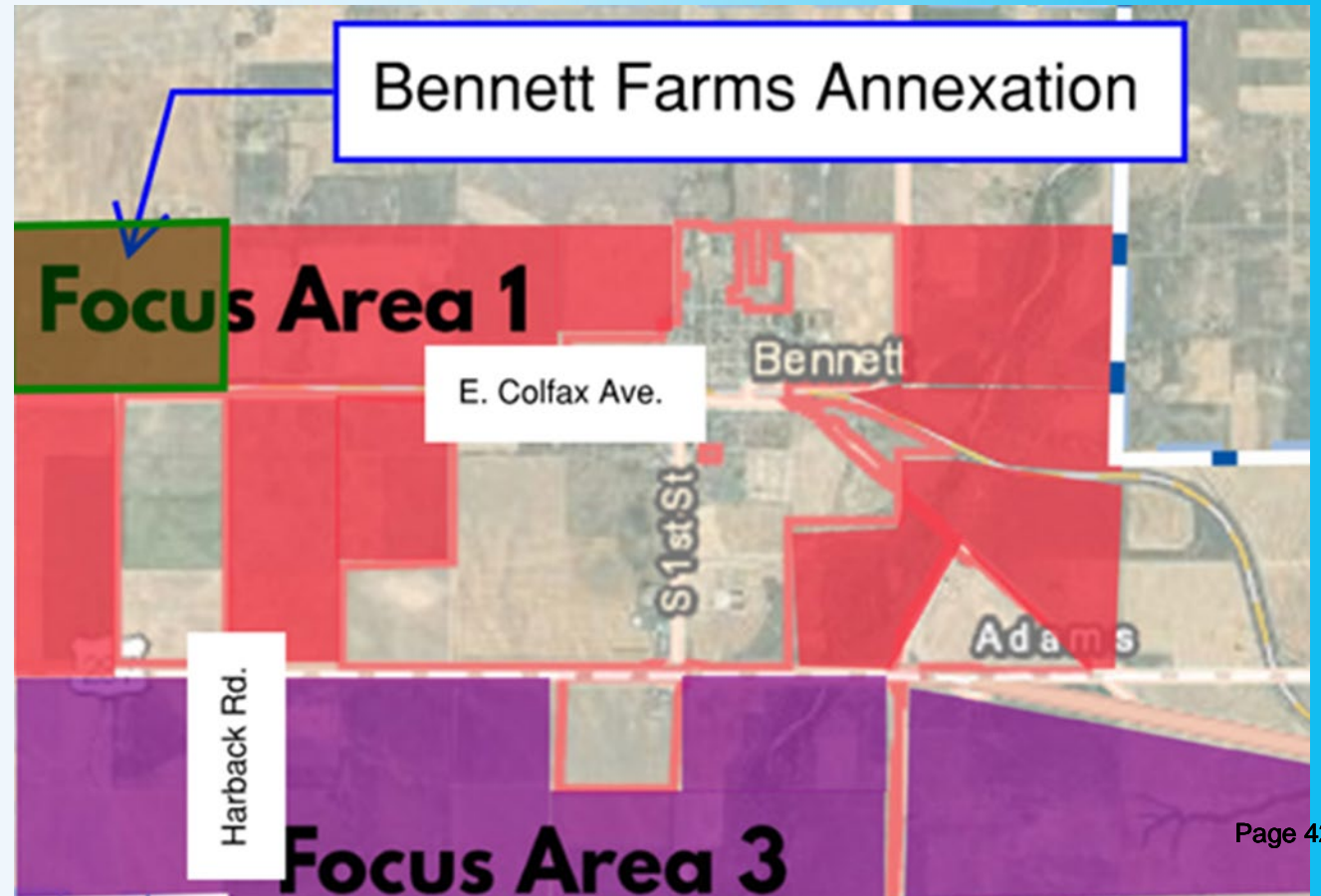
Consistent with the Comprehensive Plan and Three Mile Plan

- Within the Area of Planning Interest in the 2021 Comprehensive Plan



Consistent with the Comprehensive Plan and Three Mile Plan

- Within Focus Area 1 of the Comprehensive Plan



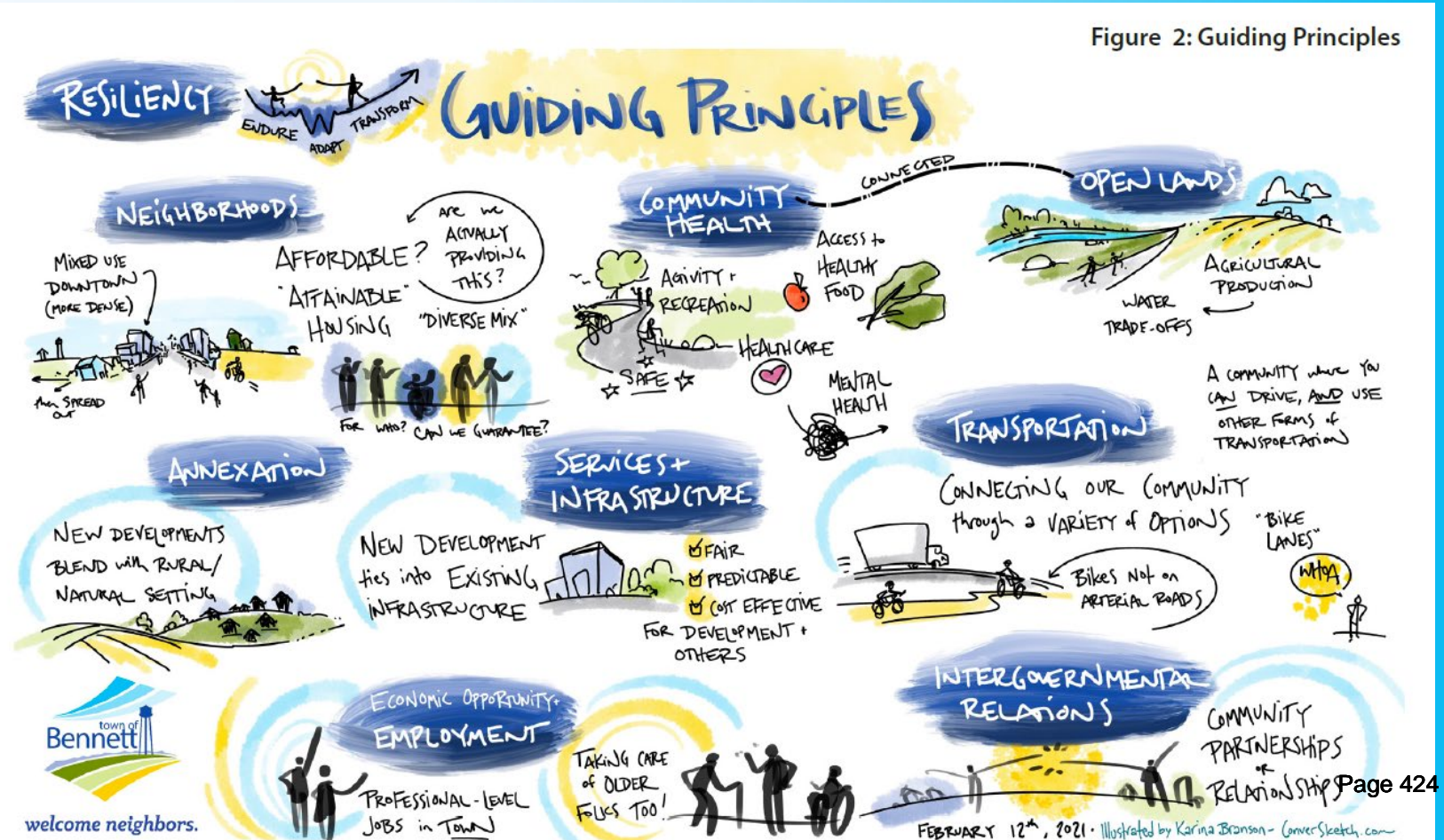
Consistent with the Comprehensive Plan and Three Mile Plan

- Consistent with the Three Mile Plan
 - 2021 Comprehensive Plan
 - 2019 Capital Asset Inventory Master Plan
 - 2019 Parks, Trails and Open Space Master Plan
 - 2019 Arts and Cultural Master Plan
 - 2011 Regional Trail Plan
 - 2010 Downtown Planning Study
 - 2013 Planning and Environmental Linkages Report

Consistent with the Comprehensive Plan and Three Mile Plan

Consistent with Guiding Principles

(See the Bennett Farms and the Comprehensive Plan Principles commentary)



Guiding Principles Commentary

(See attachment to staff report)

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.	Y	The proposed zoning includes access to the existing vehicular transportation network. Internal and external pedestrian and bicycle connections can be established at the time of subdivision plat. In addition, preservation of the Lost Creek corridor will allow for eventual trail connections, not just for Bennett Farms but other neighborhoods as well. Location along the Colfax Avenue corridor may present future public transit opportunities.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.	Y	The ODP proposes a mix of residential densities, along with non-residential commercial and light industrial uses. The commercial and light industrial uses can provide services to not just the Bennett Farms project, but also the Prospect Ridge property to the south. An important aspect of the mixed use subareas on the west edge is the opportunity to accommodate employers in the growing employment center around the Colorado Air and Space Port. In addition, the ODP includes the preservation of open space and accommodates cultural uses in Planning Area 4 around the original farm headquarters.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.	NA	This area is not part of the Town Center.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.	Y	The residential sub-zone districts offer a mix of unit types and densities including high density residential that might include both apartments and condominiums, all accommodating a diverse housing stock.
5. Commit to being good partners with other community agencies and organizations through collaboration, leveraging funding and planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.	Y	The Town of Bennett and the future developers and builders will have the opportunity to collaborate with all service providers. Increased assessed valuation will result in additional property tax revenues to the various special districts. In addition, in response to the recently proposed Colorado Air and Space Port Subarea Plan, the ODP shows non-residential uses on the west end of the project, which are more compatible with activities in and around the Space Port.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
6. Foster an attractive community that retains residents in all stages of life through attainable housing, continuing education and a robust job market.	Y	With the mixed-use zoning proposed, working with future homebuilders and commercial developers, there will be an opportunity to promote attainable housing. The employment uses on the west side of the project have the opportunity to provide jobs to the local community.
7. Preserve and protect natural open space and other areas that have environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.	Y	Setting aside 42 acres of the Lost Creek open space, park and floodplain area is an important step in preservation of areas with environmental significance. The flood hazard area will also be managed by the Town pursuant to the Municipal Code. The annexation of the property includes dedication of valuable groundwater resources.
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.	Y	The zoning accommodates non-residential uses, which may include community gardens, farmers' markets and traditional grocery stores. The 48 acres of open space (PA-9 and PA – 13), as well as local parks and trails, offer opportunities for outdoor physical activities.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.	Y	The zoning contemplates the management of the floodplain, pursuant to municipal code, which will minimize flood damage. The developer will have the opportunity to work with Bennett-Watkins Fire on the wildland-urban interface and minimize the threat of wildfires.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.	Y	The Bennett Farms property is bordered on three sides by non-agricultural zoning or land uses, including industrial, residential and a solar farm. Nevertheless, the applicant has focused on preservation of rural character and activities in PA-4 where the main farm buildings still exist. This area can accommodate cultural activities related to the communities rural character.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.	Y	The Bennett Farms property is contiguous to existing Town of Bennett boundaries, with infrastructure and services within a reasonable distance, consistent with the Town's Capital Asset Inventory Master Plan (CAIMP).
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.	Y	The annexation agreement, along with provisions of the ODP and the Bennett Municipal Code, decisions can be predictable and assure equitable cost-sharing.

Consistency with the Intent of the Zoning Code

The proposed zoning is consistent with the purpose of the Bennett Land Use Code, outlined in Section 16-1-50, including to:

- Preserve and enhance the quality of life of its citizens and to promote economic vitality of its businesses;
- Maintain and enhance a quality residential environment in the Town;
- Provide a diversity of housing types at various densities;
- Enhance the sales tax and employment base of the Town by attracting and retaining commercial, development;
- Promote logical extensions of and efficient use of the Town's infrastructure.
- Protect and preserve the rural nature of open lands;
- Support programs and help provide facilities that meet the recreational, cultural, public safety and educational needs of the community.

Consistency with Criteria for a PD District

The proposed zoning is consistent with the criteria for a Planned Development District, outlined in Section 16-2-350, including:

- Compatible with present development in the surrounding area and will not have a significant, adverse effect on the surrounding area;
- Consistent with the public health, safety and welfare, as well as efficiency and economy in the use of land and its resources;
- Consistent with the overall direction and intent of this Article and the intent and policies of the Comprehensive Plan and other pertinent policy documents of the Town;
- Provides for a creative and innovative design which could not otherwise be achieved through other standard zoning districts.
- Provides adequate circulation in terms of the internal street circulation system, designed for the type of traffic generated, for separation from living areas, convenience, safety, access and noise and exhaust control.

Consistency with Criteria for a PD District (Cont.)

- Provides functional open space in terms of practical usability and accessibility, and optimum preservation of natural features, including trees and drainage areas, recreation, views, natural stream courses, bodies of water and wetlands.
- Provides variety in terms of housing types, housing size, densities, facilities and open space.
- Provides for pedestrian and bicycle traffic in terms of safety, separation, convenience, access, destination and attractiveness.

Staff Findings on Case No. 22.18

- The proposed zoning is consistent with, or will promote, the goals and policies of the Town of Bennett 2021 Comprehensive Plan as required by Sections 16-1-90 and 16-2-360 of the Municipal Code.
- The proposal meets the criteria for a PD – Planned Development District outlined in Section 16-2-350.
- The proposed zoning is consistent with the purpose of the Bennett Land Use Code, outlined in Section 16-1-50.

Staff Recommendation

Staff recommends the Planning and Zoning Commission adopt Resolution No. 2022-10, recommending approval of the zoning of Bennett Farms property to PD- Planned Development District and approval of the Bennett Farms Development Plan, subject to the approval of the annexation of the property by the Board of Trustees, subject to the following condition:

1. Before recording the outline development plan, the applicant shall make minor modifications directed by Town Staff, the Town Attorney and the Town Engineer.

(See Resolution)

Town of Bennett Land Use Application Form

TO BE COMPLETED BY APPLICANT

Application
Type:

Other

Other Annexation, Overall Development Plan, Metro Districts

Primary Contact Name: Jeff Vogel

Name of Firm: Vogel & Associates

Address: 475 W. 12th Avenue, Suite E

City: Denver

State: CO

Zip: 80204

Phone: (303) 893-4288

Email: jvogel@vogelassoc.com

Owner Name: Kiowa Creek Preserve Holdings, LLC, Herdsman Capital, LLC - Russell MacLennan

Address: PO Box 543

City: Bennett

State: CO

Zip: 80102

Phone: (303) 817-8736

Email: russ@machunts.com; Cooper Raines cooper@thecrrgroup.com

Mineral Estate Holder/Lease:

Name of Firm: See enclosed list of mineral right owners

Address:

City:

State:

Zip:

Phone:

Parcel#: See enclose parcel map

Subdivision Name: Kiowa Creek Preserve, Bennett Farms

Site Address: Northeast corner of Kiowa Bennett Rd and Old Victory Road

Nearest Major Intersection: Kiowa Bennett Rd and Old Victory, Colfax Ave and Harback Rd.

Legal Description: See enclosed Legal Descriptions

Current Zoning: Agriculture

Proposed # lots/units: Kiowa Creek: 1,030; Bennett Farms: 3,323

Total Acreage: Kiowa Creek: 321.6; Bennett Farms: 405.7

Gross Floor Area: See enclosed ODP

Proposed Gross Densities (du/ac): Kiowa: 3.2; Farm 8.2

Additional Notes: Please see cover letter and Overall Development Plans for Kiowa Creek and Bennett Farms for additional information.

All Submittal Requirements must accompany this application. All applicable fees must be paid at the time of application. Any extraordinary cost incurred by the Town of Bennett in reviewing and processing this application is the responsibility of the applicant.

An executed cost agreement must be attached to this application pursuant to Sec. 16-1-325 of the Bennett Municipal Code.

I understand this is an application only, it must be approved by the Town, and any required building permits must be obtained before the property can be used in accordance with the request. I hereby acknowledge all of the above information is correct.

Applicant's Signature: Russell MacLennan

Date: 12.18.21



December 6, 2021

Mr. Steve Hebert,
Planning & Economic Development Manager
Town of Bennett
207 Muegge Way
Bennett, Colorado 80102

**Re: Kiowa Creek Reserve and Bennett Farm Parcel
Annexation and Zoning Applications**

Dear Steve,

On behalf of Kiowa Creek Preserve Holdings, LLC (KCPH) and Herdsman Capital, LLC, I am pleased to submit the enclosed Kiowa Creek Preserve and Bennett Farms annexation, Outline Development Plan, and metropolitan district service plan application for your review. Annexation petitions and plat maps are also included with the application.

As discussed, the intent is to advance the annexation and rezoning of the Kiowa Creek parcel that is located east of Kiowa Bennett Road and adjacent to the Kiowa Creek riparian corridor. This parcel is approximately 326.6 acres. The Bennett Farms "Farm" parcel is approximately 405 acres and is located west of Harback Road between E. 38th Ave. and Colfax Ave.

Each parcel is envisioned to be redeveloped utilizing a development program that will include residential and non-residential land uses. This mixed-use program will provide for a diversity of housing and include uses that will promote economic growth. Each property is master planned to include a comprehensive open space and trail system. As discussed with the Town of Bennett, the intent is to utilize the eastern half of the Kiowa Creek property for a community open space park and agricultural education facility. Creating this large contiguous area of open space will provide extensive community and regional recreational benefits.

Given the location and physical characteristics of the "farm" parcel, the program is envisioned to include mixed use and residential uses. A master plan will be configured to address considerations related to land use development patterns, primary circulation, etc.

Planning principles will be utilized to ensure that project objectives are implemented with each component of the project. These principles include maintaining the integrity of the Kiowa Creek corridor and establishing a framework that will reinforce community connectivity. Land uses that will promote economic and trade is a primary objective along with providing for a diversity of residential housing. These planning principles are outlined with each Outline Development Plan.

Metropolitan District(s) service plans have been prepared and are to be processed concurrently with the ODP and annexation. These districts will be utilized to design, finance, implement and maintain infrastructure and facilities for the respective land use designations. Specifics regarding the intent and purpose is outlined in the service plans.

The following represents the planning team who will be working on the annexation and ODP.

Owner:

Kiowa Creek Preserve Holdings, LLC
Herdsman Capital, LLC
P.O. Box 543
Bennett, CO. 80102
Contact: Russell MacLennan, President

Planner/Representative:

Vogel & Associates, LLC
475 W. 12th Ave., Suite E
Denver, CO. 80204
Contact: Jeff Vogel

Civil Engineer/Surveyor:

Core Consultants
1950 W. Littleton Blvd.
Littleton CO. 80120
Contact: David Forbes

Land Use Legal Counsel:

Otten Johnson Robinson Neff & Ragonetti
950 17th Street
Denver CO. 80202
Contact: Tom Ragonetti, Allison Altaras

Metropolitan District Legal Counsel:

Icenogle, Seaver & Pogue
4725 S. Monaco Street, Suite 360
Denver, CO. 80237
Contact: Alan Pogue

As outlined above the Kiowa Creek Preserve and Bennett Farms projects are master planned as mixed-use communities that integrate with the physical characteristics associated with each unique parcel. Integrated planning principles have been incorporated into each master plan as required to advance environmental, social, and economic considerations. These principles and considerations also include addressing and advancing the “Guiding Principles” outlined in the Town of Bennett comprehensive plan.

Outlined below is a summary of Comprehensive Plan Guiding Principles and policies with justification of how each project advances the respective considerations.

1. Develop town and neighborhood centers with mixed land use and greater land density to shorten distances between homes, workplaces, schools, shopping, places of worship, cultural facilities, and recreation and social activities;

Justification:

Kiowa Creek Ranch Preserve is master planned to include a mixed-use center that will provide community and neighborhood services. This mixed-use center will be conveniently access via the street network and pedestrian open space system.

Bennett Farms is also master plan to include mixed-use and neighborhood centers. The mixed-use located on the west side of the property is proposed to include a variety of uses.

A neighborhood center is proposed that includes the historic farm headquarters. This facility is proposed to serve as a neighborhood gathering area that will include a variety of recreational facilities. The mixed-use planning areas and neighborhood centers are accessible by the street network and central open space system.

2. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production;

Justification:

Kiowa Creek Preserve is master planned to integrate with the Kiowa Creek riparian corridor. Approximately 40% of the property is configured as open space. This large area of contiguous open space is planned to include active and passive recreation facilities. Planning area 6 is proposed to serve as an agricultural education center. This facility is planned to include facilities and exhibit areas that will provide agriculture related education and recreation programs.

Bennett Farms is master planned to preserve natural drainages and existing agricultural facilities that will be transformed into community amenities. Active and passive open space areas have been incorporated into the master plan. A comprehensive trail system is planned to provide community and neighborhood connectivity.

3. Ensure that affordable housing and access to healthy living is available for people of all ages and income levels;

Justification:

Kiowa Creek Preserve and Bennett Farms are master planned to include a variety of housing types. Planning areas and land use classifications that include mixed-use, high density and medium density residential housing is included in both projects. Incorporating land uses that will accommodate a diversity of housing will accommodate a multi-income and age demographic.

4. Offer access to open space, trails, and parks to provide more opportunities for walking, biking, recreation, and contact with nature;

Justification:

Kiowa Creek Preserve is master planned to include an extensive comprehensive open space system. This large contiguous open system will serve as a community amenity for the Town of Bennett and the region. Given the scale of the open space system and physical characteristics, a variety of active and passive recreation facilities can be accommodated including an expansive trail system.

Bennett Farms is master planned to include a large linear park that is located within the center of the community. This linear park will have multiple connections to the adjacent planning areas and proposed neighborhood parks. An central trail system will be located within the open space and neighborhood parks.

5. Foster a distinctive, attractive community that retains our young people to support future community governance;

Justification:

Kiowa Creek Preserve and Bennett Farms are master planned to include mixed-use parcels that can accommodate a variety of employment related to uses. Providing employment opportunities within the Town of Bennett will provide for a more balanced and viable community that will encourage the retaining of the younger demographic.

Each master plan is proposed to include a diversity of housing types. Providing a diversity of housing types will accommodate a multi-dimensional demographic.

6. Preserve open space, farmland, and areas that have environmental significance to the region, particularly that are susceptible to flood hazard; are identified aquifer recharge areas; have natural mineral wealth; or are prime agricultural land;

Justification:

As noted above, the intent is to preserve the Kiowa Creek corridor as open space and a community amenity. This corridor also serves as a flood zone and wildlife corridor. Kiowa Creek is also considered an aquifer recharge area.

The proposed linear open space in Bennett Farms also includes a flood zone area. This corridor has also been utilized as wildlife habitat.

7. New development should be contiguous, or nearly so, to existing infrastructure and services;

Justification:

Kiowa Creek Preserve is located east of the Town of Bennett and east of the Bennett Ranch project. Utilities including water and sewer will be accessed from the west of Kiowa-Bennett Road. The Kiowa Creek Preserve property is also planned to include a sanitary lift station that has been requested by the Town. A utility plan has been prepared as part of this application illustrating how infrastructure and utilities will be provided.

Bennett Farms is master planned to include and expand required utilities. As outlined in the utility plan, connections will be provided primarily from the east and northeast. This will include the required extension of water and sewer mainlines.

8. Provide a variety of transportation choices including bicycle trails; sidewalks; and mass transit to reduce the dependence upon automobiles; and create streets that are safe for use by automobiles, pedestrians, and bicyclists;

Justification:

Kiowa Creek Preserve is planned to reinforce community connectivity by providing an interconnected street network system and comprehensive trail system. Residents and users will have alternative methods for accessing adjacent neighborhoods, the mixed-use center, and the Kiowa Creek open space corridor.

Bennett Farms includes a master plan framework plan that is comprised of a modified grid that interfaces with a comprehensive open space and trail system. This modified grid encourages walkable blocks and disperses traffic. Parks and neighborhood centers are located to serve as community focal points that are configured to be accessed via a pedestrian-friendly streets and the community trail system. The modified grid, walkable blocks and trail system also encourage the use of transit.

9. Make development decisions predictable, fair, and cost effective, with the responsibility of designing and constructing the infrastructure required for new development shared by all parties receiving benefit; and

Justification:

Kiowa Creek Preserve Management, LLC has been coordinating extensively with the Town of Bennett regarding several planning considerations related infrastructure, water and the preservation of open space including the Kiowa Creek riparian corridor that is proposed to be community and regional amenity.

Kiowa Creek Preserve and Bennett Farms are proposed to include Metropolitan Districts. These metropolitan districts will be utilized to design, construct and maintain public improvements for each of the respective projects. Kiowa Creek Preserve Management, LLC will continue to collaborate with the Town of Bennett staff regarding regional infrastructure and public improvement benefits.

10. Remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth.

Justification:

As noted above, Kiowa Cree Preserve Management, LLC and the metropolitan districts will collaborate and plan for future growth including addressing regional considerations related to open space, utilities, and transportation. This application includes an annexation agreement that outlines additional specifics with regards to open space, infrastructure, and other related improvements.

Outlined below, are the proposed planning and development considerations that have been incorporated into the application.

Zoning and Density

- ❖ Proposed Zoning ODP/PUD
 Kiowa Creek Parcel- Residential, Multi-family, Recreation/AG, and mixed use.
 Farm Parcel – Mixed Use, Residential.
- ❖ Kiowa Creek Proposed Density
 Residential Density 1,030 residential units.
 Commercial Density 164,000 sqft.
- ❖ Bennett Farms Proposed Density
 Residential Density 3,323 residential units.
 Commercial Density 692,600sqft.
- ❖ ODP/Site Specific Dev. ODP to be considered Site Specific Development Plan

Enclosed with this application is an annexation agreement that outlines additional detail and considerations. These considerations include addressing items related to dedications, open space, transportation etc.

Upon your review, we will be available to meet and discuss further the respective applications. We appreciate your assistance and look forward to working with you on these exciting projects.

Sincerely,

Vogel & Associates, LLC

Jeffrey Vogel, AICP

Principal

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 1 OF 7

LEGAL DESCRIPTION:

A PARCEL OF LAND BEING A PORTION OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 30, THENCE S 00°53'47" E, ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SEC. 30 A DISTANCE OF 40.01 FEET TO A POINT BEING 40.00 FEET SOUTH OF THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30, ALSO BEING A POINT ON THE SOUTH LINE OF THE EAST 38TH AVENUE RIGHT-OF-WAY AND THE POINT OF BEGINNING;

THENCE S 89°53'20" E, ALONG SAID SOUTH RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET SOUTH OF AND PARALLEL TO THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30, A DISTANCE OF 2544.41 FEET TO A POINT ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30;

THENCE S 89°35'43" E, CONTINUING ALONG THE SOUTH LINE OF THE EAST 38TH AVENUE RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET SOUTH OF AND PARALLEL TO THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 2614.49 FEET TO A POINT BEING 40.00 FEET WEST OF THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, AND A POINT ON THE WEST LINE OF THE HARBACK ROAD RIGHT-OF-WAY;

THENCE S 00°15'07" E, ALONG SAID WEST RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET WEST OF AND PARALLEL TO THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 2603.40 FEET TO A POINT ON THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30;

THENCE S 00°20'22" E, ALONG SAID WEST RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET WEST OF AND PARALLEL TO THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 728.33 FEET TO A POINT ON THE NORTH LINE OF THE UNION PACIFIC RAILROAD RIGHT-OF-WAY;

THENCE S 87°57'46" W, ALONG THE NORTH LINE OF SAID RIGHT-OF-WAY, A DISTANCE OF 5122.46 FEET TO A POINT ON THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 30;

THENCE N 00°53'56" W, ALONG THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 30, A DISTANCE OF 932.54 FEET TO THE WEST QUARTER CORNER OF SAID SECTION 30;

THENCE N 00°53'47" W, ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30, A DISTANCE OF 2605.07 FEET TO THE POINT OF BEGINNING.

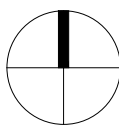
CONTAINING AN AREA OF 17,668,182 SQUARE FEET OR 405.606 ACRES, MORE OR LESS.

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH P.M., BEING ASSUMED TO BEAR S 89°35'20" E, FROM THE NORTHWEST CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP, STAMPED "PLS 27269", TO THE NORTH QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP STAMPED "PLS 23519", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.



VICINITY MAP

SCALE:NTS



SHEET INDEX

SHEET 1 OF 7:
COVER SHEET

SHEET 2 OF 7:
ZONE DISTRICT PLAN

SHEET 3 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
INTRODUCTION

SHEET 4 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
HIGH DENSITY RESIDENTIAL (HDR), PA-7
MEDIUM DENSITY RESIDENTIAL (MDR), PA-1, PA-2, PA-3, PA-5,
PA-8, PA-10, PA-11, PA-12, PA-14, PA-15, and PA-16

SHEET 5 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
MEDIUM DENSITY RESIDENTIAL (MDR), PA-1, PA-2, PA-3, PA-5,
PA-8, PA-10, PA-11, PA-12, PA-14, PA-15, and PA-16
MIXED-USE DISTRICT (MU), PA-6, PA-17, PA-18 AND PA-19
OPEN SPACE AND TRAILS (OS), PA-4, PA-9 AND PA-13

SHEET 6 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
OPEN SPACE AND TRAILS (OS), PA-4, PA-9 AND PA-13

SHEET 7 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
LAND USE MATRIX TABLE

OWNER ACKNOWLEDGEMENT

BY SIGNING THIS ODP, THE OWNER ACKNOWLEDGES AND ACCEPTS ALL OF THE REQUIREMENTS AND INTENT SET FORTH HEREIN.

KIOWA CREEK PRESERVE, LLC

HERDSMAN CAPITAL, LLC

NOTARY

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, 2022 BY _____

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC _____

TOWN OF BOARD TRUSTEES APPROVAL

APPROVED BY THE TOWN BOARD OF TRUSTEES OF THE TOWN OF BENNETT, COLORADO THIS _____ DAY OF _____, 20____ BY ORDINANCE NO. _____.

MAYOR

ATTEST: TOWN CLERK

COUNTY CLERK AND RECORDER CERTIFICATE:

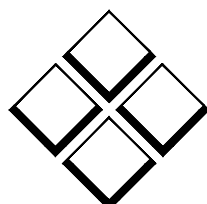
THIS PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF ADAMS COUNTY,

COLORADO, AT _____ O'CLOCK, _____ M, THIS _____ DAY OF _____, 20____.

RECEPTION NUMBER _____

ADAMS COUNTY CLERK AND RECORDER

DEPUTY



VOGEL & ASSOCIATES
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

PLANNER:

VOGEL & ASSOCIATES
Contact: Jeff Vogel
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

ENGINEER:

CORE CONSULTANTS INC.
Contact: Thomas M. Girard
3473 South Broadway
Englewood, Colorado 80113
303-703-4444

SURVEYOR:

CORE CONSULTANTS INC.
Contact: Jeff Anton
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Englewood, Colorado 80113
303-703-4444

OWNER:

KIOWA CREEK PRESERVE, LLC
HERDSMAN CAPITAL, LLC
PO Box 543
Bennett, CO 80102

BENNETT FARMS (ODP) - COVER SHEET

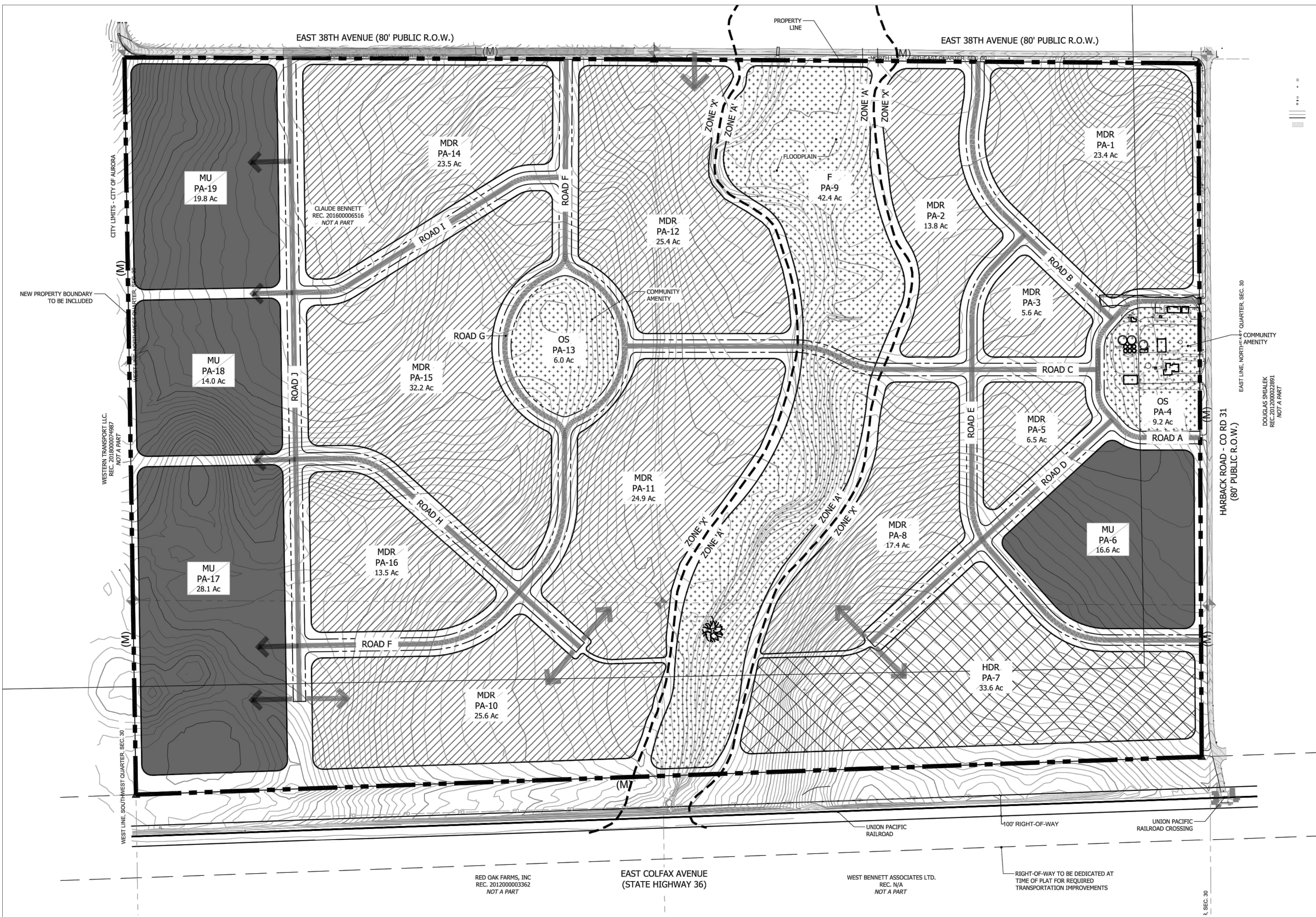
Scale: N/A
Date: MARCH 01, 2022
Revision Date: JUNE 03, 2022

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 2 OF 7



BENNETT FARMS							
PD - ZONING SUMMARY TABLE							
	PLANNING AREA	AREA (ACRES)	COMMERCIAL (SQ.FT.)	ZONING	ZONING DESCRIPTION	% OF TOTAL	MAX. RESIDENTIAL DENSITY (DU/AC)
	PA-1	23.4		MDR	Medium Density Residential District	5.8%	7
	PA-2	13.8		MDR	Medium Density Residential District	3.4%	5
	PA-3	5.6		MDR	Medium Density Residential District	1.4%	7
	PA-4	9.2		OS	Open Space	2.3%	0
	PA-5	6.5		MDR	Medium Density Residential District	1.6%	7
	PA-6	16.6	216,929	MU	Mixed Use District	4.1%	20
	PA-7	33.6		HDR	High Density Residential District	8.3%	20
	PA-8	17.4		MDR	Medium Density Residential District	4.3%	7
	PA-9	42.4		F	Floodplain	10.5%	0
	PA-10	25.6		MDR	Medium Density Residential District	6.3%	5
	PA-11	24.9		MDR	Medium Density Residential District	6.1%	7
	PA-12	25.4		MDR	Medium Density Residential District	6.3%	7
	PA-13	6		OS	Open Space	1.5%	0
	PA-14	23.5		MDR	Medium Density Residential District	5.8%	5
	PA-15	32.2		MDR	Medium Density Residential District	7.9%	5
	PA-16	13.5		MDR	Medium Density Residential District	3.3%	7
	PA-17	28.2	368,500	MU	Mixed Use District	7.0%	20
	PA-18	14	182,900	MU	Mixed Use District	3.5%	20
	PA-19	19.9	260,000	MU	Mixed Use District	4.9%	20
	Total Planning Area	381.7					
	OPEN SPACE						
	FLOODPLAIN	42.4		F	Floodplain	10.5%	
	COMMUNITY AMENITY	15.2		OS	Open Space	3.7%	
	Public ROW	24				5.9%	
	TOTAL PD AREA	405.7	1,028,329			100.0%	3538

- ROAD CIRCULATION
- FLOODPLAIN
- PROPERTY LINE

ZONE DISTRICT PLAN

Scale: N/A
Date: MARCH 01, 2022
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BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 3 OF 7

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

INTRODUCTION:

OVERVIEW

BENNETT FARMS IS APPROXIMATELY 405.7 ACRES, LOCATED IN THE TOWN OF BENNETT AT THE NORTHWEST INTERSECTION OF HARBACK ROAD AND COLFAX AVENUE. THE PROPERTY IS LOCATED IN ADAMS COUNTY AND HAS HISTORICALLY BEEN UTILIZED FOR AGRICULTURE. A NATURAL DRAINAGE AND DESIGNATED FLOODPLAIN BISECTS THE PROPERTY.

THE PROJECT IS ENVISIONED TO BE A COHESIVE MIXED-USE COMMUNITY CONSISTING OF COMMERCIAL, LIGHT INDUSTRIAL, RESIDENTIAL AND OPEN SPACE USES. RESIDENTIAL PLANNING AREAS ARE STRAGICALLY CONFIGURED AROUND A CENTRAL OPEN SPACE AND PARK SYSTEM. THIS OPEN SPACE SYSTEM INCLUDES THE PRESERVATION OF THE NATURAL DRAINAGE CORRIDOR THAT DESCENDS NORTH TO SOUTH THROUGH THE PROPERTY. MIXED USE AREAS ARE LOCATED WITHIN THE WESTERN QUADRANT OF THE PROPERTY AND ADJACENT TO THE SPACE PORT PROJECT.

THE BENNETT FARMS OUTLINE DEVELOPMENT PLAN (ODP) IS BASED ON A SET OF INTEGRATED PLANNING PRINCIPLES THAT REINFORCE THE VISION OF CREATING A BALANCED AND COHESIVE COMMUNITY. OUTLINED BELOW ARE THE PRINCIPLES THAT HAVE BEEN INCORPORATED INTO THE ODP.

PRINCIPLE ONE: **PROTECT ENVIRONMENTAL SYSTEMS:**
THE BENNETT FARMS ODP INCORPORATES AND PRESERVES EXISTING NATURAL SYSTEMS INCLUDING INTEGRATING WITH THE NATURAL TOPOGRAPHY AND DRAINAGE PATTERNS. THE NATURAL DRAINAGE WILL PROVIDE OPEN SPACE AND SERVE AS A WILDLIFE CORRIDOR.

PRINCIPLE TWO: **IDENTIFY AND SUSTAIN GREEN INFRASTRUCTURE:**
IT IS THE INTENT TO UTILIZE AND MAINTAIN THE EXISTING GREEN INFRASTRUCTURE AND SPECIFICALLY THE NATURAL DRAINAGE CORRIDOR THAT IS LOCATED WITHIN THE CENTRAL QUADRANT OF THE PROPERTY. UTILIZING EXISTING GREEN ENVIRONMENTAL SYSTEMS AND NATURAL DRAINAGE PATTERNS WILL REQUIRE LESS IMPERVIOUS AND ENGINEERED INFRASTRUCTURE.

DESIGNING AROUND THE NATURAL DRAINAGE PROVIDES A LARGE AREA TO BE PRESERVED AS OPEN SPACE THAT CAN BE UTILIZED FOR PASSIVE AND ACTIVE RECREATIONAL PARKS.

PRINCIPLE THREE: **COMMUNITY CONNECTIVITY:**
BENNETT FARMS IS A COMMUNITY THAT INCLUDES A HIERARCHY OF CONNECTED STREETS WITH ATTACHED PEDESTRIAN FRIENDLY WALKS. THE USE OF A MODIFIED GRID REINFORCES CONNECTIVITY AND WALKABILITY. THE INTENT IS TO CREATE A FLUID SYSTEM OF PEDESTRIAN AND RECREATIONAL TRAILS THAT CONNECT USERS TO NEIGHBORHOODS, MIXED USE, RECREATION AND COMMUNITY GATHERING AREAS.

PRINCIPLE FOUR: **ESTABLISH A DIVERSITY OF HOUSING TYPES:**
BENNETT FARMS IS PLANNED TO INCLUDE A DIVERSITY OF HOUSING TYPES TO ACCOMMODATE A MULTI-GENERATIONAL AND DIVERSE INCOME POPULATION. MIXED USE, HIGH DENSITY RESIDENTIAL AND MEDIUM DENSITY RESIDENTIAL LAND USES ARE INCLUDED TO ACCOMMODATE A VARIETY OF SINGLE FAMILY ATTACHED, SINGLE FAMILY DETACHED AND ,MULTIFAMILY HOUSING TYPES.

PRINCIPLE FIVE: **MIXED USE CENTERS AND NEIGHBORHOOD FOCAL POINTS:**
BENNETT FARMS UTILIZES A MODIFIED GRID THAT IS CONFIGURED AROUND A CENTRAL OPEN SPACE AND PARK SYSTEM. THIS SYSTEM INCLUDES COMMUNITY AMENITIES, NEIGHBORHOOD AND POCKETS PARKS. MIXED USE CENTER AND AMENITIES ARE INCORPORATED TO SERVICE AS COMMUNITY FOCAL POINTS AND GATHERING AREAS. THIS INCLUDES TRANSFORMING THE EXISTING FARM HEADQUARTERS INTO A CENTRAL COMMUNITY AMENITY. THESE COMPONENTS WILL BE ACCESSIBLE THROUGH AN INTER-CONNECTED TRAIL SYSTEM.

INTENT

UTILIZING THE EXISTING PHYSICAL CHARACTERISTICS AND INTEGRATED PLANNING PRINCIPLES, THE INTENT IS TO CREATE A MIXED-USE COMMUNITY THAT WILL HAVE ENDURING VALUE TO THE TOWN OF BENNETT AND REGION. THIS COMMUNITY WILL BE COMPRISED OF INTERCONNECTED NEIGHBORHOODS, MIXED USE CENTERS AND AMENITIES.

THE EXISTING FARM HEADQUARTERS, MIXED USE CENTERS AND A HIERARCHY OF PROPOSED PARKS WILL SERVE AS COMMUNITY GATHERING AREAS. MIXED USE AREAS ARE INTEGRATED TO PROVIDE A VARIETY OF USES AND TO SERVE AS A LAND USE TRANSITION FROM THE FUTURE TRANSPORT PROJECT. RESIDENTIAL USED ARE LOCATED AND CONFIGURED TO ACCOMMODATE A DIVERSITY OF HOUSING TYPES. THIS MIXED-USE COMMUNITY WILL PROVIDE SERVICES AND HOUSING ALTERNATIVES FOR A MULTI-GENERATIONAL POPULATION.

PLANNED DEVELOPMENT ZONING

THE BENNETT FARMS ODP INCLUDES A MIX OF RESIDENTIAL, MIXED-USE, AND OPEN SPACE LAND USE DISTRICTS. THESE MIXED-USE DISTRICTS WILL ACCOMMODATE A WIDE RANGES OF USERS, SERVICES AND HOUSING OPPORTUNITIES. DEVELOPMENT STANDARDS ARE PREPARED FOR EACH LAND USE DISTRICT TO ENSURE THE FIVE PLANNING PRINCIPLES ARE IMPLEMENTED WITH EACH PHASE OF THE PROJECT.

DENSITY TRANSFER

DENSITY MAY BE TRANSFERRED TO A PLANNING AREA UP TO 30% OF THE DENSITY OF THE RECEIVING PLANNING AREA IF SUFFICIENT ROADWAY, WATER AND SEWER CAPACITY ARE AVAILABLE. TRANSFERS 30% OR LESS WILL REQUIRE AN ADMINISTRATIVE AMENDMENT TO THE ODP. REVIEW WILL BE REQUIRED BY THE TOWN ENGINEER, TRAFFIC ENGINEER AND OTHER REQUIRED AGENCIES.

LAND USE PLANNING OVERVIEW:

OVERALL DEVELOPMENT PROGRAM

BENNETT FARMS IS PLANNED AS A VIBRANT AND BALANCED MIXED-USE COMMUNITY THAT IS BASED ON INTEGRATED PLANNING AND DESIGN PRINCIPLES. THIS ODP IS INCORPORATES THE PRINCIPLES OUTLINED ABOVE WHILE PROVIDING FLEXIBILITY TO ACHIEVE PROJECT OBJECTIVES OVERTIME. THIS OUTLINE DEVELOPMENT PLAN INCLUDES PERMITTED USES AND DEVELOPMENT STANDARDS THAT ARE CREATED FOR EACH SPECIFIC DISTRICT. THE DESIGN STANDARDS OUTLINED ENSURE GOALS AND OBJECTIVES ASSOCIATED WITH EACH DISTRICT ARE ACHIEVED.

RESIDENTIAL DEVELOPMENT

PLANNING AREAS 1, 2, 3, 5, 8, 10, 11, 12, 14,15 AND 16 ARE PLANNED FOR BOTH MEDIUM DENSITY RESIDENTIAL (MDR). LOCATED WITHIN SOUTHEASTERN QUADRANT OF THE PROPERTY IS PLANNING AREA 7 THAT WILL INCLUDE HIGH DENSITY RESIDENTIAL (HDR) USES. THE PURPOSE OF ESTABLISHING A VARIETY OF RESIDENTIAL ZONING DISTRICTS IS TO ACCOMMODATE DIVERSE HOUSING TYPES THAT WILL ALLOW FOR A MULTI-GENERATIONAL POPULATION. BENNETT FARM'S RESIDENTIAL NEIGHBORHOOD ARE CONFIGURED WITHIN A FRAMEWORK PLAN THAT REFLECTS A MODIFIED GRID. THIS MODIFIED GRID WILL BE COMPRISED OF INTERCONNECTED PEDESTRIAN-ORIENTED STREETS THAT WILL DEFINE WALKABLE BLOCKS.

THE STREET CONFIGURATION IS PLANNED TO ALLOW FOR A MULTI-MODAL TRANSPORTATION PROGRAM INCLUDING BICYCLE, PEDESTRIAN, VEHICLE AND TRANSIT ALTERNATIVES. THE COMMUNITY INCLUDES A HIERARCHY OF CONNECTED STREETS THAT DISPERSE TRAFFIC BY PROVIDING DRIVERS, CYCLIST AND PEDESTRIANS WITH A NUMBER OF ALTERNATIVES TO ACCESS AND NAVIGATE THROUGHOUT THE COMMUNITY. THE STREET CONFIGURATION INCLUDES MULTIPLE PROPOSED FULL MOVEMENT INGRESS/EGRESS ACCESS POINTS THAT CONNECT NORTH TO EAST 38TH AVENUE AND EAST TO HARBACK ROAD. THE ROAD SYSTEM IS PROPOSED TO CROSS THE FLOODPLAIN ZONE, CREATING AN EAST/WEST CONNECTION. THIS CROSSING WILL NATURALLY AND PHYSICALLY BRING A SENSE OF AWARENESS TO THE LARGE OPEN SPACE WITHIN THE PRESERVED DRAINAGE CORRIDOR. THESE LAND USES ARE OUTLINED IN THE LAND USE MATRIX (PAGE 6 OF 6) WITHIN THE PERMITTED USES OF THE FLOODPLAIN ZONE DISTRICT.

MIXED USE

PLANNING AREAS 6, 17, 18 AND 19 ARE INTENDED TO BE CONFIGURED TO ACCOMMODATE A MIX OF USES, INCLUDING A TOTAL OF 1,028,329 SQUARE FEET OF PROPOSED COMMERCIAL SPACE. THE PROPOSED MIXED-USE (MU) DISTRICT TO ACCOMMODATE A VARIETY OF NON-RESIDENTIAL USES. THESE USES MAY INCLUDE RESEARCH AND DEVELOPMENT, DISTRIBUTION AND OTHER RELATED LIGHT INDUSTRIAL EMPLOYMENT CENTERS.

PLANNING AREA 6 IS LOCATED ON THE EASTERN SIDE OF THE PROPERTY JUST SOUTH OF OPEN SPACE PLANNING AREA 4 AND ALONG HARBACK ROAD. PLANNING AREAS 17, 18 AND 19 ARE LOCATED ALONG THE WESTERN BORDER OF THE PROPERTY. THESE DISTRICTS ARE DESIGNED TO COMPLEMENT THE TRANSPORT/PORT COLORADO PROJECT LOCATED WEST OF THE PROPERTY AND TO ALSO SERVE AS A TRANSITION TO THE RESIDENTIAL AREAS LOCATED TO THE EAST. THE MASTER PLANNED INDUSTRIAL AND COMMERCIAL PARK, SUB-AREA 6 - INDUSTRIAL PARK, WHICH IS 1.089 ACRES IS PROPOSED ON THE PARCEL DIRECTLY TO THE WEST OF BENNETT FARMS. PROXIMITY AND VISIBILITY TO THE FUTURE USES OF TRANSPORT COLORADO WILL HELP BRING DEVELOPMENT AND OVERALL SUCCESS TO THE MIXED-USE PLANNING AREAS WITHIN BENNETT FARMS.

SITE ANALYSIS:

EXISTING CONDITIONS AND ENVIRONMENTALLY SIGNIFICANT AREAS

THE BENNETT FARMS ODP INCLUDES APPROXIMATELY 405.7 ACRES. EAST 38TH AVENUE BORDERS THE PARCEL TO THE NORTH, HARBACK ROAD TO THE EAST AND EAST COLFAX TO THE SOUTH. THE PROPERTY HAS PRIMARILY BEEN UTILIZED FOR AGRICULTURAL USES. AN EXISTING ENTRANCE INTO THE PROPERTY IS LOCATED ALONG NORTH HARBACK ROAD THAT PROVIDES ACCES TO THE EXISTING FARM HEADQUARTERS. THIS HEADQUARTERS INCLUDES A SINGLE-FAMILY HOME, SILOS, A BARN AND OTHER ACCESSORY USES. THE NATURAL ROLLING TOPOGRAPHY OF THE LAND GENERALLY DESCENDS TO THE NATURAL DRAINAGE CORRIDOR THAT IS LOCATED IN THE CENTER OF THE PROPERTY. VEGETATION CONSISTS OF CROPS AND NATIVE GRASSES. THE DELINEATED FLOODPLAIN ZONE IS APPROXIMATELY 42 ACRES AND BISECTS THE PARCEL NORTH/ SOUTH.

GENERAL SITE CONDITIONS:

PLANNING AREA BOUNDARIES

THE NINETEEN PLANNING AREAS LOCATED WITHIN THE BENNETT FARMS ODP ARE ILLUSTRATED ON THE ZONE DISTRICT PLAN ON SHEET 2 OF 6. THIS PLAN ILLUSTRATES THE FOLLOWING FOUR ZONE DISTRICTS: HIGH DENSITY RESIDENTIAL (HDR), MEDIUM DENSITY RESIDENTIAL (MDR), MIXED-USE (MU), AND OPEN SPACE (OS). FINAL PLANNING AREA BOUNDARIES, ROAD ALIGNMENTS, INGRESS/EGRESS POINTS AND OPEN SPACE CALCULATIONS WILL BE ESTABLISHED WITH THE FINAL PLAT OR PLATS.

PLANNING AREA ACREAGES AND BOUNDARIES AS SHOWN ON THE ZONE DISTRICT PLAN ARE PRELIMINARY AND SUBJECT TO CHANGE WITH DETAILED PLANNING. INDIVIDUAL PLANNING AREA ACREAGES CAN CHANGE UP TO 20%. AN ADMINISTRATIVE AMENDMENT WILL BE REQUIRED TO THE ODP. ADDITIONAL ANALYSIS MAY BE REQUIRED BY THE TOWN ENGINEER, TRAFFIC ENGINEER, BENNETT-WATKINS FIRE AND OTHER REQUIRED AGENCIES.

SCHEDULE OF DEVELOPMENT, PROPOSED PHASING AND VESTING

THE PROJECT WILL BE DEVELOPED IN PHASES BASED ON LOGICAL GROWTH, INFRASTRUCTURE EXTENSION AND AVAILABILITY OF UTILITY SERVICE OF THE SITE. AS ILLUSTRATED ON THE ZONE DISTRICT PLAN, SHEET 2 OF 6, THE SITE WILL HAVE MULTIPLE POINTS OF ACCESS ALONG EAST 38TH AVENUE AND HARBACK ROAD, WHICH WILL INFLUENCE THE PHASING OF THE PROJECT.

SPECIAL FINANCIAL DISTRICTS

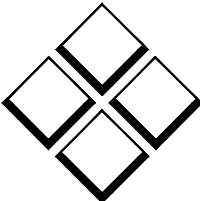
IT IS ANTICIPATED THAT THIS DEVELOPMENT WILL REQUIRE THE FORMATION OF METROPOLITAN DISTRICTS. THESE DISTRICTS WILL BE UTILIZED TO DESIGN, FINANCE AND IMPLEMENT INFRASTRUCTURE REQUIRED. THIS WILL INCLUDE WATER, SEWER, UTILITIES AND OTHER PUBLIC IMPROVEMENTS TO THE SITE.

END OF SECTION

DEVELOPMENT STANDARDS AND GUIDELINES

Introduction

Scale: N/A
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BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 4 OF 7

DEVELOPMENT STANDARDS AND GUIDELINES

INTRODUCTION

FOLLOWING ARE DESCRIPTIONS OF THE PLANNING AREAS INCLUDING: AN INTENT STATEMENT, DEVELOPMENT PROGRAM, LAND USES, STANDARDS & SETBACKS AND GUIDELINES.

HIGH DENSITY RESIDENTIAL DISTRICT (HDR)

PLANNING AREA 7

INTENT

LOCATED WITHIN THE SOUTHEAST QUADRANT OF THE PROPERTY AND AT THE CORNER OF EAST COLFAX AVENUE AND HARBACK ROAD, PLANNING AREA 7 IS INTENDED TO BE DEVELOPED INTO A HIGH-DENSITY RESIDENTIAL NEIGHBORHOOD. THE HIGH-DENSITY RESIDENTIAL DISTRICT PERMITS SINGLE-FAMILY DETACHED, SINGLE-FAMILY ATTACHED AND MULTI-FAMILY HOUSING TYPES INCLUDING TOWNHOMES, CLUSTER DEVELOPMENT AND PATIO HOMES.

DEVELOPMENT PROGRAM

THE PROPOSED 33.6 ACRES IN INTENDED TO INCORPORATE A RESIDENTIAL PROGRAM THAT CONSISTS OF A VARIETY OF SINGLE FAMILY ATTACHED AND MULTI-FAMILY HOUSING TYPES. PLANNING AREA 7 WILL OFFER A VARIETY OF ARCHITECTURAL STYLES/MODELS THAT WILL ACCOMMODATE DIVERSE RESIDENTS/USERS. THIS NEIGHBORHOOD WILL BE PLANNED TO REINFORCE CONNECTIVITY TO THE SURROUNDING MEDIUM DENSITY RESIDENTIAL PLANNING AREAS AND THE CENTRAL OPEN SPACE SYSTEM INCLUDING THE NATURAL DRAINAGE SYSTEM.

THIS PLANNING AREA WILL BE CONNECTED BY PEDESTRIAN-FRIENDLY VEHICULAR STREETS. THE MODIFIED STREET GRID PROVIDES FOR ALTERNATIVE ROUTES, DISPERSED TRAFFIC AND REINFORCED PEDESTRIAN ACTIVITY.

PERMITTED LAND USES - HDR DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 6 OF 6 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE HDR SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - HDR DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX	
HIGH DENSITY RESIDENTIAL DISTRICT (HDR)	
STANDARDS	HDR
MAXIMUM HEIGHT (PRINCIPAL STRUCTURE)	40 FT
(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA	3,500 SF FOR SFD, N/A FOR OTHER MULTI-FAMILY RESIDENTIAL
MINIMUM LOT WIDTH	40 FT FOR SFD, NONE FOR OTHER MULTI-FAMILY RESIDENTIAL
MAXIMUM LOT COVERAGE (BUILDING & PARKING)	75%
MINIMUM UNOBSTRUCTED OPEN SPACE	20%
DENSITY - MAXIMUM	5 DU/AC
SETBACKS	
PARKING LOT SETBACKS	LANDSCAPE BUFFER (1)
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW	
FRONT SETBACK (PRINCIPAL STRUCTURE)	10 FT (3)
(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK (PRINCIPAL STRUCTURE)	5 FT(3)
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1) (3)
REAR SETBACK (PRINCIPAL STRUCTURE)	15 FT
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)

MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT (3)
	(ACCESSORY STRUCTURE)	10 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	20 FT
	GARAGE SETBACK	N/A (2)
NOTES:		
(1) 0 FT SETBACK IF NO OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK BACK REQUIRED		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		
(3) 15' SETBACK WHERE UTILITY EASEMENTS ARE LOCATED ALONG THE FRONT AND SIDE OF LOTS ADJACENT TO A STREET		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREA 7 SHOULD PROVIDE SIDEWALKS ALONG ALL STREETS AND PRIVATE STREETS, PARKING LOTS ARE EXCLUDED.
- ACCESS SHALL BE PROVIDED AND MAINTAIN CONNECTED TO THE ADJACENT PROPOSED STREET SYSTEM AND TO HARBACK ROAD TO THE EAST.
- BENNETT FARMS IS PLANNED TO INCLUDE A SERIES OF INTEGRATED AND PEDESTRIAN-ORIENTED RESIDENTIAL PLANNING AREAS.
- ESTABLISH WALKABLE NEIGHBORHOODS WITH CONVENIENT ACCESS TO MIXED-USE CENTERS, EMPLOYMENT CENTERS, TRANSIT AND OPEN SPACE, INCLUDING THE COMMUNITY AMENITIES.
- ENCOURAGE A DIVERSITY OF HOUSING TYPES AND HUMAN-SCALE ARCHITECTURE THAT WILL ENHANCE SOCIAL INTERACTION AND PEDESTRIAN ACTIVITY.
- INTERCONNECTED STREETS AND TRAFFIC PATTERNS USING A MODIFIED GRID THAT ENCOURAGE CONNECTIVITY FOR VEHICLES AND PEDESTRIANS.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LANDSCAPE REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LIGHTING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)

PLANNING AREAS 1, 2, 3, 5, 8, 10, 11, 12, 14, 15 AND 16

INTENT

PLANNING AREAS 1, 2, 3, 5, 8, 10, 11, 12, 14, 15 AND 16 ARE CENTRALLY LOCATED AND DISPERSED THROUGHOUT BENNETT FARMS. THE MEDIUM DENSITY RESIDENTIAL DISTRICT IS INTENDED TO BE COMPRISED OF SINGLE FAMILY ATTACHED HOMES AND SINGLE-FAMILY DETACHED HOMES. THE NEIGHBORHOOD WILL INCLUDE VEHICULAR AND PEDESTRIAN CONNECTIONS TO THE CENTRAL OPEN SPACE AND PARK SYSTEM. POCKET PARKS WILL BE INTEGRATED WITHIN NEIGHBORHOODS TO SERVE AS FOCAL POINTS AND GATHERING AREAS.

DEVELOPMENT PROGRAM

THE DESIGN INTENT IS TO CONFIGURE PLANNING AREAS UTILIZING MODIFIED GRID STREET SYSTEM. THE PROPOSED CONFIGURATION WILL BE INTERCONNECTED THROUGH PEDESTRIAN-FRIENDLY STREETS CREATING WALKABLE BLOCKS. CONNECTIVITY TO THE MIXED-USE CENTERS, ADJACENT NEIGHBORHOODS AND THE COMMUNITY OPEN SPACE SYSTEM WILL BE REINFORCED WITH EACH PLANNING AREA. THE MDR PLANNING AREAS WILL BE FOCUSED ON BUILDING COMMUNITY CHARACTER THROUGH THE USE OF WALKABLE STREETS, POCKET PARKS AND TRAIL SYSTEMS. HOMES ARE TO REFLECT ARCHITECTURE THAT REINFORCES THE PUBLIC REALM ASSOCIATED WITH PEDESTRIAN-ORIENTED STREETS AND OPEN SPACE.

PERMITTED LAND USES - MDR DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 6 OF 6 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MDR SPECIFIC USE TYPE.

LOT AND BUILDING STANDARDS - MDR DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX	
MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)	
STANDARDS	MDR
MAXIMUM HEIGHT (PRINCIPAL STRUCTURE)	35 FT
(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA	3,500 SF
MINIMUM LOT WIDTH	30 FT
MAXIMUM LOT COVERAGE (BUILDING & PARKING)	70%
DENSITY - MAXIMUM	8 DU/AC
SETBACKS	
GARAGE SETBACKS (GARAGE DOOR TO SIDEWALK)	20 FT
(SIDE LOADED GARAGES)	10 FT (3)
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW	
FRONT SETBACK (PRINCIPAL STRUCTURE)	10 FT (3)
(ACCESSORY STRUCTURE)	10 FT (3)
SIDE SETBACK (PRINCIPAL STRUCTURE)	5 FT (3)
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1) (3)
REAR SETBACK (PRINCIPAL STRUCTURE)	10 FT
(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS	
FRONT SETBACK (PRINCIPAL STRUCTURE)	10 FT (3)
(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK (PRINCIPAL STRUCTURE)	5 FT (3)
(ACCESSORY STRUCTURE)	10 FT
REAR SETBACK (PRINCIPAL STRUCTURE)	20 FT
GARAGE SETBACK	N/A (2)
NOTES:	
(1) 0 FT SETBACK IF NO OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK BACK REQUIRED	
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS	
(3) 15' SETBACK OR WHERE UTILITY EASEMENTS ARE LOCATED ALONG THE FRONT AND SIDE OF LOTS ADJACENT TO A STREET	

MDR CONT. ON SHEET 5 OF 6

DEVELOPMENT STANDARDS AND GUIDELINES

High Density Residential (HDR)
Medium Density Residential (MDR)

Scale: N/A
Date: MARCH 01, 2022
Revision Date: JUNE 03, 2022

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 5 OF 7

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREAS 1, 2, 3, 5, 8, 10, 11, 12, 14, 15 AND 16 SHOULD PROVIDE SIDEWALKS THROUGHOUT THE NEIGHBORHOOD AND ON ALL STREETS AND PRIVATE STREETS.
- PEDESTRIAN ACCESS SHOULD CONNECT TO ADJACENT PLANNING AREA DISTRICTS INCLUDING MIXED-USE AREAS.
- BUILDING DESIGN AND ORIENTATION SHOULD BE PLANNED TO INTEGRATE WITH THE NATURAL SITE CHARACTERISTICS AND TO MAXIMIZE SOLAR EXPOSURE.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- SINGLE FAMILY DETACHED (SFD) FRONT LOADED GARAGES REQUIRE A MINIMUM 18' DRIVEWAY FROM THE GARAGE FACE TO THE BACK OF WALK. SFD FRONT LOADED GARAGES WITH NO WALK REQUIRE A MINIMUM 20' DRIVEWAY FROM THE GARAGE FACE TO THE ASPHALT. SFD FRONT LOADED GARAGES LOCATED ON CORNER LOTS SHALL BE LOCATED 20' FROM POINT OF CURB RETURN
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LANDSCAPE REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LIGHTING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

MIXED USE DISTRICT (MU)

PLANNING AREAS 6, 17, 18 AND 19

INTENT

PLANNING AREA 6 IS LOCATED ON THE EASERN SIDE OF THE PROPERTY JUST SOUTH OF OPEN SPACE PLANNING AREA 4. ACCESS TO THIS PLANNING AREA WILL BE PROVIDED VIA ROAD D, E AND HARBACK ROAD. THE OTHER THREE MIXED USE DISTRICT PLANNING AREAS ARE LOCATED ALONG THE WESTERN PERIMETER OF THE PROPERTY. ACCESS TO THESE PLANNING AREAS WILL BE PROVIDE VIA EAST 38TH AVENUE AND ROAD J. THE MIXED-USE AREAS ARE LOCATED ADJACENT TO THE FUTURE TRANSPORT PROJECT. THESE MIXED-USE AREAS ARE PROPOSED TO SERVE AS A EMPLOYMENT CENTERS THAT WILL ACCOMMODATE A VARIETY OF COMMERCIAL AND LIGHT INDUSTRIAL LAND USES. HIGH DENSITY RESIDENTIAL LAND USES ARE ALSO PERMITTED WITHIN THE MIXED-USE DISTRICT. A MINIMUM OF 50% OF THE DISTRICT SHALL CONTAIN NON-RESIDENTIAL LAND USES.

DEVELOPMENT PROGRAM

THE INTENT IS TO CREATE MIXED USE CENTERS THAT WILL PROVIDE EMPLOYMENT AND HIGH-DENSITY HOUSING OPPORTUNITIES. THIS DISTRICT WILL BE VISUALLY AND PHYSICALLY CONNECTED UTILIZING PEDESTRIAN FRIENDLY WALKS AND STREETS. SITE AND ARCHITECTURAL COMPONENTS SHOULD BE CONFIGURED TO REINFORCE THE PUBLIC REALM. BUILDINGS SHALL BE ORIENTED TO ENCOURAGE PEDESTRIAN ACTIVITY AND SCREEN SERVICES. PLAZAS AND POCKET PARKS SHOULD BE INCORPORATED TO SERVE AS GATHERING AREAS. ACCESS AND PARKING SHOULD BE CONFIGURED TO PROVIDE EFFICIENCY AND SAFETY FOR MOTORISTS AND PEDESTRIANS.

RESIDENTIAL AND COMMERCIAL MIXED-USE

IF RESIDENTIAL LAND USES ARE DEVELOPED IN THE MIXED-USE PLANNING AREA, RETAIL, COMMERCIAL AND SERVICES WILL BE LIMITED TO PRINCIPAL USES THAT ARE COMPATIBLE WITH THE RESIDENTIAL NEIGHBORHOOD. IF RESIDENTIAL USES ARE NOT DEVELOPED IN THE MIXED-USE PLANNING AREA, A LIST OF ADDITIONAL PERMITTED USES AND DESIGN STANDARDS FOR NON-RESIDENTIAL USES APPLY.

COMMERCIAL LAND USES IN SUPPORT OF RESIDENTIAL DEVELOPMENT

WHERE COMMERCIAL DEVELOPMENT AND RESIDENTIAL USES ARE COMBINED, THE COMMERCIAL AND RESIDENTIAL USES MAY BE LOCATED IN THE SAME BUILDING OR ON ADJACENT LOTS. HORIZONTAL AND VERTICAL MIXED-USE IS PERMITTED. THE INTENT FOR THIS MIXED-USE DISTRICT IS TO PROVIDE COMMERCIAL SERVICES AND EMPLOYMENT SERVICES TO SUPPORT THE RESIDENTIAL LOCATED WITHIN THE TOWN OF BENNETT AND REGION.

PERMITTED LAND USES - MU DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MU SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - MU DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

MIXED-USE DEVELOPMENT STANDARDS MATRIX		
MIXED-USE DISTRICT (MU)		
STANDARDS - COMMERICAL & RETAIL USES		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	50 FT
	(ACCESSORY STRUCTURE)	30 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
MAXIMUM FLOOR AREA RATIO - COMMERICAL		.7:1
SETBACKS - COMMERICAL & RETAIL		
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	15 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	5 FT (3)
REAR SETBACK	(PRINCIPAL STRUCTURE)	15 FT
	(ACCESSORY STRUCTURE)	5 FT
STANDARDS - RESIDENTIAL		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	45 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
DENSITY - MAXIMUM		25 DU/ AC
SETBACKS - RESIDENTIAL		MU
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
GARAGE		N/A (2)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT (3)
	(ACCESSORY STRUCTURE)	10 FT (3)
SIDE SETBACK	(PRINCIPAL STRUCTURE)	0 FT (3)
	(ACCESSORY STRUCTURE)	5 FT (3)
REAR SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	5 FT
NOTES:		
(1) REFER TO TOWN OF BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS, FOR REQUIREMENTS AND DESIGN STANDARDS.		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		
(3) 15' SETBACK WHERE UTILITY EASEMENTS ARE LOCATED ALONG THE FRONT AND SIDE LOTS ADJACENT TO A STREET		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

- RETAIL, COMMERCIAL AND RESIDENTIAL USES SHALL PROVIDE PEDESTRIAN CONNECTIONS TO ALLOW VISITORS AND USERS TO CIRCULATE BETWEEN THE VARIOUS CENTERS AND NEIGHBORHOODS.
- DEVELOP BUILDING SITE LANDSCAPING THAT REINFORCES CONNECTIONS TO BUILDING ENTRANCES, COMMUNITY AMENITIES AND OPEN SPACE AREAS.
- ALL BUILDINGS WILL BE ARTICULATED ON ALL FOUR SIDES WITH VARIATIONS IN MATERIALS, CREATIVE ENTRY TREATMENTS AND FACADE COMPONENTS THAT HELP ESTABLISH BUILDING SCALE AND VARYING COMPOSITION.
- SHARED PARKING IS ENCOURAGED TO MAXIMIZE DENSITY AND USERS - SEE PARKING REQUIREMENTS BELOW.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LANDSCAPE REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

LIGHTING REQUIREMENTS:

REFER TO PARKING, LANDSCAPE AND LIGHTING REQUIREMENTS OF THE TOWN OF BENNETT MUNICIPAL CODE AS IT MAY BE AMENDED FROM TIME TO TIME.

OPEN SPACE AND TRAILS (OS)

PLANNING AREAS 4, 9 AND 13

INTENT

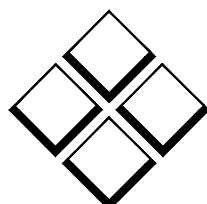
PLANNING AREAS 4, 9 AND 13 ARE INDENTED TO PROVIDE OPEN SPACE AREAS THAT WILL SERVE AS A COMMUNITY AMENITY. PLANNING AREA 4 IS LOCATED ON THE EASTERN HALF OF BENNETT FARMS SURROUNDING THE EXISTING FARMSTEAD. THIS PROPOSED AREA IS TO BE A FOCAL POINT WITHIN BENNETT FARMS AND IS TO BE TRANSFORMED INTO A COMMUNITY AMENITY. PLANNING AREA 13 IS LOCATED WITHIN THE WESTERN QUADRANT OF BENNETT FARMS AND CENTRALLY LOCATED WITH CONVENIENT ACCESS FROM ADJACENT RESIDENTIAL NEIGHBORHOODS. THIS PARK WILL SERVE AS A SECOND COMMUNITY AMENITY AND GATHERING SPACE. PLANNING AREA 4 IS WITHIN THE NATURAL DRAINAGE CORRIDOR THAT IS LOCATED WITHIN CENTER OF THE COMMUNITY. THIS LARGE CONTIGUOUS OPEN SPACE AREA AND WILL BE PRESERVED AND UTILIZED FOR PASSIVE AND ACTIVE RECREATION. PEDESTRIAN TRAIL CONNECTIONS, VISUAL AMENITIES THAT BENEFIT THE COMMUNITY WILL BE INCORPORATED IN THIS DISTRICT.

OS CONT. ON SHEET 6 OF 7

DEVELOPMENT STANDARDS AND GUIDELINES

Medium Density Residential (MDR),
Mixed Use District (MU)
Open Space and Trails (OS)

Scale: N/A
Date: MARCH 01, 2022
Revision Date: JUNE 03, 2022



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BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 6 OF 7

DEVELOPMENT PROGRAM

BENNETT FARMS INCORPORATES A PLANNING APPROACH THAT INTEGRATES WITH THE NATURAL TOPOGRAPHY AND DRAINAGE PATTERNS.

PARKS, OPEN SPACE AND TRAILS ARE INCORPORATED TO ENHANCE COMMUNITY CONNECTIVITY WITH RESIDENTIAL AND MIXED-USE DISTRICTS. ESTABLISHING A COHESIVE COMMUNITY SHALL BE REINFORCED THROUGH A HIERARCHY OF WALKABLE TRAIL CONNECTIONS TO ALL PLANNING AREAS.

PERMITTED LAND USES - OS DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE OS SPECIFIC USE TYPE COLUMN.

TRAIL CONNECTIONS

ALONG WITH THE OPEN SPACE PLANNING AREAS BENNETT FARMS WILL INCLUDE A HIERARCHY OF TRAILS. COMMUNITY CONNECTIVITY WITHIN BENNETT FARMS WILL INCLUDE CREATING A WELL-CONNECTED SYSTEM OF PEDESTRIAN-FRIENDLY TRAILS THAT WILL ACCOMMODATE A VARIETY OF RECREATIONAL USER GROUPS INCLUDING HIKING AND BIKING. THIS SYSTEM WILL INCLUDE COMMUNITY AND NEIGHBORHOOD TRAILS.

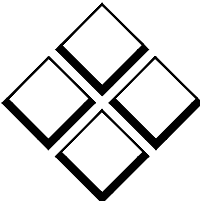
DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

SETBACKS AND DEVELOPMENT CRITERIA WILL BE FURTHER DEFINED AND DETERMINED AT THE TIME OF FINAL PLAT.

- NO FENCING OR PERMANENT STRUCTURES SHALL BE PERMITTED WITHIN THE 100 YEAR FLOODPLAIN ZONE.
- AGRICULTURAL BUILDINGS SHALL HAVE THE FOLLOWING MAXIMUM HEIGHTS:
 - BARNs 50 FEET
 - SILOS 75 FEET

END OF SECTION



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DEVELOPMENT STANDARDS AND GUIDELINES

Open Space and Trails (OS)

Scale: N/A
Date: MARCH 01, 2022
Revision Date: JUNE 03, 2022

PART OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL
MERIDIAN, TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 7 OF 7

GENERAL LAND USE GUIDELINES NOTES:

1. NO STRUCTURES OR FENCES SHALL BE CONSTRUCTED WITHIN THE 100 YEAR FLOODPLAIN. USES WITHIN THE F-ZONE MUST BE EVALUATED BY THE ADMINISTRATOR FOR FINAL DETERMINATION ON WHETHER THE USE IS ALLOWABLE.
2. OUTDOOR SKATEBOARD PARKS CAN BE CONSTRUCTED IN CONJUNCTION WITH PUBLIC PARKS.
3. ONLY PUBLIC FACILITIES SHALL BE CONSTRUCTED ON DEDICATED PUBLIC OPEN SPACE.
4. AGRICULTURE USES SHALL BE PERMITTED AS AN INTERIM USE FOR ALL PLANNING AREAS UNTIL CONSTRUCTION, OR OVERLOT GRADING IS IMPLEMENTED.

X PRINCIPAL PERMITTED USE
A ACCESSORY USE
- EXCLUDED USE

MU - MIXED USE
MDR - MEDIUM DENSITY RESIDENTIAL
HDR - HIGH DENSITY RESIDENTIAL
F - FLOOD PLAIN
OS - OPEN SPACE

OPEN SPACE (OS): THE INTENT IS TO PROVIDE FOR PASSIVE AND ACTIVE RECREATION AND VISUAL AMENITIES FOR THE BENEFIT OF THE COMMUNITY.

Vehicle / Equipment Sales and Services	Automobile, RV's, trailer and camper rentals	X	-	-	-	-
	Automobile w ashing facility	X	-	-	-	-
	Limited equipment rental (U-Haul type business)	X	-	-	-	-
	Major vehicle/equipment repair (includes auto body repair, paint shops, and incidental sales of parts)	-	-	-	-	-
	Motor vehicle dealer / sales, new and used RV's, trailers, and campers)	X	-	-	-	-
	Automobile fuel service stations	X	-	-	-	-
Visitor Accommodations	Hotel or motel lodging establishments	X	-	-	-	-
	Campground	X	-	-	X	X
INDUSTRIAL USES		MU	MDR	HDR	F	OS
Outdoor Storage	Outdoor parking and storage of vehicles	X	-	-	-	-
	Above ground oil and gas operations storage tanks	X	X	X	-	X
Oil and Gas	Oil and gas operations	X	X	X	X	X
PUBLIC, INSTITUTIONAL & CIVIC USES		MU	MDR	HDR	F	OS
Ambulance Service	Garage and office for ambulance service	X	X	X	-	-
Clubs and Lodges	Private lodge or club (excluding guns)	X	-	-	-	X
Community Services	Events center less than 15,000 sq. ft.	X	-	-	-	X
	Events center greater than 15,000 sq. ft.	-	-	-	-	X
Day Care Facilities, Adult or Child	Child care center	X	-	-	-	A
	Adult day care center	X	-	-	-	-
Fire	Fire Stations	X	X	X	-	-
Hospitals	Hospital	X	-	-	-	-
	Outpatient surgical centers	X	-	-	-	-
Office and Recreation	Public administrative office or service building	X	-	-	-	X
	Public park or recreational facilities	X	X	X	X	X
Religious Institutions	Religious institution and facilities	X	-	-	-	-
Educational Facilities	Public Schools	X	X	X	-	X
	Private business, trade, and vocation schools	X	-	-	-	A
Transportation Facilities	Public Transportation Terminals / Parking	X	-	-	-	-
	Private automobile parking lots or parking garages as a principal use	X	-	-	-	-
Utilities	Reservoirs or Aquifers recharge areas	X	X	X	X	X
	Electrical Substations	X	X	X	X	X
	Public Utility Office	X	-	-	-	-
	Solar Fields	X	X	X	-	X
	Wastewater Treatment Plants	X	X	X	-	X
	Water Treatment / Storage	X	X	X	X	X
	Water Storage (Reservoirs)	X	X	X	X	X
	Water Wells	X	X	X	X	X
	Wind Energy Conversion Systems (Windmills)	X	X	X	-	X
RESIDENTIAL USES		MU	MDR	HDR	F	OS
Single Family Attached	Single Family Attached including townhomes, cluster development, and patio homes	X	-	X	-	-
Single Family Detached	Single Family Attached Duplexes	X	X	X	-	-
	Single Family Detached lots less than 0.5 acres	-	X	X	-	-
	Single Family Detached lots greater than 0.5 acres	-	X	-	-	-
Multi - Family	Multi-family including rental and for sale units	X	-	X	-	-
	Live / Work Units	X	-	X	-	-
Senior Housing	Primary residence for persons 55 years of age or older	X	-	X	-	-
	Recreation, medical, religious, laundry and / or caretaker facilities, and other building(s) and use(s) customarily appurtenant to the permitted use	X	-	X	-	-
Mobile Home	Mobile Home for Residential Purposes	-	-	-	-	-
	Supervisory, management and / or other facilities for the operation and/or maintenance of the manufactured home/mobile home park.	-	-	-	-	-
Group Homes	Group homes consistent with the Bennett Municipal Code and the CRS	X	X	X	-	-



Scale: N/A

Date: MARCH 01, 2022

Revision Date: JUNE 03, 2022

Bennett Farms and the Comprehensive Plan Principles

The Comprehensive Plan includes twelve principles that provide guidance to elected and appointed officials, residents, business and land owners, project applicants, community partners and stakeholders concerning growth and future land uses. They are outlined below.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.	Y	The proposed zoning includes access to the existing vehicular transportation network. Internal and external pedestrian and bicycle connections can be established at the time of subdivision plat. In addition, preservation of the Lost Creek corridor will allow for eventual trail connections, not just for Bennett Farms but other neighborhoods as well. Location along the Colfax Avenue corridor may present future public transit opportunities.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.	Y	The ODP proposes a mix of residential densities, along with non-residential commercial and light industrial uses. The commercial and light industrial uses can provide services to not just the Bennett Farms project, but also the Prospect Ridge property to the south. An important aspect of the mixed use subareas on the west edge is the opportunity to accommodate employers in the growing employment center around the Colorado Air and Space Port. In addition, the ODP includes the preservation of open space and accommodates cultural uses in Planning Area 4 around the original farm headquarters.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.	NA	This area is not part of the Town Center.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.	Y	The residential sub-zone districts offer a mix of unit types and densities including high density residential that might include both apartments and condominiums, all accommodating a diverse housing stock.
5. Commit to being good partners with other community agencies and organizations through collaboration, leveraging funding and planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.	Y	The Town of Bennett and the future developers and builders will have the opportunity to collaborate with all service providers. Increased assessed valuation will result in additional property tax revenues to the various special districts. In addition, in response to the recently proposed Colorado Air and Space Port Subarea Plan, the ODP shows non-residential uses on the west end of the project, which are more compatible with activities in and around the Space Port.

Comprehensive Plan Principle	Complies? Yes, No, NA	Staff Comment
6. Foster an attractive community that retains residents in all stages of life through attainable housing, continuing education and a robust job market.	Y	With the mixed-use zoning proposed, working with future homebuilders and commercial developers, there will be an opportunity to promote attainable housing. The employment uses on the west side of the project have the opportunity to provide jobs to the local community.
7. Preserve and protect natural open space and other areas that have environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.	Y	Setting aside 42 acres of the Lost Creek open space, park and floodplain area is an important step in preservation of areas with environmental significance. The flood hazard area will also be managed by the Town pursuant to the Municipal Code. The annexation of the property includes dedication of valuable groundwater resources.
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.	Y	The zoning accommodates non-residential uses, which may include community gardens, farmers' markets and traditional grocery stores. The 48 acres of open space (PA-9 and PA – 13), as well as local parks and trails, offer opportunities for outdoor physical activities.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.	Y	The zoning contemplates the management of the floodplain, pursuant to municipal code, which will minimize flood damage. The developer will have the opportunity to work with Bennett-Watkins Fire on the wildland-urban interface and minimize the threat of wildfires.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.	Y	The Bennett Farms property is bordered on three sides by non-agricultural zoning or land uses, including industrial, residential and a solar farm. Nevertheless, the applicant has focused on preservation of rural character and activities in PA-4 where the main farm buildings still exist. This area can accommodate cultural activities related to the communities rural character.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.	Y	The Bennett Farms property is contiguous to existing Town of Bennett boundaries, with infrastructure and services within a reasonable distance, consistent with the Town's Capital Asset Inventory Master Plan (CAIMP).
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.	Y	The annexation agreement, along with provisions of the ODP and the Bennett Municipal Code, decisions can be predictable and assure equitable cost-sharing.



Traffic Impact Study

Bennett Farms

Adams County, Colorado

Prepared for:

Vogel & Associates

Kimley»Horn

Bennett Farms

Adams County, Colorado

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June 2022

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1.0 EXECUTIVE SUMMARY

This report has prepared to document the results of the Traffic Study for Bennett Farms proposed to be located on the northwest corner of the Colfax Avenue (SH-36) and Harback Road (CR-31) intersection in Adams County, Colorado. Bennett Farms is proposed to include single family housing, multi-family housing, light industrial space, and self-storage space. It is expected that Bennett Farms will be completed in the next several years; therefore, analysis was conducted for the 2025 and 2045 horizons.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with Adams County, Town of Bennett, and State of Colorado Department of Transportation (CDOT) standards and requirements:

- 38th Avenue and Harback Road (CR-31)
- Colfax Avenue (SH-36) and Harback Road (CR-31)

In addition, one proposed full movement access along 38th Avenue and three full movement accesses along Harback Road (CR-31) were evaluated. It should be noted that additional access will be provided along 38th Avenue but is not currently identified in the site development process. Lane configuration and control recommendations will be provided for any future access along 38th Avenue. It should be noted that there are not any plans for additional access along Colfax Avenue or from an extension of Schumaker Road north of Colfax Avenue due to geometric and logistical constraints with the Union Pacific Railroad currently extending parallel to Colfax Avenue and being located approximately 225 feet north of Colfax Avenue.

Regional access to Bennett Farms will be provided by Interstate 70 and Colfax Avenue (SH-36) while primary access will be provided by Harback Road (CR-31) and 38th Avenue. Direct access will be provided by full movement accesses along 38th Avenue and three full movement accesses along Harback Road (CR-31).

Bennett Farms is expected to generate approximately 23,532 weekday daily trips, with 1,592 of these trips occurring during the morning peak hour and 2,101 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes Bennett Farms will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on north leg of Harback Road at Colfax Avenue (SH-36) is anticipated to increase existing access traffic volumes by more than 20 percent. Therefore, a CDOT access permit is anticipated to be required at this location in association with this project.
- With completion of the Bennett Farms project, one full movement access was analyzed on the south side of 38th Avenue and three full movement access were analyzed on the west side of Harback Road (CR-31). It is recommended that all project accesses provide stop control and R1-1 “STOP” signs be installed on the exiting approaches of each access intersection. Further, left turn lanes should be designated with 150 feet of length for entering all of the project accesses. Single lane exiting approaches should be sufficient for exiting the development accesses. It should be noted that additional access will be provided along 38th Avenue but are unknown at this time. As such, the same lane configuration and control recommendations from the east access along 38th Avenue apply to any future proposed access along 38th Avenue. It should be noted that there are not any plans for additional access along Colfax Avenue or from an extension of Schumaker Road north of Colfax Avenue due to geometric and logistical constraints with the Union Pacific Railroad currently extending parallel to Colfax Avenue and being located approximately 225 feet north of Colfax Avenue.
- It is recommended that the intersection of 38th Avenue and Harback Road (CR-31) (#1) be converted to a single lane roundabout with yield control on all approaches by 2025. An additional analysis was provided for signal control at this intersection in 2025. With

signalization and left turn lanes on all four approaches, this intersection is anticipated to operate at LOS E during the morning peak hour in 2025. Therefore, it is believed that a roundabout is the appropriate control at this intersection due to the high demand for turning movements compared to low through movements at this intersection.

- Based on CDOT standards and requirements, an eastbound left turn deceleration lane, a westbound right turn deceleration lane, and a westbound acceleration lane from southbound right turn movements will be needed at the intersection of Colfax Avenue (SH-36) and Harback Road. The eastbound left turn lane at the SH-36 and Harback Road intersection should provide a length of 1,130 feet (380 feet of deceleration length plus 750 feet of storage length) plus a 220-foot taper by 2025. Based on a 95th percentile vehicle queuing of 668 feet for this eastbound left turn lane, CDOT could consider reducing the storage length from 900 feet to 670 feet which would result in a 1,050-foot left turn lane plus a 220-foot taper. The westbound right turn deceleration lane at this intersection should provide a length of 380 feet plus a 220-foot taper. Further, a 150-foot southbound right turn lane with a 740-foot (plus 220-foot taper) westbound acceleration lane should be provided at this intersection.
- A four-hour vehicular volume signal warrant analysis was completed at the intersection of Colfax Avenue and Harback Road, and it was found that a signal is anticipated to be warranted by 2025 with project traffic. Therefore, it is also recommended that this intersection be signalized by 2025. With signalization, it is recommended that left turn lanes be implemented on all four approaches of this intersection.
- Any on-site or offsite improvements should be incorporated into the Civil Drawings and conform to standards of Adams County, Town of Bennett, CDOT, and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

2.0 INTRODUCTION

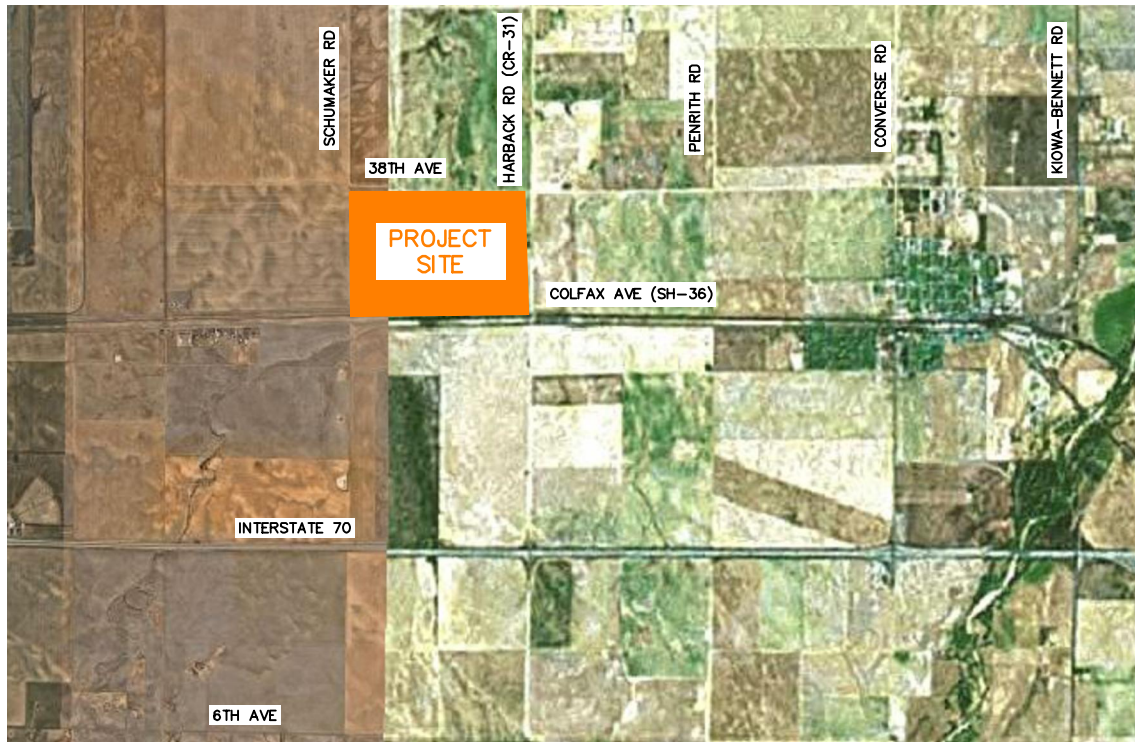
Kimley-Horn and Associates, Inc. has prepared this report to document the results of the Traffic Study for Bennett Farms proposed to be located on the northwest corner of the Colfax Avenue (SH-36) and Harback Road (CR-31) intersection in Adams County, Colorado. A vicinity map illustrating the Bennett Farms development location is shown in **Figure 1**. Bennett Farms is proposed to include single family housing, multi-family housing, light industrial space, and self-storage space. A conceptual land use plan is attached in **Appendix G**. It is expected that Bennett Farms will be completed in the next several years; therefore, analysis was conducted for the 2025 and 2045 horizons.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with Adams County, Town of Bennett, and CDOT standards and requirements:

- 38th Avenue and Harback Road (CR-31)
- Colfax Avenue (SH-36) and Harback Road (CR-31)

In addition, one proposed full movement access along 38th Avenue and three full movement accesses along Harback Road (CR-31) were evaluated. It should be noted that additional access will be provided along 38th Avenue but is not currently identified in the site development process. Lane configuration and control recommendations will be provided for any future access along 38th Avenue. It should be noted that there are not any plans for additional access along Colfax Avenue or from an extension of Schumaker Road north of Colfax Avenue due to geometric and logistical constraints with the Union Pacific Railroad currently extending parallel to Colfax Avenue and being located approximately 225 feet north of Colfax Avenue.

Regional access to Bennett Farms will be provided by Interstate 70 and Colfax Avenue (SH-36) while primary access will be provided by Harback Road (CR-31) and 38th Avenue. Direct access will be provided by full movement accesses along 38th Avenue and three full movement accesses along Harback Road (CR-31).



BENNETT FARMS
ADAMS COUNTY, COLORADO
VICINITY MAP

FIGURE 1

3.0 EXISTING AND FUTURE CONDITIONS

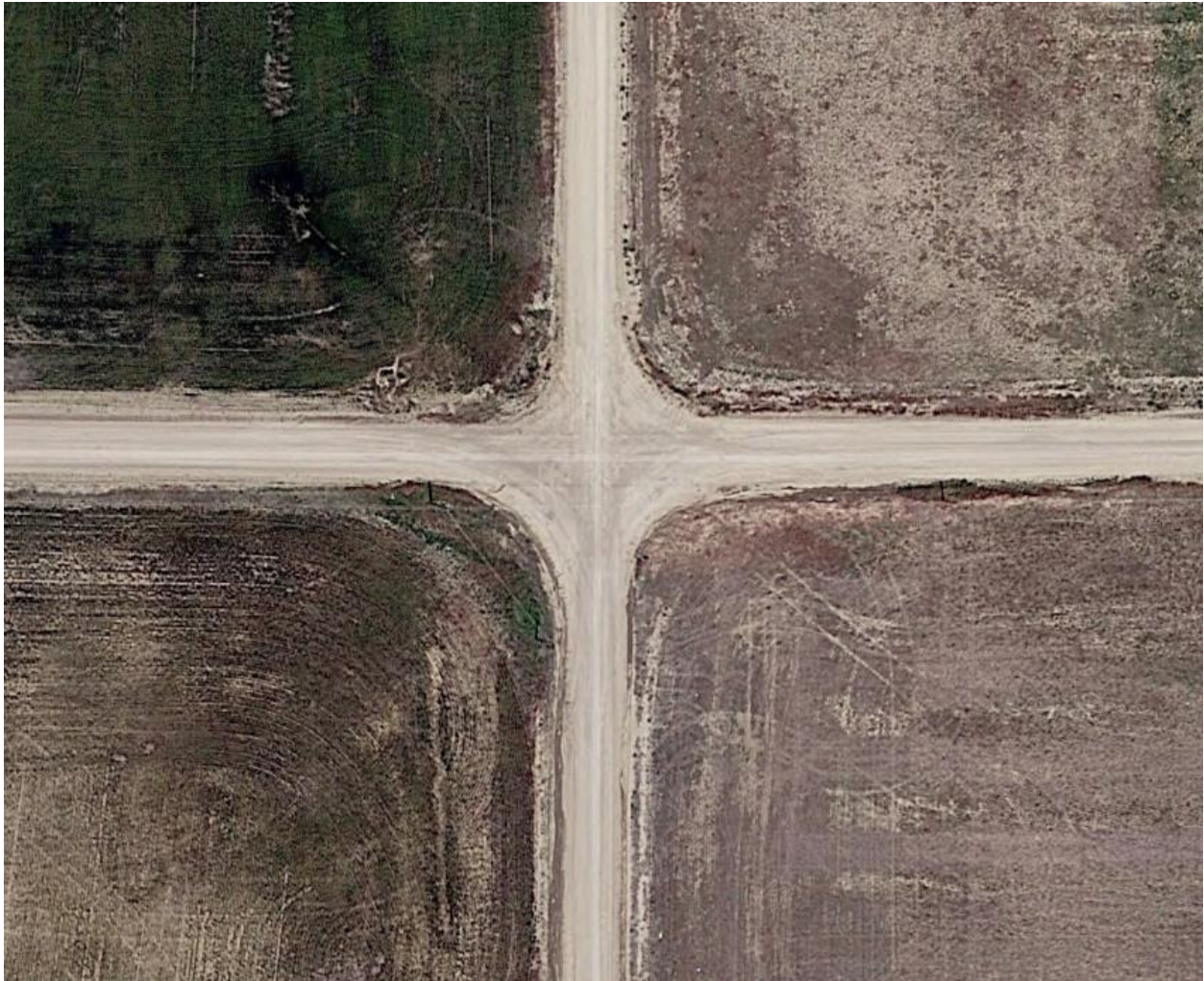
3.1 Existing Study Area

The existing site is comprised of vacant land with two single family houses centrally located on the east side of the site. The site is surrounded on all sides by undeveloped land with several ranch style houses in the surrounding area. The town of Bennett exists approximately 2.5 miles to the east of the proposed site while the Colorado Air and Space Port is located west of the project.

3.2 Existing Roadway Network

Colfax Avenue (SH-36) extends eastbound and westbound with one through lane in each direction and has a posted speed limit of 55 miles per hour within the project limits. Harback Road (CR-31) is an unpaved road that extends north-south with one through lane in each direction. 38th Avenue is an unpaved road that extends in the east-west direction with one through lane in each direction. Of note, the Union Pacific Railroad track extends parallel to Colfax Avenue (SH-36) and is located approximately 225 feet north of the intersection of Colfax Avenue (SH-36) and Harback Road (CR-13) (#2).

The unsignalized intersection of 38th Avenue and Harback Road (CR-13) (#1) operates with yield control on the northbound and southbound approaches. 38th Avenue and Harback Road are both unpaved roadways at this intersection. All four approaches of this intersection provide a single lane shared for all movements. An aerial photo of the existing intersection configuration is below (north is up - typical).



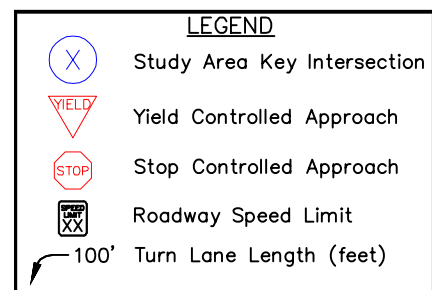
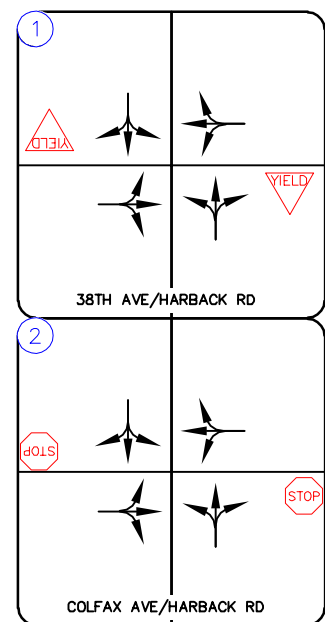
38th Avenue and Harback Road (CR-13) (#1)

The unsignalized intersection of Colfax Avenue (SH-36) and Harback Road (CR-13) (#2) operates with stop control on the northbound and southbound approaches. Harback Road is an unpaved roadway at the intersection with Colfax Avenue. All four approaches of this intersection provide a single lane shared for all movements. An aerial photo of the existing intersection configuration is below.



Colfax Avenue (SH-36) and Harback Road (CR-13) (#2)

The intersection lane configuration and control for the study area key intersections are shown in **Figure 2**.



BENNETT FARMS
ADAMS COUNTY, COLORADO
EXISTING GEOMETRY AND CONTROL

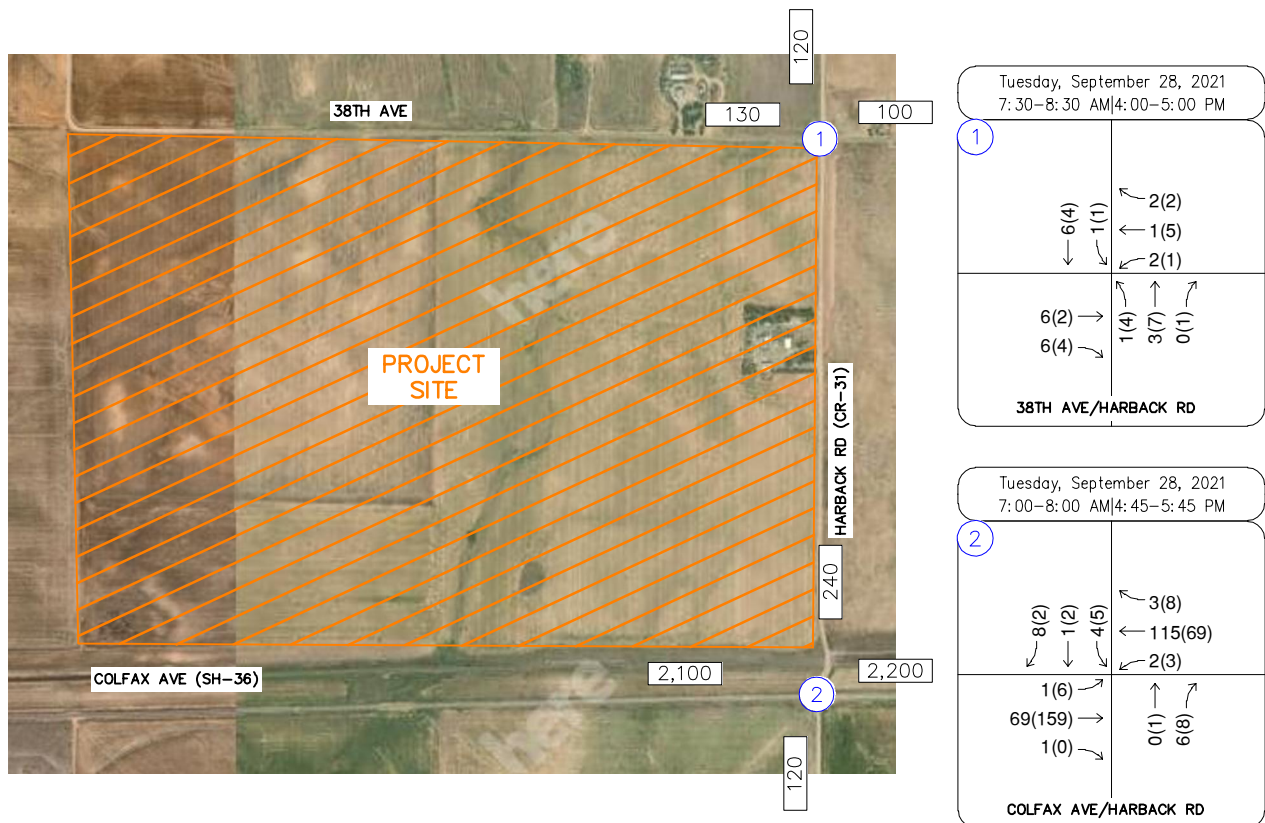
FIGURE 2

3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study area key intersections on Tuesday, September 28, 2021 during the morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

3.4 Unspecified Development Traffic Growth

According to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along SH-36 (Colfax Avenue) in the vicinity of the site is 1.35. The 20-year growth factor equates to annual growth rate of approximately 1.5 percent. Traffic information from the CDOT Online Transportation Information System (OTIS) website is included in **Appendix B**. This annual growth rate was used to estimate near term 2025 and long term 2045 traffic volume projections at the key intersections. Background traffic volumes for 2025 and 2045 are shown in **Figures 4** and **5**, respectively.



LEGEND

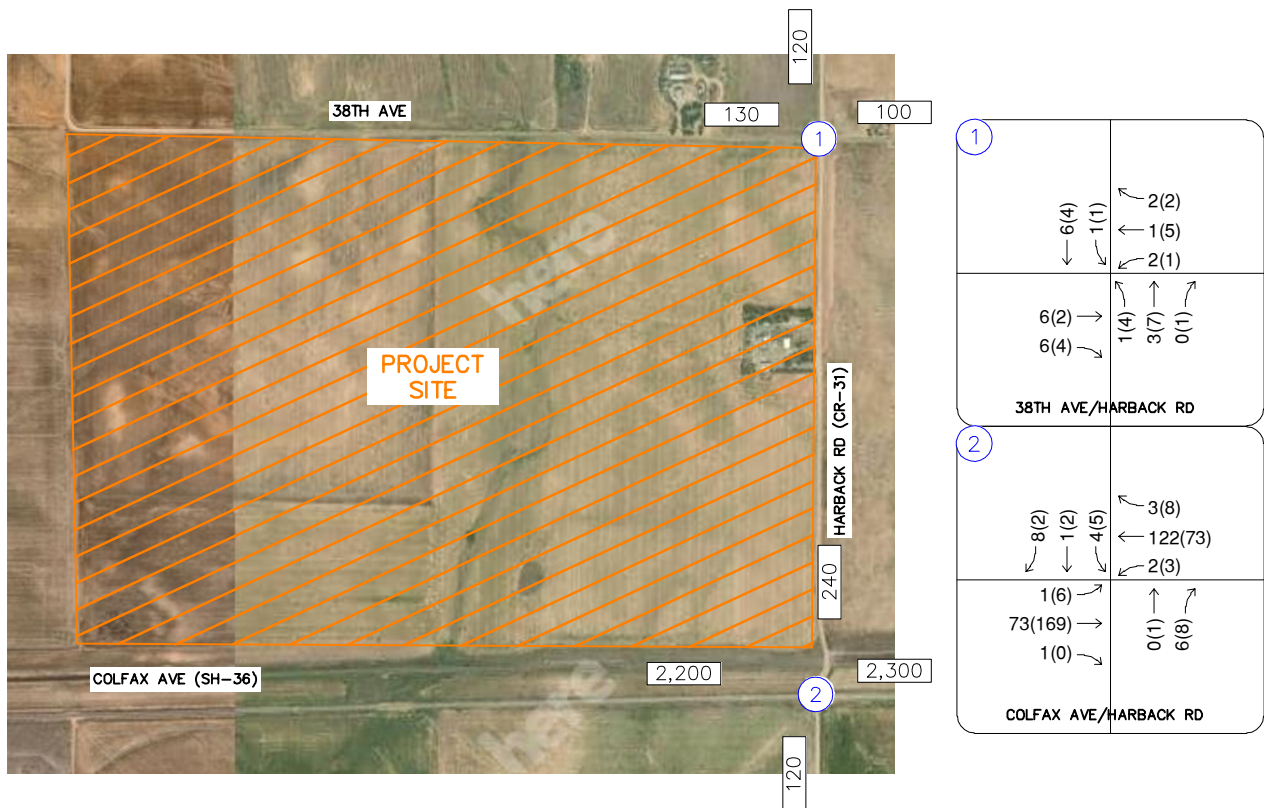
(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM)
 Peak Hour Traffic Volumes

[XX,X00] Estimated Daily Traffic Volume

BENNETT FARMS
 ADAMS COUNTY, COLORADO
 2021 EXISTING TRAFFIC VOLUMES

FIGURE 3



LEGEND

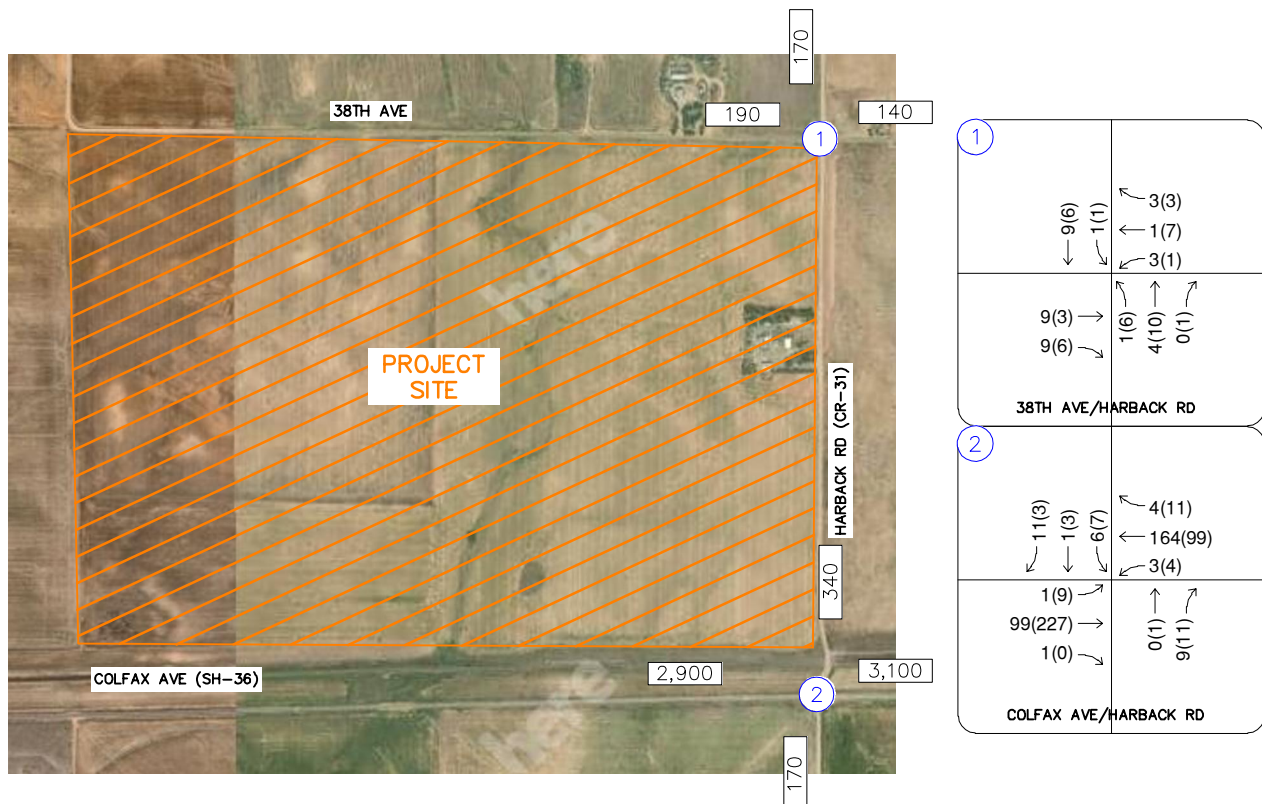
(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes

[XX,X00] Estimated Daily Traffic Volume

BENNETT FARMS
ADAMS COUNTY, COLORADO
2025 BACKGROUND TRAFFIC VOLUMES

FIGURE 4



LEGEND

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes

[XX,X00] Estimated Daily Traffic Volume

BENNETT FARMS
ADAMS COUNTY, COLORADO
2045 BACKGROUND TRAFFIC VOLUMES

FIGURE 5

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land uses to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Industrial Park (ITE Land Use Code 130) and the fitted curve equation for Single-Family Detached Housing (ITE Land Use Code 210), and Low-Rise Multi-Family Housing (ITE Land Use Code 220) for traffic associated with the development. Although it is anticipated that some self-storage space will be included in this study, the ITE Land Use Code for General Light Industrial was used for all of the proposed commercial area to provide a conservative analysis.

Bennett Farms is expected to generate approximately 23,532 weekday daily trips, with 1,592 of these trips occurring during the morning peak hour and 2,101 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the Bennett Farms. The trip generation worksheets are included in **Appendix C**.

Table 1 – Bennett Farms Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Industrial Park (ITE 130) – 1,028,400 Square Feet	3,466	282	68	350	135	215	350
Single Family Housing (210) – 1,294 Dwelling Units	10,638	199	567	766	695	408	1,103
Low-Rise Multi-Family Housing (ITE 220) – 1,459 Dwelling Units	9,428	114	362	476	408	240	648
Total Project Trips	23,532	595	997	1,592	1,238	863	2,101

¹ Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

4.2 Trip Distribution

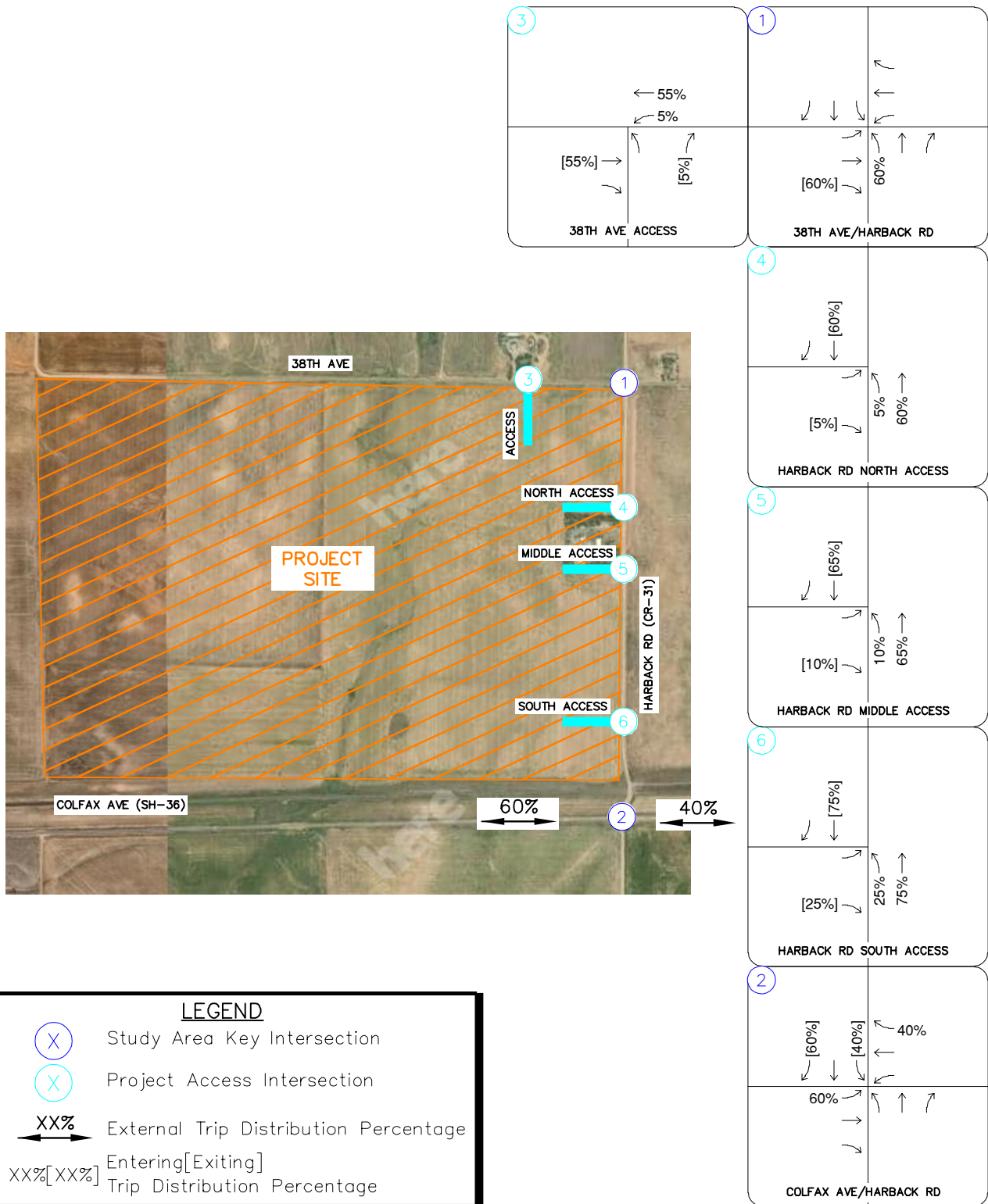
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, the proposed access system for the project, and a select link analysis. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. A select link analysis from the DRCOG 2050 Traffic Forecast Model indicated an approximate split of 60 percent to the west and 40 percent to the east along Colfax Avenue. The project trip distribution for the proposed development is illustrated in **Figure 6**.

4.3 Traffic Assignment

Bennett Farms traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment is shown in **Figure 7**.

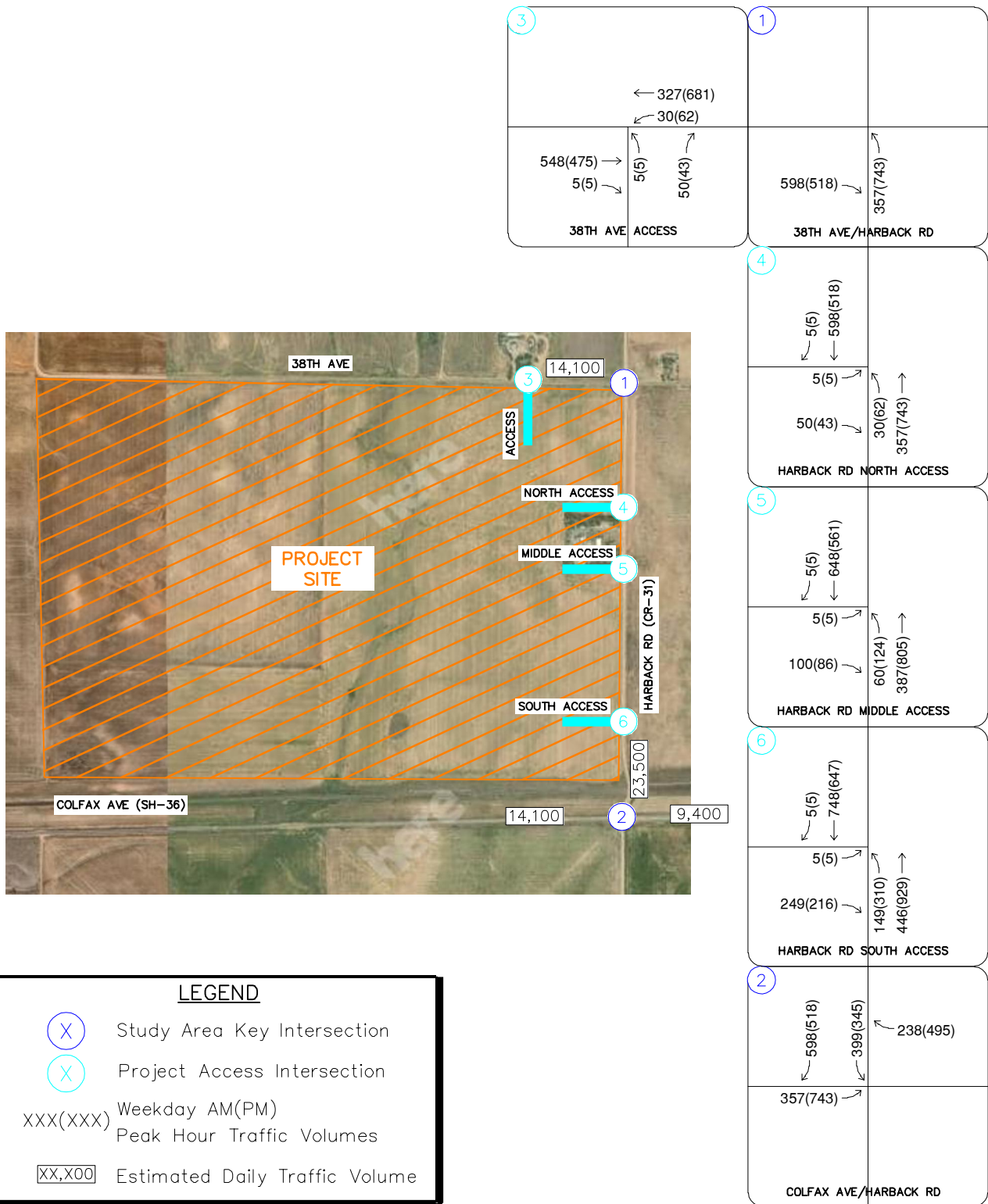
4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2025 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2025 and 2045 horizon years in **Figures 8** and **9**, respectively.



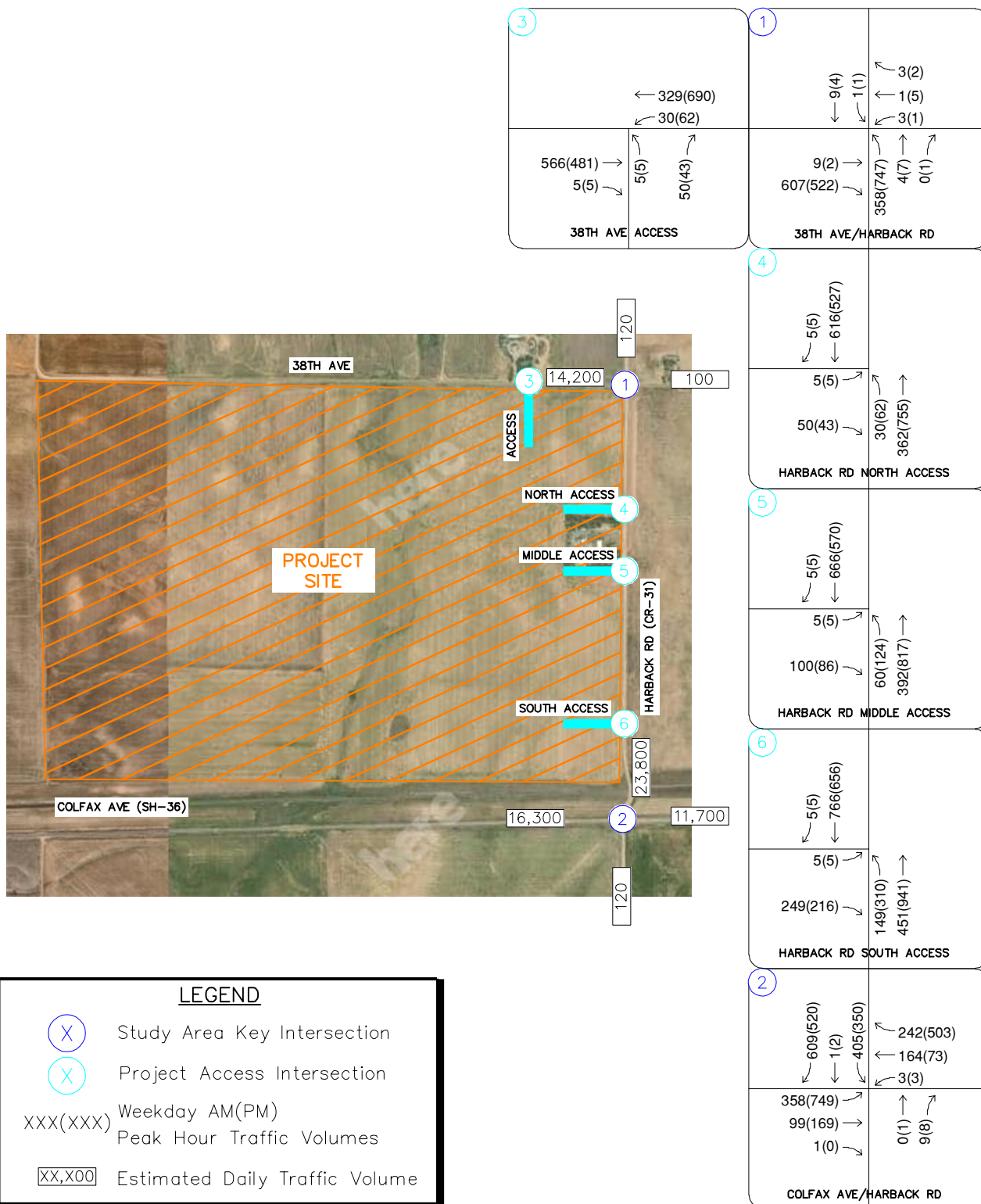
BENNETT FARMS
ADAMS COUNTY, COLORADO
PROJECT TRIP DISTRIBUTION

FIGURE 6



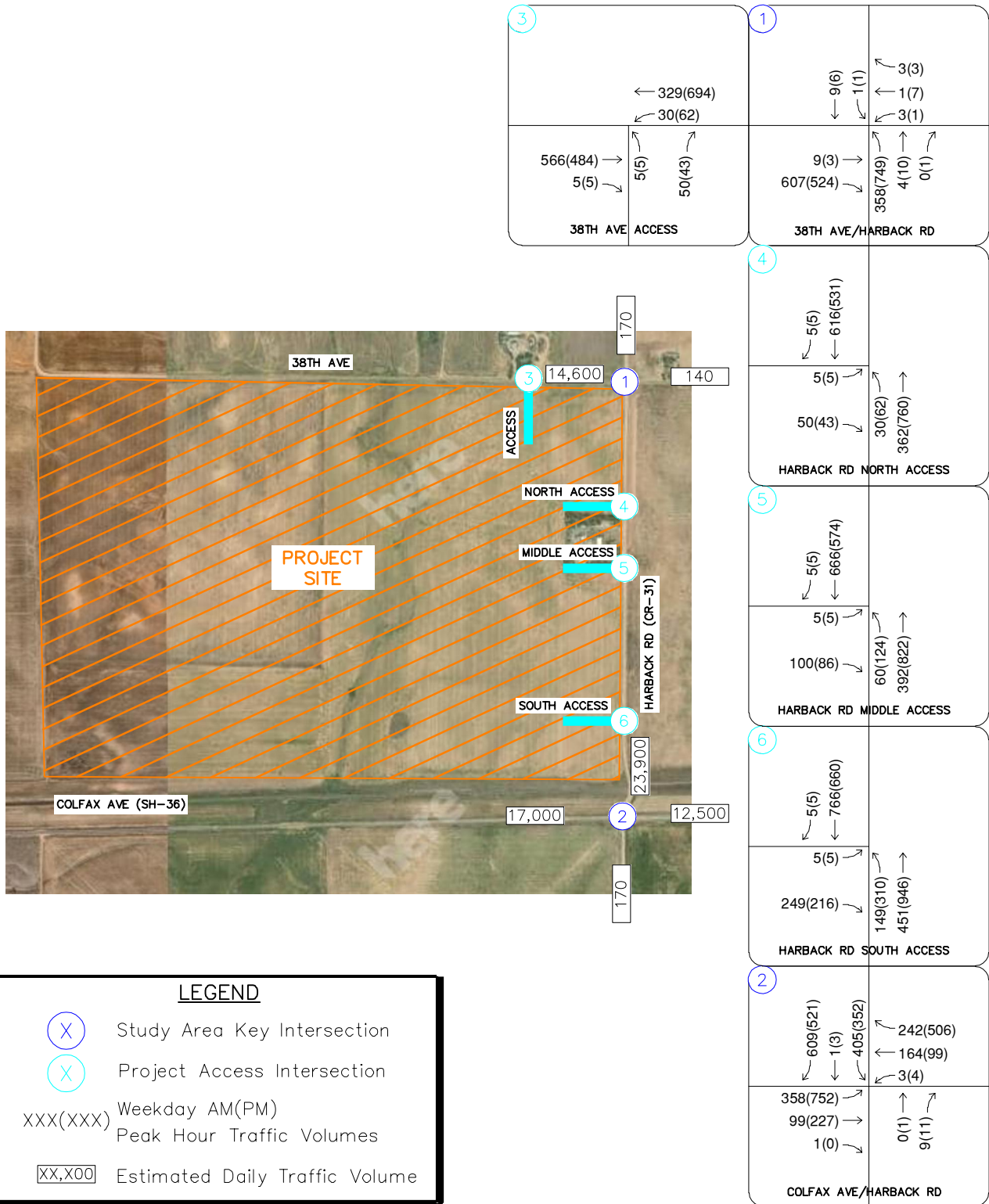
BENNETT FARMS
ADAMS COUNTY, COLORADO
PROJECT TRAFFIC ASSIGNMENT

FIGURE 7



BENNETT FARMS
ADAMS COUNTY, COLORADO
2025 TOTAL TRAFFIC VOLUMES

FIGURE 8



LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- [XX,X00] Estimated Daily Traffic Volume

BENNETT FARMS
ADAMS COUNTY, COLORADO
2045 TOTAL TRAFFIC VOLUMES

FIGURE 9

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2025 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*².

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and four-way stop controlled intersections are defined for each approach and for the overall intersection.

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the existing and 2025 horizon analysis years while the HCM urban standard of 0.92 was used for the long-term 2045 horizon analysis. Synchro traffic analysis software was used to analyze the signalized, and unsignalized key intersections for HCM level of service.

38th Avenue & Harback Road (CR-31) (#1)

The unsignalized intersection of 38th Avenue and Harback Road (CR-13) (#1) operates with yield control on the northbound and southbound approaches. However, for purposes of this study this intersection was analyzed with stop-control on the northbound and southbound approaches. 38th Avenue and Harback Road are both unpaved roadways at this intersection. With construction of the project, it is believed that Harback Road will be paved from 38th Avenue to Colfax Avenue and 38th Avenue will be paved from Harback Road to the west property limits. Therefore, the west and south legs of this intersection will be paved by buildout of the proposed development. With stop control on the northbound and southbound approaches, the intersection movements operate acceptably at LOS A during both peak hours under existing conditions.

With project traffic, the northbound approach is anticipated to operate at LOS F during the afternoon peak hour in 2025. To achieve acceptable operations, it is recommended that this intersection be converted to a single lane roundabout with yield control on all approaches. With this improvement to roundabout control, the intersection is anticipated to operate acceptably throughout 2045 with the addition of project traffic. An additional analysis was provided for signal control at this intersection in 2025. With signalization and left turn lanes on all four approaches, this intersection is anticipated to operate at LOS E during the morning peak hour in 2025. Therefore, it is believed that a roundabout is the appropriate control at this intersection due to the high demand for turning movements compared to low through movements at this intersection. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – 38th Avenue & Harback Road (CR-31) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Approach	9.1	A	8.9	A
Eastbound Left	0.0	A	0.0	A
Westbound Left	7.3	A	7.2	A
Southbound Approach	9.2	A	9.0	A
2025 Background				
Northbound Approach	9.1	A	8.9	A
Eastbound Left	0.0	A	0.0	A
Westbound Left	7.3	A	7.2	A
Southbound Approach	9.2	A	9.0	A
2025 Background Plus Project				
Northbound Approach	136.2	F	113.8	F
Eastbound Left	0.0	A	0.0	A
Westbound Left	10.0	B	8.5	A
Southbound Approach	18.7	C	12.7	B
2025 Background Plus Project #	69.2	E	40.4	D
Eastbound Left	0.0	A	0.0	A
Eastbound Through/Right	56.0	F	36.4	D
Westbound Left	45.2	D	39.8	D
Westbound Through/Right	7.8	A	17.3	B
Northbound Left	93.8	F	44.0	D
Northbound Through/Right	21.1	C	10.5	B
Southbound Left	21.2	C	10.5	B
Southbound Through/Right	21.2	C	10.4	B
2025 Background Plus Project ##	10.4	B	8.0	A
Eastbound Approach	12.7	B	6.5	A
Westbound Approach	4.8	A	6.1	A
Northbound Approach	6.7	A	9.1	A
Southbound Approach	4.9	A	6.0	A
2045 Background				
Northbound Approach	9.1	A	9.0	A
Eastbound Left	0.0	A	0.0	A
Westbound Left	7.3	A	7.2	A
Southbound Approach	9.2	A	9.1	A
2045 Background Plus Project ##	10.7	B	8.1	A
Eastbound Approach	13.2	B	6.5	A
Westbound Approach	4.9	A	6.2	A
Northbound Approach	6.8	A	9.2	A
Southbound Approach	5.0	A	6.1	A

= Signalized and left turn lanes on all approaches

= Roundabout control

Colfax Avenue (SH-36) & Harback Road (CR-31) (#2)

The unsignalized intersection of Colfax Avenue (SH-36) and Harback Road (CR-13) (#2) operates with stop control on the northbound and southbound approaches. Harback Road is an unpaved roadway at the intersection with Colfax Avenue. It is believed that Harback Road will be paved from 38th Avenue to Colfax Avenue with construction of the project; therefore, the north leg of this intersection will be paved by buildout of the proposed development. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions.

By 2025, it is recommended that an eastbound left turn lane, a westbound right turn lane, and a southbound right turn lane with an acceleration lane be constructed at this intersection to meet CDOT requirements. With these improvements and the addition of project traffic, some movements are anticipated to operate at LOS F by 2025. A four-hour vehicular volume signal warrant analysis was completed for this intersection and it was found that a signal is warranted by 2025 with project traffic. Signal warrant analysis is included in **Appendix E**. With signalization, it is recommended that left turn lanes be constructed on all four approaches of this intersection. With these improvements, this intersection is anticipated to operate acceptably throughout 2045 with the addition of project traffic. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 – Colfax Avenue (SH-36) & Harback Road (CR-31) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing				
Northbound Approach	8.8	A	9.4	A
Eastbound Left	7.5	A	7.4	A
Westbound Left	7.4	A	7.6	A
Southbound Approach	9.6	A	10.3	B
2025 Background				
Northbound Approach	8.8	A	9.5	A
Eastbound Left	7.6	A	7.4	A
Westbound Left	7.4	A	7.6	A
Southbound Approach	9.7	A	10.4	B
2025 Background Plus Project #				
Northbound Approach	8.8	A	>300	F
Eastbound Left	11.1	B	36.2	E
Westbound Left	7.4	A	7.6	A
Southbound Approach	>300	F	>300	F
2025 Background Plus Project ##	38.0	D	50.1	D
Eastbound Left	25.7	C	43.9	D
Eastbound Through/Right	14.8	B	9.5	A
Westbound Left	33.1	C	35.8	D
Westbound Through	38.0	D	38.3	D
Westbound Right	39.6	D	60.5	E
Northbound Left	0.0	A	0.0	A
Northbound Through/Right	43.2	D	45.0	D
Southbound Left	52.8	D	78.3	E
Southbound Through	22.5	C	31.2	C
Southbound Right	0.0	A	0.0	A
2045 Background				
Northbound Approach	8.8	A	9.8	A
Eastbound Left	7.6	A	7.5	A
Westbound Left	7.4	A	7.7	A
Southbound Approach	9.9	A	11.1	B
2045 Background Plus Project #				
Northbound Approach	9.0	A	>300	F
Eastbound Left	11.7	B	42.6	E
Westbound Left	7.5	A	7.8	A
Southbound Approach	>300	F	>300	F
2045 Background Plus Project ##	45.5	D	54.3	D
Eastbound Left	34.9	C	50.0	D
Eastbound Through/Right	16.8	B	10.5	B
Westbound Left	36.2	D	38.3	D
Westbound Through	45.5	D	42.5	D
Westbound Right	75.7	E	78.5	E
Northbound Left	0.0	A	0.0	A
Northbound Through/Right	43.6	D	42.5	D
Southbound Left	44.1	D	78.0	E
Southbound Through	20.7	C	30.5	C
Southbound Right	0.0	A	0.0	A

= Eastbound left turn lane, westbound right turn lane, and a southbound right turn lane with acceleration lane
 ## = # + Signalization + WB, NB, and SB Left Turn Lanes

Project Accesses

With completion of the Bennett Farms project, one full movement access was analyzed on the south side of 38th Avenue and three full movement access were analyzed on the west side of Harback Road (CR-31). It should be noted that additional access will be provided along 38th Avenue but are unknown at this time. As such, lane configuration and control recommendations will be provided for any future access along 38th Avenue. It is recommended that all project accesses provide stop control and R1-1 “STOP” signs be installed on the exiting approaches of each access. Further, left turn lanes should be designated for entering all of the project accesses. Single lane exiting approaches should be sufficient for exiting the development accesses. The same recommendations apply if any additional accesses are proposed along the south side of 38th Avenue. **Table 5** provides the results of the level of service for the project access intersections. As shown in the table, the project access intersections are anticipated to have all movements operating with acceptable LOS during the peak hours in both the buildout year 2025 and the 2045 long term horizons. Of note, the Town of Bennett Transportation Plan is not completed at this time; however, the Adams County Transportation Plan identifies 38th Avenue as a rural arterial and Harback Road as a rural collector. It is believed that the project will construct the half street improvements along 38th Avenue which will consist of a three-lane roadway section in the interim. When adjacent development to north occurs, it is anticipated that the full Town of Bennett four-lane arterial section with 110 feet of right-of-way will be provided by others. The full Town of Bennett Commercial Collector cross section will be constructed along Harback Road adjacent to the property frontage which consists of one through lane in each direction, a center median or two-way left turn lane, and bike lanes on both sides. Of note, the average daily traffic volume projection of approximately 24,000 vehicles per day along Harback Road exceeds the threshold for a typical three lane roadway section (15,000 to 18,000 vehicles per day); however, the studied intersections along Harback Road are expected to operate acceptably. Therefore, the Town of Bennett may consider a higher classification of roadway for Harback Road.

Table 5 – Project Access Level of Service Results

Intersection	2025 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS
38th Avenue Access (#3)								
Northbound Approach	13.6	B	13.1	B	13.6	B	13.1	B
Westbound Left	8.9	A	8.7	A	8.9	A	8.7	A
Harback Rd North Access (#4)								
Northbound Left	9.1	A	8.9	A	9.1	A	8.9	A
Eastbound Approach	14.3	B	13.7	B	14.4	B	14.1	B
Harback Rd Middle Access (#5)								
Northbound Left	9.4	A	9.4	A	9.4	A	9.4	A
Eastbound Approach	16.8	C	15.2	C	16.9	C	16.1	C
Harback Rd South Access (#6)								
Northbound Left	10.6	B	11.6	B	10.7	B	11.6	B
Eastbound Approach	39.8	E	26.4	D	40.7	E	26.6	D

5.3 CDOT Turn Bay Length Analysis

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the north leg of Harback Rod at Colfax Avenue (SH-36) is anticipated to increase existing access traffic volumes by more than 20 percent. Therefore, a CDOT access permit is anticipated to be required at this location in association with this project.

Since Colfax Avenue (SH-36) is a state owned and maintained facility, it is recommended that auxiliary turn lanes along Colfax Avenue (SH-36) be constructed in accordance with the current CDOT State Highway Access Code (SHAC). CDOT categorizes the segment of Colfax Avenue (SH-36) through the project as R-B: Rural Highway and this segment of roadway has a speed limit of 55 miles per hour. According to the State Highway Access Code for category R-B roadways, the following thresholds apply:

- A left turn deceleration lane with taper and additional storage length is required for any access with a projected peak hour left ingress turning volume greater than 10 vehicles per hour (vph). The taper length shall be included within the required deceleration length.
- A right turn deceleration lane with taper is required for any access with a projected peak hour right ingress turning volume greater than 25 vph. The taper length shall be included within the required deceleration length.
- A right turn acceleration lane with taper is required for any access with a projected peak hour right turning volume greater than 50 vph when the posted speed on the highway is 45 mph or greater and the highway has only one lane for through traffic in the direction of the right turn.

Based on traffic projections and the above thresholds, auxiliary turn lane requirements were calculated for the intersection of Colfax Avenue and Harback Road (CR-31) (#2). Colfax Avenue (SH-36) provides one lane of travel eastbound and westbound and has a posted speed limit of 55 miles per hour in the site area. As such, turn lane requirements at the study area access are as follows:

- An eastbound left turn deceleration lane is warranted based on 2025 total traffic volumes being 749 eastbound left turns during the peak hour and the threshold being greater than 10 vehicles per hour. Since Colfax Avenue (SH-36) has a category of R-B, the left turn lane requirement is deceleration with taper length included plus storage length. Based on the 55-mile per hour speed limit, the deceleration lane length is 600 feet, including a 220-foot taper. The projected peak hour left turning volumes are 749 vehicles by 2025 and 752 vehicles by 2045. Therefore, this left turn lane should provide a length of 1,130 feet (380 feet of deceleration length plus 750 feet of storage length) plus a 220-foot taper by 2025. Based on a 95th percentile vehicle queuing of 668 feet for this eastbound left turn lane, CDOT could consider reducing the storage length from 750 feet to 670 feet which would result in a 1,050-foot left turn lane plus a 220-foot taper.
- A westbound right turn deceleration lane is warranted based on 2025 total traffic volumes being 503 westbound right turns during the peak hour and the threshold being greater than 25 vehicles per hour. Since Colfax Avenue (SH-36) has a category of R-B, the right turn lane requirement is deceleration with taper length included. Based on the 55-mile per hour speed limit, the deceleration lane length is 600 feet, including a 220-foot taper. Therefore, this right turn lane should provide a length of 380 feet plus a 220-foot taper by 2025.
- A southbound to westbound right turn acceleration lane is warranted based on 2025 total traffic volumes being 609 southbound right turns during the peak hour and the threshold being greater than 50 vehicles. Since Colfax Avenue (SH-36) has a category of R-B, the taper length will be included within the required acceleration length. Based on the 55-mile per hour speed limit, the acceleration lane requirement is 960 feet which equates to 740 feet of length plus a 220-foot taper.

5.4 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area key intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 6** with calculations provided within the level of service operational sheets of **Appendix D** for unsignalized intersections and **Appendix F** for signalized intersections.

Table 6 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2025 Calculated Queue (feet)	2025 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Colfax Ave & Harback Rd (#2)					
Eastbound Left	DNE	668'	1,050'+220'T	641'	1,050'+220'T
Westbound Left	DNE	25'	150'	25'	150'
Westbound Right	DNE	162'	380'+220'T (CDOT)	180'	380'+220'T (CDOT)
Northbound Left	DNE	25'	150'	25'	150'
Southbound Left	DNE	526'	150'	526'	150'
Southbound Through	C	25'	C	25'	C
Southbound Right	DNE	25'	150'	25'	150'
38th Ave Access (#3)					
Westbound Left	DNE	25'	150'	25'	150'
Harback Rd North Access (#4)					
Northbound Left	DNE	25'	150'	25'	150'
Harback Rd Middle Access (#5)					
Northbound Left	DNE	25'	150'	25'	150'
Harback Rd South Access (#6)					
Northbound Left	DNE	50'	150'	50'	150'

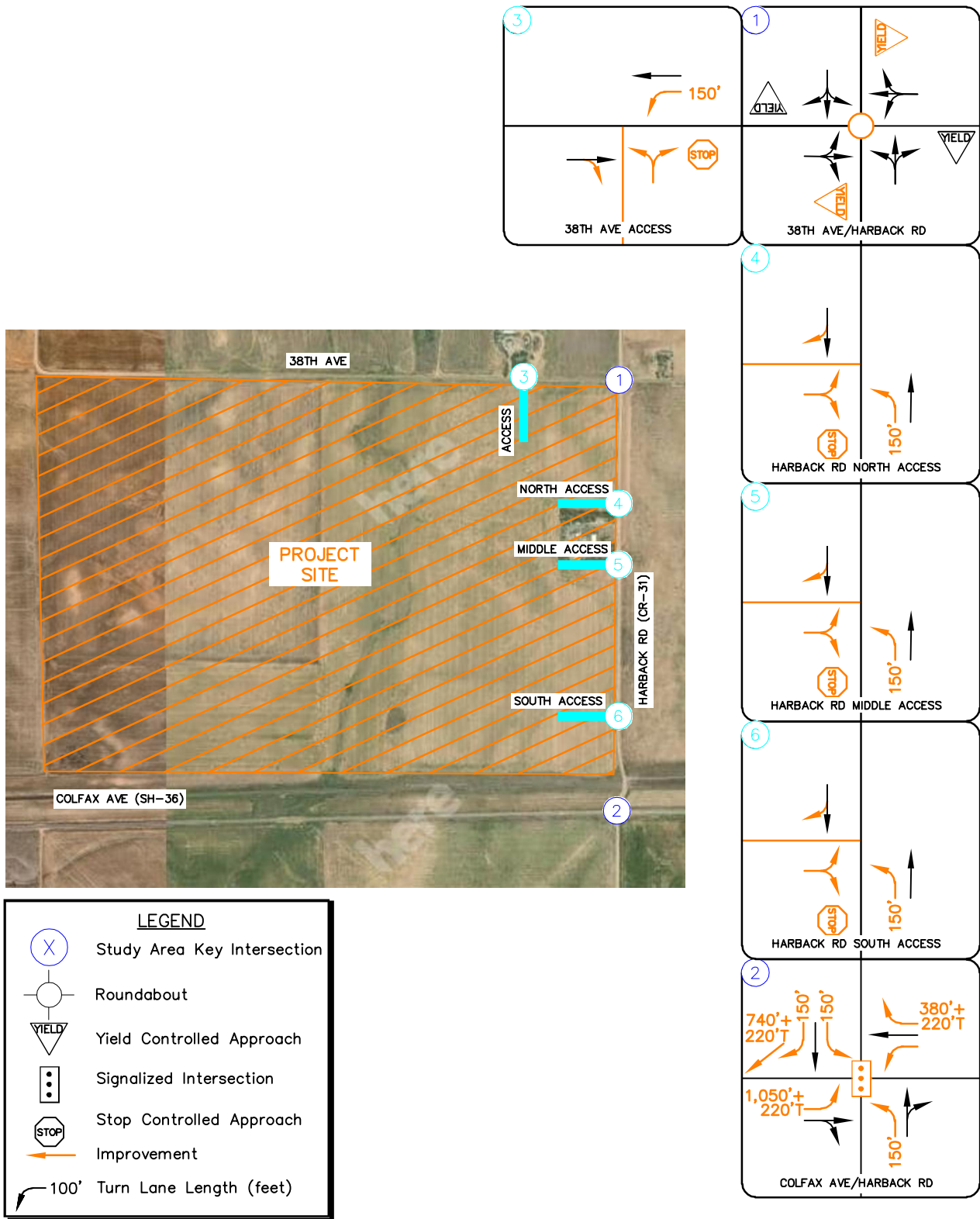
DNE = Does Not Exist; C = Continuous Lane; CDOT = CDOT SHAC Requirement; T = Taper; **Blue** Text = Recommendation

The vehicle queues are anticipated to be managed within the recommended turn lane lengths throughout the 2045 horizon. With construction of the Bennett Farms development, it is recommended that a 150-foot southbound left turn lane, and a 150-foot southbound right turn lane be constructed at the intersection of Colfax Avenue and Harback Road (#2). It is also recommended that 150-foot left turn lanes be constructed for entering all of the project accesses along Harback Road and 38th Avenue. It should be noted that the southbound right turn and southbound through queues are anticipated to be less than 225 feet and will therefore likely be accommodated without crossing the railroad tracks to the north. However, the southbound left turn queue may extend beyond the railroad tracks to the north; therefore, it is recommended that this left turn lane be constructed the maximum possible length of approximately 150 feet prior to

the railroad tracks. Vehicles making a southbound left turn at this intersection will likely queue into the through lane during the peak hours of the day; however, this through lane will essentially serve as a left turn lane as there is very little demand to travel south through Colfax Avenue on Harback Road.

5.5 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 10**.



BENNETT FARMS
ADAMS COUNTY, COLORADO
RECOMMENDATIONS

FIGURE 10

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes Bennett Farms will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on north leg of Harback Road at Colfax Avenue (SH-36) is anticipated to increase existing access traffic volumes by more than 20 percent. Therefore, a CDOT access permit is anticipated to be required at this location in association with this project.
- With completion of the Bennett Farms project, one full movement access was analyzed on the south side of 38th Avenue and three full movement access were analyzed on the west side of Harback Road (CR-31). It is recommended that all project accesses provide stop control and R1-1 "STOP" signs be installed on the exiting approaches of each access intersection. Further, left turn lanes should be designated with 150 feet of length for entering all of the project accesses. Single lane exiting approaches should be sufficient for exiting the development accesses. It should be noted that additional access will be provided along 38th Avenue but are unknown at this time. As such, the same lane configuration and control recommendations from the east access along 38th Avenue apply to any future proposed access along 38th Avenue. It should be noted that there are not any plans for additional access along Colfax Avenue or from an extension of Schumaker Road north of Colfax Avenue due to geometric and logistical constraints with the Union Pacific Railroad currently extending parallel to Colfax Avenue and being located approximately 225 feet north of Colfax Avenue.
- It is recommended that the intersection of 38th Avenue and Harback Road (CR-31) (#1) be converted to a single lane roundabout with yield control on all approaches by 2025. An additional analysis was provided for signal control at this intersection in 2025. With signalization and left turn lanes on all four approaches, this intersection is anticipated to operate at LOS E during the morning peak hour in 2025. Therefore, it is believed that a

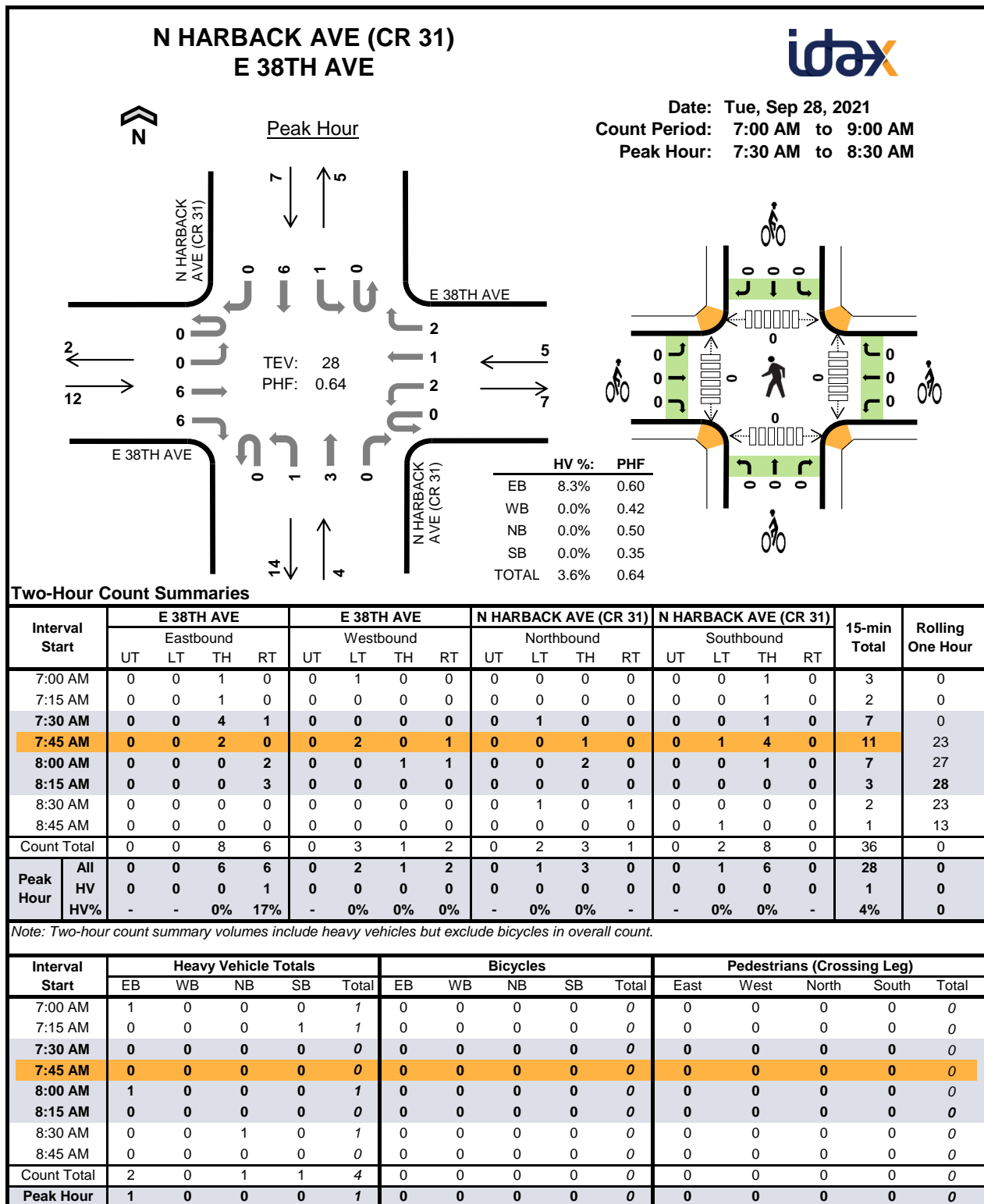
roundabout is the appropriate control at this intersection due to the high demand for turning movements compared to low through movements at this intersection.

- Based on CDOT standards and requirements, an eastbound left turn deceleration lane, a westbound right turn deceleration lane, and a westbound acceleration lane from southbound right turn movements will be needed at the intersection of Colfax Avenue (SH-36) and Harback Road. The eastbound left turn lane at the SH-36 and Harback Road intersection should provide a length of 1,130 feet (380 feet of deceleration length plus 750 feet of storage length) plus a 220-foot taper by 2025. Based on a 95th percentile vehicle queuing of 668 feet for this eastbound left turn lane, CDOT could consider reducing the storage length from 900 feet to 670 feet which would result in a 1,050-foot left turn lane plus a 220-foot taper. The westbound right turn deceleration lane at this intersection should provide a length of 380 feet plus a 220-foot taper. Further, a 150-foot southbound right turn lane with a 740-foot (plus 220-foot taper) westbound acceleration lane should be provided at this intersection.
- A four-hour vehicular volume signal warrant analysis was completed at the intersection of Colfax Avenue and Harback Road, and it was found that a signal is anticipated to be warranted by 2025 with project traffic. Therefore, it is also recommended that this intersection be signalized by 2025. With signalization, it is recommended that left turn lanes be implemented on all four approaches of this intersection.
- Any on-site or offsite improvements should be incorporated into the Civil Drawings and conform to standards of Adams County, Town of Bennett, CDOT, and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

APPENDICES

APPENDIX A

Intersection Count Sheets



Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E 38TH AVE				E 38TH AVE				N HARBACK AVE (CR 31)				N HARBACK AVE (CR 31)				15-min Total	Rolling One Hour
	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	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	2
8:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
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	1	0	0	0	0	0	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	0	4	0
Peak Hour	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Two-Hour Count Summaries - Bikes

Interval Start	E 38TH AVE			E 38TH AVE			N HARBACK AVE (CR 31)			N HARBACK AVE (CR 31)			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	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
7:30 AM	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
8:00 AM	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
8:30 AM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E 38TH AVE				E 38TH AVE				N HARBACK AVE (CR 31)				N HARBACK AVE (CR 31)				15-min Total	Rolling One Hour
	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	1	0	0	0	1	0	2	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	0	0	0	0	1	2
Count Total	0	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	4	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0

Two-Hour Count Summaries - Bikes

Interval Start	E 38TH AVE			E 38TH AVE			N HARBACK AVE (CR 31)			N HARBACK AVE (CR 31)			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	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
4:30 PM	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
5:00 PM	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
5:30 PM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E COLFAX AVE (SH 36)				E COLFAX AVE (SH 36)				N HARBACK RD (CR 31)				N HARBACK RD (CR 31)				15-min Total	Rolling One Hour
	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	2	0	0	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	0	0	0	0	7	0	0	0	0	1	0	0	0	0	8	0
7:30 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	8	0
7:45 AM	0	0	9	0	0	0	3	0	0	0	0	0	0	0	0	1	13	32
8:00 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	34
8:15 AM	0	0	6	0	1	0	0	0	0	0	0	0	0	0	1	0	8	34
8:30 AM	0	0	10	0	0	0	1	0	0	0	1	0	0	0	0	0	12	38
8:45 AM	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	6	31
Count Total	0	0	40	0	1	0	18	0	0	0	1	1	0	0	1	1	63	0
Peak Hour	0	0	14	0	0	0	16	0	0	0	0	1	0	0	0	1	32	0

Two-Hour Count Summaries - Bikes

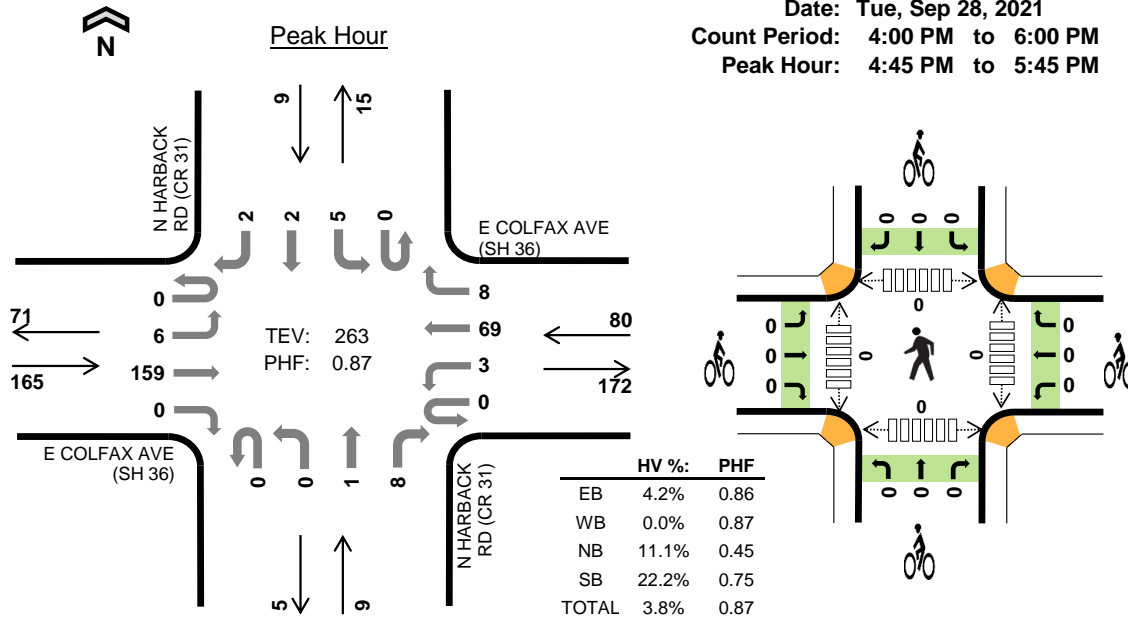
Interval Start	E COLFAX AVE (SH 36)			E COLFAX AVE (SH 36)			N HARBACK RD (CR 31)			N HARBACK RD (CR 31)			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	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
8:00 AM	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
8:30 AM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N HARBACK RD (CR 31) E COLFAX AVE (SH 36)



Date: Tue, Sep 28, 2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



Two-Hour Count Summaries

Interval Start		E COLFAX AVE (SH 36)				E COLFAX AVE (SH 36)				N HARBACK RD (CR 31)				N HARBACK RD (CR 31)				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	27	0	0	2	14	1	0	0	0	1	0	1	0	1	49	0
4:15 PM		0	2	24	0	1	3	20	0	0	0	0	0	0	1	0	0	51	0
4:30 PM		0	1	29	0	0	0	14	1	0	0	0	0	0	2	0	1	48	0
4:45 PM		0	2	46	0	0	0	18	3	0	0	0	5	0	1	1	0	76	224
5:00 PM		0	2	40	0	0	1	17	3	0	0	0	1	0	2	0	0	66	241
5:15 PM		0	0	40	0	0	1	20	2	0	0	0	2	0	0	1	1	67	257
5:30 PM		0	2	33	0	0	1	14	0	0	0	1	0	0	2	0	1	54	263
5:45 PM		0	2	23	0	0	0	10	1	0	0	0	0	0	2	0	0	38	225
Count Total		0	13	262	0	1	8	127	11	0	0	1	9	0	11	2	4	449	0
Peak Hour	All	0	6	159	0	0	3	69	8	0	0	1	8	0	5	2	2	263	0
	HV	0	0	7	0	0	0	0	0	0	0	0	1	0	2	0	0	10	0
	HV%	-	0%	4%	-	-	0%	0%	0%	-	-	0%	13%	-	40%	0%	0%	4%	0

Note: Two-hour count summary volumes 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	East	West	North	South	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
4:30 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0
5:15 PM	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0
5:30 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0
5:45 PM	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0
Count Total	12	4	1	2	19	0	0	0	0	0	0	0	0	0	0
Peak Hour	7	0	1	2	10	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	E COLFAX AVE (SH 36)				E COLFAX AVE (SH 36)				N HARBACK RD (CR 31)				N HARBACK RD (CR 31)				15-min Total	Rolling One Hour
	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	2	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	7
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	9
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3	10
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10
5:45 PM	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	4	12
Count Total	0	2	10	0	0	0	4	0	0	0	0	1	0	2	0	0	19	0
Peak Hour	0	0	7	0	0	0	0	0	0	0	0	1	0	2	0	0	10	0

Two-Hour Count Summaries - Bikes

Interval Start	E COLFAX AVE (SH 36)			E COLFAX AVE (SH 36)			N HARBACK RD (CR 31)			N HARBACK RD (CR 31)			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	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
4:30 PM	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
5:00 PM	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
5:30 PM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

APPENDIX B

Future Traffic Projections

ROUTE	REFPT	ENDREFPT	LENGTH	AADT	AADTYR	PKTRK	OFFPKTRK	YR20FACTOR	GROWTH RATE	DHV	LOCATION
036C	83.71	88.836	4.994	1900	2020	0.47	5.9	1.35	1.5%	11.5	ON SH 36 COLFAX AVE W/O SH 79 W JCT 1ST ST BENNETT

APPENDIX C

Trip Generation Worksheets

Trip Generation Planner (ITE 11th Edition) - Summary Report

Weekday Trip Generation
Trips Based on Average Rates/Equations

Project Name
Project Number

Bennett Farms
196303000



							Rates			Total Trips						
							Daily Rate	AM Rate	PM Rate	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
ITE Code	Internal Capture Use	Land Use Description	Independent Variable	Setting/Location	No. of Units	Avg Rate or Eq	3.37	0.34	0.34	3,466	350	350	282	68	135	215
130	Other	Industrial Park	1,000 Sq Ft	General Urban/Suburban	1,028.4	Avg	N/A	N/A	N/A	10,638	766	1,103	199	567	695	408
210	Residential	Single-Family Detached Housing	Dwelling Unit(s)	General Urban/Suburban	1,294	Eq	N/A	N/A	N/A	9,428	476	648	114	362	408	240
220	Residential	Multifamily Housing (Low-Rise)	Dwelling Unit(s)	General Urban/Suburban	1,459	Eq	Grand Total			23,532	1,592	2,101	595	997	1,238	863

Project Bennett Farms
 Subject Trip Generation for Industrial Park
 Designed by TES Date June 01, 2022 Job No. 196303000
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Industrial Park (130)

Independant Variable - 1000 Square Feet (X)

SF = 1,028,400

X = 1028.400

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (100 Series Page 49)

(T) = 0.34 (X)		Directional Distribution:	81% ent.	19% exit.
(T) = 0.34 *	(1028.4)	T = 350	Average Vehicle Trip Ends	
		282 entering	67	exiting
		282 + 68 = 350		

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (100 Series Page 50)

(T) = 0.34 (X)		Directional Distribution:	39% ent.	61% exit.
(T) = 0.34 *	(1028.4)	T = 350	Average Vehicle Trip Ends	
		135 entering	214	exiting
		135 + 215 = 350		

Weekday (100 Series Page 48)

Average Weekday		Directional Distribution:	50% ent.	50% exit.
(T) = 3.37 (X)		T = 3466	Average Vehicle Trip Ends	
(T) = 3.37 *	(1028.4)	1733 entering	1733	exiting
		1733 + 1733 = 3466		

Project Bennett Farms
 Subject Trip Generation for Single-Family Detached Housing
 Designed by TES Date June 01, 2022 Job No. 196303000
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Single-Family Detached Housing (210)

Independent Variable - Dwelling Units (X)

$$X = 1,294$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 220)

$$\ln(T) = 0.91 \ln(X) + 0.12$$

$$\ln(T) = 0.91 * \ln(1294) + 0.12$$

Directional Distribution: 26% ent. 74% exit.

T = 766 Average Vehicle Trip Ends

199 entering 567 exiting

$$199 + 567 = 766$$

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 221)

$$\ln(T) = 0.94 \ln(X) + 0.27$$

$$\ln(T) = 0.94 * \ln(1294) + 0.27$$

Directional Distribution: 63% ent. 37% exit.

T = 1103 Average Vehicle Trip Ends

695 entering 408 exiting

$$695 + 408 = 1103$$

Weekday (200 Series Page 219)

$$\ln(T) = 0.92 \ln(X) + 2.68$$

$$\ln(T) = 0.92 * \ln(1294) + 2.68$$

Directional Distribution: 50% entering, 50% exiting

T = 10638 Average Vehicle Trip Ends

5319 entering 5319 exiting

$$5319 + 5319 = 10638$$

Project Bennett Farms
 Subject Trip Generation for Multifamily Housing (Low-Rise)
 Designed by TES Date June 01, 2022 Job No. 196303000
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Multifamily Housing (Low-Rise) (220)

Independent Variable - Dwelling Units (X)

$$X = 1,459$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 255)

$$(T) = 0.31 (X) + 22.85$$

$$(T) = 0.31 * (1459.0) + 22.85$$

Directional Distribution: 24% ent. 76% exit.

T = 476 Average Vehicle Trip Ends

114 entering 362 exiting

$$114 + 362 = 476$$

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 256)

$$(T) = 0.43 (X) + 20.55$$

$$(T) = 0.43 * (1459.0) + 20.55$$

Directional Distribution: 63% ent. 37% exit.

T = 648 Average Vehicle Trip Ends

408 entering 240 exiting

$$408 + 240 = 648$$

Weekday (200 Series Page 254)

$$(T) = 6.41 (X) + 75.31$$

$$(T) = 6.41 * (1459.0) + 75.31$$

Directional Distribution: 50% ent. 50% exit.

T = 9428 Average Vehicle Trip Ends

4714 entering 4714 exiting

$$4714 + 4714 = 9428$$





APPENDIX D

Intersection Analysis Worksheets

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	0	6	6	2	1	2	1	3	0	1	6	0
Future Vol, veh/h	0	6	6	2	1	2	1	3	0	1	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	64	64	64	64	64	64	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	9	9	3	2	3	2	5	0	2	9	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5	0	0	18	0	0	28	25	14	26	28	4
Stage 1	-	-	-	-	-	-	14	14	-	10	10	-
Stage 2	-	-	-	-	-	-	14	11	-	16	18	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1616	-	-	1599	-	-	981	868	1066	984	865	1080
Stage 1	-	-	-	-	-	-	1006	884	-	1011	887	-
Stage 2	-	-	-	-	-	-	1006	886	-	1004	880	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1616	-	-	1599	-	-	971	866	1066	978	863	1080
Mov Cap-2 Maneuver	-	-	-	-	-	-	971	866	-	978	863	-
Stage 1	-	-	-	-	-	-	1006	884	-	1011	885	-
Stage 2	-	-	-	-	-	-	993	884	-	999	880	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.9			9.1			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	890	1616	-	-	1599	-	-	878				
HCM Lane V/C Ratio	0.007	-	-	-	0.002	-	-	0.012				
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	4	1	5	2	4	7	1	1	4	0
Future Vol, veh/h	0	2	4	1	5	2	4	7	1	1	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	4	1	5	2	4	7	1	1	4	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	7	0	0	6	0	0	14	13	4	16	14	6
Stage 1	-	-	-	-	-	-	4	4	-	8	8	-
Stage 2	-	-	-	-	-	-	10	9	-	8	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1614	-	-	1615	-	-	1002	881	1080	999	880	1077
Stage 1	-	-	-	-	-	-	1018	892	-	1013	889	-
Stage 2	-	-	-	-	-	-	1011	888	-	1013	891	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1614	-	-	1615	-	-	998	880	1080	991	879	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	998	880	-	991	879	-
Stage 1	-	-	-	-	-	-	1018	892	-	1013	888	-
Stage 2	-	-	-	-	-	-	1005	887	-	1004	891	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.9			8.9			9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	931	1614	-	-	1615	-	-	899				
HCM Lane V/C Ratio	0.013	-	-	-	0.001	-	-	0.006				
HCM Control Delay (s)	8.9	0	-	-	7.2	0	-	9				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		<div>↕</div>			<div>↕</div>			<div>↕</div>			<div>↕</div>	
Traffic Vol, veh/h	0	6	6	2	1	2	1	3	0	1	6	0
Future Vol, veh/h	0	6	6	2	1	2	1	3	0	1	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	64	64	64	64	64	64	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	9	9	3	2	3	2	5	0	2	9	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5	0	0	18	0	0	28	25	14	26	28	4
Stage 1	-	-	-	-	-	-	14	14	-	10	10	-
Stage 2	-	-	-	-	-	-	14	11	-	16	18	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1616	-	-	1599	-	-	981	868	1066	984	865	1080
Stage 1	-	-	-	-	-	-	1006	884	-	1011	887	-
Stage 2	-	-	-	-	-	-	1006	886	-	1004	880	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1616	-	-	1599	-	-	971	866	1066	978	863	1080
Mov Cap-2 Maneuver	-	-	-	-	-	-	971	866	-	978	863	-
Stage 1	-	-	-	-	-	-	1006	884	-	1011	885	-
Stage 2	-	-	-	-	-	-	993	884	-	999	880	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.9			9.1			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	890	1616	-	-	1599	-	-	878				
HCM Lane V/C Ratio	0.007	-	-	-	0.002	-	-	0.012				
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	4	1	5	2	4	7	1	1	4	0
Future Vol, veh/h	0	2	4	1	5	2	4	7	1	1	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	4	1	5	2	4	7	1	1	4	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	7	0	0	6	0	0	14	13	4	16	14	6
Stage 1	-	-	-	-	-	-	4	4	-	8	8	-
Stage 2	-	-	-	-	-	-	10	9	-	8	6	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1614	-	-	1615	-	-	1002	881	1080	999	880	1077
Stage 1	-	-	-	-	-	-	1018	892	-	1013	889	-
Stage 2	-	-	-	-	-	-	1011	888	-	1013	891	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1614	-	-	1615	-	-	998	880	1080	991	879	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	998	880	-	991	879	-
Stage 1	-	-	-	-	-	-	1018	892	-	1013	888	-
Stage 2	-	-	-	-	-	-	1005	887	-	1004	891	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.9			8.9			9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	931	1614	-	-	1615	-	-	899				
HCM Lane V/C Ratio	0.013	-	-	-	0.001	-	-	0.006				
HCM Control Delay (s)	8.9	0	-	-	7.2	0	-	9				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	50.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	6	604	2	1	2	358	3	0	1	6	0
Future Vol, veh/h	0	6	604	2	1	2	358	3	0	1	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	64	64	64	64	64	64	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	9	944	3	2	3	559	5	0	2	9	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	5	0	0	953	0	0	495	492	481	494	963	4
Stage 1	-	-	-	-	-	-	481	481	-	10	10	-
Stage 2	-	-	-	-	-	-	14	11	-	484	953	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1616	-	-	721	-	-	~ 485	478	585	486	256	1080
Stage 1	-	-	-	-	-	-	566	554	-	1011	887	-
Stage 2	-	-	-	-	-	-	1006	886	-	564	338	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1616	-	-	721	-	-	~ 470	476	585	481	255	1080
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 470	476	-	481	255	-
Stage 1	-	-	-	-	-	-	566	554	-	1011	883	-
Stage 2	-	-	-	-	-	-	991	882	-	559	338	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			4			136.2			18.7		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	470	1616	-	-	721	-	-	273				
HCM Lane V/C Ratio	1.2	-	-	-	0.004	-	-	0.04				
HCM Control Delay (s)	136.2	0	-	-	10	0	-	18.7				
HCM Lane LOS	F	A	-	-	B	A	-	C				
HCM 95th %tile Q(veh)	21.6	0	-	-	0	-	-	0.1				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	66.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	522	1	5	2	747	7	1	1	4	0
Future Vol, veh/h	0	2	522	1	5	2	747	7	1	1	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	538	1	5	2	770	7	1	1	4	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	7	0	0	540	0	0	281	280	271	283	548	6
Stage 1	-	-	-	-	-	-	271	271	-	8	8	-
Stage 2	-	-	-	-	-	-	10	9	-	275	540	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1614	-	-	1028	-	-	~ 671	628	768	669	444	1077
Stage 1	-	-	-	-	-	-	~ 735	685	-	1013	889	-
Stage 2	-	-	-	-	-	-	1011	888	-	731	521	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1614	-	-	1028	-	-	~ 666	627	768	662	444	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 666	627	-	662	444	-
Stage 1	-	-	-	-	-	-	~ 735	685	-	1013	888	-
Stage 2	-	-	-	-	-	-	1005	887	-	722	521	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.1			113.8			12.7		
HCM LOS							F			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	666	1614	-	-	1028	-	-	475				
HCM Lane V/C Ratio	1.169	-	-	-	0.001	-	-	0.011				
HCM Control Delay (s)	113.8	0	-	-	8.5	0	-	12.7				
HCM Lane LOS	F	A	-	-	A	A	-	B				
HCM 95th %tile Q(veh)	25.5	0	-	-	0	-	-	0				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings

1: Harback Rd (CR-31) & 38th Ave

2025 Total AM - Signalized.syn

06/01/2022



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	EB	WB	WB	NB	NB	SB	SB
Traffic Volume (vph)	6	2	1	358	3	1	6
Future Volume (vph)	6	2	1	358	3	1	6
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4		8		2		6
Permitted Phases		8		2		6	
Detector Phase	4	8	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	57.0	57.0	57.0	33.0	33.0	33.0	33.0
Total Split (%)	63.3%	63.3%	63.3%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	20.2	20.2	20.2	60.8	60.8	60.8	60.8
Actuated g/C Ratio	0.22	0.22	0.22	0.68	0.68	0.68	0.68
v/c Ratio	0.88	0.04	0.01	0.59	0.00	0.00	0.01
Control Delay	11.6	17.5	12.0	17.4	13.0	13.0	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	17.5	12.0	17.4	13.0	13.0	12.5
LOS	B	B	B	B	B	B	B
Approach Delay	11.6		14.1		17.3		12.6
Approach LOS	B		B		B		B

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 13.7

Intersection LOS: B

Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Harback Rd (CR-31) & 38th Ave























HCM 6th Signalized Intersection Summary

2025 Total AM - Signalized.syn

1: Harback Rd (CR-31) & 38th Ave

06/01/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	6	604	2	1	2	358	3	0	1	6	0
Future Volume (veh/h)	0	6	604	2	1	2	358	3	0	1	6	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	9	944	3	2	3	559	5	0	2	9	0
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	9	917	80	394	591	521	592	0	524	592	0
Arrive On Green	0.00	0.58	0.58	0.58	0.58	0.58	0.32	0.32	0.00	0.32	0.32	0.00
Sat Flow, veh/h	1411	15	1572	589	675	1013	1406	1870	0	1411	1870	0
Grp Volume(v), veh/h	0	0	953	3	0	5	559	5	0	2	9	0
Grp Sat Flow(s),veh/h/ln	1411	0	1587	589	0	1688	1406	1870	0	1411	1870	0
Q Serve(g_s), s	0.0	0.0	52.5	0.0	0.0	0.1	28.2	0.2	0.0	0.1	0.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	52.5	52.5	0.0	0.1	28.5	0.2	0.0	0.3	0.3	0.0
Prop In Lane	1.00		0.99	1.00		0.60	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	80	0	926	80	0	985	521	592	0	524	592	0
V/C Ratio(X)	0.00	0.00	1.03	0.04	0.00	0.01	1.07	0.01	0.00	0.00	0.02	0.00
Avail Cap(c_a), veh/h	80	0	926	80	0	985	521	592	0	524	592	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	18.8	45.0	0.0	7.8	33.1	21.1	0.0	21.2	21.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	37.3	0.2	0.0	0.0	60.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	26.3	0.1	0.0	0.0	20.3	0.1	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	56.0	45.2	0.0	7.8	93.8	21.1	0.0	21.2	21.2	0.0
LnGrp LOS	A	A	F	D	A	A	F	C	A	C	C	A
Approach Vol, veh/h	953			8			564			11		
Approach Delay, s/veh	56.0			21.8			93.1			21.2		
Approach LOS	E			C			F			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	33.0			57.0			33.0			57.0		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	28.5			52.5			28.5			52.5		
Max Q Clear Time (g_c+I1), s	30.5			54.5			2.3			54.5		
Green Ext Time (p_c), s	0.0			0.0			0.0			0.0		
Intersection Summary												
HCM 6th Ctrl Delay	69.2											
HCM 6th LOS	E											

Timings

1: Harback Rd (CR-31) & 38th Ave

2025 Total PM - Signalized.syn

06/01/2022



Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	EB	WB	WB	NB	NB	SB	SB
Traffic Volume (vph)	2	1	5	747	7	1	4
Future Volume (vph)	2	1	5	747	7	1	4
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4		8		2		6
Permitted Phases		8		2		6	
Detector Phase	4	8	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	50.0	50.0	50.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	11.0	11.0	11.0	70.0	70.0	70.0	70.0
Actuated g/C Ratio	0.12	0.12	0.12	0.78	0.78	0.78	0.78
v/c Ratio	0.81	0.01	0.03	0.70	0.01	0.00	0.00
Control Delay	13.6	28.0	25.7	12.1	4.2	5.0	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	28.0	25.7	12.1	4.2	5.0	4.5
LOS	B	C	C	B	A	A	A
Approach Delay	13.6		26.0		12.0		4.6
Approach LOS	B		C		B		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 12.7

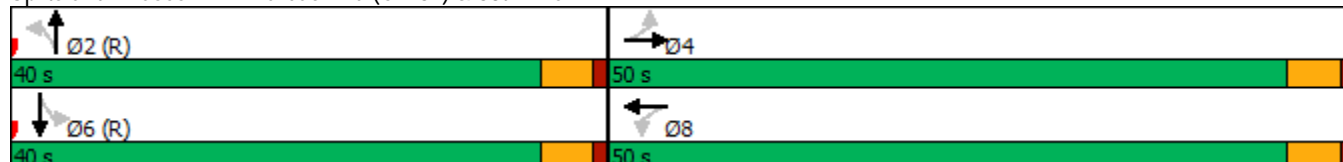
Intersection LOS: B

Intersection Capacity Utilization 88.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Harback Rd (CR-31) & 38th Ave























HCM 6th Signalized Intersection Summary

2025 Total PM - Signalized.syn

1: Harback Rd (CR-31) & 38th Ave

06/01/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	522	1	5	2	747	7	1	1	4	0
Future Volume (veh/h)	0	2	522	1	5	2	747	7	1	1	4	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	2	538	1	5	2	770	7	1	1	4	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	2	601	132	483	193	812	832	119	808	972	0
Arrive On Green	0.00	0.38	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52	0.00
Sat Flow, veh/h	1409	6	1580	866	1271	508	1412	1601	229	1407	1870	0
Grp Volume(v), veh/h	0	0	540	1	0	7	770	0	8	1	4	0
Grp Sat Flow(s),veh/h/ln	1409	0	1586	866	0	1779	1412	0	1829	1407	1870	0
Q Serve(g_s), s	0.0	0.0	28.8	0.1	0.0	0.2	46.7	0.0	0.2	0.0	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	28.8	28.9	0.0	0.2	46.8	0.0	0.2	0.2	0.1	0.0
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.13	1.00		0.00
Lane Grp Cap(c), veh/h	80	0	603	132	0	677	812	0	950	808	972	0
V/C Ratio(X)	0.00	0.00	0.89	0.01	0.00	0.01	0.95	0.00	0.01	0.00	0.00	0.00
Avail Cap(c_a), veh/h	256	0	802	241	0	899	812	0	950	808	972	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	26.2	39.8	0.0	17.3	22.8	0.0	10.4	10.5	10.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	10.2	0.0	0.0	0.0	21.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	12.0	0.0	0.0	0.1	20.3	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	36.4	39.8	0.0	17.3	44.0	0.0	10.5	10.5	10.4	0.0
LnGrp LOS	A	A	D	D	A	B	D	A	B	B	B	A
Approach Vol, veh/h		540			8			778			5	
Approach Delay, s/veh		36.4			20.2			43.6			10.4	
Approach LOS		D			C			D			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.3		38.7		51.3		38.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		35.5		45.5		35.5		45.5				
Max Q Clear Time (g_c+I1), s		48.8		30.8		2.2		30.9				
Green Ext Time (p_c), s		0.0		3.5		0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			40.4									
HCM 6th LOS			D									

Intersection				
Intersection Delay, s/veh	10.4			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	953	8	564	11
Demand Flow Rate, veh/h	972	8	575	11
Vehicles Circulating, veh/h	14	575	11	575
Vehicles Exiting, veh/h	572	11	975	8
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	4.8	6.7	4.9
Approach LOS	B	A	A	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
Entry Flow, veh/h	972	8	575	11
Cap Entry Lane, veh/h	1360	768	1364	768
Entry HV Adj Factor	0.980	0.995	0.981	0.984
Flow Entry, veh/h	953	8	564	11
Cap Entry, veh/h	1333	764	1338	755
V/C Ratio	0.715	0.010	0.421	0.014
Control Delay, s/veh	12.7	4.8	6.7	4.9
LOS	B	A	A	A
95th %tile Queue, veh	7	0	2	0

Intersection				
Intersection Delay, s/veh	8.0			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	540	8	778	5
Demand Flow Rate, veh/h	551	8	793	5
Vehicles Circulating, veh/h	6	792	3	791
Vehicles Exiting, veh/h	790	4	554	9
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.5	6.1	9.1	6.0
Approach LOS	A	A	A	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
Entry Flow, veh/h	551	8	793	5
Cap Entry Lane, veh/h	1371	615	1376	616
Entry HV Adj Factor	0.980	0.988	0.981	0.984
Flow Entry, veh/h	540	8	778	5
Cap Entry, veh/h	1344	608	1349	606
V/C Ratio	0.402	0.013	0.576	0.008
Control Delay, s/veh	6.5	6.1	9.1	6.0
LOS	A	A	A	A
95th %tile Queue, veh	2	0	4	0

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	9	9	3	1	3	1	4	0	1	9	0
Future Vol, veh/h	0	9	9	3	1	3	1	4	0	1	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	10	3	1	3	1	4	0	1	10	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	4	0	0	20	0	0	29	25	15	26	29	3
Stage 1	-	-	-	-	-	-	15	15	-	9	9	-
Stage 2	-	-	-	-	-	-	14	10	-	17	20	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1618	-	-	1596	-	-	980	868	1065	984	864	1081
Stage 1	-	-	-	-	-	-	1005	883	-	1012	888	-
Stage 2	-	-	-	-	-	-	1006	887	-	1002	879	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1618	-	-	1596	-	-	970	866	1065	979	862	1081
Mov Cap-2 Maneuver	-	-	-	-	-	-	970	866	-	979	862	-
Stage 1	-	-	-	-	-	-	1005	883	-	1012	886	-
Stage 2	-	-	-	-	-	-	993	885	-	997	879	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.1			9.1			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	885	1618	-	-	1596	-	-	872				
HCM Lane V/C Ratio	0.006	-	-	-	0.002	-	-	0.012				
HCM Control Delay (s)	9.1	0	-	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	3	6	1	7	3	6	10	1	1	6	0
Future Vol, veh/h	0	3	6	1	7	3	6	10	1	1	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	6	1	7	3	6	10	1	1	6	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	10	0	0	9	0	0	20	18	6	23	20	9
Stage 1	-	-	-	-	-	-	6	6	-	11	11	-
Stage 2	-	-	-	-	-	-	14	12	-	12	9	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1610	-	-	1611	-	-	993	876	1077	989	874	1073
Stage 1	-	-	-	-	-	-	1016	891	-	1010	886	-
Stage 2	-	-	-	-	-	-	1006	886	-	1009	888	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1610	-	-	1611	-	-	987	875	1077	978	873	1073
Mov Cap-2 Maneuver	-	-	-	-	-	-	987	875	-	978	873	-
Stage 1	-	-	-	-	-	-	1016	891	-	1010	885	-
Stage 2	-	-	-	-	-	-	998	885	-	996	888	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.7			9			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	922	1610	-	-	1611	-	-	887				
HCM Lane V/C Ratio	0.019	-	-	-	0.001	-	-	0.008				
HCM Control Delay (s)	9	0	-	-	7.2	0	-	9.1				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Intersection				
Intersection Delay, s/veh	10.7			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	962	12	565	16
Demand Flow Rate, veh/h	981	12	576	16
Vehicles Circulating, veh/h	21	576	16	577
Vehicles Exiting, veh/h	572	16	986	11
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.2	4.9	6.8	5.0
Approach LOS	B	A	A	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
Entry Flow, veh/h	981	12	576	16
Cap Entry Lane, veh/h	1351	767	1358	766
Entry HV Adj Factor	0.980	0.997	0.981	0.983
Flow Entry, veh/h	962	12	565	16
Cap Entry, veh/h	1324	764	1331	753
V/C Ratio	0.726	0.016	0.424	0.021
Control Delay, s/veh	13.2	4.9	6.8	5.0
LOS	B	A	A	A
95th %tile Queue, veh	7	0	2	0

Intersection				
Intersection Delay, s/veh	8.1			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	543	11	783	7
Demand Flow Rate, veh/h	554	11	798	7
Vehicles Circulating, veh/h	8	797	4	795
Vehicles Exiting, veh/h	794	5	558	13
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.5	6.2	9.2	6.1
Approach LOS	A	A	A	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
Entry Flow, veh/h	554	11	798	7
Cap Entry Lane, veh/h	1369	612	1374	613
Entry HV Adj Factor	0.980	0.988	0.981	0.983
Flow Entry, veh/h	543	11	783	7
Cap Entry, veh/h	1341	604	1348	603
V/C Ratio	0.405	0.018	0.581	0.011
Control Delay, s/veh	6.5	6.2	9.2	6.1
LOS	A	A	A	A
95th %tile Queue, veh	2	0	4	0

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	69	1	2	115	3	0	0	6	4	1	8
Future Vol, veh/h	1	69	1	2	115	3	0	0	6	4	1	8
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	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	93	1	3	155	4	0	0	8	5	1	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	159	0	0	94	0	0	265	261	94	263	259	157
Stage 1	-	-	-	-	-	-	96	96	-	163	163	-
Stage 2	-	-	-	-	-	-	169	165	-	100	96	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1420	-	-	1500	-	-	688	644	963	690	645	889
Stage 1	-	-	-	-	-	-	911	815	-	839	763	-
Stage 2	-	-	-	-	-	-	833	762	-	906	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1420	-	-	1500	-	-	677	642	963	682	643	889
Mov Cap-2 Maneuver	-	-	-	-	-	-	677	642	-	682	643	-
Stage 1	-	-	-	-	-	-	910	814	-	838	761	-
Stage 2	-	-	-	-	-	-	820	760	-	897	814	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			8.8			9.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	963	1420	-	-	1500	-	-	792				
HCM Lane V/C Ratio	0.008	0.001	-	-	0.002	-	-	0.022				
HCM Control Delay (s)	8.8	7.5	0	-	7.4	0	-	9.6				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	159	0	3	69	8	0	1	8	5	2	2
Future Vol, veh/h	6	159	0	3	69	8	0	1	8	5	2	2
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	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	7	183	0	3	79	9	0	1	9	6	2	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	88	0	0	183	0	0	289	291	183	292	287	84
Stage 1	-	-	-	-	-	-	197	197	-	90	90	-
Stage 2	-	-	-	-	-	-	92	94	-	202	197	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1508	-	-	1392	-	-	663	619	859	660	623	975
Stage 1	-	-	-	-	-	-	805	738	-	917	820	-
Stage 2	-	-	-	-	-	-	915	817	-	800	738	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1508	-	-	1392	-	-	656	615	859	649	619	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	656	615	-	649	619	-
Stage 1	-	-	-	-	-	-	801	734	-	912	818	-
Stage 2	-	-	-	-	-	-	908	815	-	786	734	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.3			9.4			10.3		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	823	1508	-	-	1392	-	-	693				
HCM Lane V/C Ratio	0.013	0.005	-	-	0.002	-	-	0.015				
HCM Control Delay (s)	9.4	7.4	0	-	7.6	0	-	10.3				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	73	1	2	122	3	0	0	6	4	1	8
Future Vol, veh/h	1	73	1	2	122	3	0	0	6	4	1	8
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	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	99	1	3	165	4	0	0	8	5	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	169	0	0	100	0	0	281	277	100	279	275	167
Stage 1	-	-	-	-	-	-	102	102	-	173	173	-
Stage 2	-	-	-	-	-	-	179	175	-	106	102	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1409	-	-	1493	-	-	671	631	956	673	632	877
Stage 1	-	-	-	-	-	-	904	811	-	829	756	-
Stage 2	-	-	-	-	-	-	823	754	-	900	811	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1409	-	-	1493	-	-	660	629	956	666	630	877
Mov Cap-2 Maneuver	-	-	-	-	-	-	660	629	-	666	630	-
Stage 1	-	-	-	-	-	-	903	810	-	828	754	-
Stage 2	-	-	-	-	-	-	810	752	-	891	810	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			8.8			9.7		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	956	1409	-	-	1493	-	-	778
HCM Lane V/C Ratio	0.008	0.001	-	-	0.002	-	-	0.023
HCM Control Delay (s)	8.8	7.6	0	-	7.4	0	-	9.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection








Int Delay, s/veh 0.9








Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	169	0	3	73	8	0	1	8	5	2	2
Future Vol, veh/h	6	169	0	3	73	8	0	1	8	5	2	2
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	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	7	194	0	3	84	9	0	1	9	6	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	194	0	0	305	307	194	308	303	89
Stage 1	-	-	-	-	-	-	208	208	-	95	95	-
Stage 2	-	-	-	-	-	-	97	99	-	213	208	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1379	-	-	647	607	847	644	610	969
Stage 1	-	-	-	-	-	-	794	730	-	912	816	-
Stage 2	-	-	-	-	-	-	910	813	-	789	730	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1501	-	-	1379	-	-	640	603	847	632	606	969
Mov Cap-2 Maneuver	-	-	-	-	-	-	640	603	-	632	606	-
Stage 1	-	-	-	-	-	-	790	726	-	907	814	-
Stage 2	-	-	-	-	-	-	903	811	-	775	726	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.3			9.5			10.4		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	811	1501	-	-	1379	-	-	678
HCM Lane V/C Ratio	0.013	0.005	-	-	0.003	-	-	0.015
HCM Control Delay (s)	9.5	7.4	0	-	7.6	0	-	10.4
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	729.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	358	73	1	2	122	241	0	0	6	403	1	606
Future Vol, veh/h	358	73	1	2	122	241	0	0	6	403	1	606
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	-	-	Free
Storage Length	150	-	-	-	-	150	-	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	484	99	1	3	165	326	0	0	8	545	1	819
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	491	0	0	100	0	0	1403	1565	100	1243	1239	-
Stage 1	-	-	-	-	-	-	1068	1068	-	171	171	-
Stage 2	-	-	-	-	-	-	335	497	-	1072	1068	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	-
Pot Cap-1 Maneuver	1072	-	-	1493	-	-	117	111	956	~ 151	175	0
Stage 1	-	-	-	-	-	-	268	298	-	831	757	0
Stage 2	-	-	-	-	-	-	679	545	-	~ 267	298	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1072	-	-	1493	-	-	75	61	956	~ 97	96	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	61	-	~ 97	96	-
Stage 1	-	-	-	-	-	-	147	164	-	~ 456	755	-
Stage 2	-	-	-	-	-	-	676	543	-	~ 145	164	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.2			0			8.8			\$ 2169		
HCM LOS							A			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	956	1072	-	-	1493	-	-	97	-			
HCM Lane V/C Ratio	0.008	0.451	-	-	0.002	-	-	5.628	-			
HCM Control Delay (s)	8.8	11.1	-	-	7.4	0	-	\$ 2169	0			
HCM Lane LOS	A	B	-	-	A	A	-	F	A			
HCM 95th %tile Q(veh)	0	2.4	-	-	0	-	-	59.6	-			
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Intersection												
Int Delay, s/veh	7102.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	749	169	0	3	73	503	0	1	8	350	2	520
Future Vol, veh/h	749	169	0	3	73	503	0	1	8	350	2	520
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	-	-	Free
Storage Length	150	-	-	-	-	150	-	-	-	-	-	150
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	861	194	0	3	84	578	0	1	9	402	2	598
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	662	0	0	194	0	0	2296	2584	194	2011	2006	-
Stage 1	-	-	-	-	-	-	1916	1916	-	90	90	-
Stage 2	-	-	-	-	-	-	380	668	-	1921	1916	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	-
Pot Cap-1 Maneuver	927	-	-	1379	-	-	27	25	847	~ 44	59	0
Stage 1	-	-	-	-	-	-	87	115	-	917	820	0
Stage 2	-	-	-	-	-	-	642	456	-	~ 87	115	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	927	-	-	1379	-	-	3	2	847	~ 5	4	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	3	2	-	~ 5	4	-
Stage 1	-	-	-	-	-	-	6	8	-	~ 65	817	-
Stage 2	-	-	-	-	-	-	638	454	-	~ 5	8	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	29.5			0			\$ 356.1			\$ 37403.6		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	18	927	-	-	1379	-	-	5	-			
HCM Lane V/C Ratio	0.575	0.929	-	-	0.003	-	-	80.92	-			
HCM Control Delay (s)	\$ 356.1	36.2	-	-	7.6	0	\$ 37403.6	0				
HCM Lane LOS	F	E	-	-	A	A	-	F	A			
HCM 95th %tile Q(veh)	1.5	14.3	-	-	0	-	-	52.8	-			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Timings

2025 Total AM - Improved.syn

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

06/03/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	358	73	2	122	241	0	403	1	606
Future Volume (vph)	358	73	2	122	241	0	403	1	606
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA	Free
Protected Phases	7	4		8		2	1	6	
Permitted Phases	4		8		8		6		Free
Detector Phase	7	4	8	8	8	2	1	6	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	23.5	23.5	23.5	23.5	23.5	10.5	23.5	
Total Split (s)	39.5	68.0	28.5	28.5	28.5	24.0	28.0	52.0	
Total Split (%)	32.9%	56.7%	23.8%	23.8%	23.8%	20.0%	23.3%	43.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	Max	None	Max	
Act Effect Green (s)	62.5	62.5	30.1	30.1	30.1	18.5	46.5	46.5	120.0
Actuated g/C Ratio	0.52	0.52	0.25	0.25	0.25	0.15	0.39	0.39	1.00
v/c Ratio	0.73	0.10	0.01	0.35	0.51	0.01	1.00	0.00	0.52
Control Delay	26.3	14.8	38.5	41.5	7.5	0.0	72.4	23.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	14.8	38.5	41.5	7.5	0.0	72.4	23.0	1.2
LOS	C	B	D	D	A	A	E	C	A
Approach Delay		24.3		19.0				29.7	
Approach LOS		C		B				C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 26.2

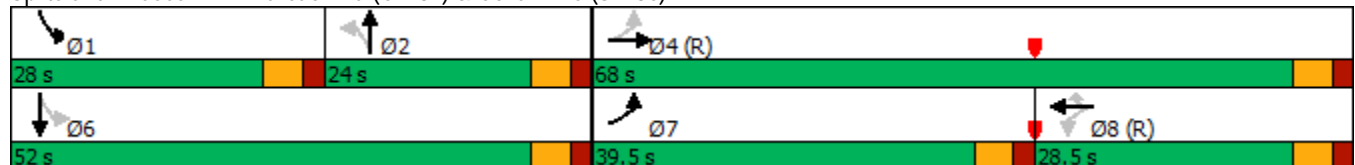
Intersection LOS: C

Intersection Capacity Utilization 69.0%

ICU Level of Service C

Analysis Period (min) 15























Splits and Phases: 2: Harback Rd (CR-31) & Colfax Ave (SH-36)



HCM 6th Signalized Intersection Summary 2: Harback Rd (CR-31) & Colfax Ave (SH-36)

2025 Total AM - Improved.syn

06/03/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	73	1	2	122	241	0	0	6	403	1	606
Future Volume (veh/h)	358	73	1	2	122	241	0	0	6	403	1	606
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	484	99	1	3	165	164	0	0	4	545	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	642	963	10	395	484	411	60	0	244	609	725	
Arrive On Green	0.22	0.52	0.52	0.26	0.26	0.26	0.00	0.00	0.15	0.19	0.39	0.00
Sat Flow, veh/h	1781	1848	19	1295	1870	1585	1416	0	1585	1781	1870	1585
Grp Volume(v), veh/h	484	0	100	3	165	164	0	0	4	545	1	0
Grp Sat Flow(s),veh/h/ln	1781	0	1867	1295	1870	1585	1416	0	1585	1781	1870	1585
Q Serve(g_s), s	22.8	0.0	3.3	0.2	8.6	10.3	0.0	0.0	0.3	22.5	0.0	0.0
Cycle Q Clear(g_c), s	22.8	0.0	3.3	0.2	8.6	10.3	0.0	0.0	0.3	22.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	642	0	972	395	484	411	60	0	244	609	725	
V/C Ratio(X)	0.75	0.00	0.10	0.01	0.34	0.40	0.00	0.00	0.02	0.90	0.00	
Avail Cap(c_a), veh/h	762	0	972	395	484	411	60	0	244	609	725	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.2	0.0	14.6	33.0	36.1	36.7	0.0	0.0	43.0	37.0	22.5	0.0
Incr Delay (d2), s/veh	3.6	0.0	0.2	0.0	1.9	2.9	0.0	0.0	0.1	15.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	0.0	1.4	0.1	4.2	4.3	0.0	0.0	0.1	7.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	0.0	14.8	33.1	38.0	39.6	0.0	0.0	43.2	52.8	22.5	0.0
LnGrp LOS	C	A	B	C	D	D	A	A	D	D	C	
Approach Vol, veh/h		584			332			4			546	A
Approach Delay, s/veh		23.9			38.8			43.2			52.7	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	28.0	24.0		68.0		52.0	31.4	36.6				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5	5.5	5.5				
Max Green Setting (Gmax), s	22.5	18.5		62.5		46.5	34.0	23.0				
Max Q Clear Time (g_c+l1), s	24.5	2.3		5.3		2.0	24.8	12.3				
Green Ext Time (p_c), s	0.0	0.0		0.6		0.0	1.2	1.1				
Intersection Summary												
HCM 6th Ctrl Delay				38.0								
HCM 6th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings

2025 Total PM - Improved.syn

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

06/03/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Configurations	←	→	←	→	←	→	←	→	←
Traffic Volume (vph)	749	169	3	73	503	1	350	2	520
Future Volume (vph)	749	169	3	73	503	1	350	2	520
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA	Free
Protected Phases	7	4		8		2	1	6	
Permitted Phases	4		8		8		6		Free
Detector Phase	7	4	8	8	8	2	1	6	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	23.5	23.5	23.5	23.5	23.5	10.5	23.5	
Total Split (s)	48.0	81.0	33.0	33.0	33.0	22.0	17.0	39.0	
Total Split (%)	40.0%	67.5%	27.5%	27.5%	27.5%	18.3%	14.2%	32.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	Max	None	Max	
Act Effect Green (s)	75.5	75.5	28.5	28.5	28.5	16.5	33.5	33.5	120.0
Actuated g/C Ratio	0.63	0.63	0.24	0.24	0.24	0.14	0.28	0.28	1.00
v/c Ratio	0.93	0.17	0.01	0.19	0.76	0.04	1.11	0.00	0.38
Control Delay	35.2	9.6	36.0	38.6	13.8	25.1	120.7	31.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	9.6	36.0	38.6	13.8	25.1	120.7	31.5	0.7
LOS	D	A	D	D	B	C	F	C	A
Approach Delay		30.5		17.0		25.1		48.9	
Approach LOS		C		B		C		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 33.9

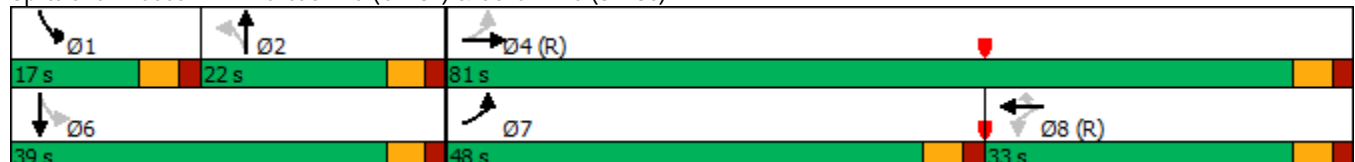
Intersection LOS: C

Intersection Capacity Utilization 90.6%

ICU Level of Service E

Analysis Period (min) 15























Splits and Phases: 2: Harback Rd (CR-31) & Colfax Ave (SH-36)



HCM 6th Signalized Intersection Summary 2: Harback Rd (CR-31) & Colfax Ave (SH-36)

2025 Total PM - Improved.syn

06/03/2022








												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	749	169	0	3	73	503	0	1	8	350	2	520
Future Volume (veh/h)	749	169	0	3	73	503	0	1	8	350	2	520
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	861	194	0	3	84	291	0	1	4	402	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	885	1177	0	332	429	363	60	45	180	421	522	
Arrive On Green	0.35	0.63	0.00	0.23	0.23	0.23	0.00	0.14	0.14	0.10	0.28	0.00
Sat Flow, veh/h	1781	1870	0	1189	1870	1585	1415	327	1308	1781	1870	1585
Grp Volume(v), veh/h	861	194	0	3	84	291	0	0	5	402	2	0
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1189	1870	1585	1415	0	1635	1781	1870	1585
Q Serve(g_s), s	42.5	5.1	0.0	0.2	4.3	20.8	0.0	0.0	0.3	11.5	0.1	0.0
Cycle Q Clear(g_c), s	42.5	5.1	0.0	0.2	4.3	20.8	0.0	0.0	0.3	11.5	0.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	885	1177	0	332	429	363	60	0	225	421	522	
V/C Ratio(X)	0.97	0.16	0.00	0.01	0.20	0.80	0.00	0.00	0.02	0.95	0.00	
Avail Cap(c_a), veh/h	885	1177	0	332	429	363	60	0	225	421	522	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.2	9.2	0.0	35.7	37.3	43.7	0.0	0.0	44.8	45.9	31.2	0.0
Incr Delay (d2), s/veh	23.7	0.3	0.0	0.0	1.0	16.8	0.0	0.0	0.2	32.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.2	2.1	0.0	0.1	2.1	9.8	0.0	0.0	0.1	10.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	9.5	0.0	35.8	38.3	60.5	0.0	0.0	45.0	78.3	31.2	0.0
LnGrp LOS	D	A	A	D	D	E	A	A	D	E	C	
Approach Vol, veh/h	1055				378		5				404	
Approach Delay, s/veh	37.5				55.4		45.0				78.0	
Approach LOS	D				E		D				E	
Timer - Assigned Phs	1	2	4		6		7	8				
Phs Duration (G+Y+Rc), s	17.0	22.0	81.0		39.0		48.0	33.0				
Change Period (Y+Rc), s	5.5	5.5	5.5		5.5		5.5	5.5				
Max Green Setting (Gmax), s	11.5	16.5	75.5		33.5		42.5	27.5				
Max Q Clear Time (g_c+l1), s	13.5	2.3	7.1		2.1		44.5	22.8				
Green Ext Time (p_c), s	0.0	0.0	1.2		0.0		0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay	50.1											
HCM 6th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	99	1	3	164	4	0	0	9	6	1	11
Future Vol, veh/h	1	99	1	3	164	4	0	0	9	6	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	108	1	3	178	4	0	0	10	7	1	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	109	0	0	304	299	109	302	297	180
Stage 1	-	-	-	-	-	-	111	111	-	186	186	-
Stage 2	-	-	-	-	-	-	193	188	-	116	111	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1393	-	-	1481	-	-	648	613	945	650	615	863
Stage 1	-	-	-	-	-	-	894	804	-	816	746	-
Stage 2	-	-	-	-	-	-	809	745	-	889	804	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1393	-	-	1481	-	-	637	611	945	642	613	863
Mov Cap-2 Maneuver	-	-	-	-	-	-	637	611	-	642	613	-
Stage 1	-	-	-	-	-	-	893	803	-	815	745	-
Stage 2	-	-	-	-	-	-	795	744	-	879	803	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			8.8			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	945	1393	-	-	1481	-	-	759				
HCM Lane V/C Ratio	0.01	0.001	-	-	0.002	-	-	0.026				
HCM Control Delay (s)	8.8	7.6	0	-	7.4	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	227	0	4	99	11	0	1	11	7	3	3
Future Vol, veh/h	9	227	0	4	99	11	0	1	11	7	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	247	0	4	108	12	0	1	12	8	3	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	247	0	0	392	395	247	396	389	114
Stage 1	-	-	-	-	-	-	267	267	-	122	122	-
Stage 2	-	-	-	-	-	-	125	128	-	274	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1468	-	-	1319	-	-	567	542	792	564	546	939
Stage 1	-	-	-	-	-	-	738	688	-	882	795	-
Stage 2	-	-	-	-	-	-	879	790	-	732	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1468	-	-	1319	-	-	558	536	792	550	540	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	558	536	-	550	540	-
Stage 1	-	-	-	-	-	-	732	682	-	875	793	-
Stage 2	-	-	-	-	-	-	870	788	-	714	682	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.3			9.8			11.1		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	762	1468	-	-	1319	-	-	605				
HCM Lane V/C Ratio	0.017	0.007	-	-	0.003	-	-	0.023				
HCM Control Delay (s)	9.8	7.5	0	-	7.7	0	-	11.1				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection

Int Delay, s/veh 870.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	358	99	1	3	164	242	0	0	9	405	1	609
Future Vol, veh/h	358	99	1	3	164	242	0	0	9	405	1	609
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	-	-	Free
Storage Length	150	-	-	-	-	150	-	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	484	134	1	4	222	327	0	0	12	547	1	823








Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	549	0	0	135	0	0	1497	1660	135	1339	1333	-
Stage 1	-	-	-	-	-	-	1103	1103	-	230	230	-
Stage 2	-	-	-	-	-	-	394	557	-	1109	1103	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	-
Pot Cap-1 Maneuver	1021	-	-	1449	-	-	101	97	914	~ 130	154	0
Stage 1	-	-	-	-	-	-	256	287	-	773	714	0
Stage 2	-	-	-	-	-	-	631	512	-	~ 254	287	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1021	-	-	1449	-	-	63	51	914	~ 80	81	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	51	-	~ 80	81	-
Stage 1	-	-	-	-	-	-	135	151	-	~ 407	711	-
Stage 2	-	-	-	-	-	-	627	510	-	~ 132	151	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	0.1	9	\$ 2737.8
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	914	1021	-	-	1449	-	-	80	-
HCM Lane V/C Ratio	0.013	0.474	-	-	0.003	-	-	6.858	-
HCM Control Delay (s)	9	11.7	-	-	7.5	0	\$ 2737.8	0	
HCM Lane LOS	A	B	-	-	A	A	-	F	A
HCM 95th %tile Q(veh)	0	2.6	-	-	0	-	-	61.9	-

Notes

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



















Intersection												
Int Delay, s/veh	16.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	752	227	0	4	99	506	0	1	11	352	3	521
Future Vol, veh/h	752	227	0	4	99	506	0	1	11	352	3	521
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	-	-	Free
Storage Length	150	-	-	-	-	150	-	-	-	-	-	150
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	864	261	0	5	114	582	0	1	13	405	3	599
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	696	0	0	261	0	0	2406	2695	261	2120	2113	-
Stage 1	-	-	-	-	-	-	1989	1989	-	124	124	-
Stage 2	-	-	-	-	-	-	417	706	-	1996	1989	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	-
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	-
Pot Cap-1 Maneuver	900	-	-	1303	-	-	23	22	778	~ 37	51	0
Stage 1	-	-	-	-	-	-	79	106	-	880	793	0
Stage 2	-	-	-	-	-	-	613	439	-	~ 78	106	0
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	900	-	-	1303	-	-	-	~ 1	778	-	~ 2	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 1	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	3	4	-	~ 35	787	-
Stage 2	-	-	-	-	-	-	606	436	-	~ 2	4	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	32.7			0.1								
HCM LOS							-			-		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)		- 900	-	-	1303	-	-	-	-			
HCM Lane V/C Ratio		- 0.96	-	-	0.004	-	-	-	-			
HCM Control Delay (s)		- 42.6	-	-	7.8	0	-	-	0			
HCM Lane LOS		- E	-	-	A	A	-	-	A			
HCM 95th %tile Q(veh)		- 15.9	-	-	0	-	-	-	-			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Timings

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

2045 Total AM.syn

06/03/2022

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	358	99	3	164	242	0	405	1	609
Future Volume (vph)	358	99	3	164	242	0	405	1	609
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA	Free
Protected Phases	7	4		8		2	1	6	
Permitted Phases	4		8		8		6		Free
Detector Phase	7	4	8	8	8	2	1	6	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	23.5	23.5	23.5	23.5	23.5	10.5	23.5	
Total Split (s)	39.5	65.0	25.5	25.5	25.5	24.0	31.0	55.0	
Total Split (%)	32.9%	54.2%	21.3%	21.3%	21.3%	20.0%	25.8%	45.8%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	Max	None	Max	
Act Effect Green (s)	59.5	59.5	25.7	25.7	25.7	18.5	49.5	49.5	120.0
Actuated g/C Ratio	0.50	0.50	0.21	0.21	0.21	0.15	0.41	0.41	1.00
v/c Ratio	0.82	0.15	0.01	0.56	0.55	0.02	0.93	0.00	0.52
Control Delay	33.7	17.0	41.7	50.0	8.6	0.0	54.4	21.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	17.0	41.7	50.0	8.6	0.0	54.4	21.0	1.2
LOS	C	B	D	D	A	A	D	C	A
Approach Delay		30.1		25.5				22.5	
Approach LOS		C		C				C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 24.9

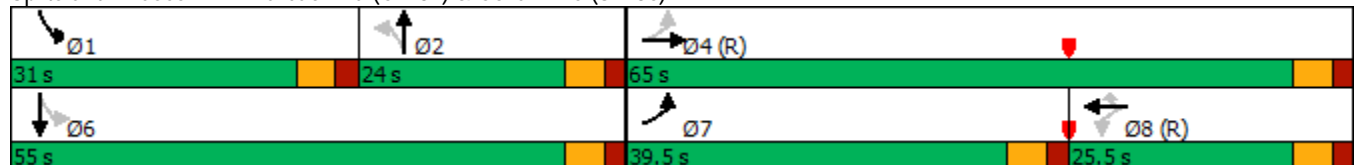
Intersection LOS: C

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Harback Rd (CR-31) & Colfax Ave (SH-36)

























HCM 6th Signalized Intersection Summary

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

2045 Total AM.syn

06/03/2022



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	99	1	3	164	242	0	0	9	405	1	609
Future Volume (veh/h)	358	99	1	3	164	242	0	0	9	405	1	609
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	484	134	1	4	222	327	0	0	12	547	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	564	919	7	343	421	357	60	0	244	646	772	
Arrive On Green	0.22	0.50	0.50	0.23	0.23	0.23	0.00	0.00	0.15	0.21	0.41	0.00
Sat Flow, veh/h	1781	1854	14	1254	1870	1585	1416	0	1585	1781	1870	1585
Grp Volume(v), veh/h	484	0	135	4	222	327	0	0	12	547	1	0
Grp Sat Flow(s),veh/h/ln	1781	0	1868	1254	1870	1585	1416	0	1585	1781	1870	1585
Q Serve(g_s), s	23.9	0.0	4.7	0.3	12.5	24.2	0.0	0.0	0.8	25.5	0.0	0.0
Cycle Q Clear(g_c), s	23.9	0.0	4.7	0.3	12.5	24.2	0.0	0.0	0.8	25.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	564	0	926	343	421	357	60	0	244	646	772	
V/C Ratio(X)	0.86	0.00	0.15	0.01	0.53	0.92	0.00	0.00	0.05	0.85	0.00	
Avail Cap(c_a), veh/h	669	0	926	343	421	357	60	0	244	646	772	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.4	0.0	16.4	36.1	40.9	45.4	0.0	0.0	43.3	33.8	20.7	0.0
Incr Delay (d2), s/veh	9.5	0.0	0.3	0.1	4.7	30.4	0.0	0.0	0.4	10.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.0	2.1	0.1	6.3	12.5	0.0	0.0	0.3	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	0.0	16.8	36.2	45.5	75.7	0.0	0.0	43.6	44.1	20.7	0.0
LnGrp LOS	C	A	B	D	D	E	A	A	D	D	C	
Approach Vol, veh/h		619			553			12			548	A
Approach Delay, s/veh		31.0			63.3			43.6			44.0	
Approach LOS		C			E			D			D	
Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	31.0	24.0		65.0		55.0	32.5	32.5				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5	5.5	5.5				
Max Green Setting (Gmax), s	25.5	18.5		59.5		49.5	34.0	20.0				
Max Q Clear Time (g_c+l1), s	27.5	2.8		6.7		2.0	25.9	26.2				
Green Ext Time (p_c), s	0.0	0.0		0.8		0.0	1.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				45.5								
HCM 6th LOS				D								
Notes												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

2045 Total PM.syn

06/03/2022

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	752	227	4	99	506	1	352	3	521
Future Volume (vph)	752	227	4	99	506	1	352	3	521
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA	Free
Protected Phases	7	4		8		2	1	6	
Permitted Phases	4		8		8		6		Free
Detector Phase	7	4	8	8	8	2	1	6	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	23.5	23.5	23.5	23.5	23.5	10.5	23.5	
Total Split (s)	50.0	80.0	30.0	30.0	30.0	25.0	15.0	40.0	
Total Split (%)	41.7%	66.7%	25.0%	25.0%	25.0%	20.8%	12.5%	33.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	Max	None	Max	
Act Effect Green (s)	74.5	74.5	25.1	25.1	25.1	19.5	34.5	34.5	120.0
Actuated g/C Ratio	0.62	0.62	0.21	0.21	0.21	0.16	0.29	0.29	1.00
v/c Ratio	0.96	0.23	0.02	0.29	0.80	0.05	1.11	0.01	0.38
Control Delay	39.8	10.6	38.8	42.8	17.0	21.2	117.9	30.7	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.6	38.8	42.8	17.0	21.2	117.9	30.7	0.7
LOS	D	B	D	D	B	C	F	C	A
Approach Delay		33.0		21.4		21.2		47.9	
Approach LOS		C		C		C		D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 35.4

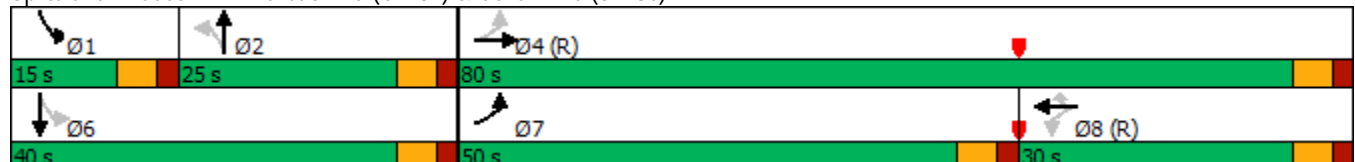
Intersection LOS: D

Intersection Capacity Utilization 90.9%

ICU Level of Service E

Analysis Period (min) 15























Splits and Phases: 2: Harback Rd (CR-31) & Colfax Ave (SH-36)












HCM 6th Signalized Intersection Summary 2: Harback Rd (CR-31) & Colfax Ave (SH-36)

2045 Total PM.syn

06/03/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	752	227	0	4	99	506	0	1	11	352	3	521
Future Volume (veh/h)	752	227	0	4	99	506	0	1	11	352	3	521
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	864	261	0	5	114	295	0	1	7	405	3	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	870	1161	0	288	382	324	60	33	230	424	538	
Arrive On Green	0.37	0.62	0.00	0.20	0.20	0.20	0.00	0.16	0.16	0.08	0.29	0.00
Sat Flow, veh/h	1781	1870	0	1118	1870	1585	1414	202	1414	1781	1870	1585
Grp Volume(v), veh/h	864	261	0	5	114	295	0	0	8	405	3	0
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1118	1870	1585	1414	0	1616	1781	1870	1585
Q Serve(g_s), s	44.5	7.4	0.0	0.4	6.2	21.8	0.0	0.0	0.5	9.5	0.1	0.0
Cycle Q Clear(g_c), s	44.5	7.4	0.0	0.4	6.2	21.8	0.0	0.0	0.5	9.5	0.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.88	1.00		1.00
Lane Grp Cap(c), veh/h	870	1161	0	288	382	324	60	0	263	424	538	
V/C Ratio(X)	0.99	0.22	0.00	0.02	0.30	0.91	0.00	0.00	0.03	0.96	0.01	
Avail Cap(c_a), veh/h	870	1161	0	288	382	324	60	0	263	424	538	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.2	10.0	0.0	38.2	40.5	46.7	0.0	0.0	42.3	45.6	30.5	0.0
Incr Delay (d2), s/veh	28.9	0.4	0.0	0.1	2.0	31.8	0.0	0.0	0.2	32.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.9	3.1	0.0	0.1	3.1	11.4	0.0	0.0	0.2	11.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	10.5	0.0	38.3	42.5	78.5	0.0	0.0	42.5	78.0	30.5	0.0
LnGrp LOS	D	B	A	D	D	E	A	A	D	E	C	
Approach Vol, veh/h	1125		414				8		408			
Approach Delay, s/veh	40.9		68.1				42.5		77.7			
Approach LOS	D		E				D		E			
Timer - Assigned Phs	1	2	4		6		7	8				
Phs Duration (G+Y+Rc), s	15.0	25.0	80.0		40.0		50.0	30.0				
Change Period (Y+Rc), s	5.5	5.5	5.5		5.5		5.5	5.5				
Max Green Setting (Gmax), s	9.5	19.5	74.5		34.5		44.5	24.5				
Max Q Clear Time (g_c+I1), s	11.5	2.5	9.4		2.1		46.5	23.8				
Green Ext Time (p_c), s	0.0	0.0	1.7		0.0		0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	54.3											
HCM 6th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												






Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	560	5	30	329	5	50
Future Vol, veh/h	560	5	30	329	5	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	609	5	33	358	5	54
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	614	0	1036	612
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	965	-	256	493
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	965	-	247	493
Mov Cap-2 Maneuver	-	-	-	-	379	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	638	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		13.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	480	-	-	965	-	
HCM Lane V/C Ratio	0.125	-	-	0.034	-	
HCM Control Delay (s)	13.6	-	-	8.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	






Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	481	5	62	690	5	43
Future Vol, veh/h	481	5	62	690	5	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	523	5	67	750	5	47

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	528
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1039
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1039
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	13.1
HCM LOS			B






Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	498	-	-	1039	-
HCM Lane V/C Ratio	0.105	-	-	0.065	-
HCM Control Delay (s)	13.1	-	-	8.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-






Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	566	5	30	329	5	50
Future Vol, veh/h	566	5	30	329	5	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	615	5	33	358	5	54
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	620	0	1042	618
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	960	-	254	489
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	960	-	245	489
Mov Cap-2 Maneuver	-	-	-	-	377	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	638	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		13.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	476	-	-	960	-	
HCM Lane V/C Ratio	0.126	-	-	0.034	-	
HCM Control Delay (s)	13.6	-	-	8.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	484	5	62	694	5	43
Future Vol, veh/h	484	5	62	694	5	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	526	5	67	754	5	47
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	531	0	1417	529
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	888	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1036	-	151	550
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	402	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1036	-	141	550
Mov Cap-2 Maneuver	-	-	-	-	270	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	376	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		13.1	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	496	-	-	1036	-	
HCM Lane V/C Ratio	0.105	-	-	0.065	-	
HCM Control Delay (s)	13.1	-	-	8.7	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	

HCM 6th TWSC
4: Harback Rd (CR-31) & North Access

2025 Total AM.syn
06/01/2022

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	50	30	361	611	5
Future Vol, veh/h	5	50	30	361	611	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	54	33	392	664	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1125	667	669	0	-	0
Stage 1	667	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	227	459	921	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	219	459	921	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	492	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.3	0.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	921	-	447	-	-	
HCM Lane V/C Ratio	0.035	-	0.134	-	-	
HCM Control Delay (s)	9.1	-	14.3	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-	





Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	43	62	755	527	5
Future Vol, veh/h	5	43	62	755	527	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	47	67	821	573	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1531	576	578	0	-	0
Stage 1	576	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	129	517	996	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	517	996	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	524	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.7	0.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	996	-	466	-	-	
HCM Lane V/C Ratio	0.068	-	0.112	-	-	
HCM Control Delay (s)	8.9	-	13.7	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-	

HCM 6th TWSC
4: Harback Rd (CR-31) & North Access

2045 Total AM.syn
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Intersection






Int Delay, s/veh 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	50	30	362	616	5
Future Vol, veh/h	5	50	30	362	616	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	54	33	393	670	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1132	673	675
Stage 1	673	-	-
Stage 2	459	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	197	455	916
Stage 1	507	-	-
Stage 2	693	-	-
Platoon blocked, %	1	-	-
Mov Cap-1 Maneuver	190	455	916
Mov Cap-2 Maneuver	345	-	-
Stage 1	489	-	-
Stage 2	693	-	-






Approach	EB	NB	SB
HCM Control Delay, s	14.4	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	916	-	442	-	-
HCM Lane V/C Ratio	0.036	-	0.135	-	-
HCM Control Delay (s)	9.1	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	43	62	760	531	5
Future Vol, veh/h	5	43	62	760	531	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	47	67	826	577	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1540	580	582	0	-	0
Stage 1	580	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	49	514	992	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	346	-	-	-	-	-
Platoon blocked, %	1			-	-	-
Mov Cap-1 Maneuver	45	514	992	-	-	-
Mov Cap-2 Maneuver	210	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	346	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	0.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	992	-	447	-	-	
HCM Lane V/C Ratio	0.068	-	0.117	-	-	
HCM Control Delay (s)	8.9	-	14.1	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-	

Intersection





Int Delay, s/veh 1.9





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	100	60	391	661	5
Future Vol, veh/h	5	100	60	391	661	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	109	65	425	718	5





Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1276	721	723
Stage 1	721	-	-
Stage 2	555	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	184	427	879
Stage 1	482	-	-
Stage 2	575	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	170	427	879
Mov Cap-2 Maneuver	305	-	-
Stage 1	446	-	-
Stage 2	575	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.8	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	879	-	419	-	-
HCM Lane V/C Ratio	0.074	-	0.272	-	-
HCM Control Delay (s)	9.4	-	16.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-





Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	86	124	817	570	5
Future Vol, veh/h	5	86	124	817	570	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	93	135	888	620	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1781	623	625	0	-	0
Stage 1	623	-	-	-	-	-
Stage 2	1158	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	90	486	956	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	77	486	956	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.2	1.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	956	-	450	-	-	
HCM Lane V/C Ratio	0.141	-	0.22	-	-	
HCM Control Delay (s)	9.4	-	15.2	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.5	-	0.8	-	-	

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	100	60	392	666	5
Future Vol, veh/h	5	100	60	392	666	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	109	65	426	724	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1283	727	729	0	-	0
Stage 1	727	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	146	424	875	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Platoon blocked, %	1			-	-	-
Mov Cap-1 Maneuver	135	424	875	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	443	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.9	1.3		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	875	-	415	-	-	
HCM Lane V/C Ratio	0.075	-	0.275	-	-	
HCM Control Delay (s)	9.4	-	16.9	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-	

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	86	124	822	574	5
Future Vol, veh/h	5	86	124	822	574	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	93	135	893	624	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1790	627	629	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	1163	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	16	484	953	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Platoon blocked, %	1			-	-	-
Mov Cap-1 Maneuver	14	484	953	-	-	-
Mov Cap-2 Maneuver	135	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.1	1.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	953	-	424	-	-	
HCM Lane V/C Ratio	0.141	-	0.233	-	-	
HCM Control Delay (s)	9.4	-	16.1	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.5	-	0.9	-	-	





HCM 6th TWSC
6: Harback Rd (CR-31) & South Access

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Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	249	149	450	761	5
Future Vol, veh/h	5	249	149	450	761	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	271	162	489	827	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1643	830	832	0	-	0
Stage 1	830	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	110	370	801	-	-	-
Stage 1	428	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	88	370	801	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	39.8	2.6		0		
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	801	-	365	-	-	
HCM Lane V/C Ratio	0.202	-	0.756	-	-	
HCM Control Delay (s)	10.6	-	39.8	-	-	
HCM Lane LOS	B	-	E	-	-	
HCM 95th %tile Q(veh)	0.8	-	6	-	-	

Intersection





Int Delay, s/veh 4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	216	310	941	656	5
Future Vol, veh/h	5	216	310	941	656	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	235	337	1023	713	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	2413	716	718
Stage 1	716	-	-
Stage 2	1697	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	36	430	883
Stage 1	484	-	-
Stage 2	163	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	22	430	883
Mov Cap-2 Maneuver	105	-	-
Stage 1	299	-	-
Stage 2	163	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.4	2.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	883	-	402	-	-
HCM Lane V/C Ratio	0.382	-	0.598	-	-
HCM Control Delay (s)	11.6	-	26.4	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	1.8	-	3.8	-	-





Intersection						
Int Delay, s/veh	7.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	249	149	451	766	5
Future Vol, veh/h	5	249	149	451	766	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	271	162	490	833	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1650	836	838	0	-	0
Stage 1	836	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	109	367	796	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	87	367	796	-	-	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	338	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	40.7	2.7		0		
HCM LOS	E					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	796	-	362	-	-	
HCM Lane V/C Ratio	0.203	-	0.763	-	-	
HCM Control Delay (s)	10.7	-	40.7	-	-	
HCM Lane LOS	B	-	E	-	-	
HCM 95th %tile Q(veh)	0.8	-	6.1	-	-	

HCM 6th TWSC
6: Harback Rd (CR-31) & South Access

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Intersection

Int Delay, s/veh 4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	216	310	946	660	5
Future Vol, veh/h	5	216	310	946	660	5
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	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	235	337	1028	717	5

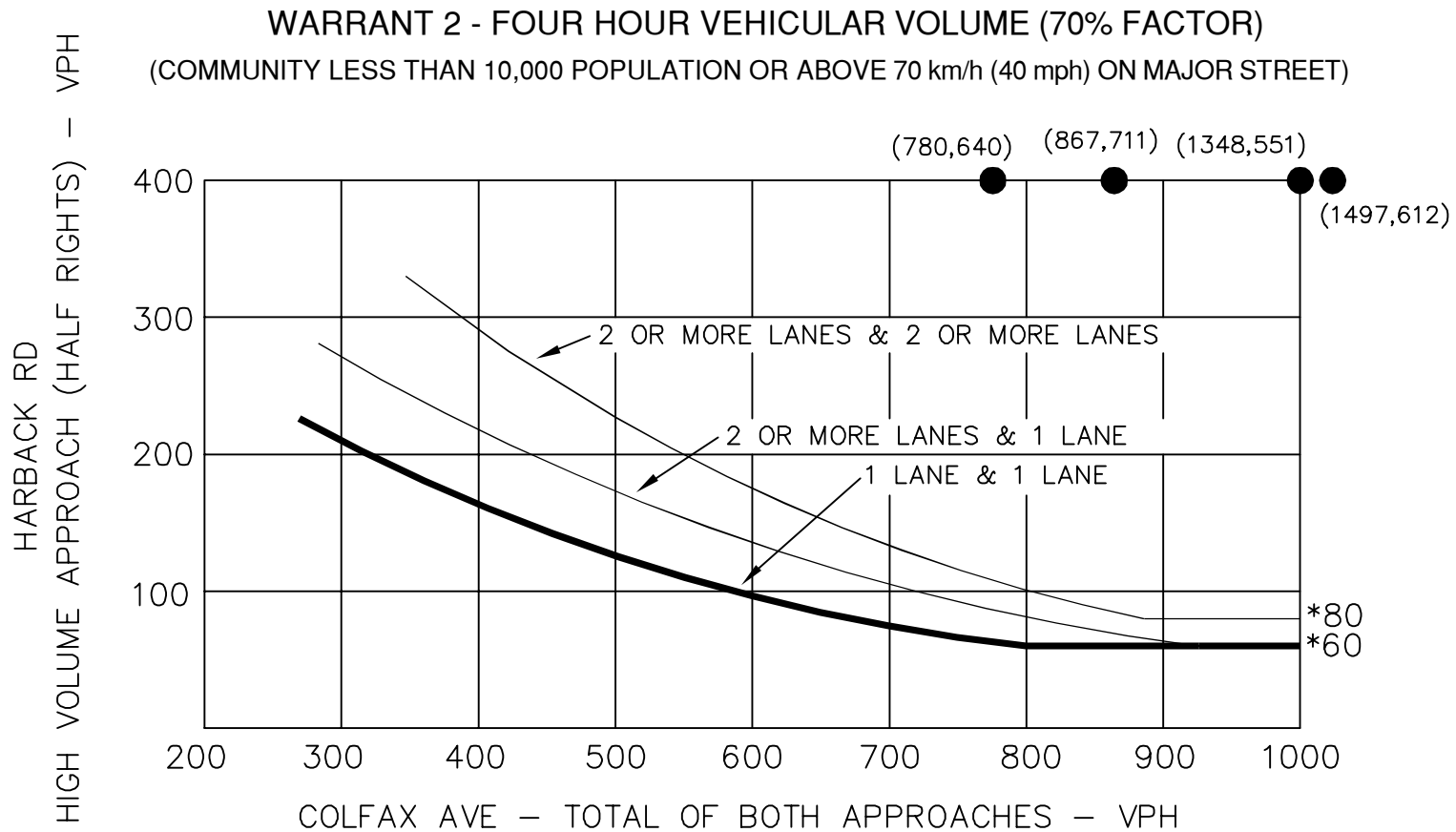
Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	2422	720	722
Stage 1	720	-	-
Stage 2	1702	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	36	428	880
Stage 1	482	-	-
Stage 2	162	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	22	428	880
Mov Cap-2 Maneuver	105	-	-
Stage 1	297	-	-
Stage 2	162	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.6	2.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	880	-	400	-	-
HCM Lane V/C Ratio	0.383	-	0.601	-	-
HCM Control Delay (s)	11.6	-	26.6	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	1.8	-	3.8	-	-

APPENDIX E

Signal Warrant Analysis



COLFAX AVE & HARBACK RD
SIGNAL WARRANT ANALYSIS
FOUR HOUR VOLUME WARRANT

* NOTE: 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 60 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

● 2025 TOTAL TRAFFIC DATA POINT

Source: Manual of Uniform Traffic Control Devices 2009

APPENDIX F

Queues Analysis Worksheets

Queues

2025 Total AM - Improved.syn

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

06/03/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	484	100	3	165	326	8	545	1	819
v/c Ratio	0.73	0.10	0.01	0.35	0.51	0.01	1.00	0.00	0.52
Control Delay	26.3	14.8	38.5	41.5	7.5	0.0	72.4	23.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	14.8	38.5	41.5	7.5	0.0	72.4	23.0	1.2
Queue Length 50th (ft)	238	37	2	106	0	0	369	1	0
Queue Length 95th (ft)	253	54	9	148	23	0	#396	3	0
Internal Link Dist (ft)		948		522		1056		741	
Turn Bay Length (ft)	150		150		150		150		150
Base Capacity (vph)	716	968	323	468	641	788	547	721	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.10	0.01	0.35	0.51	0.01	1.00	0.00	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

2025 Total PM - Improved.syn

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

06/03/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	861	194	3	84	578	10	402	2	598
v/c Ratio	0.93	0.17	0.01	0.19	0.76	0.04	1.11	0.00	0.38
Control Delay	35.2	9.6	36.0	38.6	13.8	25.1	120.7	31.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	9.6	36.0	38.6	13.8	25.1	120.7	31.5	0.7
Queue Length 50th (ft)	449	58	2	53	45	1	~331	1	0
Queue Length 95th (ft)	#668	88	10	95	162	17	#526	7	0
Internal Link Dist (ft)		948		522		1056		741	
Turn Bay Length (ft)	150		150		150		150		150
Base Capacity (vph)	928	1172	281	442	761	229	361	520	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.17	0.01	0.19	0.76	0.04	1.11	0.00	0.38

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

2045 Total AM.syn

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

06/03/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	484	135	4	222	327	12	547	1	823
v/c Ratio	0.82	0.15	0.01	0.56	0.55	0.02	0.93	0.00	0.52
Control Delay	33.7	17.0	41.7	50.0	8.6	0.0	54.4	21.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	17.0	41.7	50.0	8.6	0.0	54.4	21.0	1.2
Queue Length 50th (ft)	252	55	2	156	0	0	355	0	0
Queue Length 95th (ft)	267	75	11	200	24	0	368	3	0
Internal Link Dist (ft)		948		522		1056		741	
Turn Bay Length (ft)	150		150		150		150		150
Base Capacity (vph)	642	922	268	399	596	722	591	768	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.15	0.01	0.56	0.55	0.02	0.93	0.00	0.52
Intersection Summary									

Queues

2045 Total PM.syn

2: Harback Rd (CR-31) & Colfax Ave (SH-36)

06/03/2022



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	864	261	5	114	582	14	405	3	599
v/c Ratio	0.96	0.23	0.02	0.29	0.80	0.05	1.11	0.01	0.38
Control Delay	39.8	10.6	38.8	42.8	17.0	21.2	117.9	30.7	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	10.6	38.8	42.8	17.0	21.2	117.9	30.7	0.7
Queue Length 50th (ft)	464	83	3	76	54	1	~329	2	0
Queue Length 95th (ft)	#641	120	14	126	180	19	#526	9	0
Internal Link Dist (ft)		948		522		1056		741	
Turn Bay Length (ft)	150		150		150		150		150
Base Capacity (vph)	907	1156	233	390	726	271	366	535	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.23	0.02	0.29	0.80	0.05	1.11	0.01	0.38

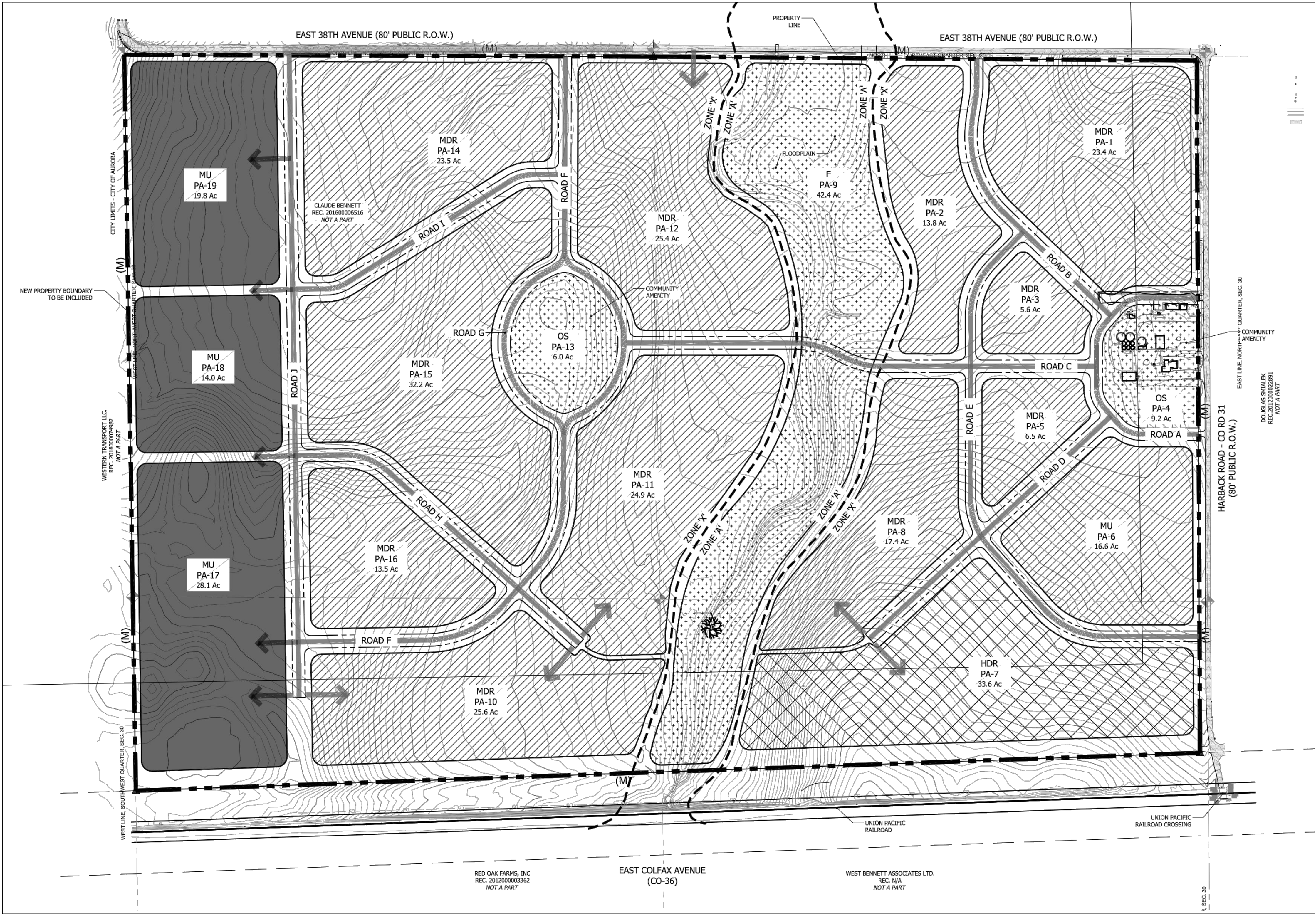
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX G

Conceptual Site Plan

BENNETT FARMS
OUTLINE DEVELOPMENT PLAN
PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO
SHEET 2 OF 7



BENNETT FARMS							
PD - ZONING SUMMARY TABLE							
	PLANNING AREA	AREA (ACRES)	COMMERCIAL (SQ.FT.)	ZONING	ZONING DESCRIPTION	% OF TOTAL	MAX. RESIDENTIAL DENSITY (DU/AC)
	PA-1	23.4		MDR	Medium Density Residential District	5.8%	7
	PA-2	13.8		MDR	Medium Density Residential District	3.4%	5
	PA-3	5.6		MDR	Medium Density Residential District	1.4%	7
	PA-4	9.2		OS	Open Space	2.3%	0
	PA-5	6.5		MDR	Medium Density Residential District	1.6%	7
	PA-6	16.6	216,929	MU	Mixed Use District	4.1%	20
	PA-7	33.6		HDR	High Density Residential District	8.3%	20
	PA-8	17.4		MDR	Medium Density Residential District	4.3%	7
	PA-9	42.4		F	Floodplain	10.5%	0
	PA-10	25.6		MDR	Medium Density Residential District	6.3%	5
	PA-11	24.9		MDR	Medium Density Residential District	6.1%	7
	PA-12	25.4		MDR	Medium Density Residential District	6.3%	7
	PA-13	6		OS	Open Space	1.5%	0
	PA-14	23.5		MDR	Medium Density Residential District	5.8%	5
	PA-15	32.2		MDR	Medium Density Residential District	7.9%	5
	PA-16	13.5		MDR	Medium Density Residential District	3.3%	7
	PA-17	28.2	368,500	MU	Mixed Use District	7.0%	20
	PA-18	14	182,900	MU	Mixed Use District	3.5%	20
	PA-19	19.9	260,000	MU	Mixed Use District	4.9%	20
	Total Planning Area	381.7					
	OPEN SPACE						
	FLOODPLAIN	42.4		F	Floodplain	10.5%	
	COMMUNITY AMENITY	15.2		OS	Open Space	3.7%	
	Public ROW	24				5.9%	
	TOTAL PD AREA	405.7	0			100.0%	3538

- ROAD CIRCULATION
- FLOODPLAIN
- PROPERTY LINE

ZONE DISTRICT PLAN

Scale: N/A
Date: MARCH 01, 2022
Revision Date: JUNE 01, 2022

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 1 OF 7

Update title on each sheet to reflect the property is in the Town of Bennett

Section 30?

It appears there are two different property ownership entities. Please provide signature lines and information for both.

Type out the owner's name and title, if officer of the ownership entity.

LEGAL DESCRIPTION:

A PARCEL OF LAND BEING A PORTION OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 30, THENCE S 00°53'47" E, ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SEC. 30 A DISTANCE OF 40.01 FEET TO A POINT BEING 40.00 FEET SOUTH OF THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30, ALSO BEING A POINT ON THE SOUTH LINE OF THE EAST 38TH AVENUE RIGHT-OF-WAY AND THE POINT OF BEGINNING;
THENCE S 89°53'20" E, ALONG SAID SOUTH RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET SOUTH OF AND PARALLEL TO THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30, A DISTANCE OF 2544.41 FEET TO A POINT ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30;
THENCE S 89°35'43" E, CONTINUING ALONG THE SOUTH LINE OF THE EAST 38TH AVENUE RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET SOUTH OF AND PARALLEL TO THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 2614.49 FEET TO A POINT BEING 40.00 FEET WEST OF THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, AND A POINT ON THE WEST LINE OF THE HARBACK ROAD RIGHT-OF-WAY;
THENCE S 00°15'07" E, ALONG SAID WEST RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET WEST OF AND PARALLEL TO THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 2603.40 FEET TO A POINT ON THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 30;
THENCE S 00°20'22" E, ALONG SAID WEST RIGHT-OF-WAY AND ALONG A LINE THAT IS 40.00 FEET WEST OF AND PARALLEL TO THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 728.33 FEET TO A POINT ON THE NORTH LINE OF THE UNION PACIFIC RAILROAD RIGHT-OF-WAY;
THENCE S 87°57'46" W, ALONG THE NORTH LINE OF SAID RIGHT-OF-WAY, A DISTANCE OF 5122.46 FEET TO A POINT ON THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 30;
THENCE N 00°53'56" W, ALONG THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 30, A DISTANCE OF 932.54 FEET TO THE WEST QUARTER CORNER OF SAID SECTION 30;
THENCE N 00°53'47" W, ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 30, A DISTANCE OF 2605.07 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,668,182 SQUARE FEET OR 405.606 ACRES, MORE OR LESS.

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH P.M., BEING ASSUMED TO BEAR S 89°35'20" E, FROM THE NORTHWEST CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP, STAMPED "PLS 27269", TO THE NORTH QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 3-1/4 INCH ALUMINUM CAP STAMPED "PLS 23519", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.



VICINITY MAP

SCALE:NTS

SHEET INDEX

SHEET 1 OF 7:
COVER SHEET

SHEET 2 OF 7:
ZONE DISTRICT PLAN

SHEET 3 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
INTRODUCTION

SHEET 4 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
HIGH DENSITY RESIDENTIAL (HDR), PA-7
MEDIUM DENSITY RESIDENTIAL (MDR), PA-1, PA-2, PA-3, PA-5,
PA-6, PA-8, PA-10, PA-11, PA-12, PA-14, PA-15, and PA-16

SHEET 5 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
MEDIUM DENSITY RESIDENTIAL (MDR), PA-1, PA-2, PA-3, PA-5,
PA-6, PA-8, PA-10, PA-11, PA-12, PA-14, PA-15, and PA-16
MIXED-USE DISTRICT (MU), PA-17, PA-18 AND PA-19
OPEN SPACE AND TRAILS (OS), PA-4, PA-9 AND PA-13

SHEET 6 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
OPEN SPACE AND TRAILS (OS), PA-4, PA-9 AND PA-13

SHEET 7 OF 7:
DEVELOPMENT STANDARDS AND GUIDELINES:
LAND USE MATRIX TABLE

OWNER ACKNOWLEDGEMENT

BY SIGNING THIS ODP, THE OWNER ACKNOWLEDGES AND ACCEPTS ALL OF THE REQUIREMENTS AND INTENT SET FORTH HEREIN.

OWNER

Need a notary signature block here.

TOWN OF BOARD TRUSTEES APPROVAL

APPROVED BY THE TOWN BOARD OF TRUSTEES OF THE TOWN OF BENNETT, COLORADO THIS _____ DAY OF _____, 20____ BY ORDINANCE NO. _____.

MAYOR

ATTEST: TOWN CLERK

COUNTY CLERK AND RECORDER CERTIFICATE:

THIS PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF ADAMS COUNTY,

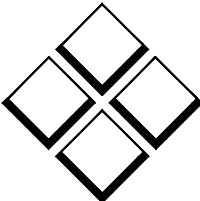
COLORADO, AT _____ O'CLOCK, _____ M, THIS _____ DAY OF _____, 20____.

RECEPTION NUMBER _____ IN FILE _____ AT MAP NUMBER _____.

ADAMS COUNTY CLERK AND RECORDER

DEPUTY

Delete File and Map Number, no longer required.



VOGEL & ASSOCIATES
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

PLANNER:

VOGEL & ASSOCIATES
Contact: Jeff Vogel
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

ENGINEER:

CORE CONSULTANTS INC.
Contact: Thomas M. Girard
3473 South Broadway
Englewood, Colorado 80113
303-703-4444

SURVEYOR:

CORE CONSULTANTS INC.
Contact: Jeff Anton
3473 South Broadway
Englewood, Colorado 80113
303-703-4444

OWNER:

KIOWA CREEK PRESERVE, LLC
HERDSMAN CAPITAL, LLC
PO Box 543
Bennett, CO 80102

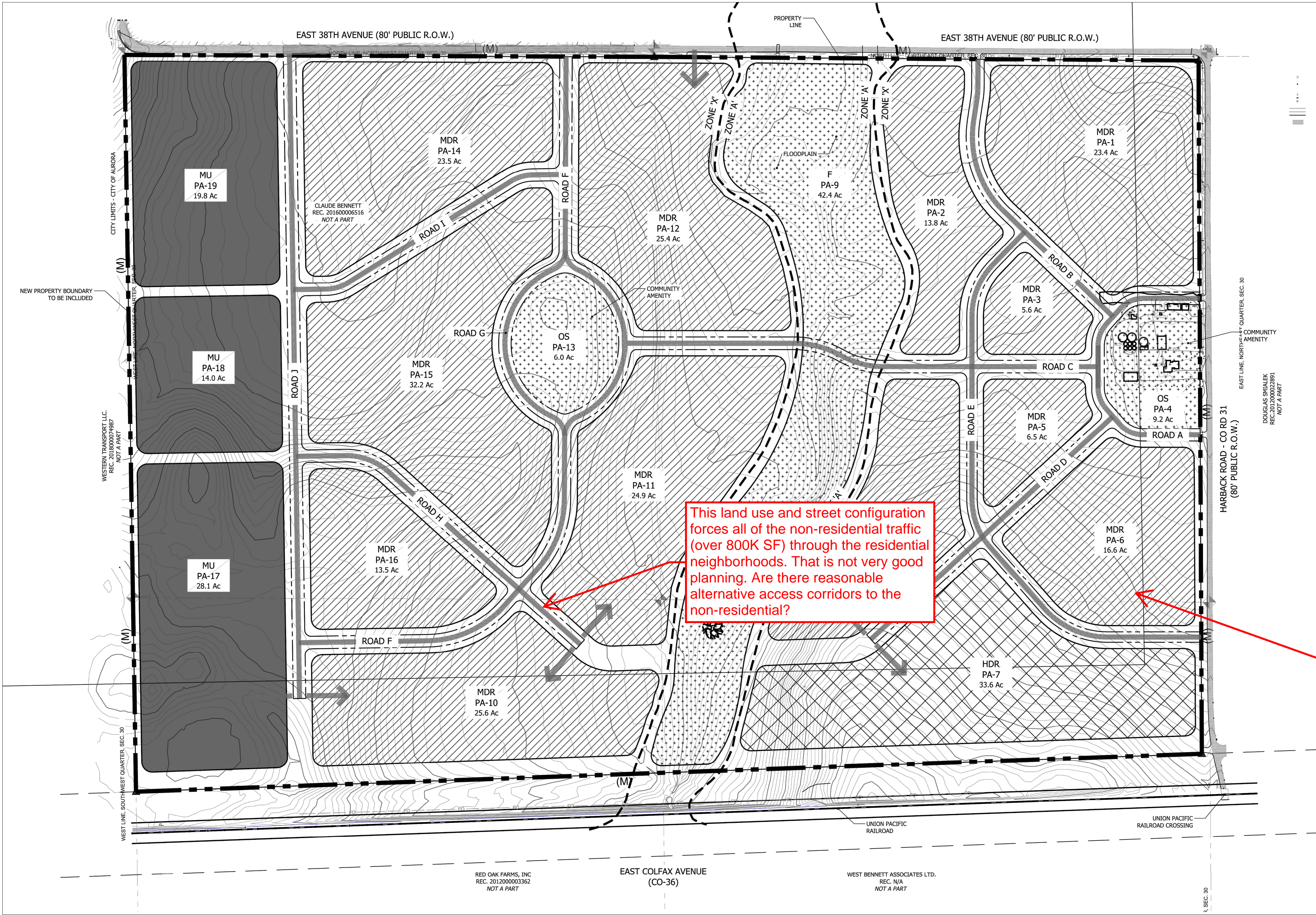
BENNETT FARMS (ODP) - COVER SHEET

Scale: N/A

Date: MARCH 1, 2022

Revision Date:

BENNETT FARMS
OUTLINE DEVELOPMENT PLAN
PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO
SHEET 2 OF 7



BENNETT FARMS							
PD - ZONING SUMMARY TABLE							
	PLANNING AREA	AREA (ACRES)	COMMERCIAL (SQ.FT.)	ZONING	ZONING DESCRIPTION	% OF TOTAL	MAX. RESIDENTIAL DENSITY (DU/AC)
	PA-1	23.4		MDR	Medium Density Residential District	5.8%	7
	PA-2	13.8		MDR	Medium Density Residential District	3.4%	5
	PA-3	5.6		MDR	Medium Density Residential District	1.4%	7
	PA-4	9.2		OS	Open Space	2.3%	0
	PA-5	6.5		MDR	Medium Density Residential District	1.6%	7
	PA-6	16.6		MDR	Medium Density Residential District	4.1%	7
	PA-7	33.6		HDR	High Density Residential District	8.3%	20
	PA-8	17.4		MDR	Medium Density Residential District	4.3%	7
	PA-9	42.4		F	Floodplain	10.5%	0
	PA-10	25.6		MDR	Medium Density Residential District	6.3%	5
	PA-11	24.9		MDR	Medium Density Residential District	6.1%	7
	PA-12	25.4		MDR	Medium Density Residential District	6.3%	7
	PA-13	6		OS	Open Space	1.5%	0
	PA-14	23.5		MDR	Medium Density Residential District	5.8%	5
	PA-15	32.2		MDR	Medium Density Residential District	7.9%	5
	PA-16	13.5		MDR	Medium Density Residential District	3.3%	7
	PA-17	28.2	368,500	MU	Mixed Use District	7.0%	20
	PA-18	14	182,900	MU	Mixed Use District	3.5%	20
	PA-19	19.9	260,000	MU	Mixed Use District	4.9%	20
	Total Planning Area	381.7					
	OPEN SPACE						
	FLOODPLAIN	42.4		F	Floodplain	10.5%	
	COMMUNITY AMENITY	15.2		OS	Open Space	3.7%	
	Public ROW	24				5.9%	
	TOTAL PD AREA	405.7	0			100.0%	3323

- ROAD CIRCULATION
- FLOODPLAIN
- PROPERTY LINE

Neighborhood scale shopping and service opportunities for over 3,300 units and a project population of over 9,000 are pushed to the western edge. Consider putting some of the retail and service uses along Harback.

Staff is considering a provision that will limit the number of residential units until some certain amount of community retail/services uses are developed. Otherwise the residents have no convenient access to that type of shopping and the town gets no retail sales tax revenue. Let's discuss. Why would we approve a plan that could eventually result in a food desert for these residents?

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 3 OF 7

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

INTRODUCTION:

OVERVIEW

BENNETT FARMS IS APPROXIMATELY 405.7 ACRES, LOCATED IN THE TOWN OF BENNETT AT THE NORTHWEST INTERSECTION OF HARBACK ROAD AND COLFAX AVENUE. THE PROPERTY IS LOCATED IN ADAMS COUNTY AND HAS HISTORICALLY BEEN UTILIZED FOR AGRICULTURE. A NATURAL DRAINAGE AND DESIGNATED FLOODPLAIN BISECTS THE PROPERTY.

THE PROJECT IS ENVISIONED TO BE A COHESIVE MIXED-USE COMMUNITY CONSISTING OF COMMERCIAL, LIGHT INDUSTRIAL, RESIDENTIAL AND OPEN SPACE USES. RESIDENTIAL PLANNING AREAS ARE STRAGICALLY CONFIGURED AROUND A CENTRAL OPEN SPACE AND PARK SYSTEM. THIS OPEN SPACE SYSTEM INCLUDES THE PRESERVATION OF THE NATURAL DRAINAGE CORRIDOR THAT DESCENDS NORTH TO SOUTH THROUGH THE PROPERTY. MIXED USE AREAS ARE LOCATED WITHIN THE WESTERN QUADRANT OF THE PROPERTY AND ADJACENT TO THE SPACE PORT PROJECT.

THE BENNETT FARMS OUTLINE DEVELOPMENT PLAN (ODP) IS BASED ON A SET OF INTEGRATED PLANNING PRINCIPLES THAT REINFORCE THE VISION OF CREATING A BALANCED AND COHESIVE COMMUNITY. OUTLINED BELOW ARE THE PRINCIPLES THAT HAVE BEEN INCORPORATED INTO THE ODP.

PRINCIPLE ONE: PROTECT ENVIRONMENTAL SYSTEMS:

THE BENNETT FARMS ODP INCORPORATES AND PRESERVES EXISTING NATURAL SYSTEMS INCLUDING INTEGRATING WITH THE NATURAL TOPOGRAPHY AND DRAINAGE PATTERNS. THE NATURAL DRAINAGE WILL PROVIDE OPEN SPACE AND SERVE AS A WILDLIFE CORRIDOR.

PRINCIPLE TWO: IDENTIFY AND SUSTAIN GREEN INFRASTRUCTURE:

IT IS THE INTENT TO UTILIZE AND MAINTAIN THE EXISTING GREEN INFRASTRUCTURE AND SPECIFICALLY THE NATURAL DRAINAGE CORRIDOR THAT IS LOCATED WITHIN THE CENTRAL QUADRANT OF THE PROPERTY. UTILIZING EXISTING GREEN ENVIRONMENTAL SYSTEMS AND NATURAL DRAINAGE PATTERNS WILL REQUIRE LESS IMPERVIOUS AND ENGINEERED INFRASTRUCTURE.

DESIGNING AROUND THE NATURAL DRAINAGE PROVIDES A LARGE AREA TO BE PRESERVED AS OPEN SPACE THAT CAN BE UTILIZED FOR PASSIVE AND ACTIVE RECREATIONAL PARKS.

PRINCIPLE THREE: COMMUNITY CONNECTIVITY:

BENNETT FARMS IS A COMMUNITY THAT INCLUDES A HIERARCHY OF CONNECTED STREETS WITH ATTACHED PEDESTRIAN FRIENDLY WALKS. THE USE OF A MODIFIED GRID REINFORCES CONNECTIVITY AND WALKABILITY. THE INTENT IS TO CREATE A FLUID SYSTEM OF PEDESTRIAN AND RECREATIONAL TRAILS THAT CONNECT USERS TO NEIGHBORHOODS, MIXED USE, RECREATION AND COMMUNITY GATHERING AREAS.

PRINCIPLE FOUR: ESTABLISH A DIVERSITY OF HOUSING TYPES:

BENNETT FARMS IS PLANNED TO INCLUDE A DIVERSITY OF HOUSING TYPES TO ACCOMMODATE A MULTI-GENERATIONAL AND DIVERSE INCOME POPULATION. MIXED USE, HIGH DENSITY RESIDENTIAL AND MEDIUM DENSITY RESIDENTIAL LAND USES ARE INCLUDED TO ACCOMMODATE A VARIETY OF SINGLE FAMILY ATTACHED, SINGLE FAMILY DETACHED AND MULTIFAMILY HOUSING TYPES.

PRINCIPLE FIVE: MIXED USE CENTERS AND NEIGHBORHOOD FOCAL POINTS:

BENNETT FARMS UTILIZES A MODIFIED GRID THAT IS CONFIGURED AROUND A CENTRAL OPEN SPACE AND PARK SYSTEM. THIS SYSTEM INCLUDES COMMUNITY AMENITIES, NEIGHBORHOOD AND POCKETS PARKS. MIXED USE CENTER AND AMENITIES ARE INCORPORATED TO SERVICE AS COMMUNITY FOCAL POINTS AND GATHERING AREAS. THIS INCLUDES TRANSFORMING THE EXISTING FARM HEADQUARTERS INTO A CENTRAL COMMUNITY AMENITY. THESE COMPONENTS WILL BE ACCESSIBLE THROUGH AN INTER-CONNECTED TRAIL SYSTEM.

INTENT

UTILIZING THE EXISTING PHYSICAL CHARACTERISTICS AND INTEGRATED PLANNING PRINCIPLES, THE INTENT IS TO CREATE A MIXED-USE COMMUNITY THAT WILL HAVE ENDURING VALUE TO THE TOWN OF BENNETT AND REGION. THIS COMMUNITY WILL BE COMPRISED OF INTERCONNECTED NEIGHBORHOODS, MIXED USE CENTERS AND AMENITIES.

THE EXISTING FARM HEADQUARTERS, MIXED USE CENTERS AND A HIERARCHY OF PROPOSED PARKS WILL SERVE AS COMMUNITY GATHERING AREAS. MIXED USE AREAS ARE INTEGRATED TO PROVIDE A VARIETY OF USES AND TO SERVE AS A LAND USE TRANSITION FROM THE FUTURE TRANSPORT PROJECT. RESIDENTIAL USED ARE LOCATED AND CONFIGURED TO ACCOMMODATE A DIVERSITY OF HOUSING TYPES. THIS MIXED-USE COMMUNITY WILL PROVIDE SERVICES AND HOUSING ALTERNATIVES FOR A MULTI-GENERATIONAL POPULATION.

PLANNED DEVELOPMENT ZONING

THE BENNETT FARMS ODP INCLUDES A MIX OF RESIDENTIAL, MIXED-USE, AND OPEN SPACE LAND USE DISTRICTS. THESE MIXED-USE DISTRICTS WILL ACCOMMODATE A WIDE RANGES OF USERS, SERVICES AND HOUSING OPPORTUNITIES. DEVELOPMENT STANDARDS ARE PREPARED FOR EACH LAND USE DISTRICT TO ENSURE THE FIVE PLANNING PRINCIPLES ARE IMPLEMENTED WITH EACH PHASE OF THE PROJECT.

DENSITY TRANSFER

DENSITY MAY BE TRANSFERRED TO A PLANNING AREA UP TO 30% OF THE DENSITY OF THE RECEIVING PLANNING AREA IF SUFFICIENT ROADWAY, WATER AND SEWER CAPACITY ARE AVAILABLE. TRANSFERS EXCEEDING 30% WILL REQUIRE A MAJOR AMENDMENT TO THE OUTLINE DEVELOPMENT PLAN.

LAND USE PLANNING OVERVIEW:

OVERALL DEVELOPMENT PROGRAM

BENNETT FARMS IS PLANNED AS A VIBRANT AND BALANCED MIXED-USE COMMUNITY THAT IS BASED ON INTEGRATED PLANNING AND DESIGN PRINCIPLES. THIS ODP IS INCORPORATES THE PRINCIPLES OUTLINED ABOVE WHILE PROVIDING FLEXIBILITY TO ACHIEVE PROJECT OBJECTIVES OVERTIME. THIS OUTLINE DEVELOPMENT PLAN INCLUDES PERMITTED USES AND DEVELOPMENT STANDARDS FOR EACH DISTRICT. THE DESIGN STANDARDS OF OBJECTIVES ASSOCIATED WITH EACH DISTRICT ARE AS FOLLOWS:

RESIDENTIAL DEVELOPMENT

PLANNING AREAS 1, 2, 3, 5, 6, 8, 10, 11, 12, 14,15 AND 16 DENSITY RESIDENTIAL (MDR). LOCATED WITHIN SOUTH PROPERTY IS PLANNING AREA 7 THAT WILL INCLUDE H USES. THE PURPOSE OF ESTABLISHING A VARIETY OF IS TO ACCOMMODATE DIVERSE HOUSING TYPES THAT GENERATIONAL AND DIMENSIONAL POPULATION. BENNETT FARM'S RESIDENTIAL NEIGHBORHOOD ARE CONFIGURED WITHIN A FRAMEWORK PLAN THAT REFLECTS A MODIFIED GRID. THIS MODIFIED GRID WILL BE COMPRISED OF INTERCONNECTED PEDESTRIAN-ORIENTED STREETS THAT WILL DEFINE WALKABLE BLOCKS.

THE STREET CONFIGURATION IS PLANNED TO ALLOW FOR A MODAL TRANSPORTATION PROGRAM INCLUDING BICYCLE, PEDESTRIAN, CAR AND TRANSIT ALTERNATIVES. THE COMMUNITY INCLUDES A HIERARCHY OF CONNECTED STREETS THAT DISPERSE TRAFFIC BY PROVIDING DRIVERS, CYCLIST AND PEDESTRIANS WITH A NUMBER OF ALTERNATIVES TO ACCESS AND NAVIGATE THROUGHOUT THE COMMUNITY. THE STREET CONFIGURATION INCLUDES MULTIPLE PROPOSED FULL MOVEMENT INGRESS/EGRESS ACCESS POINTS THAT CONNECT NORTH TO EAST 38TH AVENUE AND EAST TO HARBACK ROAD. THE ROAD SYSTEM IS PROPOSED TO CROSS THE FLOODPLAIN ZONE, CREATING AN EAST/WEST CONNECTION. THIS CROSSING WILL NATURALLY AND PHYSICALLY BRING A SENSE OF AWARENESS TO THE LARGE OPEN SPACE WITHIN THE PRESERVED DRAINAGE CORRIDOR. THESE LAND USES ARE OUTLINED IN THE LAND USE MATRIX (PAGE 6 OF 6) WITHIN THE PERMITTED USES OF THE FLOODPLAIN ZONE DISTRICT.

The mixed use centers are not interconnected, but rather disconnected form the remainder of the community.

MIXED USE

PLANNING AREAS 17, 18 AND 19 ARE INTENDED TO BE CONFIGURED TO ACCOMMODATE A MIX OF USES, INCLUDING A TOTAL OF 811,400 SQUARE FEET OF PROPOSED COMMERCIAL SPACE.THE PROPOSED MIXED-USE (MU) DISTRICT TO ACCOMMODATE A VARIETY OF NON-RESIDENTIAL USES. THESE USES MAY INCLUDE RESEARCH AND DEVELOPMENT, DISTRIBUTION AND OTHER RELATED LIGHT INDUSTRIAL EMPLOYMENT CENTERS.

THESE PLANNING AREAS ARE LOCATED ALONG THE WESTERN BORDER OF THE PROPERTY. THESE DISTRICTS ARE DESIGNED TO COMPLEMENT THE TRANSPORT/PORT COLORADO PROJECT LOCATED WEST OF THE PROPERTY AND TO ALSO SERVE AS A TRANSITION TO THE RESIDENTIAL AREAS LOCATED TO THE EAST. THE MASTER PLANNED INDUSTRIAL AND COMMERCIAL PARK. SUB-AREA 6 - INDUSTRIAL PARK, WHICH IS 1,089 ACRES IS PROPOSED ON THE PARCEL DIRECTLY TO THE WEST OF BENNETT FARMS. PROXIMITY AND VISIBILITY TO THE FUTURE USES OF TRANSPORT COLORADO WILL HELP BRING DEVELOPMENT AND OVERALL SUCCESS TO THE MIXED-USE AREAS WITHIN BENNETT FARMS.

SITE ANALYSIS:

EXISTING CONDITIONS AND ENVIRONMENTALLY SIGNIFICANT AREAS

THE BENNETT FARMS ODP INCLUDES APPROXIMATELY 405.7 ACRES. EAST 38TH AVENUE BORDERS THE PARCEL TO THE NORTH, HARBACK ROAD TO THE EAST AND EAST COLFAX TO THE SOUTH. THE PROPERTY HAS PRIMARILY BEEN UTILIZED FOR AGRICULTURAL USES. AN EXISTING ENTRANCE INTO THE PROPERTY IS LOCATED ALONG NORTH HARBACK ROAD THAT PROVIDES ACCES TO THE EXISTING FARM HEADQUARTERS. THIS HEADQUARTERS INCLUDES A SINGLE-FAMILY HOME, SILOS, A BARN AND OTHER ACCESSORY USES. THE NATURAL ROLLING TOPOGRAPHY OF THE LAND GENERALLY DESCENDS TO THE NATURAL DRAINAGE CORRIDOR THAT IS LOCATED IN THE CENTER OF THE PROPERTY. VEGETATION CONSISTS OF CROPS AND NATIVE GRASSES. THE DELINEATED FLOODPLAIN ZONE IS APPROXIMATELY 42 ACRES AND BISECTS THE PARCEL NORTH/ SOUTH.

GENERAL SITE CONDITIONS:

PLANNING AREA BOUNDARIES

THE NINETEEN PLANNING AREAS LOCATED WITHIN THE BENNETT FARMS ODP ARE ILLUSTRATED ON THE ZONE DISTRICT PLAN ON SHEET 2 OF 6. THIS PLAN ILLUSTRATES THE FOLLOWING FOUR ZONE DISTRICTS: HIGH DENSITY RESIDENTIAL (HDR), MEDIUM DENSITY RESIDENTIAL (MDR), MIXED-USE (MU), AND OPEN SPACE (OS). FINAL PLANNING AREA BOUNDARIES, ROAD ALIGNMENTS, INGRESS/EGRESS POINTS AND OPEN SPACE CALCULATIONS WILL BE ESTABLISHED WITH THE FINAL PLAT.

PLANNING AREA ACREAGES AND BOUNDARIES AS SHOWN ON THE ZONE DISTRICT PLAN ARE PRELIMINARY AND SUBJECT TO CHANGE WITH DETAILED PLANNING. INDIVIDUAL PLANNING AREA ACREAGES CAN CHANGE UP TO 20%.

SCHEDULE OF DEVELOPMENT, PROPOSED PHASING AND VESTING

THE PROJECT WILL BE DEVELOPED IN PHASES BASED ON LOGICAL GROWTH, INFRASTRUCTURE EXTENSION AND AVAILABILITY OF UTILITY SERVICE OF THE PROJECT. ILLUSTRATED ON THE ZONE DISTRICT PLAN, SHEET 2 OF 6, THE SITE WILL HAVE MULTIPLE POINTS OF ACCESS ALONG EAST 38TH AVENUE AND HARBACK ROAD. THIS WILL INFLUENCE THE PHASING PLAN.

SPECIAL FINANCIAL DISTRICTS

IT IS ANTICIPATED THAT THIS DEVELOPMENT WILL REQUIRE THE FORMATION OF COMMERCIAL, RESIDENTIAL AND RECREATIONAL METROPOLITAN DISTRICTS. THESE DISTRICTS WILL BE UTILIZED TO DESIGN, FINANCE AND IMPLEMENT INFRASTRUCTURE IMPROVEMENTS REQUIRED. THIS WILL INCLUDE WATER, SEWER, UTILITIES AND OTHER PUBLIC IMPROVEMENTS TO THE SITE.

END OF SECTION

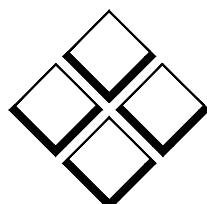
COMPLEMENT?

If this is true, the ODP should probably accommodate better access to the properties to the west.

OR PLATS

This language needs to be consistent with the annexation agreement. Need to clarify that changes to the boundary areas still require an administrative amendment to the ODP and may require additional review and analysis by the town engineer, town traffic engineer, Bennett-Watkins Fire and other agencies.

Are there three different kinds of metro districts? Aren't they more generic and can include all of those land uses?



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The mixed use centers are not likely to be community focal points given those uses are all pushed up against the western edge of the community. Seems like a lost opportunity here.

DEVELOPMENT STANDARDS AND GUIDELINES

Introduction

Scale: N/A

Date: MARCH 1, 2022

Revision Date:

Page 564

It may be in here, if not, should have a general reference to the sign regulations in the Bennett Municipal Code.

DEVELOPMENT STANDARDS AND GUIDELINES

INTRODUCTION

FOLLOWING ARE DESCRIPTIONS OF THE PLANNING AREAS INCLUDING: AN INTENT STATEMENT, DEVELOPMENT PROGRAM, LAND USES, STANDARDS & SETBACKS AND GUIDELINES.

HIGH DENSITY RESIDENTIAL DISTRICT (HDR)
PLANNING AREA 7

INTENT

LOCATED WITHIN THE SOUTHEAST QUADRANT OF THE PROPERTY AND AT THE CORNER OF EAST COLFAX AVENUE AND HARBACK ROAD, PLANNING AREA 7 IS INTENDED TO BE DEVELOPED INTO A HIGH-DENSITY RESIDENTIAL NEIGHBORHOOD. THE HIGH-DENSITY RESIDENTIAL DISTRICT IS PERMITTED SINGLE-FAMILY ATTACHED AND MULTI-FAMILY HOUSING TYPES INCLUDING TOWNHOMES, CLUSTER DEVELOPMENT AND PATIO HOMES.

DEVELOPMENT PROGRAM

THE PROPOSED 33.6 ACRES IN INTENDED TO INCORPORATE A RESIDENTIAL PROGRAM THAT CONSISTS OF A VARIETY OF SINGLE FAMILY ATTACHED AND MULTI-FAMILY HOUSING TYPES. PLANNING AREA 7 WILL OFFER A VARIETY OF ARCHITECTURAL STYLES/MODELS THAT WILL ACCOMMODATE DIVERSE RESIDENTS/USERS. THIS NEIGHBORHOOD WILL BE PLANNED TO REINFORCE CONNECTIVITY TO THE SURROUNDING MEDIUM DENSITY RESIDENTIAL PLANNING AREAS AND THE CENTRAL OPEN SPACE SYSTEM INCLUDING THE NATURAL DRAINAGE SYSTEM.

THIS PLANNING AREA WILL BE CONNECTED BY PEDESTRIAN-FRIENDLY VEHICULAR STREETS. THE MODIFIED STREET GRID PROVIDES FOR ALTERNATIVE ROUTES, DISPERSED TRAFFIC AND REINFORCED PEDESTRIAN ACTIVITY.

PERMITTED LAND USES - HDR DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 6 OF 6 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE HDR SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - HDR DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX		
HIGH DENSITY RESIDENTIAL DISTRICT (HDR)		
STANDARDS		HDR
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	45 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		2,400 SF FOR SFD, N/A FOR OTHER MULTI-FAMILY RESIDENTIAL
MINIMUM LOT WIDTH		40 FT FOR SFD, NONE FOR OTHER MULTI-FAMILY RESIDENTIAL
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
MINIMUM UNOBSTRUCTED OPEN SPACE		20%
DENSITY - MAXIMUM		25 DU/AC
SETBACKS		
PARKING LOT SETBACKS		10 FT WITH LANDSCAPE BUFFER (1)
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
REAR SETBACK	(PRINCIPAL STRUCTURE)	15 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)

The table below refers to SFD. Please clarify.

Delete "IS"

Are you sure you want SFD in your HDR area? Not sure 2,400 SF lots will be acceptable.

MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	10 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	20 FT
	GARAGE SETBACK	N/A (2)
NOTES:		
(1) 0 FT SETBACK IF NO OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK BACK REQUIRED		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES
SITE PLANNING/ CONNECTIVITY:

- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREA 7 SHOULD PROVIDE SIDEWALKS ALONG ALL STREETS AND PRIVATE STREETS, PARKING LOTS ARE EXCLUDED.
- ACCESS SHALL BE PROVIDED AND MAINTAIN CONNECTED TO THE ADJACENT PROPOSED STREET SYSTEM AND TO HARBACK ROAD TO THE EAST.
- BENNETT FARMS IS PLANNED TO INCLUDE A SERIES OF INTEGRATED AND PEDESTRIAN-ORIENTED RESIDENTIAL PLANNING AREAS.
- ESTABLISH WALKABLE NEIGHBORHOODS WITH CONVENIENT ACCESS TO MIXED-USE CENTERS, EMPLOYMENT CENTERS, TRANSIT AND OPEN SPACE, INCLUDING THE COMMUNITY AMENITIES.
- ENCOURAGE A DIVERSITY OF HOUSING TYPES AND HUMAN-SCALE ARCHITECTURE THAT WILL ENHANCE SOCIAL INTERACTION AND PEDESTRIAN ACTIVITY.
- INTERCONNECTED STREETS AND TRAFFIC PATTERNS USING A MODIFIED GRID THAT ENCOURAGE CONNECTIVITY FOR VEHICLES AND PEDESTRIANS.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- A ZERO LOT LINE MAY BE UTILIZED WHEN A MAINTENANCE EASEMENT AND SIDE YARD EASEMENT ARE SUBJECT TO U.B.C. REQUIREMENTS
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS. SEE SEC. 16-2-610. -PARKING SPACE REQUIREMENTS FOR RESIDENTIAL DISTRICT REQUIREMENTS.

LANDSCAPE REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 7 - LANDSCAPE STANDARDS. FOLLOW TOWN CODE FOR ALL ITEMS IN SEC. 16-2-710.- SEC. 16-2-795 FOR MINIMUM DESIGN GUIDELINES REQUIRED.

LIGHTING REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 8 - LIGHTING STANDARDS. SEE SEC. 16-2-840 - DESIGN STANDARDS FOR LIGHTING REQUIREMENTS.

See CORE's comments re: setbacks in this table and all other tables given their requirement for front lot electric utility easements.

BENNETT FARMS
OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 4 OF 7

MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)

PLANNING AREAS 1, 2, 3, 5, 6, 8, 10, 11, 12, 14, 15 AND 16

INTENT

PLANNING AREAS 1, 2, 3, 5, 6, 8, 10, 11, 12, 14, 15 AND 16 ARE CENTRALLY LOCATED AND DISPERSED THROUGHOUT BENNETT FARMS. THE MEDIUM DENSITY RESIDENTIAL DISTRICT IS INTENDED TO BE COMPRISED OF SINGLE FAMILY ATTACHED HOMES AND SINGLE-FAMILY DETACHED HOMES. THE NEIGHBORHOOD WILL INCLUDE VEHICULAR AND PEDESTRIAN CONNECTIONS TO THE CENTRAL OPEN SPACE AND PARK SYSTEM. POCKET PARKS WILL BE INTEGRATED WITHIN NEIGHBORHOODS TO SERVE AS FOCAL POINTS AND GATHERING AREAS.

DEVELOPMENT PROGRAM

THE DESIGN INTENT IS TO CONFIGURE PLANNING AREAS UTILIZING MODIFIED GRID STREET SYSTEM. THE PROPOSED CONFIGURATION WILL BE INTERCONNECTED THROUGH PEDESTRIAN-FRIENDLY STREETS CREATING WALKABLE BLOCKS. CONNECTIVITY TO THE MIXED-USE CENTERS, ADJACENT NEIGHBORHOODS AND THE COMMUNITY OPEN SPACE SYSTEM WILL BE REINFORCED WITH EACH PLANNING AREA. THE MDR PLANNING AREAS WILL BE FOCUSED ON BUILDING COMMUNITY CHARACTER THROUGH THE USE OF WALKABLE STREETS, POCKET PARKS AND TRAIL SYSTEMS. HOMES ARE TO REFLECT ARCHITECTURE THAT REINFORCES THE PUBLIC REALM ASSOCIATED WITH PEDESTRIAN-ORIENTED STREETS AND OPEN SPACE.

PERMITTED LAND USES - MDR DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 6 OF 6 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MDR SPECIFIC USE TYPE.

LOT AND BUILDING STANDARDS - MDR DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

RESIDENTIAL LAND USE DEVELOPMENT STANDARDS MATRIX		
MEDIUM DENSITY RESIDENTIAL DISTRICT (MDR)		
STANDARDS		MDR
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	35 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		3,500 SF
MINIMUM LOT WIDTH		30 FT
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		70%
DENSITY - MAXIMUM		8 DU/AC
SETBACKS		
GARAGE SETBACKS (GARAGE DOOR TO SIDEWALK)		20 FT
(SIDE LOADED GARAGES)		10 FT
MINIMUM SETBACKS FROM INTERIOR LOT LINES AND LOCAL STREET ROW		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	10 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
REAR SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	0 FT/ 5 FT (1)
MINIMUM SETBACKS FROM RESIDENTIAL COLLECTORS		
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	20 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	5 FT
	(ACCESSORY STRUCTURE)	10 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	20 FT
	GARAGE SETBACK	N/A (2)

OPENINGS IN SIDE FACING ADJACENT LOT, OTHERWISE 5' SETBACK

TED ALONG RESIDENTIAL COLLECTORS

MDR CONT. ON SHEET 5 OF 6

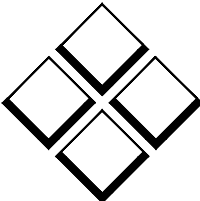
DEVELOPMENT STANDARDS AND GUIDELINES

High Density Residential (HDR)
Medium Density Residential (MDR)

Scale: N/A

Date: MARCH 1, 2022

Revision Date:



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Please delete reference to specific sections and just refer to PARKING, LANDSCAPE AND LIGHTING REQUIREMENT OF THE BENETT MUNICIPAL CODE AS MAY BE AMENDED FROM TIME TO TIME.

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 5 OF 7

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

- RESIDENTIAL NEIGHBORHOODS IN PLANNING AREAS 1, 2, 3 5, 6, 8, 10, 11, 12, 14, 15 AND 16 SHOULD PROVIDE SIDEWALKS THROUGHOUT THE NEIGHBORHOOD AND ON ALL STREETS AND PRIVATE STREETS.
- PEDESTRIAN ACCESS SHOULD CONNECT TO ADJACENT PLANNING AREA DISTRICTS INCLUDING MIXED-USE AREAS.
- BUILDING DESIGN AND ORIENTATION SHOULD BE PLANNED TO INTEGRATE WITH THE NATURAL SITE CHARACTERISTICS AND TO MAXIMIZE SOLAR EXPOSURE.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- A ZERO LOT LINE MAY BE UTILIZED WHEN A MAINTENANCE EASEMENT AND SIDE YARD EASEMENT ARE SUBJECT TO U.B.C. REQUIREMENTS
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- SINGLE FAMILY DETACHED (SFD) FRONT LOADED GARAGES REQUIRE A MINIMUM 18' DRIVEWAY FROM THE GARAGE FACE TO THE BACK OF WALK. SFD FRONT LOADED GARAGES WITH NO WALK REQUIRE A MINIMUM 20' DRIVEWAY FROM THE GARAGE FACE TO THE ASPHALT. SFD FRONT LOADED GARAGES LOCATED ON CORNER LOTS SHALL BE LOCATED 20' FROM POINT OF CURB RETURN
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:

REFER TO BENNETT, COLO. DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS. SEE SEC. 16-2-610. -PARKING SPACE REQUIREMENTS FOR RESIDENTIAL DISTRICT REQUIREMENTS.

LANDSCAPE REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 7 - LANDSCAPE STANDARDS. FOLLOW TOWN CODE FOR ALL ITEMS IN SEC. 16-2-710.- SEC. 16-2-795 FOR MINIMUM DESIGN GUIDELINES REQUIRED.

LIGHTING REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 8 - LIGHTING STANDARDS. SEE SEC. 16-2-840 - DESIGN STANDARDS FOR LIGHTING REQUIREMENTS.

MIXED USE DISTRICT (MU)

PLANNING AREAS 17, 18 AND 19

INTENT

THREE MIXED USE DISTRICT PLANNING AREAS ARE LOCATED ALONG THE WESTERN PERIMETER OF THE PROPERTY. ACCESS TO THESE PLANNING AREAS WILL BE PROVIDE VIA EAST 38TH AVENUE AND ROAD J. THE MIXED-USE AREAS ARE LOCATED ADJACENT TO THE FUTURE TRANSPORT PROJECT. THESE MIXED-USE AREAS ARE PROPOSED TO SERVE AS A EMPLOYMENT CENTERS THAT WILL ACCOMMODATE A VARIETY OF COMMERCIAL AND LIGHT INDUSTRIAL LAND USES. HIGH DENSITY RESIDENTIAL LAND USES ARE ALSO PERMITTED WITHIN THE MIXED-USE DISTRICT. A MINIMUM OF 50% OF THE DISTRICT SHALL CONTAIN NON-RESIDENTIAL LAND USES.

DEVELOPMENT PROGRAM

THE INTENT IS TO CREATE MIXED USE CENTERS THAT WILL PROVIDE EMPLOYMENT AND HIGH-DENSITY HOUSING OPPORTUNITIES. THIS DISTRICT WILL BE VISUALLY AND PHYSICALLY CONNECTED UTILIZING PEDESTRIAN FRIENDLY WALKS AND STREETS. SITE AND ARCHITECTURAL COMPONENTS SHOULD BE CONFIGURED TO REINFORCE THE PUBLIC REALM. BUILDINGS SHALL BE ORIENTED TO ENCOURAGE PEDESTRIAN ACTIVITY AND SCREEN SERVICES. PLAZAS AND POCKET PARKS SHOULD BE INCORPORATED TO SERVE AS GATHERING AREAS. ACCESS AND PARKING SHOULD BE CONFIGURED TO PROVIDE EFFICIENCY AND SAFETY FOR MOTORISTS AND PEDESTRIANS.

RESIDENTIAL AND COMMERCIAL MIXED-USE

IF RESIDENTIAL LAND USES ARE DEVELOPED IN THE MIXED-USE PLANNING AREA, RETAIL, COMMERCIAL AND SERVICES WILL BE LIMITED TO PRINCIPAL USES THAT ARE COMPATIBLE WITH THE RESIDENTIAL NEIGHBORHOOD. IF RESIDENTIAL USES ARE NOT DEVELOPED IN THE MIXED-USE PLANNING AREA, A LIST OF ADDITIONAL PERMITTED USES AND DESIGN STANDARDS FOR NON-RESIDENTIAL USES APPLY.

COMMERCIAL LAND USES IN SUPPORT OF RESIDENTIAL DEVELOPMENT

WHERE COMMERCIAL DEVELOPMENT AND RESIDENTIAL USES ARE COMBINED, THE COMMERCIAL AND RESIDENTIAL USES MAY BE LOCATED IN THE SAME BUILDING OR ON ADJACENT LOTS. HORIZONTAL AND VERTICAL MIXED-USE IS PERMITTED. THE INTENT FOR THIS MIXED-USE DISTRICT IS TO PROVIDE COMMERCIAL SERVICES AND EMPLOYMENT SERVICES TO SUPPORT THE RESIDENTIAL LOCATED WITHIN THE TOWN OF BENNETT AND REGION.

PERMITTED LAND USES - MU DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE MU SPECIFIC USE TYPE COLUMN.

LOT AND BUILDING STANDARDS - MU DISTRICT

THE LOT AND BUILDING REQUIREMENTS ARE LISTED IN THE FOLLOWING TABLE:

MIXED-USE DEVELOPMENT STANDARDS MATRIX		
MIXED-USE DISTRICT (MU)		
STANDARDS - COMMERCIAL & RETAIL USES		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	50 FT
	(ACCESSORY STRUCTURE)	30 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
MAXIMUM FLOOR AREA RATIO - COMMERICAL		.7:1
SETBACKS - COMMERICAL & RETAIL		
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	15 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	5 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	15 FT
	(ACCESSORY STRUCTURE)	5 FT
STANDARDS - RESIDENTIAL		MU
MAXIMUM HEIGHT	(PRINCIPAL STRUCTURE)	45 FT
	(ACCESSORY STRUCTURE)	18 FT
MINIMUM LOT AREA		N/A
MINIMUM LOT WIDTH		N/A
MAXIMUM LOT COVERAGE (BUILDING & PARKING)		75%
DENSITY - MAXIMUM		25 DU/ AC
SETBACKS - RESIDENTIAL		MU
PARKING- SUBJECT TO BUFFER AND SCREEN		6 FT (1)
GARAGE		N/A (2)
FRONT SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	10 FT
SIDE SETBACK	(PRINCIPAL STRUCTURE)	0 FT
	(ACCESSORY STRUCTURE)	5 FT
REAR SETBACK	(PRINCIPAL STRUCTURE)	10 FT
	(ACCESSORY STRUCTURE)	5 FT
NOTES:		
(1) REFER TO TOWN OF BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS, FOR REQUIREMENTS AND DESIGN STANDARDS.		
(2) NO GARGES PERMITTED ALONG RESIDENTIAL COLLECTORS		

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

SITE PLANNING/ CONNECTIVITY:

- RETAIL, COMMERCIAL AND RESIDENTIAL USES SHALL PROVIDE PEDESTRIAN CONNECTIONS TO ALLOW VISITORS AND USERS TO CIRCULATE BETWEEN THE VARIOUS CENTERS AND NEIGHBORHOODS.
- DEVELOP BUILDING SITE LANDSCAPING THAT REINFORCES CONNECTIONS TO BUILDING ENTRANCES, COMMUNITY AMENITIES AND OPEN SPACE AREAS.
- ALL BUILDINGS WILL BE ARTICULATED ON ALL FOUR SIDES WITH VARIATIONS IN MATERIALS, CREATIVE ENTRY TREATMENTS AND FACADE COMPONENTS THAT HELP ESTABLISH BUILDING SCALE AND VARYING COMPOSITION.
- SHARED PARKING IS ENCOURAGED TO MAXIMIZE DENSITY AND USERS - SEE PARKING REQUIREMENTS BELOW.
- ARCHITECTURAL ELEMENTS SUCH AS ROOF OVERHANGS, FIREPLACES, AND BAY BOX WINDOWS ARE PERMITTED A 24-INCH ENCROACHMENT INTO BUILDING SEPARATIONS. NO PORTION OF THE STRUCTURE ABOVE GROUND MAY ENCROACH INTO THE THREE-FOOT BUILDING TO PROPERTY LINE SETBACK WITHOUT MODIFICATION AND BUILDING DEPARTMENT REVIEW AND APPROVAL. OTHER SUBSURFACE ARCHITECTURAL ELEMENTS INCLUDING STRUCTURAL ELEMENTS OF THE BUILDING FOUNDATION SUCH AS COUNTERFEITS MAY ENCROACH INTO BUILDING SEPARATIONS OR SETBACKS PROVIDED THAT SUCH ELEMENTS REMAIN ENTIRELY WITHIN THE LOT UPON WHICH THEY ORIGINATED. FOUNDATION WALLS ARE NOT PERMITTED WITHIN ANY SETBACKS. UN-ENCLOSED DECKS MAY ENCROACH INTO REAR SETBACKS BUT SHALL BE LOCATED NO CLOSER THAN 10' (FEET) FROM THE REAR PROPERTY LINE BUT SHALL NOT ENCROACH INTO A UTILITY EASEMENT. DECKS SHALL NOT ENCROACH INTO SIDE SETBACK
- A ZERO LOT LINE MAY BE UTILIZED WHEN A MAINTENANCE EASEMENT AND SIDE YARD EASEMENT ARE SUBJECT TO U.B.C. REQUIREMENTS
- SETBACKS ARE MEASURED FROM THE R.O.W. UNLESS OTHERWISE SPECIFIED
- BUILDING HEIGHT IS MEASURED AS THE VERTICAL DISTANCE FROM THE AVERAGE FINISHED GRADE IMMEDIATELY ADJACENT TO THE STRUCTURE TO THE HIGHEST POINT OF THE STRUCTURE, INCLUDING ROOFTOP APPURTENANCES

PARKING REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 6 - PARKING STANDARDS. SEE SEC. 16-2-610. -PARKING SPACE REQUIREMENTS FOR RESIDENTIAL DISTRICT REQUIREMENTS.

LANDSCAPE REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 7 - LANDSCAPE STANDARDS. FOLLOW TOWN CODE FOR ALL ITEMS IN SEC. 16-2-710.- SEC. 16-2-795 FOR MINIMUM DESIGN GUIDELINES REQUIRED.

LIGHTING REQUIREMENTS:

REFER TO BENNETT, COLORADO - MUNICIPAL CODE, CHAPTER 16 - LAND USE DEVELOPMENT; ARTICLE II - ZONING, DIVISION 8 - LIGHTING STANDARDS. SEE SEC. 16-2-840 - DESIGN STANDARDS FOR LIGHTING REQUIREMENTS.

OPEN SPACE AND TRAILS (OS)

PLANNING AREAS 4, 9 AND 13

INTENT

PLANNING AREAS 4, 9 AND 13 ARE INDENTED TO PROVIDE OPEN SPACE AREAS THAT WILL SERVE AS A COMMUNITY AMENITY. PLANNING AREA 4 IS LOCATED ON THE EASTERN HALF OF BENNETT FARMS SURROUNDING THE EXISTING FARMSTEAD. THIS PROPOSED AREA IS TO BE A FOCAL POINT WITHIN BENNETT FARMS AND IS TO BE TRANSFORMED INTO A COMMUNITY AMENITY. PLANNING AREA 13 IS LOCATED WITHIN THE WESTERN QUADRANT OF BENNETT FARMS AND CENTRALLY LOCATED WITH CONVENIENT ACCESS FROM ADJACENT RESIDENTIAL NEIGHBORHOODS. THIS PARK WILL SERVE AS A SECOND COMMUNITY AMENITY AND GATHERING SPACE. PLANNING AREA 4 IS WITHIN THE NATURAL DRAINAGE CORRIDOR THAT IS LOCATED WITHIN CENTER OF THE COMMUNITY. THIS LARGE CONTIGUOUS OPEN SPACE AREA AND WILL BE PRESERVED AND UTILIZED FOR PASSIVE AND ACTIVE RECREATION. PEDESTRIAN TRAIL CONNECTIONS, VISUAL AMENITIES THAT BENEFIT THE COMMUNITY WILL BE INCORPORATED IN THIS DISTRICT.

OS CONT. ON SHEET 6 OF 7

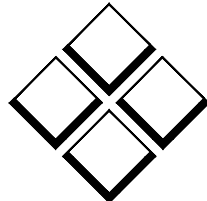
DEVELOPMENT STANDARDS AND GUIDELINES

Medium Density Residential (MDR),
Mixed Use District (MU)
Open Space and Trails (OS)

Scale: N/A

Date: MARCH 1, 2022

Revision Date:



VOGEL & ASSOCIATES

475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288

BENNETT FARMS

OUTLINE DEVELOPMENT PLAN

PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO

SHEET 6 OF 7

DEVELOPMENT PROGRAM

BENNETT FARMS INCORPORATES A PLANNING APPROACH THAT INTEGRATES WITH THE NATURAL TOPOGRAPHY AND DRAINAGE PATTERNS.

PARKS, OPEN SPACE AND TRAILS ARE INCORPORATED TO ENHANCE COMMUNITY CONNECTIVITY WITH RESIDENTIAL AND MIXED-USE DISTRICTS. ESTABLISHING A COHESIVE COMMUNITY SHALL BE REINFORCED THROUGH A HIERARCHY OF WALKABLE TRAIL CONNECTIONS TO ALL PLANNING AREAS.

PERMITTED LAND USES - OS DISTRICT

THE PERMITTED LAND USES ARE LISTED ON SHEET 7 OF 7 IN THE LAND USE MATRIX TABLE AND ARE REPRESENTED WITH AN "X" UNDER THE OS SPECIFIC USE TYPE COLUMN.

TRAIL CONNECTIONS

ALONG WITH THE OPEN SPACE PLANNING AREAS BENNETT FARMS WILL INCLUDE A HIERARCHY OF TRAILS. COMMUNITY CONNECTIVITY WITHIN BENNETT FARMS WILL INCLUDE CREATING A WELL-CONNECTED SYSTEM OF PEDESTRIAN-FRIENDLY TRAILS THAT WILL ACCOMMODATE A VARIETY OF RECREATIONAL USER GROUPS INCLUDING HIKING AND BIKING. THIS SYSTEM WILL INCLUDE COMMUNITY AND NEIGHBORHOOD TRAILS.

DEVELOPMENT STANDARDS/ DESIGN GUIDELINES

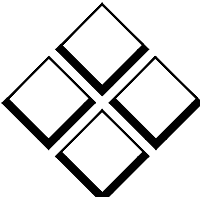
SITE PLANNING/ CONNECTIVITY:

SETBACKS AND DEVELOPMENT CRITERIA WILL BE FURTHER DEFINED AND DETERMINED AT THE TIME OF FINAL PLAT.

- NO FENCING OR PERMANENT STRUCTURES SHALL BE PERMITTED WITHIN THE 100 YEAR FLOODPLAIN ZONE.
- AGRICULTURAL BUILDINGS SHALL HAVE THE FOLLOWING MAXIMUM HEIGHTS:
 - BARNs 50 FEET
 - SILOS 75 FEET

"SHALL?" Please have
someone conduct a technical
writing edit of this document.

END OF SECTION



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DEVELOPMENT STANDARDS AND GUIDELINES

Open Space and Trails (OS)

Scale: N/A	
Date: MARCH 1, 2022	
Revision Date:	Page 567

BENNETT FARMS
OUTLINE DEVELOPMENT PLAN
PART OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO
SHEET 7 OF 7

LAND USE CLASSIFICATION	SPECIFIC USE TYPE					
AGRICULTURAL USES		MU	MDR	HDR	F	OS
Agriculture or Ranch Use	Agriculture / Crop Cultivation	-	-	-	X	X
	Ranching (By Special Review)	-	-	-	-	X
	Agriculture as an Interim Use	X	X	X	X	X
	Community Gardens	X	X	X	X	X
Accessory Structures	Accessory Structures for Agriculture/ Ranching Operations	X	X	-	-	X
Animals / Livestock	Farm or Ranch Animal Center	-	-	-	-	X
	Rodeos	-	-	-	-	X
	Commercial Stables / Private Stables - Less than 30,000 Sq Ft	X	-	-	-	X
	Livestock Feed Lots	-	-	-	-	-
Horticulture and Nurseries	Greenhouse/nursery/tree production (w ith no outdoor storage)	X	-	-	-	X
	Outdoor Nursery / Tree Production	X	-	-	X	X
	Greenhouse/nursery/tree production (w ith outdoor storage)	X	-	-	-	-
Markets	Farmers Markets / Seasonal Farmers Markets	X	-	-	-	X
Museums	Farming / Ranching Museums	X	-	-	-	X

GENERAL LAND USE GUIDELINES NOTES:

1. NO STRUCTURES OR FENCES SHALL BE CONSTRUCTED WITHIN THE 100 YEAR FLOODPLAIN. USES WITHIN THE F-ZONE MUST BE EVALUATED BY THE TOWN ADMINISTRATOR FOR FINAL DETERMINATION ON WHETHER THE USE IS ALLOWABLE.
2. PRIVATE STABLE MAY BE PERMITTED ON MEDIUM DENSITY RESIDENTIAL LOTS THAT ARE A MINIMUM OF 2.5 ACRES.
3. OUTDOOR SKATEBOARD PARKS CAN BE CONSTRUCTED IN CONJUNCTION WITH PUBLIC PARKS.
4. ONLY PUBLIC FACILITIES SHALL BE CONSTRUCTED ON DEDICATED PUBLIC OPEN SPACE.
5. AGRICULTURE USES SHALL BE PERMITTED AS AN INTERIM USE FOR ALL PLANNING AREAS UNTIL THE TIME OF FINAL PLAT.

LEGEND

- X PRINCIPAL PERMITTED USE
- A ACCESSORY USE
- EXCLUDED USE

LAND USE

- MU - MIXED USE
- MDR- MEDIUM DENSITY RESIDENTIAL
- HDR - HIGH DENSITY RESIDENTIAL
- F - FLOOD PLAIN
- OS - OPEN SPACE

MIXED USE (MU): PREDOMINANTLY A COMMERCIAL FOCUS. THIS DISTRICT REQUIRES AT LEAST 50% OF ITS AREA TO BE USED FOR RETAIL, CIVIC, OFFICE OR OTHER NON-RESIDENTIAL USES. THE REMAINDER OF THE AREA MAY BE USED FOR RESIDENTIAL, OPEN SPACE PLAZAS, COURTYARDS AND OTHER PEDESTRIAN ENHANCING ELEMENTS SHALL BE ENCOURAGED. MAXIMUM 0.7 FAR & MAXIMUM 164,000 SQ. FT. COMMERCIAL SPACE.

MEDIUM DENSITY RESIDENTIAL (MDR): THE INTENT IS TO ALLOW FOR SINGLE FAMILY DETACHED HOMES THAT CAN HAVE A MINIMUM LOT SIZE OF 3,500 SQ. FT.

HIGH DENSITY RESIDENTIAL (HDR): THE INTENT IS TO ALLOW FOR SINGLE FAMILY, SINGLE FAMILY ATTACHED HOMES AND MULTI-FAMILY UNITS.

FLOOD PLAIN (F): THE INTENT IS TO ACCOMMODATE AREAS FOR THE CONVEYANCE AND STORAGE OF STORMWATER. FLOOD PLAIN IS DEFINED AS THE FLOOD OF 100 YEAR FREQUENCY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

OPEN SPACE (OS): THE INTENT IS TO PROVIDE FOR PASSIVE AND ACTIVE RECREATION AND VISUAL AMENITIES FOR THE BENEFIT OF THE COMMUNITY.

COMMERCIAL USES		MU	MDR	HDR	F	OS
Animal Services	Doggie day care centers, animal boarding and training (indoor)	X	-	-	-	-
	Veterinary offices or clinics	X	-	-	-	-
Automobile Parking	Automobile parking lot	A	A	A	-	A
	Private park & ride lot, car pool lot or equivalent	X	-	-	-	X
Building Materials & Services (Retail)	All other similar uses (plumbing, electrical, lumber and building equipment-without outdoor storage)	X	-	-	-	-
	Landscape equipment, hardscape materials (without outdoor storage)	X	-	-	-	-
Eating and Drinking Establishments	Bar, tavern	X	-	-	-	-
	Catering services	X	-	-	-	-
	Restaurant with or without drive-thru / up	X	-	-	-	-
Office	Administrative and or Executive Offices	X	-	-	-	-
	Business or professional (including medical / dental office / clinics)	X	-	-	-	-
	Consulting Services Offices	X	-	-	-	-
	Courier services	X	-	-	-	-
	Corporate Headquarters / Offices	X	-	-	-	-
	Financial Institutions	X	-	-	-	-
	General Office / Temporary Offices	X	-	-	-	-
	Home Occupations	X	X	X	-	-
	Home / Land Sales Office	X	X	X	-	X
	Investment and Insurance Offices	X	-	-	-	-
	Massage therapy office / clinics	X	-	-	-	-
	Instructional services, studios	X	-	-	-	-
	Amusement Parks	-	-	-	-	-
	Small Theaters/ Performance centers (Outdoor Performances)	X	-	-	-	-
Recreation / Amusement Facilities	Bowling, Billiards, Movie theaters and Similar uses	X	-	-	-	-
	Health clubs	X	-	-	-	-
	Parks	X	X	X	X	X
	Public and Private Golf Courses and Related Facilities	X	-	-	-	X
	Outdoor recreation	X	X	X	X	X
	Outdoor Skateboard Parks	X	-	-	-	X
	Community / Neighborhood Recreation Center	X	X	X	-	X
Retail	Auto Sales and Repair	X	-	-	-	-
	Convenience store / grocery store (includig fuel sales)	X	-	-	-	-
	Department Store	X	-	-	-	-
	Furniture / Appliance Store	X	-	-	-	-
	Grocery store (greater than 5,000 sq. ft.)	X	-	-	-	-
	Ground floor retail with office or residential on upper levels	X	-	-	-	-
	Retail (less than 40,000 sq.ft.)	X	-	-	-	-
	Retail (greater than 40,000 sq.ft. but less than 80,000 sq.ft.)	X	-	-	-	-
	Retail (greater than 80,000 sq.ft.)	X	-	-	-	-
	Liquor Sales	X	-	-	-	-
Repair Services (Not Including Vehicles)	Neighborhood Retail (e.g., delicatessen, retail bakery, specialty food market, coffee shop)	X	-	-	-	A
	Furniture or major household appliance repair	-	-	-	-	-
Telecommunications Facilities, Antennas, and Cell Towers	Machinery sales, excluding truck trailers, heavy equipment, and farm machinery	X	-	-	-	-
	Antennas for commercial/industrial use accessory to principal use	A	-	-	-	A
Vehicle / Equipment Sales and Services	Commercial Antennas and Radio Towers (height and location to be reviewed and approved by county)	X	-	-	-	A
	Radio or television broadcasting facilities/offices	X	-	-	-	-
	Automobile, RV's, trailer and camper rentals	X	-	-	-	-
	Automobile washing facility	X	-	-	-	-
	Limited equipment rental (U-Haul type business)	X	-	-	-	-
	Major vehicle/equipment repair (includes auto body repair, paint shops, and incidental sales of parts)	-	-	-	-	-
	Motor vehicle dealer / sales, new and used RV's, trailers, and campers)	X	-	-	-	-
Visitor Accommodations	Automobile fuel service stations	X	-	-	-	-
	Hotel or motel lodging establishments	X	-	-	-	-
	Campground	X	-	-	X	X

INDUSTRIAL USES		MU	MDR	HDR	F	OS
Outdoor Storage	Outdoor parking and storage of vehicles	X	-	-	-	-
	Above ground oil and gas operations storage tanks	X	X	X	-	X
Oil and Gas	Oil and gas operations	X	X	X	X	X
PUBLIC, INSTITUTIONAL & CIVIC USES		MU	MDR	HDR	F	OS
Ambulance Service	Garage and office for ambulance service	X	X	X	-	-
Clubs and Lodges	Private lodge or club (excluding guns)	X	-	-	-	X
Community Services	Events center less than 15,000 sq. ft.	X	-	-	-	X
	Events center greater than 15,000 sq. ft.	-	-	-	-	X
Day Care Facilities, Adult or Child	Child care center	X	-	-	-	A
	Adult day care center	X	-	-	-	-
Fire	Fire Stations	X	X	X	-	-
Hospitals	Hospital	X	-	-	-	-
	Outpatient surgical centers	X	-	-	-	-
Office and Recreation	Public administrative office or service building	X	-	-	-	X
	Public park or recreational facilities	X	X	X	X	X
Religious Institutions	Church or religious institution	-	-	-	-	-
Educational Facilities	Public Schools	-	X	X	-	X
	Private business, trade, and vocation schools	-	-	-	-	A
Transportation Facilities	Public Transportation Terminals / Parking	X	-	-	-	-
	Private automobile parking lots or parking garages as a principal use	X	-	-	-	-
Utilities	Reservoirs or Aquifers recharge areas	X	X	X	X	X
	Electrical Substations	X	X	X	X	X
	Public Utility Office	X	-	-	-	-
	Solar Fields	X	X	X	-	X
	Wastewater Treatment Plants	X	X	X	-	X
	Water Treatment / Storage	X	X	X	X	X
	Water Storage (Reservoirs)	X	X	X	X	X
	Water Wells	X	X	X	X	X
RESIDENTIAL USES	Wind Energy Conversion Systems (Windmills)	X	X	X	-	X
RESIDENTIAL USES		MU	MDR	HDR	F	OS
Single Family Attached	Single Family Attached including townhomes and duplexes	X	-	X	-	-
Single Family Detached	Single Family Detached Duplexes	X	X	X	-	-
	Single Family Detached lots less than 0.5 acres	-	X	X	-	-
	Single Family Detached lots greater than 0.5 acres	-	X	-	-	-
Multi - Family	Multi-family including rental and for sale units	X	-	X	-	-
	Live / Work Units	X	-	X	-	-
Senior Housing	Primary residence for persons 55 years of age or older	X	-	X	-	-
	Recreation, medical, religious, laundry and / or caretaker facilities, and other building(s) and use(s) customarily appurtenant to the permitted use	X	-	X	-	-
Mobile Home	Mobile Home for Residential Purposes	-	-	-	-	-
	Supervisory, management and / or other facilities for the operation and/or maintenance of the manufactured home/mobile home park.	-	-	-	-	-

Because of FCC and state legislation, this entire section should reference the Bennett Municipal Code.

Should add a reference to group homes, consistent with the Bennett Municipal Code and the CRS.

Eliminate "church", religious institutions and facilities will suffice.

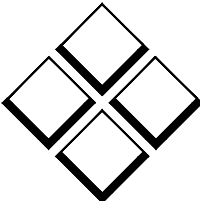
Duplexes are attached, not detached.

DEVELOPMENT STANDARDS AND GUIDELINES
Land Use Matrix Tables

Scale: N/A

Date: MARCH 1, 2022

Revision Date:



VOGEL & ASSOCIATES
475 W. 12th Avenue - Suite E
Denver, Colorado 80204-3688
(303) 893-4288



Engineering Review Memo

To: Stephen Hebert, AICP, Bennett Planning & Economic Development Manager
From: Dan Giroux, PE, Engineering Consultant to the Town
Date: Wednesday, May 18, 2022
Case: Bennett Farms Annexation and Zoning / Cases 22.17 and 22.18
Subject: Engineering Review

Per the request of the Town of Bennett, Terramax, Inc. has reviewed the application materials for the proposed Bennett Farms Annexation and Zoning. This review does not relieve the applicant from meeting the Town's requirement that the development comply with all Town Codes and Standards.

I have the following comments to offer on the application materials:

Water Supply

- The property and potential development on the property would be subject to the Town of Bennett's raw water supply guidelines and requirements, including governing development impact fees, and groundwater rights credits or reimbursement policies.
- The property development will require the support of additional groundwater well and water tank storage development, through a Town water campus site.
 - Current Town water campus area sizing requirements are four (4) acres in size, and as close to square as feasible.
- More information would be developed as the property makes its way through next steps of technical analysis and detail, should the Town view the Annexation & Zoning application favorably.

Water Distribution System

- The property is proximate to multiple potential future Town water distribution system connection points to the immediate east, along East 38th Avenue, and south, via Harback Road or other UPRR and Colfax Avenue crossings.
- Connections to multiple Town water distribution system points is desired for greatest independent redundancy of Town water delivery to proposed development on the property, as well as for other Town development and service areas.

Sanitary Sewer System / Wastewater Treatment

- The property is proximate to pending Town sanitary sewer collection system connection points to the east, along East 38th Avenue, and specifically known under the working name "Western Bypass", currently underway with preliminary design activities that the Town is managing and participating in.
- The Western Bypass is being evaluated for capacity requirements to accommodate development at Bennett Farms, along with other western Bennett potential development areas.
- For Bennett Farms, the Western Bypass would be accessed via a regional "Lost Creek Lift Station" and transmission force main east along East 38th Avenue, to gravity outfall near or east of the Penrith Road future alignment.

- The Lost Creek Lift Station would need to be sited on the Bennett Farms property, and somewhat adjacent to the Lost Creek main channel and low point for maximum efficiency and service area.
- The Town should consider participating in phased upsizing design of the potential Lost Creek Lift Station and East 38th Avenue force main, as well as related (non-phased) upsizing of the proposed Lost Creek service area primary sanitary sewer interceptors, in order to potentially serve other future development within the Lost Creek basin.
- Development of the Bennett Farms property with the proposed Zoning will require expansion of the Town's Water Reclamation Facility at East 38th Avenue.
 - The Town is currently conducting detailed pre-design technical studies for expansion of the existing WRF to support additional development, while also addressing improved effluent water quality, and especially treatment to quality levels supporting highly flexible and robust reuse water programs.
- The Bennett Farms development would support the WRF expansion via Wastewater Development Impact Fees.
 - These Fees are evaluated regularly by Town Staff, and reviewed with the Town Board of Trustees, to ensure the Town is collecting appropriate development fees to support required WRF expansion and upgrades.

Access

- The property is immediately adjacent to Harback Road and East 38th Avenue within Adams County, which would be subject to maintenance as governed by an Intergovernmental Agreement (IGA) with the County.
- The Town should consider and evaluate the prior success and benefit of split-jurisdiction rights-of-way annexations within Adams County, and whether annexation of the full rights-of-way for adjacent roads is more desirable and practical.
- Town ownership, with operation and maintenance obligations and costs, along East 38th Avenue may require evaluation, and additional cost assessment to Bennett Farms and other significant west Bennett users of the road.
- Potential and viable westerly and southerly access to and from the property will require significant consideration and evaluation, particularly in terms of reviewing UPRR crossing(s).
- Road system access, improvements, connections and traffic impact management will be the subject of significant detailed technical analysis, proposals and design as the property goes through ensuing entitlement review, including Sketch Plan and Subdivision, should the Town view the Annexation & Zoning application favorably.

Stormwater Management

- The property features significant regulatory Lost Creek floodplain areas, as the applicant has identified and recognized.
- The Town has adopted National Flood Insurance Program (NFIP) floodplain administration ordinances, which would govern proposed floodplain activities and all proposed development.
- The Town would work with the developer on any proposed floodplain amendments, modifications, and development, including for public improvement facilities, as might be indicated, and especially including roadway crossings with bridge or box culvert treatments.
- It is anticipated that stormwater and floodplain management challenges can be successfully addressed for potential development on the property.

Steve, this concludes my engineering review of the application materials for the proposed Bennett Farms Annexation and Zoning by the applicant. Please let me know if you have any questions, or require additional information pertaining to the submitted information, or my review.

6312 S. Fiddlers Green Circle
Suite 300N
Greenwood Village, CO 80111
T +1.303.771.0900

www.jacobs.com

Subject Bennett Farms Annexation and Zoning Referral Package

Attention Steve Hebert, AICP, Bennett Planning & Economic Development Manager
Sara Aragon, Community Development Manager

From Mike Heugh, PE
Town Traffic Engineer

Date May 12, 2022

Copies to Dan Giroux, PE, Town Engineer

Bennett Farms Traffic Impact Statement (Oct 2021) – Town Traffic Comments

1. Section 3.2, please add a discussion about UPRR crossing north of US-36 on Harback Rd.
2. Figures 8 & 9, please provide estimated ADT for Harback Rd and 38th Ave adjacent to the development. Recommendations of roadway type (per town standards) should be made for these adjacent roadways. Analysis should match recommended roadway section.
3. Section 5.2, I don't believe the town is amenable to a roundabout at 38th & Harback. Please provide other traffic control options and analysis.
4. Section 5.2, is the proposed 38th & Harback roundabout design and construction the responsibility of the developer?
5. Section 5.2, is the proposed Colfax & Harback signal design and construction the responsibility of the developer? What about railroad crossing upgrades due to signalization?
6. Table 4, 2025/2045 Background Plus Project ## is showing overall LOS at the intersection? Does this equate that all critical movements operated LOS D or better?
7. Table 5, Harback Rd Middle Access (#5) EB approach shows 2045 PM LOS E while South Access shows LOS C where there are higher volumes. Synchro output matches the table, but this seems counter intuitive. Any thoughts on how this is correct?
8. Table 6, Colfax & Harback 2045 shows blue text indicating this is a recommendation. Please verify if this is correct and if the recommendation is 2025 information or 2045.
9. Report recommends 2-lanes for access roads at an arterial (assuming Harback is such). However, the final typical section of the access road will need to meet Town standards. Please revise text to include.



Steve Hebert <shebert@bennett.co.us>

RE: Bennett Farms Annexation and Zoning Referral

1 message

Brooks Kaufman <BKaufman@core.coop>
To: Steve Hebert <shebert@bennett.co.us>

Wed, May 11, 2022 at 2:49 PM

Steve

CORE Electric approves the annexation but does not approve the zoning referral. Effective July 1, 2022; CORE Electric Cooperative will require a 15-foot utility easement along all roadways, front lot and side lots adjacent to roadways. CORE Electric Cooperative will no longer install electric facilities within rear lot utility easements. The proposed setbacks do not meet CORE Electric 15-foot utility easement requirements.

Respectfully

Brooks Kaufman

Lands and Rights of Way Manager

800.332.9540 MAIN

720.733.5493 DIRECT

303.912.0765 MOBILE

www.core.coop.

Page 572

From: Town of Bennett Planning <planning@bennett.co.us>**Sent:** Thursday, April 21, 2022 2:20 PM**To:** LBajelan@adcogov.org; Karl Smalley <ksmalley@adcogov.org>; United States Postal Service

<sarah.e.zawatzki@usps.gov>; Bennett School District 29J ATTN: Robin Purdy <robinp@bsd29j.com>; Bennett School District 29J: ATTN: Jennifer West <jenniferw@bsd29j.com>; Bennett School District 29J: ATTN: Keith Yaich <keithy@bsd29j.com>; Robin Price <rprice@bennett.co.us>; Daymon Johnson <djohnson@bennett.co.us>; Bennett Rec District <director@bennettrec.org>; Victoria Flamini <VictoriaFlamini@bennettfireescue.org>; Bennett Watkins Fire Rescue <calebconnor@bennettfireescue.org>; Marilyn Cross - CDOT <Marilyn.Cross@state.co.us>; Colorado Department of Transportation (CDOT) Assistant Access Manager <david.dixon@state.co.us>; JGutierrez@summitutilitiesinc.com; GVanderstraten@summitutilitiesinc.com; Eastern Slope Rural Telephone <patw@esrta.com>; I-70 Regional Economic Advancement Partnership <lxc.strategies@gmail.com>; Brooks Kaufman <BKaufman@core.coop>; Jehn Water Consultants Inc <gburke@jehnwater.com>; Melinda Culley <melinda@kellypc.com>; Daniel Giroux <dangiroux@terramax.us>; Union Pacific Railroad <aldancer@up.com>; Heugh, Michael <Michael.Heugh@jacobs.com>; Steve Hebert <shebert@bennett.co.us>

Subject: Bennett Farms Annexation and Zoning Referral

CAUTION:

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello All,

Below is a Dropbox link for the Bennett Farms Annexation and Zoning application documents. We appreciate your review and comments. Please send your comments back via this email address or by mail to Town Hall by May 12, 2022. You will note some documents, e.g. the Impact Report, also refer to the Kiowa Creek annexation and zoning applications. They are two separate applications but are being processed by the same applicant at the same time.

<https://www.dropbox.com/scl/fo/w4x6mkckv472dku0o6z xu/h?dl=0&rlkey=5qhuete5tlxg6faf9a44uwptg>

If you have any questions, please email or call Steve Hebert at shebert@bennett.co.us or the phone number below.



Planning Department
207 Muegge Way | Bennett CO, 80102
(303)644-3249 | planning@bennett.co.us
townofbennett.colorado.gov



CORE MARKUP COMMENTS BENNETT FARMS BF-ODP5-11-22.pdf
10980K

STATE OF COLORADO

Traffic & Safety

Region 1

2829 W. Howard Place

Denver, Colorado 80204



COLORADO
Department of Transportation

Project Name: **Bennett Farms**

Print Date: 5/12/2022

Highway:

036

Mile Marker:

86.706

Drainage Comments:

SBL - 5/4/2022

I have reviewed the Bennett Farms Preliminary Drainage Report and have no comments at this time. Both historic and proposed drainage is north and away from US 36 (Colfax).

Environmental Comments:

Planning: No concerns

Paleo: Depending on depth of excavation there should be no concerns. A paleo file search is required.

Arch: Per the records of the Colorado Office of Archaeology and Historic Preservation (OAHP), the subject parcel has not been previously inventoried for cultural resources. A 19th century era wagon road, which was a branch of the Fort Morgan Cutoff and served as a shortcut between the Living Springs Stage Station and Box Elder Stage Station for early settlers and homesteaders, purportedly passed through this general vicinity northeast of Bennett but the exact location is unknown. As such, it is possible that artifacts and/or features associated with the wagon road may be present within the subject parcel. In addition, artifacts and/or cultural features associated with prior prehistoric use of the area may be present within the subject parcel.

If archeological resources are uncovered during the project construction all work shall be stopped and the following shall be notified immediately for further direction and/or for a site visit.

Contact - Greg Wolff 303-757-9158 greg.wolff@state.co.us *due to covid and CDOT staff working remotely please contact Greg by both phone AND email.

Bio: Lost Creek may be a jurisdictional water of the U.S. (including any adjacent wetlands) and would require a Section 404 permit for impacts - unless an approved jurisdictional determination by the Army Corps indicates otherwise. We are not aware of prairie dogs in the area, but if there are- then there may be Burrowing Owls, a Colorado threatened species.

Air/Noise:

The proposed development would place medium and high density residential housing near the southern boundary of the property. These first row noise receptors would be exposed to traffic and railroad noise from Colfax Ave/SH-36 and the UPRR. However, the residential development proposed for this area appears to be approximately 400 ft from the nearest SH-36 travel lanes, and given the relatively low 2025 estimated daily traffic volumes presented in the traffic analysis report, my concern related to potential noise impacts from SH-36 traffic to residential receptors in this area is minimal. Train traffic on the UPRR may be the dominant sound source at times, especially if the horn is being used. If development in this general area continues at the current pace, it's possible that traffic volumes on SH-36 could increase significantly in the future. If SH-36 were widened and improved, speed/volume and associated traffic noise could also increase. Given the flat terrain and direct line of sight between these properties and the SH-36 travel lanes, the developer should consider construction of a barrier along the southern boundary of the development that would break the line-of-sight between the first row residences and SH-36 traffic and the UPRR, or consider placing the less noise sensitive mixed use portion of the development in this area.

LOS at associated intersections are A/B under current and future conditions, with the exception of the northbound approach under 2025 conditions during the PM peak (LOS F). A roundabout is being proposed for this location, and given the relatively low traffic volumes at this intersection, we have no air quality concerns.

WQ: Recommends to not treat CDOT ROW in their WQ Ponds. In addition, we will want to see BMPs for any proposed construction on CDOT ROW.

The Permittee shall complete a stormwater management plan (SWMP) which must be prepared with good engineering, hydrologic, and pollution control practices and include at a minimum the following components: qualified stormwater manager; spill prevention and response plan; materials handling; potential sources of pollution; implementation of control measures; site description; and site map.

In addition, the Permittee shall comply with all local/state/federal regulations and obtain all necessary permits. Permittee shall comply with CDOT's MS4 Permit. When working within a local MS4 jurisdictional boundary, the permittee shall obtain concurrence from the local MS4 that the local MS4 will provide construction stormwater oversight. The local MS4 concurrence documentation shall be retained with the SWMP.

Clear Zone: It is the responsibility of the engineer/architect who stamps the plans to ensure that: any new landscaping/trees are outside of the clear zones for any State Highway/CDOT ROW and that the new landscaping/trees do not interfere with site lines from any State Highway/CDOT ROW.

Landscape: Any new or changes to existing landscaping within CDOT ROW must be reviewed and approved by CDOT. Landscaping plans should be submitted and should include details of all proposed plant species and seed mixes/ratios.

For ANY ground disturbance/work within CDOT ROW---

Required:

Arch/History/Paleo:

Since this is a permit, a file search for Arch and History is required. If the file search identifies anything, a more extensive report will be required. If nothing is identified, then the file search should be sufficient. For the file search contact:

Cultural/History File Search: <http://www.historycolorado.org/oahp/file-search>

email: hc_filesearch@state.co.us

Paleo File Search: <https://www.colorado.edu/cumuseum/research-collections/paleontology/policies-procedure> and <https://www.dmns.org/science/earth-sciences/earth-sciences-collections/>

Traffic Comments:

The report used the fitted curve for the General Light industrial trip Generation. The range between these two is significant for the peak periods. The graph shows that the average trip rate is closer to studied trips in the ITE based on the scale of this development.

CDOT for these bigger developments expects a select link analysis based on the region travel demand model to develop traffic distributions.

The analysis shows no SBL lane. When the thru movement is shared with a left turn CDOT split phases the signal. The analysis doesn't show this. The SBT queue is projected to be over 331 feet in 2025 PM peak. There is only 235 feet till the railroad tracks. This is a safety concern that needs to be addressed.

Signal clearance timing is not correct. CDOT would have at least 2 seconds of green time for this intersection.

CDOT does not approve Signals unless they meet warrants based on existing traffic. CDOT wants to see an analysis that shows it without the signal.

JAI 5/9/2022

Right of Way Comments:

MJO - 4/26/2022 - There is really not sufficient information provided in Revision 1 for CDOT ROW to provide input

on. The development is north of Colfax (US 36) and north of the RR tracks and the access will be with a new intersection with Colfax.

It does not appear there are A-Lines to worry about, but if they are they should be detailed in the Developers future submittals for the new intersection with Colfax.

The Developer does not show any proposed Dedications to the City or to CDOT, if there is a proposed parcel or tract to be transferred to CDOT then we will need to see preliminary plat to make sure its is acceptable.

AliciaC - 5/5/2022 - Currently I am not seeing anything pertaining to Property Management. If there is anything related to CDOT property or ROW then CDOT will need to see the ROW plans and will need a legal description, drawing depicting the parcel or Aline crossing and aerial with overlay of CDOT property.

Resident Engineer Comments:

4/27/22

-Any work done within CDOT ROW must conform to CDOT standards.

-Please refer to the State Highway Access Code for any applicable turn lane requirements on US-36.

-Please provide roadway plans showing proposed improvements once they are available.

Permits Comments:

Will need plans for the work in the CDOT ROW. Identify and label the CDOT ROW as such. RLW May 6 2022

Other Comments:

On the OPD sheet map, please add the label SH 36 on Colfax, which would also imply that different standards and specifications may apply to that Right-of-way. Also label the RR and respective RoW.

Adams County Transportation Master Plan calls for a 140-ft roadway profile for SH 36 (Colfax). Please ID how much RoW is to be dedicated for SH 30. Please ID and ensure that land is available to be dedicated from the RR or if this developer will need to dedicate the balance needed from the south side. Ideally, the ODP should include the appropriate cross section for SH 36/Colfax. We need to be clear who-when full the westbound improvements on SH 36 will be made or accommodated in the limited RoW currently existing.

The ODP map should show better contextual information such as what roadways are planned on all sides to ensure local connectivity is achieved via alignment & match-up for 4-way intersections. The roadway network illustrated by the ODP does not show how it meets the objective that is stated as Principle 3. Narrative says page 2 outlines project phasing – but we don't see it. Not only roadways but the utility infrastructure as well.

This project appears to extend 1 mile west of Harback. Projecting the Greater Metro Area street grid system would have a collector roadway on the 1/2 mile spacing between Harback & Schumaker Rd (which is the City of Aurora Boundary.) CDOT would anticipate that the Town of Bennet Transportation Master Plan to show a N-S collector roadway at the half-mile location (supported by the State Access code) and this development although we understand an additional railroad crossing would be nearly impossible. This really needs to be mentioned in the TIS why fewer connections to SH 36 are planned.

Currently only 1 access to SH 36 is envisioned at Harback Rd, with a RR Crossing. Please add a scale on the ODP to ensure the spacing of planned roadways (if any along SH 36) are to per-code.

~~Unclear why HDR & MDR with higher densities are proposed along US 36 & the RR without any noise buffer. We suggest consideration that for noise sensitive uses abutting the RR & SH 36, a greater setback with appropriate noise buffer be provided. See environmental re: noise buffering~~

Unclear where traffic is heading – we anticipate significant amounts to disburse through the off-site Manila/I-70 interchange. Highly recommended that this project (or Town of Bennett) be a funding stakeholder in the 1601 process that Manila/I-70 will warrant.

Word of caution is that improvements to the Harback Rd RR crossing can be complex and also require extensive lead time. CDOT RR coordination is currently handled through CDOT HQ, not at the region level. However permits associated with signalized crossings are handled at the region level. We seek a better explanation - expectation of how many RR Crossings & highway accesses may exist along this segment of SH 36.

- RS 04-26-22

5-6-2022 A State highway Access Permit will be required for the improvements required at Colfax Ave. and Harback Road. If Harback Road is a Bennett City street, then Bennett shall be the Permittee on the access permit. Contact for access permitting is Steve Loeffler who can be reached at 303-757-9891 or steven.loeffler@state.co.us

--Steve Loeffler, 5-6-2022



Steve Hebert <shebert@bennett.co.us>

Re: referral letters

1 message

Keith Yaich <KeithY@bsd29j.com>

Mon, May 16, 2022 at 2:00 PM

To: Savannah Vickery <svickery@bennett.co.us>

Cc: Steve Hebert <shebert@bennett.co.us>

Please see my answers below in red.

Thanks for your time. hated to ask.

I appreciate this.

Keith

Keith Yaich
CFO-Treasurer to the Board
[615 7th Street](#)
Bennett, CO 80102
720-810-0584 cell
303-644-3234 ext 8204 office
303-644-4121 fax
GO TIGERS!!!

"It's not wanting to win that makes you a winner; It's refusing to fail."

Peyton Manning

From: Savannah Vickery <svickery@bennett.co.us>**Sent:** Monday, May 16, 2022 1:56 PM**To:** Keith Yaich <KeithY@bsd29j.com>**Cc:** Steve Hebert <shebert@bennett.co.us>**Subject:** Re: referral letters

Hi Keith,

The more recent referrals sent to the school district and their sent/due dates for prioritization are:

Page 578

Muegge Farms PA-1 Sketch Plan - Sent 4/22 - Due 5/13 **no comment at this time. would like cash-in lieu**

Kiowa Creek Preserve Annexation and Zoning - Sent 4/21 - Due 5/12 **no comment at this time**

Bennett Farms Annexation and Zoning - Sent 4/21 - Due 5/12 **no comment at this time**

Shops at Bennett, Major Subdivision Plat - Sent 3/14 - Due 4/4 **no comment at this time**

If you need any older than that please let me know. All of these referrals were sent to your email, but I can re-send any if needed.

On Mon, May 16, 2022 at 9:16 AM Keith Yaich <KeithY@bsd29j.com> wrote:

thank you!!!

Keith Yaich
CFO-Treasurer to the Board
[615 7th Street](#)
Bennett, CO 80102
720-810-0584 cell
303-644-3234 ext 8204 office
303-644-4121 fax
GO TIGERS!!!

"It's not wanting to win that makes you a winner; It's refusing to fail."

Peyton Manning

From: Steve Hebert <shebert@bennett.co.us>
Sent: Thursday, May 12, 2022 4:25 PM
To: Savannah Vickery <svickery@bennett.co.us>
Cc: Keith Yaich <KeithY@bsd29j.com>
Subject: Fwd: referral letters

Savannah,

Can you help Keith sort out what referrals we might be expecting from the school district? I am guessing the Bennett Farms and Kiowa Creek Preserve annexations and zonings, as well as the Muegge Farms PA-6 sketch plan. Any others?



Steve Hebert, AICP
Planning & Economic Development Manager
207 Muegge Way | Bennett CO, 80102
(303)644-3249 ext. 1030 | shebert@bennett.co.us
townofbennett.colorado.gov

----- Forwarded message -----

From: Keith Yaich <KeithY@bsd29j.com>
Date: Wed, May 11, 2022 at 11:15 AM
Subject: referral letters
To: Steve Hebert <shebert@bennett.co.us>

Hey buddy,

Jen was in an accident and told me that I needed do some referrals

Can you please remind me of what's due?

thanks,
Keith

Keith Yaich
CFO-Treasurer to the Board
[615 7th Street](#)
Bennett, CO 80102
720-810-0584 cell
303-644-3234 ext 8204 office
303-644-4121 fax
GO TIGERS!!!

"It's not wanting to win that makes you a winner; It's refusing to fail."

Peyton Manning

--



Savannah Vickery | *Community Development Coordinator*
207 Muegge Way | Bennett CO, 80102
(303)644-3249 ext.1032 | svickery@bennett.co.us
townofbennett.colorado.gov



Planning Town Of Bennett <planning@bennett.co.us>

RE: Bennett Farms Annexation and Zoning Referral

1 message

Karl Smalley <KSmalley@adcogov.org>
To: Town of Bennett Planning <planning@bennett.co.us>

Thu, Apr 21, 2022 at 8:04 PM

The Adams County Sheriff's Office has no objections to this project.

Karl Smalley, Commander

Adams County Sheriff's Office

Strasburg, Co 80136

From: Town of Bennett Planning <planning@bennett.co.us>
Sent: Thursday, April 21, 2022 2:20 PM
To: Layla Bajelan <LBajelan@adcogov.org>; Karl Smalley <KSmalley@adcogov.org>; United States Postal Service <sarah.e.zawatzki@usps.gov>; Bennett School District 29J ATTN: Robin Purdy <robinp@bsd29j.com>; Bennett School District 29J: ATTN: Jennifer West <jenniferw@bsd29j.com>; Bennett School District 29J: ATTN: Keith Yaich <keithy@bsd29j.com>; Robin Price <rprice@bennett.co.us>; Daymon Johnson <djohnson@bennett.co.us>; Bennett Rec District <director@bennettrec.org>; Victoria Flamini <VictoriaFlamini@bennettfireescue.org>; Bennett Watkins Fire Rescue <calebconnor@bennettfireescue.org>; Marilyn Cross - CDOT <Marilyn.Cross@state.co.us>; Colorado Department of Transportation (CDOT) Assistant Access Manager <david.dixon@state.co.us>; JGutierrez@summitutilitiesinc.com; GVanderstraten@summitutilitiesinc.com; Eastern Slope Rural Telephone <patw@esrta.com>; I-70 Regional Economic Advancement Partnership <lxc.strategies@gmail.com>; Brooks Kaufman <BKaufman@core.coop>; Jehn Water Consultants Inc <gburke@jehnwater.com>; Melinda Culley <melinda@kellypc.com>; Daniel Giroux <dangiroux@terramax.us>; Union Pacific Railroad <aldancer@up.com>; Heugh, Michael <Michael.Heugh@jacobs.com>; Steve Hebert <shebert@bennett.co.us>
Subject: Bennett Farms Annexation and Zoning Referral

Please be cautious: This email was sent from outside Adams County

Hello All,

Below is a Dropbox link for the Bennett Farms Annexation and Zoning application documents. We appreciate your review and comments. Please send your comments back via this email address or by mail to Town Hall by May 12, 2022. You will note some documents, e.g. the Impact Report, also refer to the Kiowa Creek annexation and zoning applications. They are two separate applications but are being processed by the same applicant at the same time.

<https://www.dropbox.com/scl/fo/w4x6mkckv472dku0o6zxu/h?dl=0&rlkey=5qhuete5tlxg6faf9a44uwptg>

If you have any questions, please email or call Steve Hebert at shebert@bennett.co.us or the phone number below.

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Planning Department

207 Muegge Way | Bennett CO, 80102
(303)644-3249 | planning@bennett.co.us
townofbennett.colorado.gov

2021 TOWN OF BENNETT COMPREHENSIVE PLAN



INTRODUCTION

The Town of Bennett, Colorado is a rapidly evolving community on the high plains of Eastern Adams and Arapahoe Counties. Bennett residents enjoy the pleasures of small-town living, clean air, room to breathe and welcoming neighbors. While the Town's incorporated area is currently 5.9 square miles, Bennett is the shopping and service hub for over twenty thousand residents along the eastern Interstate 70 (I-70) corridor. Our residents have a unique mixture of rural and urban highlights, surrounded by ranchland and farmland; but only 25 miles from Denver and the alpine recreation of the Rocky Mountains only an hour's drive away. The major transportation network creates a transportation nexus ideal for influential development and economic vitality.

Bennett's community leaders are visionary and willing to take bold steps to secure the Town's future. As the Town continues to attract significant land development interest, it recognizes the guiding principles for public and private land development need to be updated to reflect our community's vision and regional planning interests. In the 2015 Comprehensive Plan, the Town identified a 91.4 square mile "**Area of Planning Interest**." While this planning area continues to influence what happens in Bennett, this 2021 update redefines the surrounding planning areas. The amended "**Area of Planning Influence**" is defined as an area that influences the Town's ability to provide services and grow; but, it does not align with annexation interests. More specifically, the Area of Planning Interest includes unincorporated infill properties within Bennett, contiguous properties and properties within a logical service area, ideal for future annexation for the Town. The Area of Planning Interest is further categorized into three focus areas for potential annexation. The areas are number based on the continuity for infrastructure, resources and services for the community. Each area describes the Town's primary vision for key expansion and includes specific goals and policies that will guide future planning and development in these areas. The Area of Planning Interest reflects a 30.2 square mile area for likely near-term development.

Bennett's plans for growth are matched by its objective to effectively master plan infrastructure and introduce a portfolio of water resources, including renewable and reuse water supplies. The prospect for expansion associated with the Town's recently adopted Capital Asset Inventory Master Plan is a fundamental tenet of this comprehensive plan.

Bennett is committed to responsible planned development; economic vitality; high-quality public services, resilient infrastructure, programs and policies; and the continued expansion of a healthy community. The 2021 Town of Bennett Comprehensive Plan is a focused update of the Town's 2012 and 2015 Comprehensive Plans. The updated 2021 Comprehensive Plan process involved master planning and public engagement efforts, including:

- The recently modernized Town of Bennett website, providing a page dedicated to master planning and guiding documents for public transparency.
- An update to the Town's social media and public information approach to provide details on upcoming meetings, meeting summaries, draft documents, and public comment forums.
- Adoption of the Capital Asset Inventory Master Plan (CAIMP), which lays the groundwork for the supporting infrastructure and resiliency of our community.
- In-person Engage.Shape.Build public forums with one-on-one conversations, educational presentations and community input boards.
- Adams County, Arapahoe County and Colorado Air and Space Port master planning efforts.
- Work sessions with the Adams County and Arapahoe County planning staff, the Bennett Planning Commission and Town Board.
- Public hearings before the Bennett Planning Commission and Town Board.

STRUCTURE AND USE OF THE PLAN

The 2021 Town of Bennett Comprehensive Plan Update is structured around nine planning themes - Neighborhoods, Economic Opportunity, Open Lands, Transportation, Services and Infrastructure, Community Health, Annexation, Community Partnerships and Resiliency. In addition, there is defined Area of Planning Influence and a focus on our Area of Planning Interest.

Each planning theme contains an achievable goal, key strategy, catalyst action, and one or more policy directives:

- An **achievable goal** is a statement of an ideal condition that can be accomplished. An achievable goal is supported by one or more key strategies, catalyst actions, and/or policy directives;
- A **key strategy** is a statement of a specific approach directed toward the achievement of a goal;
- A **catalyst action** is a statement of an initiative that will enhance the success of reaching an achievable goal. The Plan Monitoring section (page 20) identifies the short-term, mid-term, and long-term time frames established for the implementation of catalyst actions; and
- A **policy directive** is a statement consistent with a strategy to prescribe, restrict or otherwise guide or direct action.

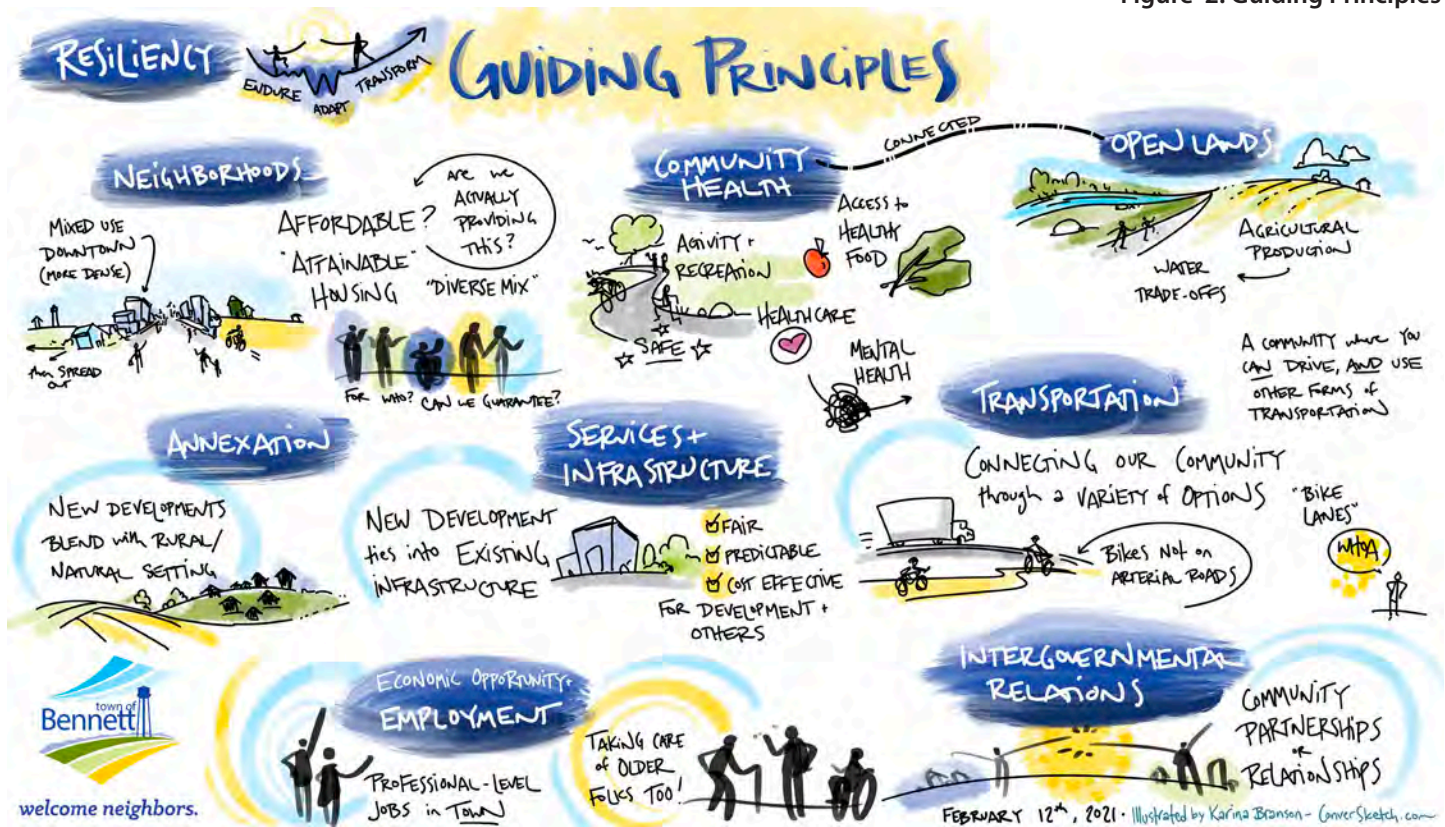
This plan is intended to provide elected and appointed officials, residents, business owners, landowners, project applicants, community partners and other stakeholders a broad policy tool for guiding decisions concerning growth and future land uses. As the Area of Planning Influence is regional in scale, plan implementation will require intergovernmental coordination and an additional level of public policy guidance and in-depth study. The focus areas, achievable goals, key strategies, catalyst actions and policy directives detailed within this document serve as the first generation of what is anticipated to be an ongoing, dynamic planning process. To further support the nine planning themes, the Board adopted a vision statement (Figure 1) and twelve guiding principles, as shown on page 3 (Figure 2), to establish our core values or standards to guide decision-making now and into the future.

Overall, this plan has been created to give successive public bodies a common framework for addressing land-use issues and set forth policies that foster a distinctive sense of place unique to Bennett. The plan is concluded by a summarized culmination and desired outcome accountability and tracking system within the plan monitoring section of this document.

Figure 1: Vision Statement



Figure 2: Guiding Principles



1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.
2. Develop neighborhoods that have a mix of land uses and densities with easy access to parks and open space, schools, cultural facilities, places of worship, shopping and employment.
3. Development of a Town Center in the heart of Bennett that will serve as our "downtown" offering easy access to shopping, dining, entertainment and employment.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.
5. Commit to being good partners with other community agencies and organizations through; collaboration, leveraging funding, needs planning for future growth. Emphasize local relationships with the School, Library, Recreation, and Fire Districts.
6. Foster an attractive community that retains residents in all stages of life through attainable housing, continuing education and a robust job market.
7. Preserve and protect natural open space and other areas that have environmental significance, with an emphasis on flood hazard; water value; natural mineral wealth; or are prime open space locations.
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.
9. The Town strives to be resilient by providing a framework to understand and measure its capacity to endure, adapt and transform through economic, social, and physical stresses.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.

COMMUNITY PROFILE

The Town of Bennett incorporated in 1930 and has steadily grown into a thriving and self-sustaining community with an excellent public school system and a growing hub for goods and services along the eastern I-70 corridor. The Town boasts over twelve miles of walking and biking trails, numerous parks, a community center, a recreation center and over 200 acres of protected open spaces. Currently, there are over 1,200 acres of land approved for development within the Town boundaries. Over half of that land being located within an Enterprise and Foreign Trade Zone, making Bennett a rising community with many attractive attributes for land developers and growing businesses.

Like many communities in rural Colorado, Bennett has an agricultural history and culture and has remained relatively small. However, since 2015, it is estimated the population has grown 33%, from 2,587 to approximately 3,200 persons by 2021 (Based on Water Account Data). The primary contributor to this increased population was the approval of new residential developments and a high demand for quality housing. In addition, two major annexations were approved during that period. Developing the Capital Asset Inventory Master Plan was a major policy change resulting in the expansion of the portfolio of water resources and identification of major infrastructure needs, providing the Town with the

capacity to accomodate development and responsibly absorb the impacts of growth. The below demographic information chart was provided by The Retail Coach, an economic development consulting firm.

While the incorporated 5.89 square miles of the Town is relatively small, Bennett is the service hub for the surrounding rural region. The total population of the trade area is currently over 20,000 and still growing. This population supports some of the nation's largest retail chains in Bennett, including King Soopers, Tractor Supply and Love's. Over 112 local business owners have called Bennett home for multiple generations. Bennett continues to cultivate a business-friendly community through our code and development processes. A stress-free commute also provides a significant labor shed of over 1.7 million workers within a 50-mile (approximately one-hour) radius, Figure 3. This, along with various workforce training and education programs, underline the Town's strong workforce pipeline available for economic vitality and expansion.

Visionary leaders in Bennett understand the importance of balancing "green spaces," unpopulated areas that help humans connect to their environment, with a built community that plays into its residents' overall happiness and mental well-being. Overall, the Town is committed to a community built with small-town character that is happy, connected, safe and innovative with the opportunity to live well and thrive.

Table 1: Community Demographic Profile

Population (2020 Census)	3,017
Population (2026 Estimate*)	6,694
Population (2010 Census)	2,308
Population Growth 2010-2020	24%
Trade Population (Service Hub Area*)	20,644
Median Age*	36.12
Median Household Income*	\$80,093
Households*	951

Table 2: Commute Times

Colorado Air and Space Port	10 Minutes
Denver International Airport	20 Minutes
Downtown Denver	25 Minutes
Denver Tech Center	35 Minutes
Rocky Mountains	50 Minutes
Hospital	20 Minutes

*Data Provided by The RetailCoach, August 2021.

Figure 3: Radius Map



SUMMARY OF PROJECTED GROWTH

The purpose of this section is to support the Town's projected growth by providing population and land use density projections over a long-term period as a basis for community resilience, economic indicators, mixed housing products and preservation of open lands. The research has been multi-faceted, first compiling and analyzing zoning data to project land uses and densities within the Town boundaries, assembling current population data unique Bennett to establish a population growth rate, and absorption assumptions to project up to date timelines.

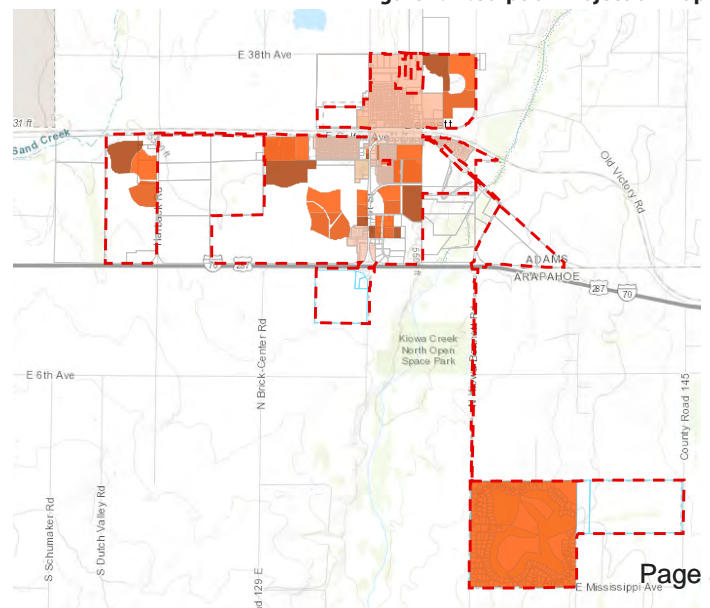
It is estimated that the Town currently has 1,200 acres of undeveloped land potential. These properties were identified through planning records, current zoning maps, landowner discussions, active applications and embedded in the Capital Improvements Planning and Development Project Status modules hosted in ArcGIS Online and updated on a case-by-case basis. The data was separated into residential versus non-residential development. In order to make comparable estimates for various development types, the projections are now assessed through the Single-Family Equivalent (S.F.E.) method, which considers the size of the property and the number of bedrooms in residential properties and restrooms in commercial properties to determine the estimated equivalence of impact of that proposed development. At the time of the CAIMP development, one S.F.E. was equivalent to 2.71 persons per household. Therefore, developments with more than one S.F.E. are allotted proportionally more impact in each tier. This methodology provides the framework for estimated equivalency in mixed-use products and growth projections, all of which is critical to future water planning for the Town's renewable water project.

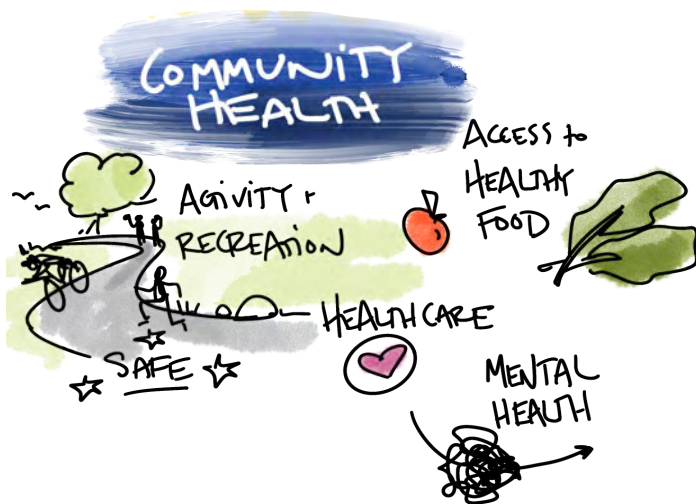
Next, the unique Bennett population summary was analyzed using data from the State Demography Office, input from the State Demographer's staff, the relevant Census data, and various discussions with the CAIMP team. Through this process, the potential for residential and commercial growth is significant in the Town based upon the property owner and developer interviews regarding the current market interests. The anticipation for growth is a result of three major contributing factors seen across the State. The first factor is the current and increasing population growth in the State, the second is the expansion and population increase in Metro Denver, and last the increase in housing prices that pushes buyers into surrounding areas such as Bennett. Bennett's residential market has been proven by prominent home builders with steady housing absorption rates over the last three years.

Finally, the absorption data was compiled through the developer interviews to determine and verify the information compiled in Geographical Information System (G.I.S). All absorption projections are based upon the developer's best estimate of how the market will respond. In the past ten years, all of Bennett's residential home market has been small infill until 2017 when LGI began to construct new homes and platted 250 new home sites. At the end of 2020, approximately 80% of these homes had certificates of occupancy. In 2021 the Town has five residential developments in various stages of construction with 948 platted lots and issued 129 certificates of occupancy. The 2021 absorption rate equates to approximately 14 SFE's per month.

The growth rates proposed were reviewed and vetted by the technical team and the Town leadership to determine Bennett's appropriate projected growth rate. Updating the growth projection models annually will be essential to the community's asset management and planning needs. The creation of CAIMP, the new G.I.S. framework, gives staff and consultants the ability to map land planning within an infrastructure model providing streamlined results for development and population projections. At the time of CAIMP, the Town's population is expected to reach 12,581 persons by the year 2029, which equates to approximately 4,358 S.F.E.'s (residential, industrial and commercial). The desired employment opportunities aligned job and housing expansion to reflect balanced growth in Bennett's future, reinforce one of the core concepts of the plan, which calls for neighborhood and employment centers with ample opportunities to live, work, and play locally.

Figure 4: Absorption Projection Map





Bennett is committed to providing a healthy, happy and safe lifestyle for all. Our capacity to plan and guide development through recreational activity, access to healthy food and healthcare initiatives reflect this commitment. On August 13, 2019, the Town adopted a robust Parks, Trails and Open Space Master Plan. This plan established a vision for the Town over the next ten years, giving the tool necessary to manage and enhance existing parks and plan for future parks, open spaces and trail connections throughout the community. This visioning process was an opportunity to update existing Town plans, including the previous 2009 Parks, Trails and Open Space Master Plan. Bennett has developed a multi-use trail that extends from the residential core of the community to the local shopping center, enabling safer pedestrian and bicycle grocery trips as well as improved

railroad crossings through the main HWY 79 and 36 intersection. Additionally, the primary grocer located within the incorporated Town, coupled with the relative population of Bennett, makes its progress in providing accessible healthy food options impressive.

An overarching objective for Bennett's community health is to increase residents' opportunities to make healthy food, mental health awareness and physical activity choices by implementing sustainable policies and practices for the built environment. As such, there is a strong emphasis on community health as an underlying principle to the Town of Bennett Comprehensive Plan. In particular, the Board has identified the desire to enhance community health by promoting healthcare recruitment strategies and incentives, as guided by the economic development assistance policy. Healthcare is highly recognized as a critical quality of life factor impacting the retention and attraction of Bennett residents and the workforce. Furthermore, healthcare is more important than just the services they provide. Access to high-quality, affordable health care institutions affects the workforce and community resiliency. Healthy, longer-living workers are more productive and happier. The more productive and happier your workforce is, the more they are likely to stay and invest in their community.

Achievable Goal: To promote healthy eating and active living.

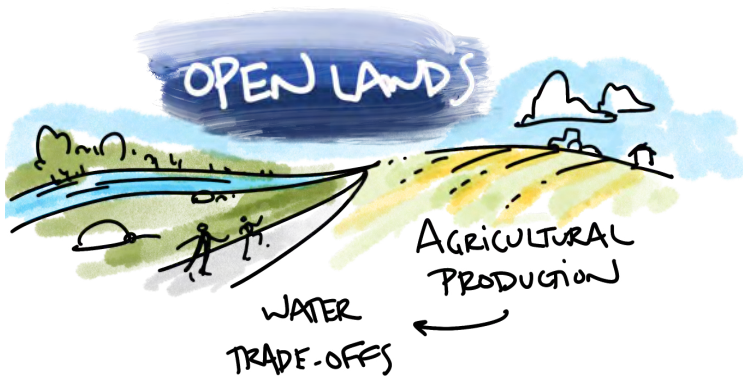
Key Strategy: Increase public health resources through partnerships with organizations such as: Tri-County Health Department, LiveWell Colorado, the Colorado Health Foundation and others as a model healthy community initiative.

Catalyst Action: Conduct an assessment of local and regional plans adopted by the Town, Adams and Arapahoe County and other regional governing bodies to link trail systems and open space.

Policy Directive: The Town shall ensure the creation of a built environment that supports healthy options for physical activity and good nutrition as foundations for sustainable health.

Policy Directive: The Town shall implement recommendations from the 2019 Parks and Open Space Master Plan to provide for the recreational and tourism needs of residents and visitors to encourage other sports or other recreational activities along with the commercial facilities supporting such uses.





The bulk of the Planning Area of Interest consists of open lands, characterized by sizeable agricultural landholdings with pockets of very low density, large lot residential areas. The area also includes four major (one hundred year event) floodplains that serve as natural drainage and riparian corridors. During the May 2021 Engage.Shape.Build public input meeting, it was evident that our residents place a high value on their environment and strongly desire the preservation of a rural lifestyle.

Unique among other communities in Colorado, Bennett's availability of open land creates a promising impact for development along with the preservation of the natural environment that will later define the physical character and image of the rural community. The extensive network of trails, open space corridors and conservation areas weaves through the fabric of each development application, connecting with parks, neighborhoods, schools, community facilities, employment centers and activity districts. Identifying rural preservation areas within new developments helps the Town assure residents access to a range of recreation opportunities and benefit from the protection of sensitive environmental habitats, water bodies and view corridors. Additionally, it is duly noted that preservation of open space provides a water trade-off, as these land areas will drastically reduce the overall water impact. Overall, this open lands effort connects residents to regional trails, neighboring jurisdiction open space and water sustainability for planned density developments. Since 2015, the Board of Trustees has taken several steps that aid in preserving open space. First, by the Code

adoption of land dedication requirements. Dedication requirements at the time of subdivision allow for the dedication of vacant land for the purposes of public parks, trails, open space, public facilities or recreational purposes. Next, by taking ownership over Bennett Regional Park and Open Space containing 193 acres. The property was previously a privately owned 18-hole golf course named "Antelope Hills" and now supports Recreation, Relatively Natural Habitat and Open Space conservation values. In particular, the property provides public access to open space and for outdoor recreation and trail connections from the Antelope Hills Community to the Kiowa Creek North Open Space and surrounding rural areas for the use and enjoyment of the general public. In addition, since taking ownership of the property in April 2013, all of the concrete trail systems from the golf course have been removed, and replantation of early-seral plants and weeds mitigation to restore historical conditions of a healthy short-grass prairie system have been completed. As a result, this well-established conservation easement now protects all 193 acres of Bennett Regional Park and Open Space. Finally, the Town recently entered into an option to purchase agreement to preserve approximately 156 acres of native creek habitat within the floodplain, serving as a natural drainage and riparian corridor within the Northern Kiowa Creek Preserve.

In summary, while the Town has made significant strides in the preservation of open space, it is recognized that in order to maintain the rural character of the area, subdivided lots created should be screened, clustered or distributed in such a manner as to minimize visual and environmental impacts and maximize the use of existing roads and utilities, and that continued efforts for public acquisition of open space property should be prioritized whenever possible.

Achievable Goal: To protect and preserve the rural nature of open lands.

Key Strategy: Identify parcels with the Focus Areas for potential open space acquisition.

Catalyst Action: Work with Arapahoe County's Open Space Master Planning efforts to redefine their North Open Space parcel and identify the trail linkage program for connectivity with the Town's trail system.

Policy Directive: The Town shall encourage future open space acquisitions and identify preservation efforts, as a way to protect their natural values.





The Summary of Projected Growth (page 5) notes demand in the next ten years for 4,358 additional S.F.E.'s within the Area of Planning Interest. Providing a balanced mix of housing opportunities in the Town will continue to be a focus of planning efforts in each development. Ensuring that a wide range of incomes, age groups and lifestyle choices are accommodated, will reinforce the Town's desire to be a place in which to live and work, inclusive of all.

A guiding principle of this plan is to develop neighborhood centers that allow for a mix of land uses with increases in densities, which is a departure from the historical growth pattern in the corridor. Benefits of concentrated mixed-use development include an efficient land use pattern that increases transportation choices, reduces energy consumption, promotes water conservation and offers more opportunities for social interaction. In addition, the Town will pursue a variety of strategies to maintain the affordable housing stock that currently exists comparable to the Denver Metro area.

Neighborhood centers are characterized by a core of civic, educational, entertainment, office and retail uses that support surrounding residential uses of varying types and densities. Each center's development will vary in density and intensity from large master-planned neighborhoods on the within the Area of Planning Interest to smaller in-fill projects within the Town's core.

In 2021, the Town commenced draft updates to its Chapter 16 Land Use Code, inclusive of zoning regulations and the adoption of interactive Zoning and Development maps. To foster new and in-fill development, the interactive maps and revamped applicants guides now provide real-time information to developers and are intended to offer transparent and streamlined development process.



Achievable Goal: To provide diverse housing types at various densities and a mix of appropriate land uses.

Key Strategy: Foster innovative infrastructure practices, site planning, and mixed-use development patterns.

Catalyst Action: Prepare design guidelines and transition the Town's existing PD's and outdated zoning districts into one of the new zoning districts.

Policy Directive: The Town shall encourage master-planned, mixed-use development in concentrated centers.



Annexation Focus Areas 1, 2, and 3 correspond to the three-mile annexation boundaries;

- The timing of annexation in each Focus Area will be dependent on the ability to provide infrastructure and services to the property. Conversely, resources underlying lands rich in water supply, open space and/or other Town desired resources, may provide an opportunity for prioritization of annexation; and
- Through various planning efforts, the Town will seek to strike a balance among the many competing demands on land by creating development patterns that are orderly and rational, provide the greatest benefits for individuals and the community as a whole and avoid nuisance conflicts between land uses.

A fundamental principle forming the basis for the Town's annexation policy is that annexation is an agreement between a willing landowner and a willing local government. Therefore, the Town and property owner should enter into a pre-annexation agreement as a precursor to any annexation. Pre-annexation agreements establish the conditions of annexation and provide the Town and property owner with a set of negotiated obligations upon annexation.

Three annexation growth areas are outlined in Figure 5 below, and referenced herein as Focus Areas, all within the Planning Area of Interest. These growth areas are intended to provide guidance, not an obligation, or priority for future annexation by the Town or landowners. In general, these are areas that may be candidates for annexation. Additional considerations include:

- With minor exceptions, Colorado annexation statutes limit the extension of a municipal boundary to no more than three miles within any one year. In general,

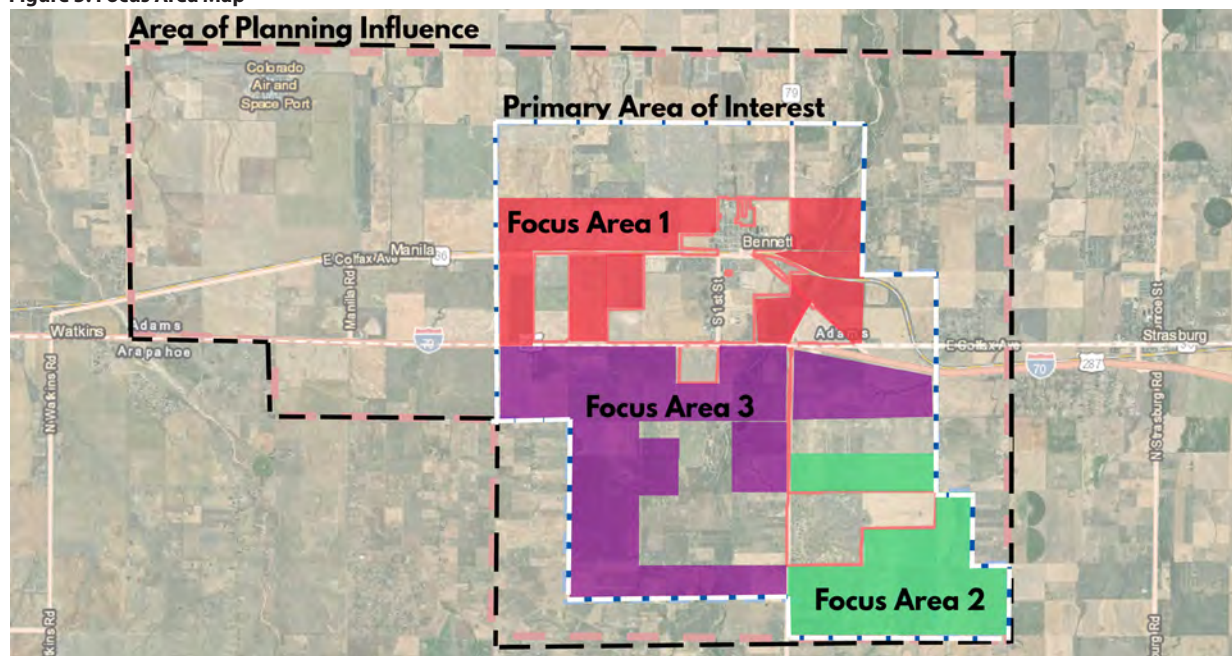
Achievable Goal: To support the development of Bennett as a healthy community with interconnected employment and neighborhood centers.

Key Strategy: Utilize incorporated lands and public rights-of-way to establish continuity for future annexation of land on a prioritized basis.

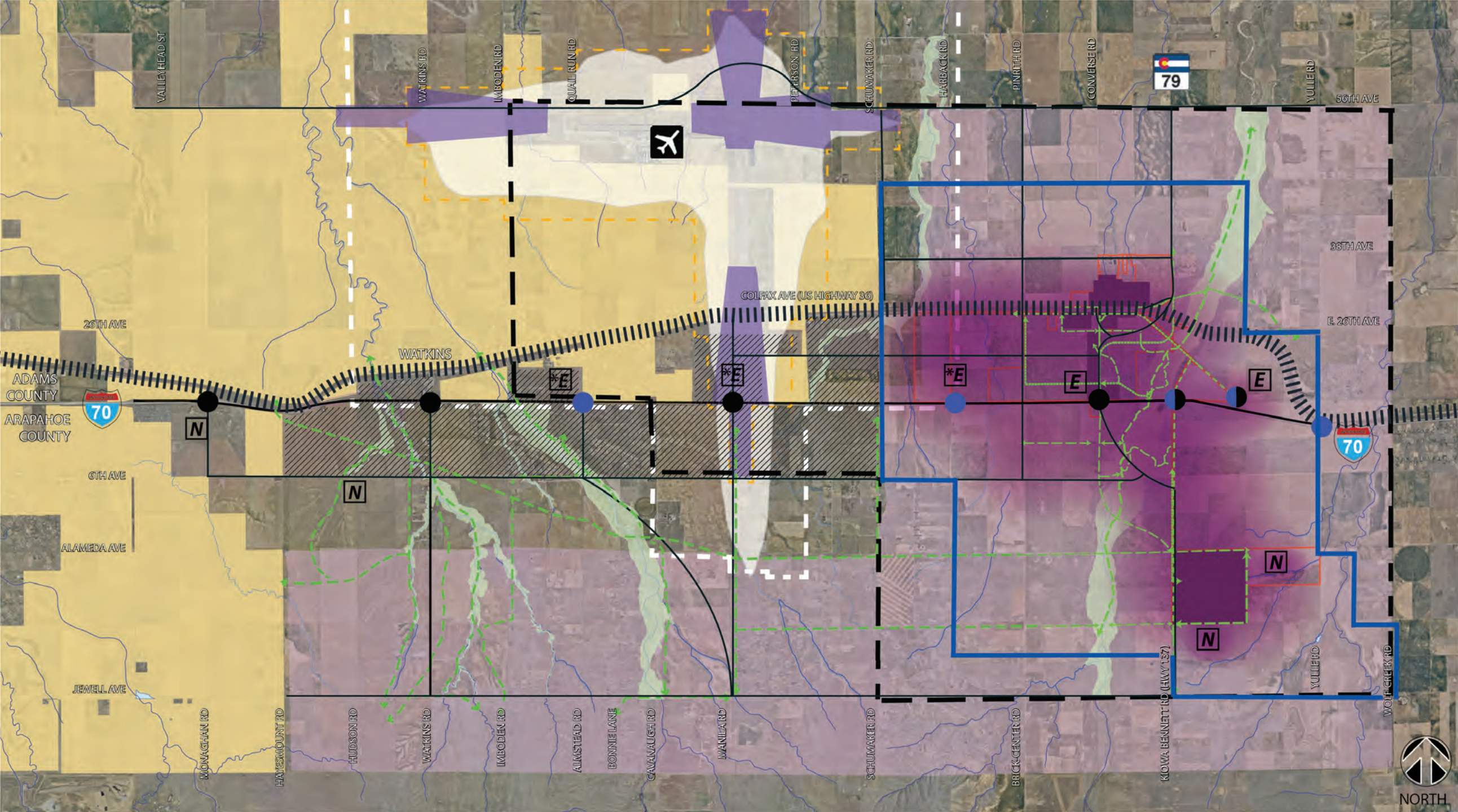
Catalyst Action: Update on an annual basis the Town's Three Mile Area Plan that serves to support Colorado statutory provision C.R.S. § 31-12-105, which requires that a municipality have a plan in place prior to the annexation of any land.

Policy Directive: Existing rural residential subdivisions in all annexation priority areas shall not be considered for annexation, unless critically in need of sewer and/or water service due to environmental concerns, failing septic systems, or poor water quality or quantity.

Figure 5: Focus Area Map

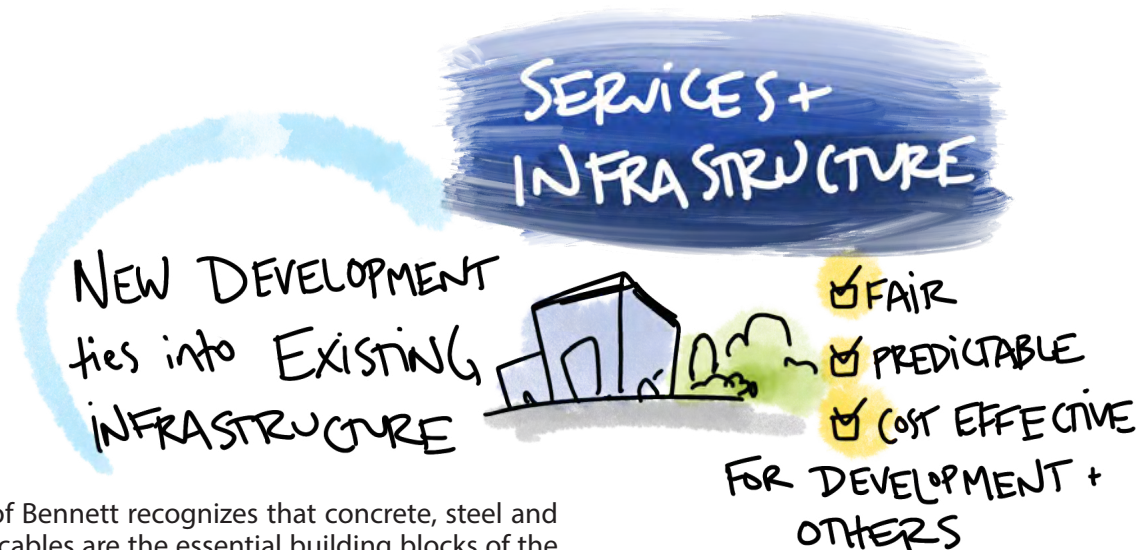


PREFERRED PLANNING PRINCIPLES MAP



Legend

	Area of Planning Interest		Colorado Air and Space Port		Freeway		Established Municipal Area		Employment Center * Subject to Airport Influence Zone restrictions
	Area of Planning Influence		Airport Influence Zone		State Highway		Developing Municipal Area		Neighborhood Center
	Town of Bennett		Airport Restriction Area #1		Union Pacific Railroad		Rural/ Rural Preservation		Proposed Arterial
	City of Aurora		Airport Restriction Area #2		Existing Interchange		Natural Resource Area		Proposed Regional Trail
	Aurora Strategic Area		55 DNL Noise Contour		Proposed Interchange				



The Town of Bennett recognizes that concrete, steel and fiber-optic cables are the essential building blocks of the economy. Infrastructure enables trade, powers businesses, connects workers to their jobs, creates opportunities for communities and sustains us from an unpredictable economy. From private investment in telecommunication systems, broadband networks, freight railroads, energy projects, and pipelines to the Town's responsibility of transportation, water, buildings, facilities, and parks, infrastructure is the backbone of a viable community and a healthy economy.

A primary focus of Bennett infrastructure is to plan, protect and construct sustainable and resilient infrastructure for current and future residents of Bennett. A thorough assessment of current assets and prospects for growth associated with a renewable water supply is a fundamental tenet of the 2019 Capital Asset Inventory Master Plan, otherwise referred to as CAIMP. In December 2019, the Town of Bennett Board of Trustees adopted a resolution approving the CAIMP as guiding principles for which infrastructure will be assessed, planned, designed, and constructed. CAIMP affirms Bennett's commitment to responsible planned development, resiliency, economic vitality and a program for public improvements to protect quality of life for its residents. CAIMP provides appointed and elected officials, landowners, project applicants, and other stakeholders with a broad policy tool for guiding decisions concerning capital infrastructure for current and future Town assets.

CAIMP was a targeted update of the Town's 2003 B.B.C. Research & Consulting Impact Fee Study, 2008 R.T.W. Water-Wastewater Master Plan and Rate Study, and the 2014 Impact Fee Update. The Town's senior staff, Terramax, Inc., Aqua Engineering, Jehn Water Consultants, Inc., Northline G.I.S., PureCycle, Kendrick Consulting, Inc., Norris Design, and SM Rocha, LLC. made up the consulting team responsible for the development of this robust master plan. Additionally, public forums were hosted to provide residential input and historical data.

Through previous assignments and communications with Bennett's stakeholders, this planning approach recognizes the Town's burgeoning Geographic Information System (GIS) vision and commitment. This new ESRI GIS program provides an avenue for more dynamic, flexible and useful living documents for master planning and capital improvements. While many master plans and capital improvement programs are destined to become obsolete quickly, GIS holds the potential to work directly against this factor, by remaining in regular and active use, reviewed and updated by Town staff and Town policy directives.



CAIMP underscored the need to "quantify the reasonable impacts of the proposed development." As Bennett considers new initiatives to complement the need for a diverse mix of land uses and services, the Town recognizes the desire from developers to diversify housing products and development phasing. Bennett took steps to assess impacts based on development types equivalent to a typical single-family resident living in Bennett. Impacts are now assessed through the Single-Family Equivalent (S.F.E.) method, which is proportionate to the size of the property, bedrooms of residential or restrooms of commercial to determine the estimated equivalence of impact of that proposed development.

Finally, to be successful, capital improvement planning must be an ongoing activity. The progress matrix within CAIMP provides an essential plan monitoring tool specific to services and infrastructure, that identifies timeframes for the accomplishment of catalyst actions in congruence with the Comprehensive Plan.



Natural, technological and human-caused hazards take a high toll on communities, but better managing disaster risks can reduce the costs of lives, livelihoods and quality of life. The Town recognizes that planning and implementing prioritized measures can strengthen resiliency, improve a community's ability to continue or restore vital services in a more timely way and build back better after damaging events. One of the primary objectives of this Plan update is to prepare the Town for future events, minimize risk and assure recovery if disasters occur.

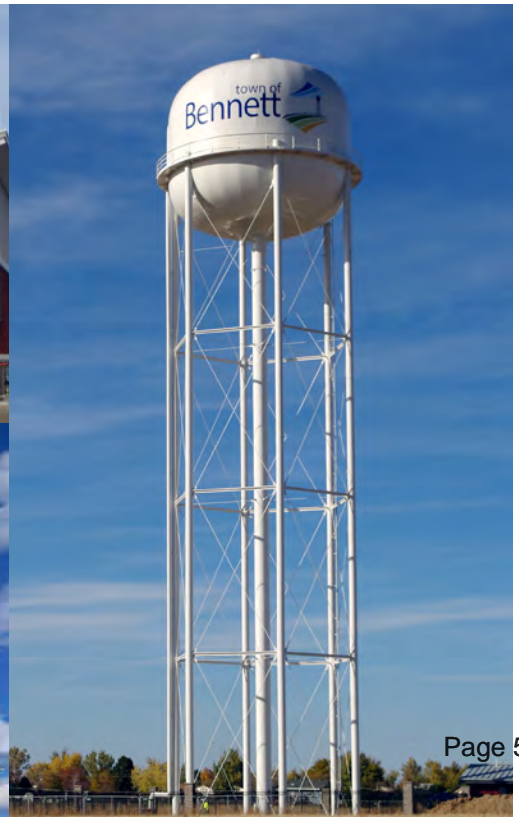
The plan provides a practical and flexible approach to help Bennett improve resilience by setting priorities and allocating resources to manage risks for prevailing hazards. Early identification of the planning process, which includes working examples, will help to illustrate the elements of resiliency. Furthermore, the Town will gather resources to characterize the social and economic dimensions of the community, dependencies and cascading consequences, and building and infrastructure performance. Finally, the implementation of resiliency guides can assist integration of consistent resiliency goals into economic development, zoning, mitigation and planning activities that impact buildings, utilities and other infrastructure system needs.

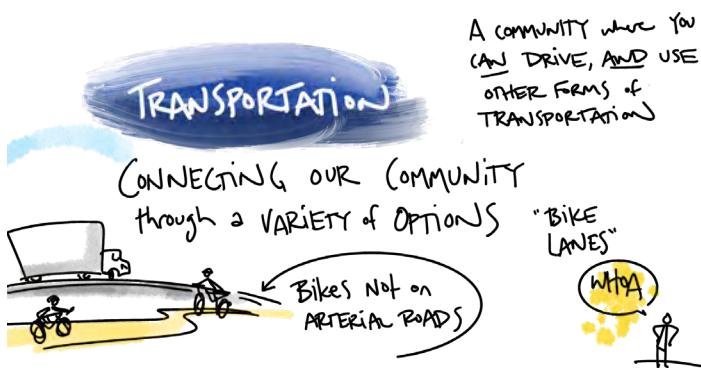
Achievable Goal: Create the next-step process to help the Town think through and plan for its social and economic needs, their particular hazard risks and recovery of the built environment.

Key Strategy: Setting performance goals for vital social functions—healthcare, education and public safety—and supporting buildings and infrastructure systems - transportation, energy, communications, and water and wastewater.

Catalyst Action: Create the action-oriented resiliency companion report to help the Town follow a guided and researched process, including providing a series of customizable templates and additional resources if a hazard occurs.

Policy Directive: The community's social and economic needs and functions should drive goal-setting for how the built environment performs and providing a comprehensive method to align community priorities and resources with resilience goals.





Bennett is one of the most accessible communities in the Denver area. The transportation network includes Interstate 70 (I-70), US Highway 36 (US 36), State Highway 79 (SH 79), as well as the Union Pacific Railroad. In addition, Bennett's proximity to Denver International Airport (DIA), the Colorado Air and Space Port, and E-470 Public Highway Authority creates transportation connections ideal for responsible development and economic vitality. Furthermore, the extensive network of trails weaving through our parks, neighborhoods, schools, community facilities, employment centers and activity districts provide the framework for a safe multi-modal transportation network.

The regional highway system's condition and functionality significantly impact the Town's existing and future roadway systems. The two primary access points off I-70 (I-70/Kiowa-Bennett Road and I-70/SH 79) currently provide convenient access to the community. The Town recognizes that as the community grows these main entry points will require significant improvements.

In 2015, the Town of Bennett passed a successful sales tax and bond measure for an additional 1% sales tax and completely reconstructed most of the streets in Bennett and made crucial repairs to the existing concrete streets. This sales tax does not sunset but will continue to be a primary funding source to make future improvements and repairs to our system.

Several studies addressing transportation needs inform this comprehensive plan, including the SH 79 PEL Study, the Access Control Plan, the Downtown Bennett Planning Study, the Grade Separation Preliminary Feasibility Study, the Adams County Transportation Plan and the Arapahoe County Transportation Plan.

Key recommendations reflected include:

- The realignment of SH 79 east of Bennett, which begins south of 38th Avenue and ends just north of I-70.
- Constructing new interchanges on I-70 at Quail Run Road, Harback Road and Yulle Road and improving the existing SH79 and Kiowa-Bennett Road interchanges.

A key next step is creating a Master Transportation Plan (MTP). The MTP will guide the Town's policy development, and the delivery of services, prioritize transportation projects, outline opportunities and generate a strategic action plan for the next ten years. In addition, the MTP will review and outline expansion opportunities for roadway, transit and other cutting-edge transportation opportunities, including a multi-modal transportation network of bike lanes and trails, and future public transit elements:

- Express bus service to the Denver metro area, as the majority of the Area of Planning Interest is currently located outside the existing Denver Regional Transportation District (RTD) boundary; and
- The initiation of a local bus circulator or trolley service that will give residents the ability to travel between neighborhood and employment centers.
- Potential transit improvements that extend beyond the 2040 planning horizon could include:
- Commuter rail service to RTD's planned East Corridor commuter rail line using either the existing Union Pacific rail line or new rail installed in the I-70 median; and
- A high speed rail station located at an I-70 interchange in the Area of Planning Influence, with service from Denver.

Achievable Goal: To provide a safe, efficient, and connected multi-modal transportation network.

Key Strategy: Improve vehicular access, traffic circulation and public safety at interstate highway interchanges accessing Bennett.

Catalyst Action: Completion of a master transportation plan for the Town of Bennett and incorporating the plan into the Town's GIS systems.

Policy Directive: The Town shall work with DRCOG, CDOT, RTD and other regional transportation entities to coordinate development of a multi-modal transportation system.





The Town's economic development strategy intends to strengthen and grow the Town's employment base, support existing and new retail business and foster redevelopment of our Downtown. The Comprehensive Plan supports a full range of business growth opportunities within the Town from inception to expansion to provide a healthy environment for business development. There is a unique opportunity with the amount of land available to both nurture existing businesses and accommodate new businesses. Identifying land uses and development that will complement the Town's rich service base is a key focus as the Town grows and attracts new businesses.

The Area of Planning Influence is part of the Colorado Air and Space Port industrial space submarket, which is projected to capture 77.6 percent of the new growth in industrial space and ultimately represent 32 percent of the total industrial space in the Denver metropolitan area. In addition, there are over 2,400 acres of open land available for development within the Area of Planning Interest. Thus, available land is one of Bennett's most significant assets for recruiting business and employment opportunities.

The Town commits to targeting new opportunities and expansion of existing businesses that diversify our economic base and continue to strengthen the fiscal health of our community while respecting our natural resources and our unique small-town feel. The Town of Bennett Economic Development Assistance (EDA) policy is intended to customize economic development assistance based upon the need of the project and meet long-term community goals by creating a vibrant, economically healthy community.

The concentration for development into employment centers is a key component of the recruitment strategy for the Town. These employment centers are proposed along the I-70 Corridor at major interchanges, parallel to the Union Pacific Railroad; and near E-470, SH 79 and 56th Avenue with excellent access to DIA and Colorado Air and Space Port. The employment centers are intended to accommodate commercial and industrial land uses, including large-scale warehousing, manufacturing, outdoor storage, distribution and trans-loading facilities. Other supporting uses could include hotels, restaurants, child care centers and small-scale retail.

As growth continues into the eastern I-70 Corridor region, Bennett finds ways to balance economic development with the community's desire to maintain its rural and agricultural character. Since 2013, the "Bennett Community Market" has been an agricultural attraction along the I-70 Corridor and partner of recent agritourism initiatives. The Bennett retail community has grown from one primary grocer to a diverse economic service base for the Eastern Corridor. The retail development efforts reflect Bennett's ongoing commitment to maintain its agricultural heritage, stimulate economic development and foster healthy lifestyle choices.

Achievable Goal: To enhance the sales tax and employment base of the Town by attracting and retaining commercial and industrial development.

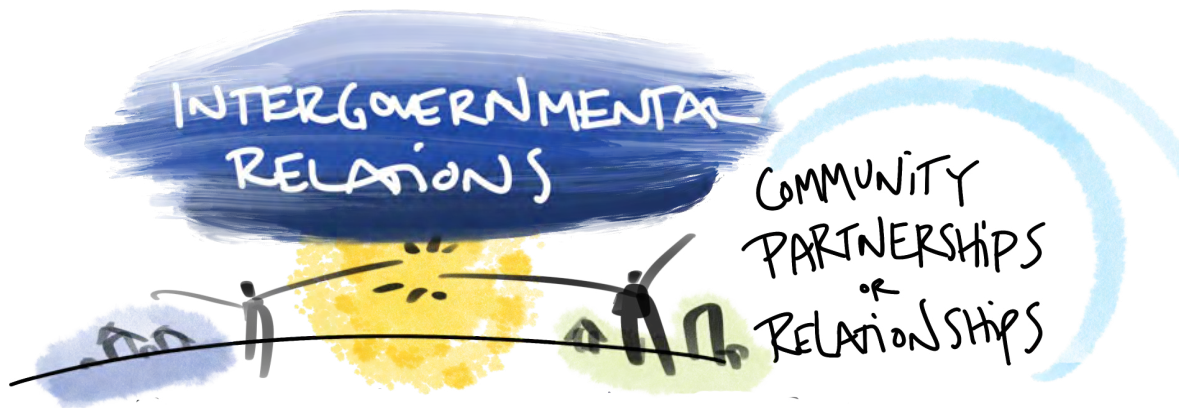
Key Strategy: Identify and preserve land for Town Centre Concept and parallel Mainstreet.

Catalyst Action: Finalize and implement the next steps in the Strategic Economic Development Plan to determine advantages and priorities for attracting a variety of new commercial and industrial development into identified employment center locations that will meet the daily needs of area workers.

Policy Directive: The Town shall proactively annex and zone land for employment centers.



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Both the Planning Influence Area and Area of Planning Interest for the 2021 Comprehensive Plan include areas of unincorporated Arapahoe and Adams Counties and the City of Aurora. These three jurisdictions, along with the Town of Bennett, the Bennett School Districts, the Bennett Fire Protection District, Anythink Library District, and the Bennett Recreation District, are major stakeholders in ensuring coordinated regional planning. The Town renewed local focus in this 2021 update, working to ensure all local special districts were included in the planning process as well as updating Intergovernmental Agreements with these entities to identify future expectations for growth and partnership.

Both Adams County and Arapahoe County updated long-range planning documents relative to the Bennett area including the Colorado Air and Space Port Subarea Plan and the Watkins-Bennett Area Vision Study. In addition, the City of Aurora completed a comprehensive plan update in 2009. While Bennett's influence planning area excludes the City of Aurora, there is a minimal direct impact on the desired annexation of these parcels. The overarching goal is to develop partnerships that encourage new growth into all adjacent areas that contemplate reduced impacts to the Town, County's and City and maximize access to services and existing infrastructure for residents and businesses. The Town is also interested in pursuing joint planning for the Colorado Air and Space Port in combination with the County's Subarea Plan.



During the development of the 2019 Capital Asset Inventory Master Plan, the Town initiated a process to coordinate its planning principles with major stakeholders. As a result, several important issues have been identified that could ultimately form the basis for one or more intergovernmental agreements, including:

- A governance structure for regional infrastructure improvements that include water, wastewater, transportation and open lands preservation;
- Revenue sharing from future commercial and industrial development;
- Joint development standards in anticipation of future annexation;
- Regulatory changes to the Space Port influence zone framework; and
- Common interest in urban growth area in Bennett.

Achievable Goal: To create a cooperative framework for regional land use planning in the eastern I-70 corridor.

Key Strategy: Promote the coordination of local and regional plans through active participation and leadership in the Colorado Air and Space Port and the updates to the Adams County and Arapahoe County comprehensive plans.

Catalyst Action: Renew or Create Intergovernmental Agreements (IGA's) as needed between/among local partners such as the Bennett/Watkins Fire Protection District, Bennett 27J School District, Bennett Parks and Recreation District, and the Anythink Library District.

Catalyst Action: Integrate additional county offices into Town facilities to foster the efficient provision of coordinated local government services for area residents.

Policy Directive: The Town shall work with DRCOG, the City of Aurora, Adams County and Arapahoe County on matters of inter-jurisdictional concern. Page 597

PREFERRED PLANNING PRINCIPLES

During the initial major revision to the Comprehensive Plan in 2011, the Town laid out a conceptual planning framework that is consistent with the Town's vision and guiding principles.

This 2021 update redefined the planning areas, shown in Figure 5 on page 9, and are as defined below:

1. The Area of Planning Interest, which includes the Town of Bennett and an unincorporated planning area within Adams and Arapahoe counties; and
2. The Area of Planning Influence, a potential growth area within the I-70 Corridor that may impact the Area of Planning Interest that includes the community of Watkins, Colorado Air and Space Port, and an undeveloped portion of northeast Aurora.

The Town's Planning Principles are categorized into four planning definitions:

Established Municipal Area

That portion of the existing incorporated Town of Bennett, which for the most part is a well developed and mature built environment with adequate services and infrastructure capability. This area also includes the Main Street- Downtown and Old Town areas proposed for redevelopment in the Town Centre Land Use Concept, as shown on page 19.

Developing Municipal Area

Areas where development is either contiguous to Established Municipal areas or where a stand-alone neighborhood or employment centers are contemplated. Developing Municipal areas are characterized by direct access to I-70 and proposed arterial roadways and transit, and the potential for targeted delivery of infrastructure and urban services.

Rural/ Rural Preservation

For the Area of Planning Interest, this area includes existing rural residential neighborhoods, large lot development, very low density cluster development and large agricultural land holdings that desire to remain rural or rural in character. The Open Lands element calls for a number of mechanisms to protect and/or preserve these areas.

Natural Resource Area

Areas that are the within designated one-hundred year flood plains. Natural Resource areas represent significant value to current and future residents in terms of open space, trail systems, passive recreation, flood control, water quality and water supply.

The assumptions derived from the 1999 comprehensive plan that shaped the preparation of the 2012 comprehensive plan and each subsequent plan update that remain relevant today are:

- Residential and commercial development is inevitable and will continue due to regional growth pressures, proximity to transportation infrastructure and availability of services;
- Adams County, Arapahoe County and the City of Aurora recognize Bennett's interest in development issues; and
- Distinction can be made between varying levels of development within Bennett's geographic area of interest.

The Town envisions a healthy, sustainable community where residents can live, work and play locally, setting Bennett and its proximity to the I-70 corridor apart from a conventional development pattern and being unique for the needs of current and future residents. Key elements of the Plan include:

- Future land development is concentrated in mixed use, master-planned neighborhood and employment centers wrapped with agricultural lands and very low density rural development;
- The open land between neighborhood and employment centers becomes a valuable community asset, with a regional trail system along riparian corridors providing important recreational and environmental linkages;
- Access, mobility and circulation are improved as development occurs, with future transit providing service between neighborhood and employment centers while additional options are explored;
- An efficient service and infrastructure delivery system limits capital and operating costs, easing the fiscal burden of existing and future residents;
- Intergovernmental Agreements (IGA's) between/ among Arapahoe County, Adams County, Aurora, to address coordination of land use issues, public financing districts, joint development standards, capital investment policies, and potential for revenue sharing; and
- Intergovernmental Agreements (IGA's) as needed between/among local partners such as the Bennett/ Watkins Fire Protection District, Bennett 27J School District, Bennett Parks and Recreation District, and the Anythink Library District.

The 2021 update will continue to reference guiding principles outlined in the 2010 Downtown Planning Study. This study is still a viable opportunity for the Town to analyze and explore future possibilities for infill development and redevelopment of Bennett north of I-70. The Town Centre Land Use Concept Plan (Figure 7) calls for increased residential density near the historic center of the Town, allowing for diverse housing opportunities that will appeal to both young adults and the increasing retirement age population. Lower density residential opportunities are reserved for the outlying edges of the Town Centre. Employment center, light industrial and commercial uses are focused along the SH 79 and SH 36 highway corridors. The Town Centre land use categories are defined as:

Main Street – Downtown

The Main Street - Downtown focuses attention on a pedestrian-oriented environment where accessibility and visibility are key. Retail is anticipated on a smaller scale with the buildings on the street creating energy and vitality through art, food, music, and entertainment. Residential uses may include single family attached and small multi-family, live/work units, and vertical mixed use with ground floor retail. See the Downtown Conceptual Plan in Figure 6, below.

Old Town

Old Town is the historic commercial center of Bennett. This area is bisected by the railway line where transportation continues to allow easy access to farming goods and services. This historic core continues to be a vital area for affordable and accessible commercial properties. Expanding upon the Main Street - Downtown theme, street improvements are envisioned where sidewalks, street trees, lighting, and parking all create an urban spine that revitalizes this important commercial center.

Commercial Mixed Use Corridor

These areas are adjacent to the realignment of SH 79 and SH 36 (E. Colfax Avenue) serving a high volume of vehicular traffic on a regional route including semi-tractor trailers. Residential is secondary and needs to be compatible with the commercial uses along this corridor.

Mixed Residential

Mixed Residential neighborhoods will contain a variety of housing types and densities, combined with non-residential secondary land uses that are complementary and supportive. These areas should meet a wide variety of every-day living needs, encourage walking to gathering places and services, and integrate into the larger community. Other supporting land uses, such as parks and recreation areas, religious institutions, and schools may be included in Mixed Residential areas.

Low Residential

Low density residential uses are typically less than 5 dwelling units per acre and comprised of single-family detached housing. Low Residential areas are intended to provide housing to accommodate a wide range of price ranges, from affordable single-family starter homes to custom home neighborhoods managed by homeowner associations.

Freeway Commercial

Freeway commercial land uses accommodate larger scale retail uses and cater to a regional population traveling along the I-70 and SH 79 corridors. As the principal gateway to Bennett, this area needs to provide continuity between the larger scale regional development and the smaller scale commercial and residential areas of Bennett progressing from I-70 along SH79 into Main Street.

Light Industrial

The Light Industrial area on the northern edge of the town core allows of a wide variety of industrial land uses that contribute to the employment base. The light industrial centers should integrate buildings, outdoor spaces, and transportation facilities, with minimal levels of dust, fumes, odors, refuse, smoke, vapor, noise, lights, and vibrations.

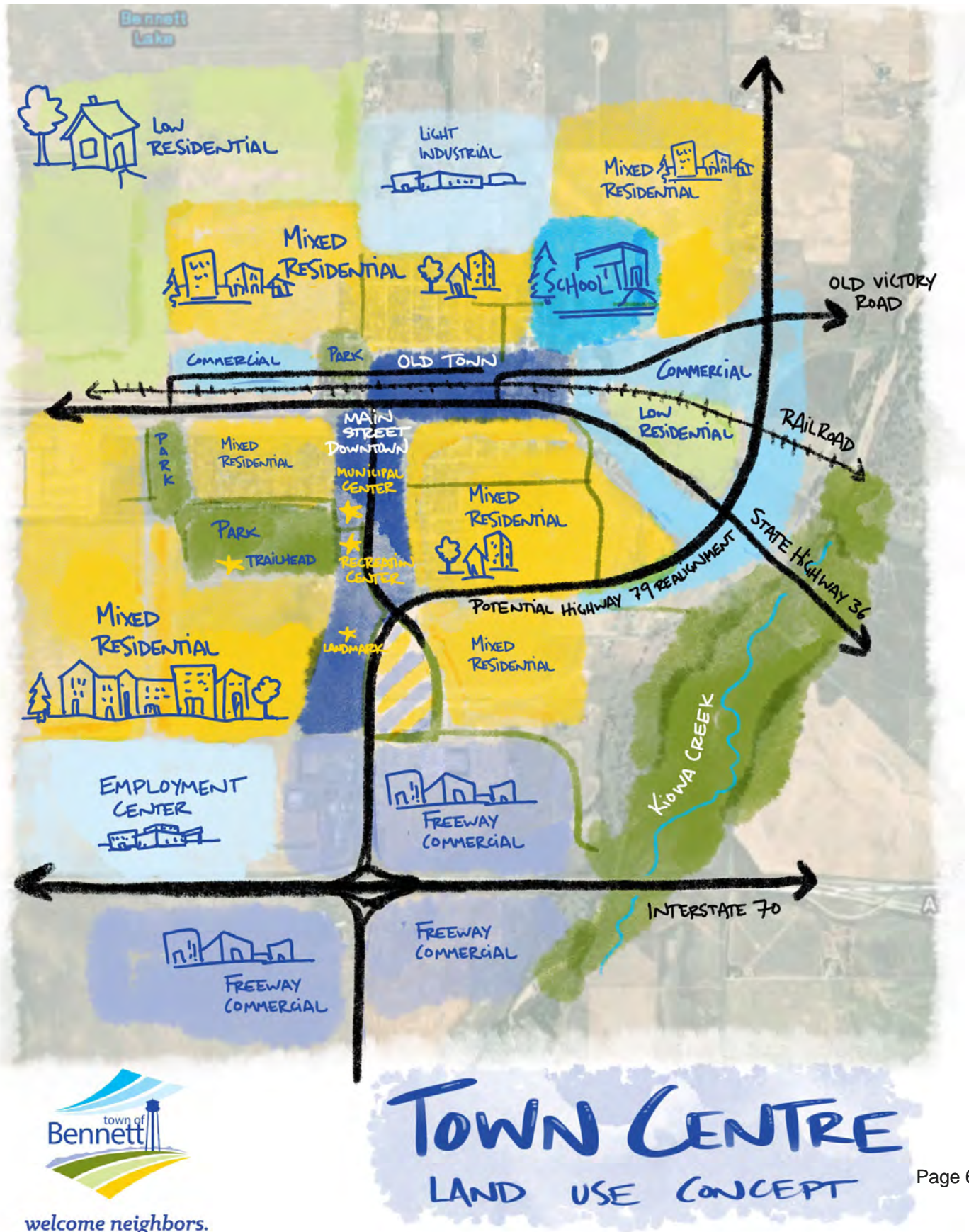
Employment Center

The Employment Center proposed near the I-70/SH79 interchange is intended to serve as a location for non-residential commercial and industrial uses in a campus-style, business park configuration. See page 15 for additional details on employment centers.

Figure 6: Downtown Conceptual Plan



Figure 7: Town Centre Land Use Concept Plan



PLAN MONITORING

To be successful, planning must be an ongoing activity. Plan monitoring involves establishing accountability tools for tracking progress over time. The progress matrix (below) is a basic plan monitoring tool that identifies timeframes for the accomplishment of catalyst actions: short-term (annual to three years), midterm (three to five years), and long-term (five years and beyond).

Plan monitoring is a dynamic process. Key strategies, catalyst actions, and policy directives should be reviewed on an annual basis and refined with changing circumstances. As data become available, indicators or other specific measures that monitor the accomplishment of achievable goals should be established for each plan theme. Finally, the entire plan document should be considered for public review and updated five years from its adoption.

Progress Matrix

Catalyst Action	Completion Timeframe	% Complete
Update on an annual basis the Town's Three Mile Area Plan that serves to support Colorado statutory provision C.R.S. § 31-12-105, which requires that a municipality have a plan in place prior to the annexation of any land.	Short-term	___%
Completion of a master transportation plan for the Town of Bennett and incorporating the plan into the Town's GIS systems.	Short-term	___%
Renew or Create Intergovernmental Agreements (IGA's) as needed between/among local partners such as the Bennett/Watkins Fire Protection District, Bennett 27J School District, Bennett Parks and Recreation District, and the Anythink Library District.	Short-term	___%
Integrate additional county offices into Town facilities to foster the efficient provision of coordinated local government services for area residents.	Mid-term	___%
Update design guidelines and transition the Town's existing PD's and outdated zoning districts into one of the new zoning districts.	Mid-term	___%
Finalize and implement the next steps in the Strategic Economic Development Plan to determine advantages and priorities for attracting a variety of new commercial and industrial development into identified employment center locations.	Mid-term	___%
Conduct an assessment of local and regional plans adopted by the Town, Adams and Arapahoe County and other regional governing bodies to link trail systems and open space.	Long-term	___%
Create the action-oriented resiliency companion report to help the Town follow a guided and researched process, including providing a series of customizable templates and additional resources if a hazard occurs.	Long-term	___%
Work with Arapahoe County's Open Space Master Planning efforts to redefine their North Open Space parcel and identify the trail linkage program for connectivity with the Town's trail system.	Long-term	___%

Acknowledgements

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Illustrations by Karina Branson of ConverSketch

Special thanks to the **Department of Local Affairs** for their generous funding of the project, and to the citizens who participated in the public workshops.

BENNETT PLANNING AND ZONING COMMISSION

RESOLUTION NO. 2022-10

A RESOLUTION RECOMMENDING APPROVAL OF ZONING FOR PROPERTY ANNEXED TO THE TOWN OF BENNETT KNOWN AS THE BENNETT FARMS ANNEXATION NOS. 1 AND 2 AND RECOMMENDING APPROVAL OF AN OUTLINE DEVELOPMENT PLAN FOR SUCH PROPERTY

WHEREAS, there has been submitted to the Planning and Zoning Commission of the Town of Bennett a request for approval of zoning for certain property, known as the Bennett Farms Annexation Nos. 1 and 2 (the “Bennett Farm Annexation”), was filed with the Board of Trustees of the Town of Bennett; and

WHEREAS, the landowner of the property requested a Planned Development (PD) zoning classification and has submitted an Outline Development Plan (ODP) in connection with the zoning request; and

WHEREAS, all materials related to the proposed ODP have been reviewed by Town Staff and found to be in compliance with Town of Bennett zoning ordinances and related Town ordinances, regulations, and policies; and

WHEREAS, after a duly-noticed public hearing, at which evidence and testimony were entered into the record, the Planning and Zoning Commission recommends that the proposed zoning and ODP be approved.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING AND ZONING COMMISSION OF THE TOWN OF BENNETT, COLORADO:

Section 1. The Planning and Zoning Commission hereby recommends approval of the proposed zoning of Planned Development (PD) for the property annexed to the Town and known as the Bennett Farms Annexation Nos 1 and 2 to the Town of Bennett.

Section 2. The Planning and Zoning Commission hereby recommends approval of the proposed Bennett Farms Outline Development Plan, subject to the following condition of approval:

A. Before recording the Outline Development Plan, the applicant shall make minor modifications directed by Town Staff, the Town Attorney and the Town Engineer.

PASSED AND ADOPTED THIS 27th DAY OF JUNE 2022.

ATTEST:

Chairperson

Secretary

Suggested Motion

I move to approve Resolution No. 2022-10 - A resolution recommending approval of zoning for property annexed to the Town of Bennett known as the Bennett Farms Annexation Nos. 1 and 2 and recommending approval of an Outline Development Plan for such property.