



# Planning and Zoning Commission

Monday, November 21, 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://us02web.zoom.us/j/85717892295?  
pwd=ci80c051WTNOMko1cm14S0g0OGRYUT09](https://us02web.zoom.us/j/85717892295?pwd=ci80c051WTNOMko1cm14S0g0OGRYUT09)

Meeting ID: 857 1789 2295

Passcode: 548369

## 2. Call to Order

Chair

### a. Roll Call

## 3. Approval of Agenda

Chair

## 4. Consent Agenda

Chair

### a. September 19, 2022 - Regular Meeting Minutes

#### Attachments:

- **September 19, 2022 - Regular Meeting Minutes** (September\_19\_\_2022\_-\_Regular\_Meeting\_Minutes.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. 22.02 - Mundell Farms Planned Development - PD Zoning

Resolution No. 2022-18 - A Resolution Recommending Approval of Zoning for Property Annexed to the Town of Bennett Known as the Bennett North Annexation and Recommending Approval of an Outline Development Plan for Mundell Farms

Steve Hebert, Planning Manager

#### Attachments:

- **Public Hearing Script** (0\_-\_Public\_Hearing\_Script.PC.pdf)
- **Staff Report - Case No. 22.02 - Mundell Farms Planned Development - PD Zoning** (Mundell\_Farms\_PD\_ODP\_P\_Z\_staff\_report\_v2.pdf)
- **Staff PowerPoint Presentation** (1\_Mundell\_Farms\_Zoning\_P\_Z\_Presentation\_11\_21\_22\_PDF.pdf)
- **Applicant's Presentation** (2\_Mundell\_Farms\_Applicant\_Presentation\_ODP\_Hearings.pdf)
- **Letter of Introduction** (3\_Letter\_of\_Introduction.pdf)
- **Mundell Farms Outline Development Plan (ODP)** (4\_Mundell\_Preliminary\_ODP\_18x24-9-29-2022.pdf)
- **Mundell Farms Traffic Impact Study** (5\_MundellFarms-TIS\_111522.pdf)
- **Combined Staff and Referral Agency Comments** (6\_Combined\_Referral\_Comments\_MundellFarms.pdf)
- **Proposed Resolution No. 2022-18** (7\_Mundell\_Farms\_Zoning\_and\_ODP.PC\_Res0\_2022-18.pdf)
- **Suggested Motion** (Suggested\_Motion.pdf)

### 6. Commissioner Comments/Reports

### 7. Adjournment

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Contact: Savannah Vickery (svickery@bennett.co.us 1 303 644 3249 x1032) | Agenda published on 11/17/2022 at 10:59 AM



# Planning and Zoning Commission

## Minutes

Monday, September 19, 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 - *Arrived at 6:12 p.m.*

James Delaney

Grider Lee - *Arrived at 6:06 p.m.*

Scott Smith

Rachel Connor

##### **Staff Present:**

Steve Hebert, Planning Manager

Chad Bunger, Community and Economic Development Director

Dan Giroux, Town Engineer

Christina Hart, Secretary

Mike Heugh, Traffic Engineer

##### **Public Present:**

Robert Dobson

Forrest Charlesworth

LeeAnn Moulter

OraMae Rich

### 3. Approval of Agenda

Chair

**Minutes:**

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

Ayes: Connor, Delaney Metsker, Smith, Childs

Nays: None

Absent: Clark, Lee

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

#### **4. Consent Agenda**

Chair

**Minutes:**

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

Ayes: Delaney, Metsker, Smith, Childs, Connor

Nays: None

Absent: Clark, Lee

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

**Action:** Approval of July 18, 2022, Regular Meeting Minutes

##### **a. July 18, 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. Case No. 22.11 - The Shops at Bennett Subdivision, Amendment No. 1 Final Plat**

Resolution No. 2022-17 - A Resolution Recommending Approval of A Final Plat for The Shops at Bennett Subdivision, Amendment No. 1

**Minutes:**

Martin Metsker, Chairman, called the matter of Case 22.11 - The Shops at Bennett Subdivision, Amendment 1, Final Plat to order.



The public hearing was opened at 6:06 p.m.

Christina Hart, Secretary, stated in accordance with the Colorado state statute, it was duly posted and published in the Eastern Colorado News on September 2, 2022. Legal #2693.

Commissioner Wayne Clark recused himself stating he has a vested interest in Case No. 22.11.

Steve Hebert, Planning Manager, presented The Shops at Bennett Subdivision, Amendment No. 1, Final Plat to the Commission. The Final Plat proposed is to recommend subdividing a 4.17 acres currently zoned C-General Commercial.

#### **PUBLIC COMMENTS**

Robert Dobson, 240 Cleveland Court, inquired about easements behind his property.

The public hearing was closed at 6:33 p.m.

#### **COMMISSIONER CHILDS MOTIONED, COMMISSIONER DELANEY**

**SECONDED** to recommend approval of Resolution No. 2022-17 - A resolution recommending approval of a Final Plat for The Shops at Bennett Subdivision, Amendment No. 1. The voting was as follows:

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

Nays: None

Recused: Clark

Martin Metsker, Chairman, declared the motion passed unanimously.

#### **6. Action/Discussion Item**

#### **7. Commissioner Comments/Reports**

#### **8. Adjournment**

##### **Minutes:**

**COMMISSIONER LEE MOTIONED, COMMISSIONER DELANEY SECONDED** to adjourn the meeting. The meeting was adjourned at 6:41 p.m. Voting was as follows:

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

Nays: None

Absent: Clark

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

##### **Minutes Approved:**

Martin Metsker, Chair

Savannah Vickery, Secretary

Contact: Christina Hart (chart@bennett.co.us 1 303 644 3249 x1001)

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

**CHAIR:** I will now open the public hearing on the following application: Case 22.02 - Mundell 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.

**Page 7**

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. 2022-18.

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 Manager  
DATE: November 21, 2022  
SUBJECT: Case No. 22.02 – Mundell Farms Planned Development – PD Zoning

**Applicant/Representative(s):** Several Mundell Family Members | Owner's Representatives – MG V 36 North Land Investments, John Vitella/Jim Marshall

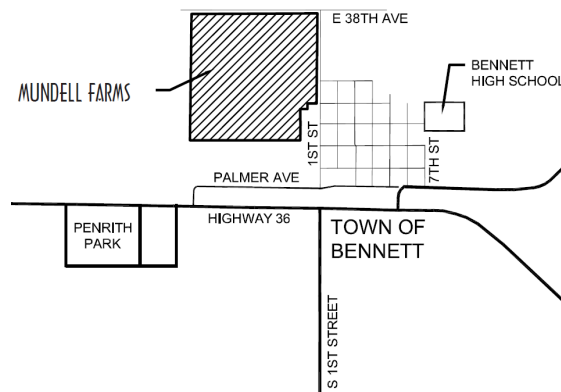
**Location:** Southwest Corner of E. 38th Avenue and 1st St./Converse Rd.

**Purpose:** Zoning of 153.62 acres to PD – Planned Development District

## Background

The 153-acre Mundell property was annexed into the Town of Bennett on March 22, 2022, when the Board of Trustees adopted Ordinance No. 739-22. Concurrent with the annexation, the applicant requested R-2 – Mid Density Residential District zoning. The motion to approve the R-2 zoning was denied. The applicant now proposes PD – Planned Development District accompanied by the Mundell Farms Outline Development Plan (ODP). The ODP proposes a maximum of 900 residential units, with a mix of single-family detached (SFD) and single-family attached (SFA) homes, at an overall density of 5.9 dwelling units per acre.

The property was zoned A-3 – Agricultural in Adams County prior to annexation. See the vicinity map below:



## Site Characteristics

The site's gently sloping topography includes a minor depression traversing from the high point in the southwest corner of the site to the low point located in the northeast corner. Overall, there is a change in elevation of 30-feet across the site with the topography in the 1 – 2 % slope range. The site has been farmed for a number of years and is currently fallow with scattered small shrubs, introduced grasses and weeds. Fauna is limited to species that live in dry grasslands.

## Proposed Zoning and Project Description

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The applicant proposes zoning the 153.62 acres to PD – Planned Development District. Sec. 16-2-475 of the Bennett Municipal code describes the PD District as:

*"a distinct zoning district that provides a means by which development standards and permitted land uses can be customized for a specific site. The PD District is intended to:*

- (1) Provide flexibility in land use regulations by allowing for the consolidation of the platting and rezoning procedures;*
- (2) Permit a developer to propose a total development plan which can be considered as to its overall merits under a unified procedure;*
- (3) Encourage imaginative uses of open space, and special consideration of property with outstanding natural or topographical features;*
- (4) Encourage a diversity of housing types while maintaining high quality living environments;*
- (5) Provide a mix of retail, office, employment, civic and recreation uses conveniently located to housing;*
- (6) Provide for more efficient use of land including the reduction of land area disturbed for utility lines and motor vehicle access;*
- (7) Facilitate use of the most appropriate design and construction techniques in the development of land; and*
- (8) Advance the guiding principles contained within the Comprehensive Plan.*

*The initial zoning for a PD District is established by an Outline Development Plan (ODP). An ODP, which reflects the overall concept of the Planned Development, shall include ODP maps and drawings, a written textual statement and such other forms as required by the Applicant Guide."*

Future uses will require a subdivision plat and a final development plan (FDP). Future subdivision plats will be reviewed by the Planning and Zoning Commission and Town Board of Trustees. FDPs are more specific site planning documents that will be also be reviewed by the Board of Trustees. More detailed plans for access, street design, water, sewer, stormwater, other utilities, landscaping, etc. will be required and reviewed at these subsequent stages.

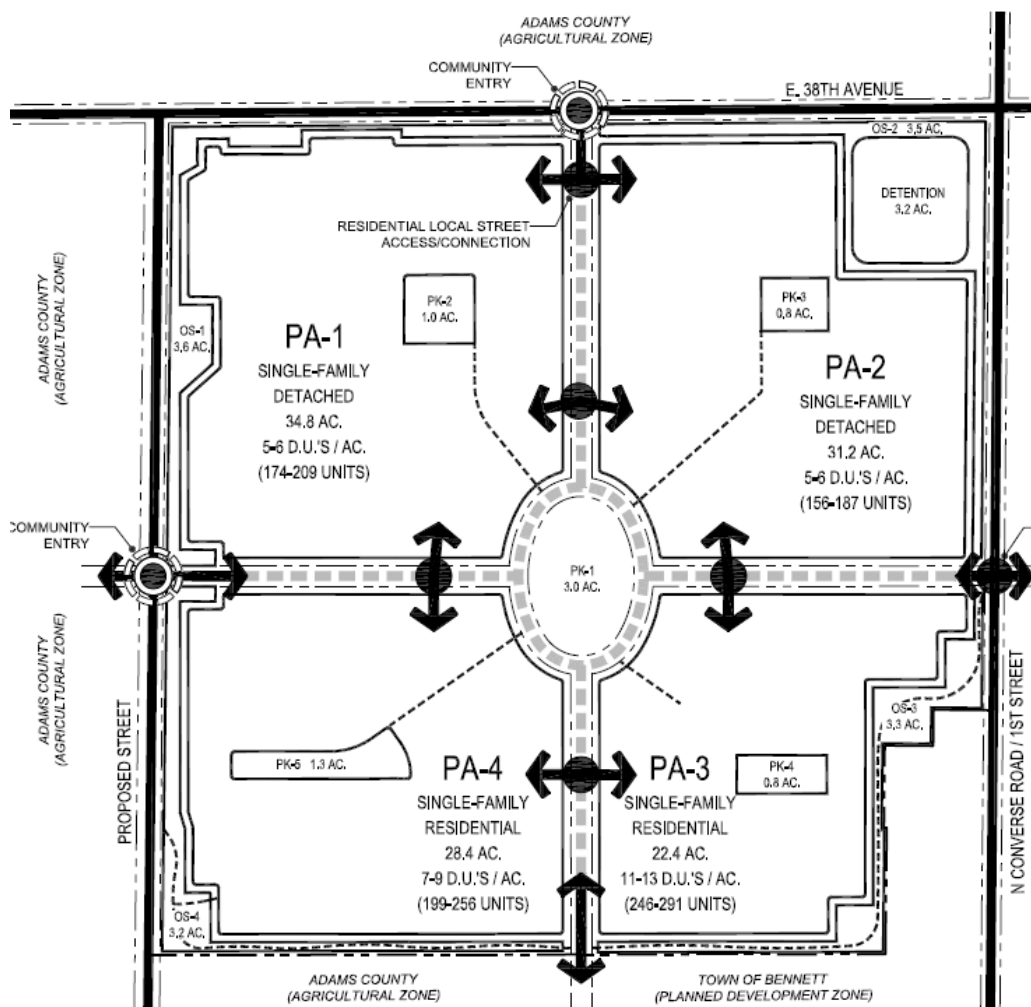
### Applicant's Development Concept and Intent

The following language is from the proposed ODP:

*"The idea for living at Mundell Farms is pure and natural: Surround homes with a central park, additional pocket parks, and a perimeter trail. The parks and open space energize the residents and the perimeter trail provides an active social amenity for the community. The homes will be diverse, for all generations and lifestyles. It is anticipated that Mundell Farms will start with both traditional detached and attached homes. A community goal is to have every home within 300 feet of a park or trail that connects to the 1-mile perimeter trail network".*

Below is a summary land use chart and an image from the ODP showing the general layout of the proposed residential neighborhood. Note the proposed residential densities are lower on the northern half of the property than the southern half, in accordance with the recommendations of the 2021 Comprehensive Plan and the Town Centre Land Use Concept Plan, a discussed later in this staff report.

Land Use Type	Gross Acreage	% of Total
Open Space and Trail Corridors	16.8	10.9%
Parks & Recreation Areas	6.3	4.1%
Development Areas (All Residential)	117.4	76.4%
Major Roadways	13.1	8.5%
Total Map Acreage	153.6	100.0%
Maximum # of Dwelling Units	900	
Residential Density	5.9 du/ac	

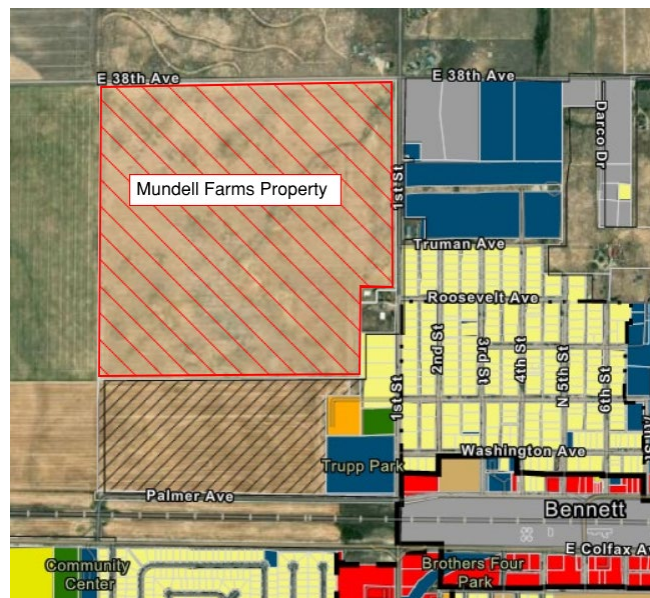


## Surrounding Zoning and Land Use

The table below summarizes the surrounding zoning and land use.

Direction	Zone District	Land Use
<b>North</b>	A-3 (Unincorporated)	Agricultural
<b>East</b>	I-Industrial, P-Public, R-1 Resid., A-3 (Unincorporated)	Industrial, Public Works Facility, Single-family Residential
<b>South</b>	PD – Planned Development	Agricultural
<b>West</b>	A-3 (Unincorporated)	Agricultural

Below is a section of the Town of Bennett Zoning Map. The properties north and west of the Mundell property are currently unincorporated and zoned A-3 in Adams County.



## Availability of Public Services and Utilities

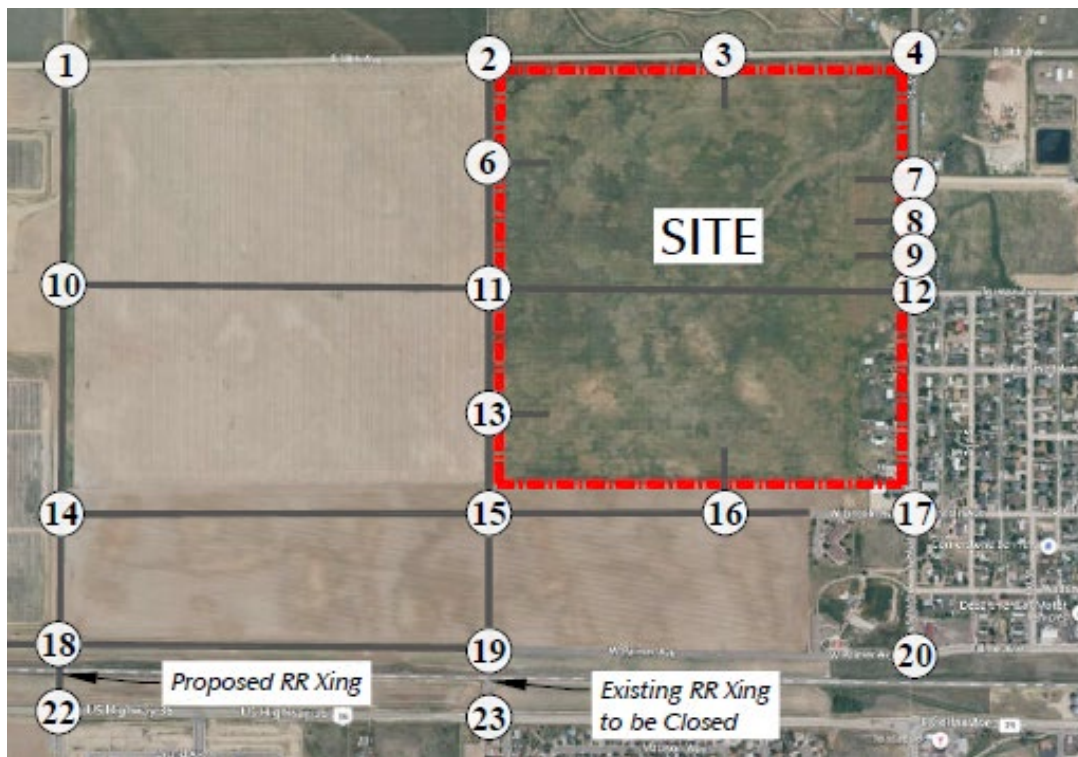
### Water, Wastewater and Stormwater Management

Town of Bennett water and wastewater treatment services will be available to the project, subject to system design, construction and financing by the developer of onsite and offsite improvements addressed in one or more future subdivision plats and subdivision agreements. A stormwater management system will be designed by the developer and reviewed by the Town at the time of subdivision platting. Phasing of all onsite and offsite improvements will also need to be addressed by future subdivision agreements. A future subdivision agreement(s) will also indicate how many new homes, if any, can be built and occupied before any of the offsite improvements are constructed.



### Access, Traffic Impacts and Timing of Development Relative to Improvements

The property abuts East 38<sup>th</sup> Avenue on the north and 1<sup>st</sup> Street/Converse Road on the east. However, neither of these streets, in their current condition, will be adequate to accommodate the traffic expected to be generated by the full build out of 900 homes. The applicant has identified future offsite connections via an expanded road network that might include additional north/south and east/west street corridors. The illustration below shows some of these potential connections, including an extension of Penrith Road to East 38<sup>th</sup> Avenue and a new crossing of the Union Pacific rail line. This is for illustrative purposes only and does not constitute a formal plan by the Town of Bennett or the applicant. However, it does align with future roadway corridors and improvements outlined in the draft Transportation Master Plan still in progress with Town staff and the consultant team.



Final location of the off-site connections will be identified at the time of subdivision platting. 1st Street and 38th Avenue, in their current conditions, will not be adequate to accommodate traffic from the site. Improvements to those rights-of-way, streets and related infrastructure will be required.

Because of the uncertainty of when future street connections and improvements will be in place to adequately accommodate vehicular traffic, staff recommends the following language be added to the ODP in place of the existing General Development Phasing language on Sheet 2:

*Updated comprehensive traffic impact studies (TIS) will be required at the time of each subdivision plat. Future studies must include, but not be limited to: an identification of vehicle trip generation, existing and proposed conditions, capacity analysis, onsite and offsite impacts*

*and improvements to mitigate the impacts. The design, financing and timing of construction of internal and external street connections will be addressed in subsequent subdivision agreement(s) at the time of the platting process. A future subdivision agreement or agreements will determine how many new homes, if any, can be built and occupied in each phase of development consistent with the timing of required offsite improvements. All traffic impact studies shall be subject to Town approval.*

## **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 property is within the Bennett 29-J School District. 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. The District has indicated they will ask for cash-in-lieu at the time of subdivision platting.

## **Public Land Dedication for Parks and Other Public Facilities**

Per Sec. 16-5-510 of the Bennett Municipal Code, at the time of subdivision, the subdivider shall dedicate to the Town and improve to the Town's specifications usable tracts of land that are free from liens or encumbrances, for park land and public facilities. This land may be used for public parks, trails, open space, public facilities or recreational purposes. The public land dedication requirement shall be equal to ten percent (10%) of the total land area contained within the subdivision.

The proposed Mundell Farms ODP sets aside approximately 23 acres for parks, open space and trails. Some or all of this acreage may be credited against that ten percent dedication requirement discussed above. However, the Town may also need a site for a future well field and water storage. The ultimate dedication for these public facilities will be determined at the time of subdivision plat, in accordance with the requirements applicable at that time.

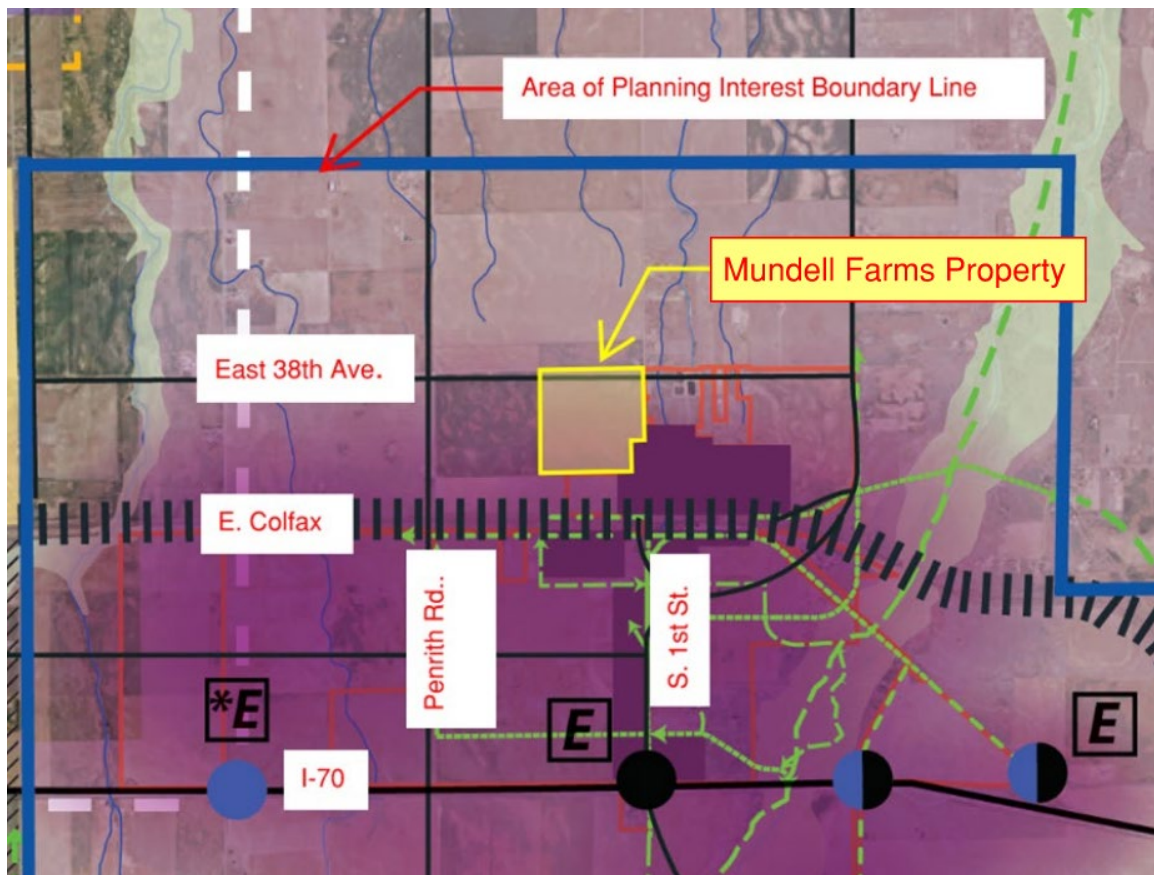
## **Staff Analysis and Findings**

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### **Consistency with the Comprehensive Plan**

1. 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 to the Town. See the excerpt of the comprehensive plan map below.



**2. The proposed zoning is consistent with the Town Centre Land Use Concept Plan.**

The approximate northern one-third of the Mundell Farms project is designated as Low (Density) Residential and the southern area is designated as Mixed Residential in the Town Centre Land Use Concept Plan. The 2021 Comprehensive Plan describes the Low Residential area as a low density residential use typically less than five dwelling units (DUs) per acre and comprised of single-family detached housing. Low Residential Areas are intended to provide housing to accommodate a wide range of home prices. The Mixed Residential neighborhoods are to contain a variety of housing types and densities, combined with non-residential secondary land use that are complementary and supportive such as parks and recreation areas, religious institutions and schools.

The proposed Mundell Farms ODP can accommodate both the Low Residential and Mixed Residential land use types.

See a subsection of the Town Centre Land Use Concept Plan below.





## 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 or Neutral	Staff Comment
1. A comprehensive, safe and efficient transportation system that provides for all forms of travel, including vehicular, bicycle, pedestrian and public transit.	Yes	The applicant's TIS anticipates an expanded future transportation network of new streets, sidewalks and trails. If accomplished, the project will comply with the Comprehensive Plan.
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.	Yes	The Mundell Farms ODP accommodates a variety of single family detached and attached housing types, along with a network of parks and open space.
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	Mundell Farms is not a part of the "downtown" contemplated in the Comprehensive Plan.
4. Encourage a high-quality and diverse mix of housing, available to people of different backgrounds, income, age, abilities and all phases of life.	Yes	The Mundell Farms ODP can accommodate a variety of high-quality and diverse mix of housing.
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.	Yes	Buildout of Mundell Farms is anticipated to be funded by one or more metropolitan districts. The Town will have IGAs with these districts to assure funding for infrastructure is born by the development. Through the future subdivision process, projects will be reviewed by the various public service organizations, e.g. the school and fire districts.

Comprehensive Plan Principle	Complies? Yes, No, NA or Neutral	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.	Yes	The proposed housing and park development can be attractive to a multitude of home buyers who work in the area and wish to live here.
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.	NA	The 153-acre property does not have any significant open space or areas of environmental concern, including flood hazards or natural minerals.
8. Value the development of a healthy community with access to healthy foods, physical activity, recreation, healthcare and safe neighborhoods.	Yes	The Mundell Farms neighborhood will be a part of a growing community that will offer healthy foods, opportunities for physical activity, access to recreation and healthcare.
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.	Yes	The future subdivision and final development plan procedures will allow the Town to consider policies and programs relative to building a resilient community.
10. Design new developments in a manner to blend with the rural setting and preserve natural features and areas designated for agricultural production.	Neutral	There are no significant natural features to preserve. The project will be taking recent agricultural lands out of production, as requested by the property owners. The proposed ODP reduces residential densities on the northern tier of the project.
11. Contiguous land development pattern that promotes connected infrastructure and services in line with the capital asset inventory master planning documents.	Yes	Mundell Farms is contiguous to the existing Town boundaries and infrastructure.
12. Both land and infrastructure development decisions will be predictable and provide equitable cost-sharing in line with the Town's master plans.	Yes	Future subdivision plats and agreements will ensure infrastructure development decisions will be predictable and equitable regarding cost sharing.

### 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) Provide adequate services and facilities to support existing and projected areas of population and growth;
- (7) Promote logical extensions of and efficient use of the Town's infrastructure;
- (8) Ensure that the fiscal impact of subdivision and development is borne by those parties who receive the benefits therefrom;
- (9) 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 future subdivision plats and 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

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The proposed Mundell Farms zoning application was sent to several referral agencies for comment, including:

- |                                |                                |
|--------------------------------|--------------------------------|
| 1. Town Planning               | 5. CORE Electric Cooperative   |
| 2. Town Engineer               | 6. Bennett School District 29J |
| 3. Town Traffic Engineer       | 7. Adams County Planning       |
| 4. Bennett-Watkins Fire Rescue | 8. 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, Bennett-Watkins Fire, Bennett School District 29J and CORE Electric Cooperative, will require more analysis at the time of subdivision platting and final development plans.

## Public Comment

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Notice of the November 21, 2022 Planning and Zoning Commission hearing and the November 22, 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;
- 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. 2022-18 recommending approval of the proposed zoning of Planned Development (PD) and approval of the proposed Mundell Farms Outline Development Plan. The resolution includes the following conditions of approval:

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.
2. The following language shall be added to the Outline Development Plan:

*Updated comprehensive traffic impact studies (TIS) will be required at the time of each subdivision plat. Future studies must include, but not be limited to: an identification of vehicle trip generation, existing and proposed conditions, capacity analysis, onsite and offsite impacts and improvements to mitigate the impacts. The design, financing and timing of construction of internal and external street connections will be addressed in subsequent subdivision agreement(s) at the time of the platting process. A future subdivision agreement or agreements will determine how many new homes, if any, can be built and occupied in each phase of development consistent with the timing of required offsite improvements. All traffic impact studies shall be subject to Town approval.*

## Attachments

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1. Staff PowerPoint Presentation (PDF)
2. Applicant's Presentation
3. Letter of Introduction
4. Mundell Farms Outline Development Plan (ODP)
5. Mundell Farms Traffic Impact Study
6. Combined Staff and Referral Agency Comments
7. Proposed Resolution No. 2022-18



# Case No. 22.02 Mundell Farms (Bennett North) Zoning

Planning and Zoning Commission

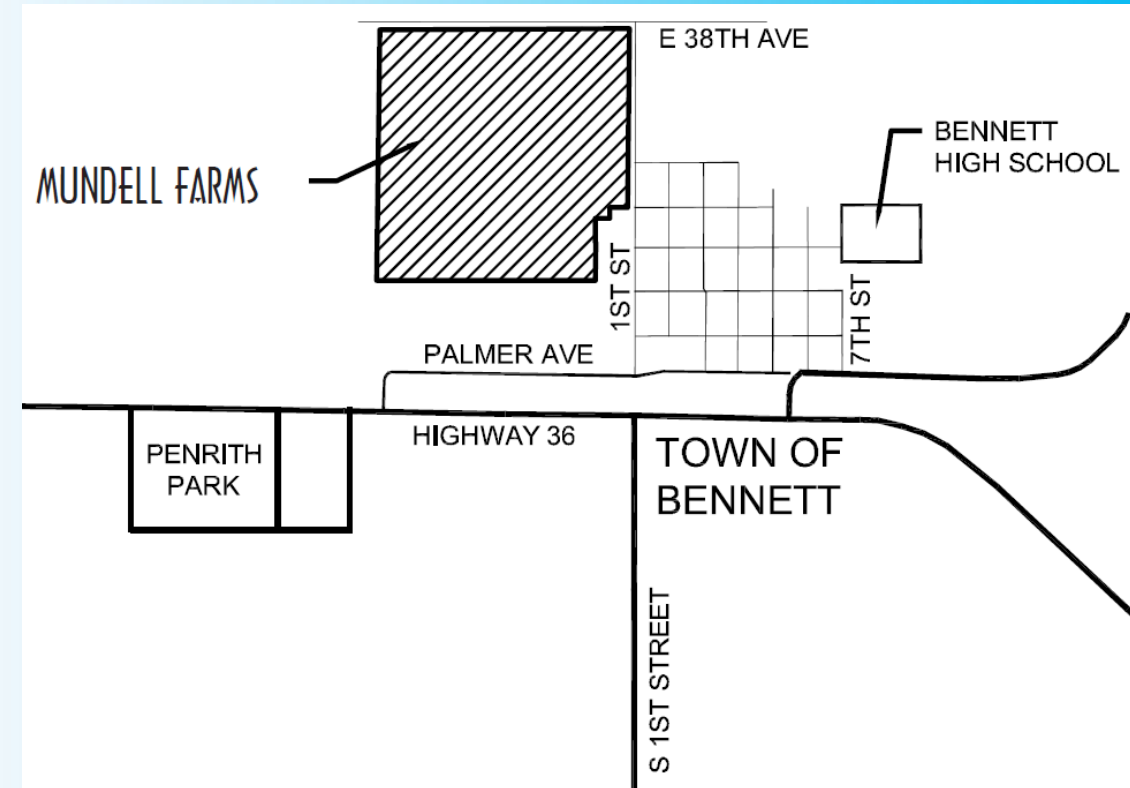
November 21, 2022

Steve Hebert, Planning Manager

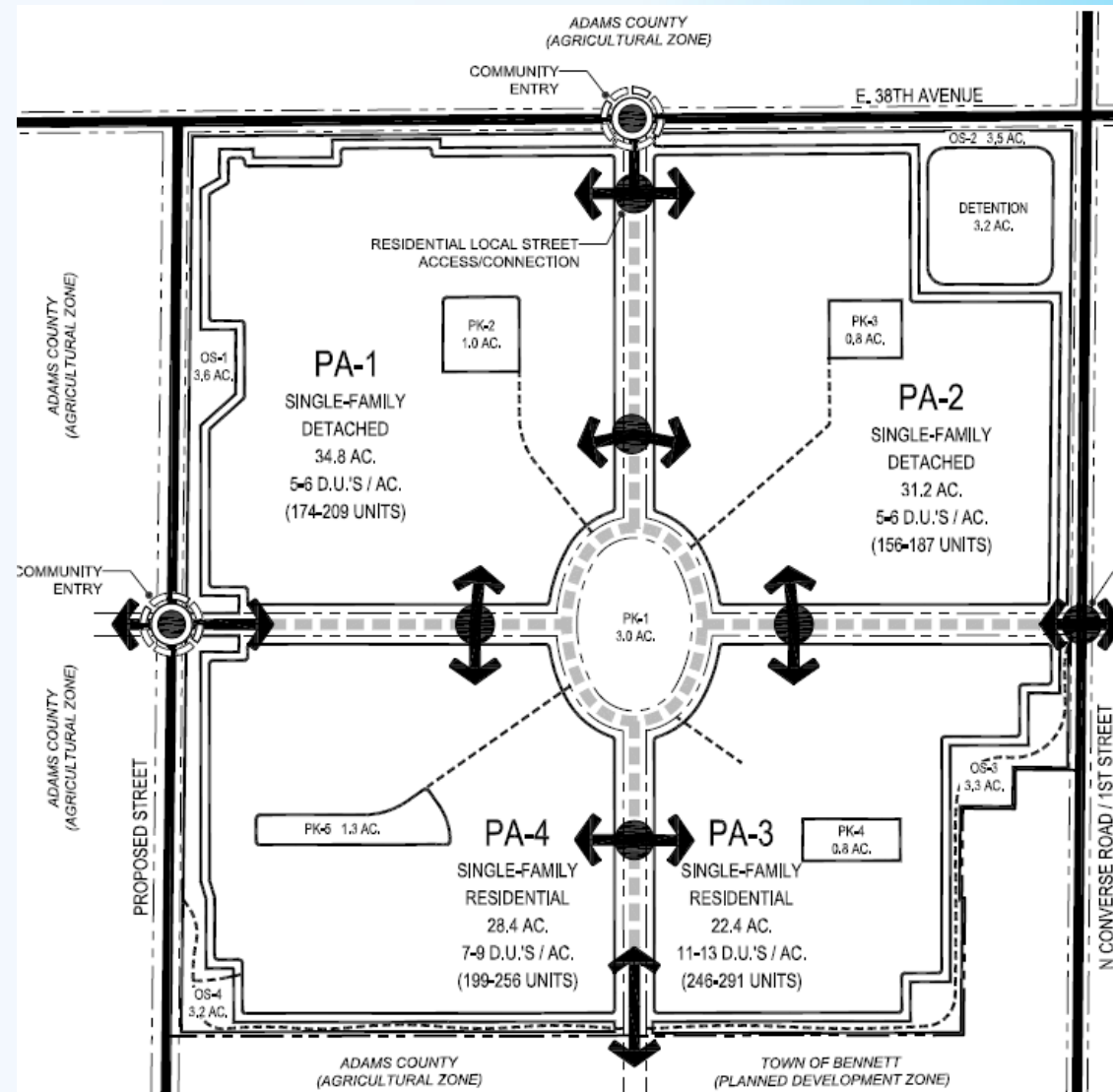


# Proposed Zoning to PD – Planned Development District with Mundell Farms Outline Development Plan

- Proposal to zone 153.62 acres
- Annexed into Town of Bennett in March 2022
- Previously zoned A-3 in unincorporated Adams County
- Board of Trustees to consider zoning on November 22, 2022
- Proposed zoning is PD – Planned Development District



# Mundell Farms Outline Development Plan



# Mundell Farms Outline Development Plan

Land Use Type	Gross Acreage	% of Total
Open Space and Trail Corridors	16.8	10.9%
Parks & Recreation Areas	6.3	4.1%
Development Areas (All Residential)	117.4	76.4%
Major Roadways	13.1	8.5%
Total Map Acreage	153.6	100.0%
Maximum # of Dwelling Units	900	
Residential Density	5.9 du/ac	

# Applicant's Project Description

- Living at Mundell Farms is pure and natural.
- Surround homes with a central park, additional pocket parks, and a perimeter trail.
- Parks and open space energize the residents and the perimeter trail provides an active social amenity for the community.
- The homes will be diverse, for all generations and lifestyles.
- Both traditional detached and attached homes.
- A community goal is to have every home within 300 feet of a park or trail that connects to the 1-mile perimeter trail network.

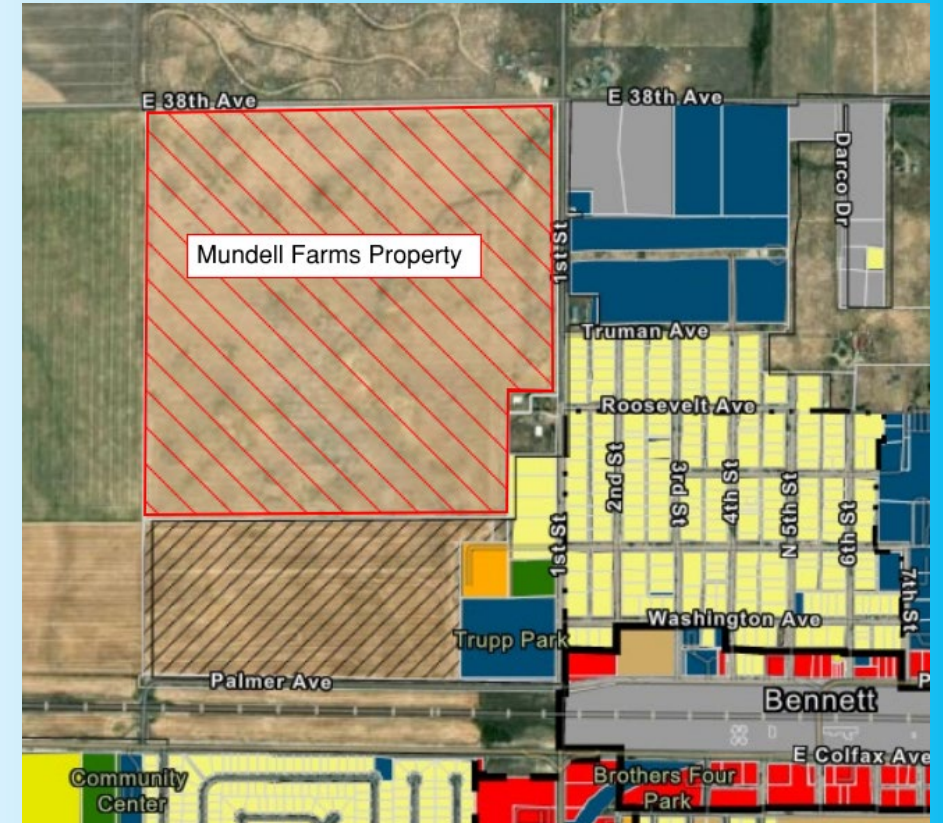


# Illustrative Plan



# Surrounding Zoning and Land Use

Direction	Zone District	Land Use
North	A-3 (Unincorporated)	Agricultural
East	I-Industrial, P-Public, R-1 Resid., A-3 (Unincorporated)	Industrial, Public Works Facility, Single-family Residential
South	PD – Planned Development	Agricultural
West	A-3 (Unincorporated)	Agricultural



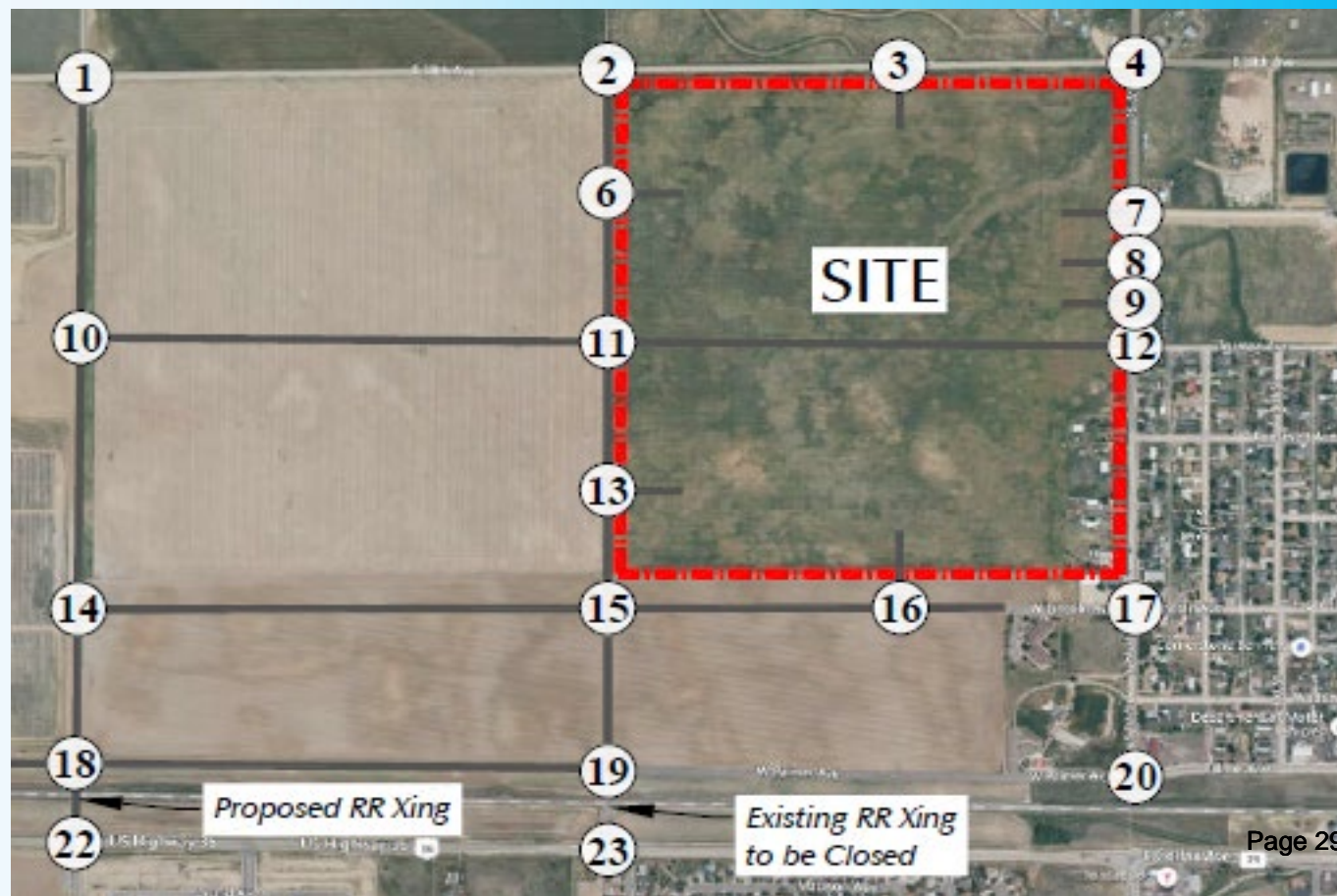
# Availability of Public Infrastructure

- 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 – E. 38<sup>th</sup> Avenue and 1<sup>st</sup> St./Converse Rd. (see additional comments on next slide)
  - 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, initial request for cash-in-lieu of land dedication



# Access, Traffic Impacts and Timing of Development Relative to Improvements

- Access via existing street network is inadequate
- Significant offsite improvements are expected in multiple phases
- Offsite connections are consistent with the draft Master Transportation Plan being developed
- Development will pay its fair share of offsite improvements
- Future subdivision plats will determine how many units can be built in each phase

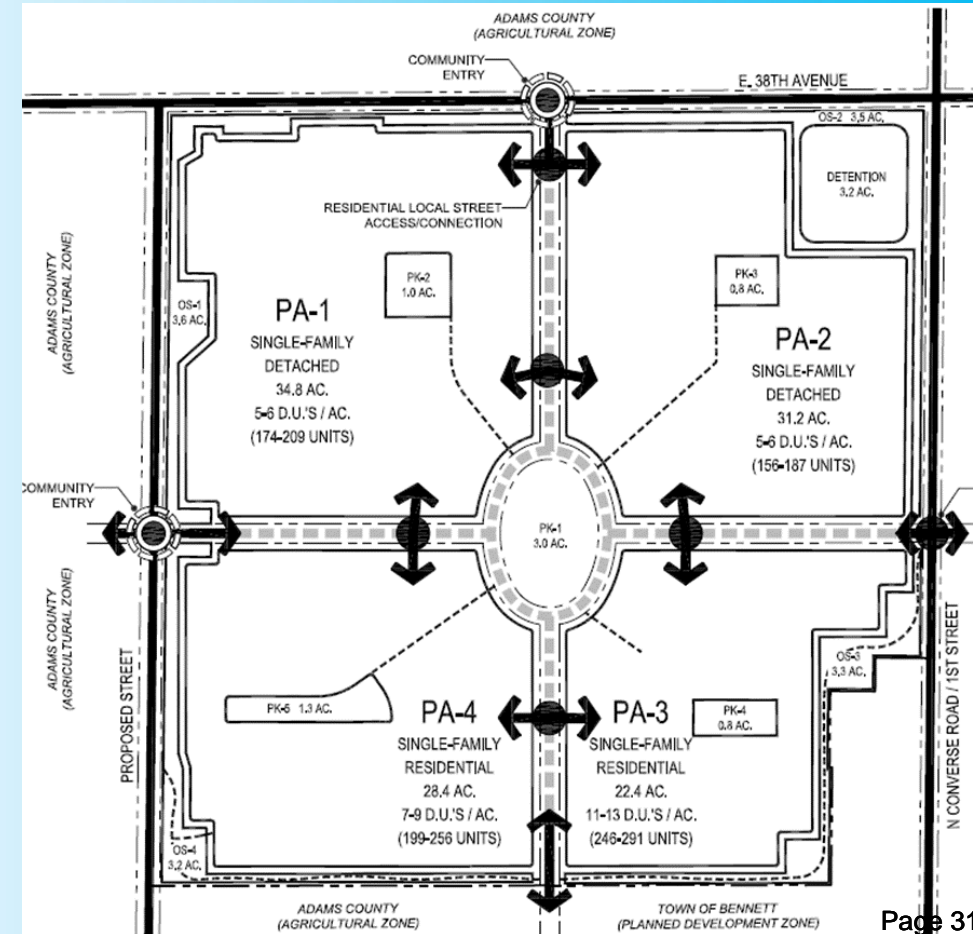


## New Language in ODP Re: Access, Traffic Impacts and Timing of Development Relative to Improvements

*Updated comprehensive traffic impact studies (TIS) will be required at the time of each subdivision plat. Future studies must include, but not be limited to: an identification of vehicle trip generation, existing and proposed conditions, capacity analysis, onsite and offsite impacts and improvements to mitigate the impacts. The design, financing and timing of construction of internal and external street connections will be addressed in subsequent subdivision agreement(s) at the time of the platting process. A future subdivision agreement or agreements will determine how many new homes, if any, can be built and occupied in each phase of development consistent with the timing of required offsite improvements. All traffic impact studies shall be subject to Town approval.*

# Future Dedication for Parks, Open Space, Trails and other Public Facilities

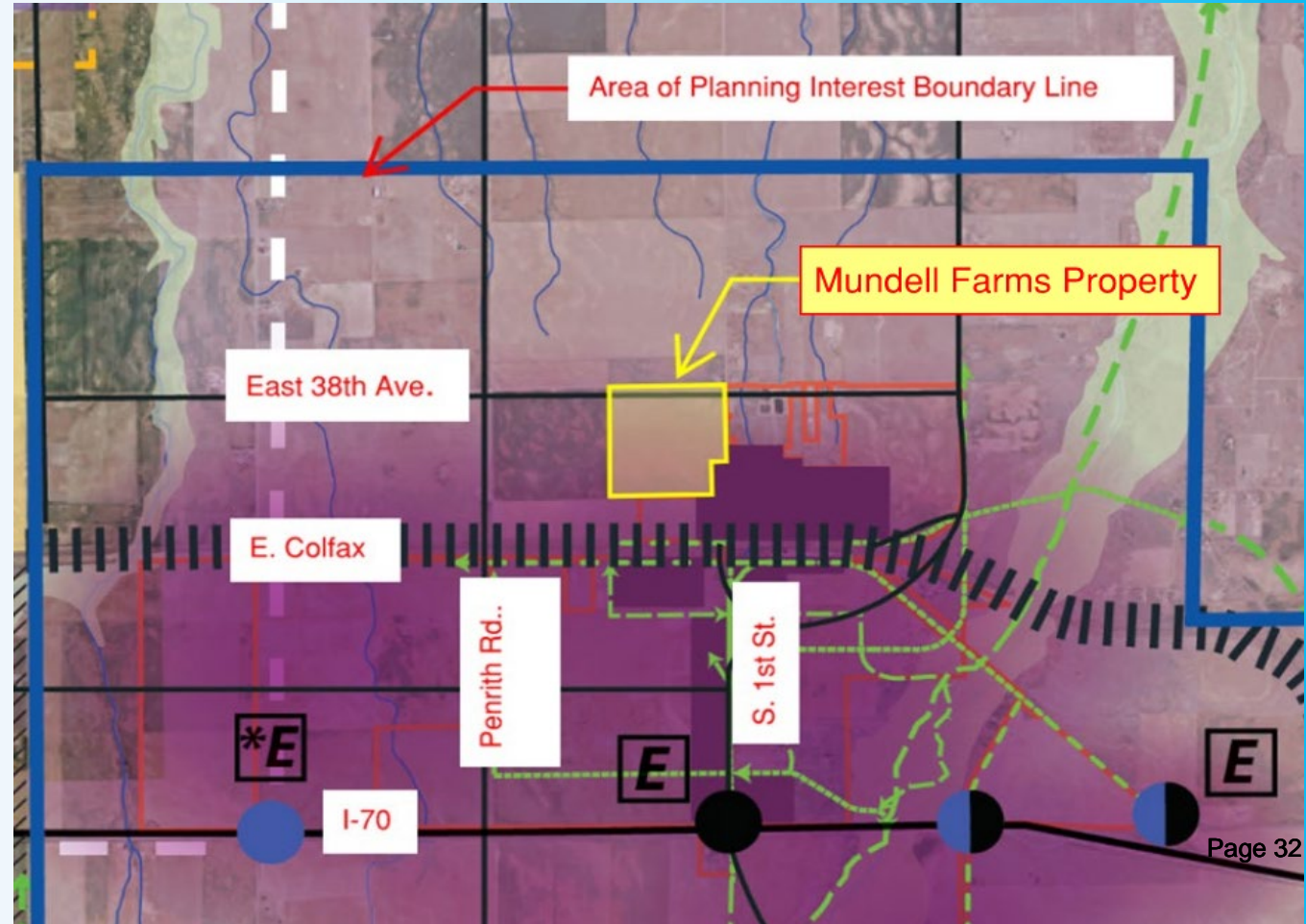
- Dedication for these public facilities will be determined at the time of subdivision plat, in accordance with the requirements applicable at that time.





# Consistency with 2021 Comprehensive Plan

- Property is within the Area of Planning Interest
- Contiguous to existing Town boundaries



# Consistency with 2021 Comprehensive Plan

- Consistent with the Town Centre Land Use Concept
- Can accommodate both Low Residential and Mixed Residential land uses



# 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:

- Maintain and enhance a quality residential environment in the Town;
- Provide a diversity of housing types at various densities;
- Promote logical extensions of and efficient use of the Town's infrastructure.

## Staff Findings on Case No. 22.02

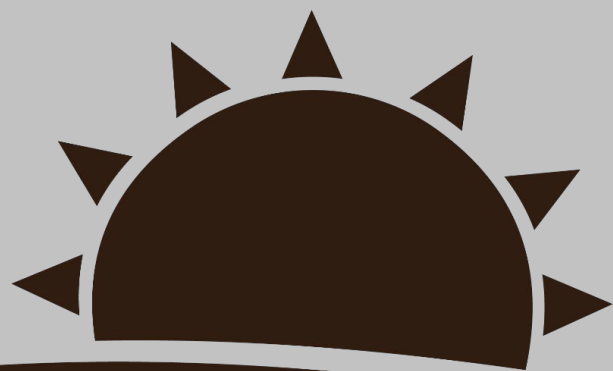
- Staff finds the proposed zoning is consistent with, or will promote, the goals and policies of the Town of Bennett 2021 Comprehensive Plan as required by Sections 16-1-90 and 16-2-360 of the Municipal Code.
- Staff finds the proposed zoning is consistent with the purpose of the Bennett Land Use Code, outlined in Section 16-1-50

## Staff Recommendation

Staff recommends the Planning and Zoning Commission adopt Resolution No. 2022-18, recommending approval of the zoning of the Mundell property to PD – Planned Development District and approval of the Mundell Farms Outline Development Plan, subject to conditions as outlined in the resolution.

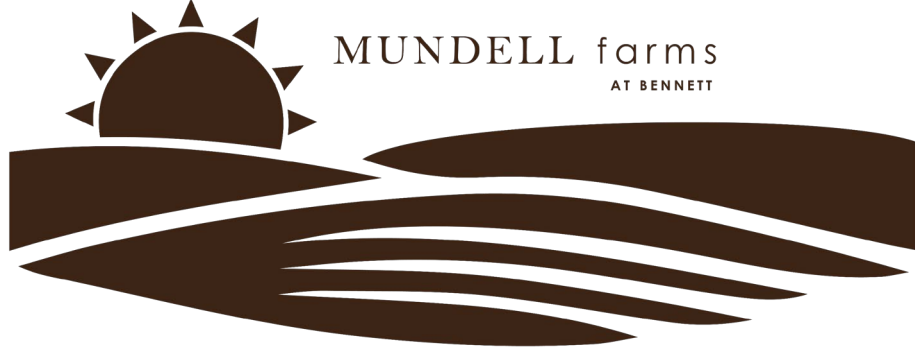
(See Proposed Resolution)





MUNDELL farms  
AT BENNETT

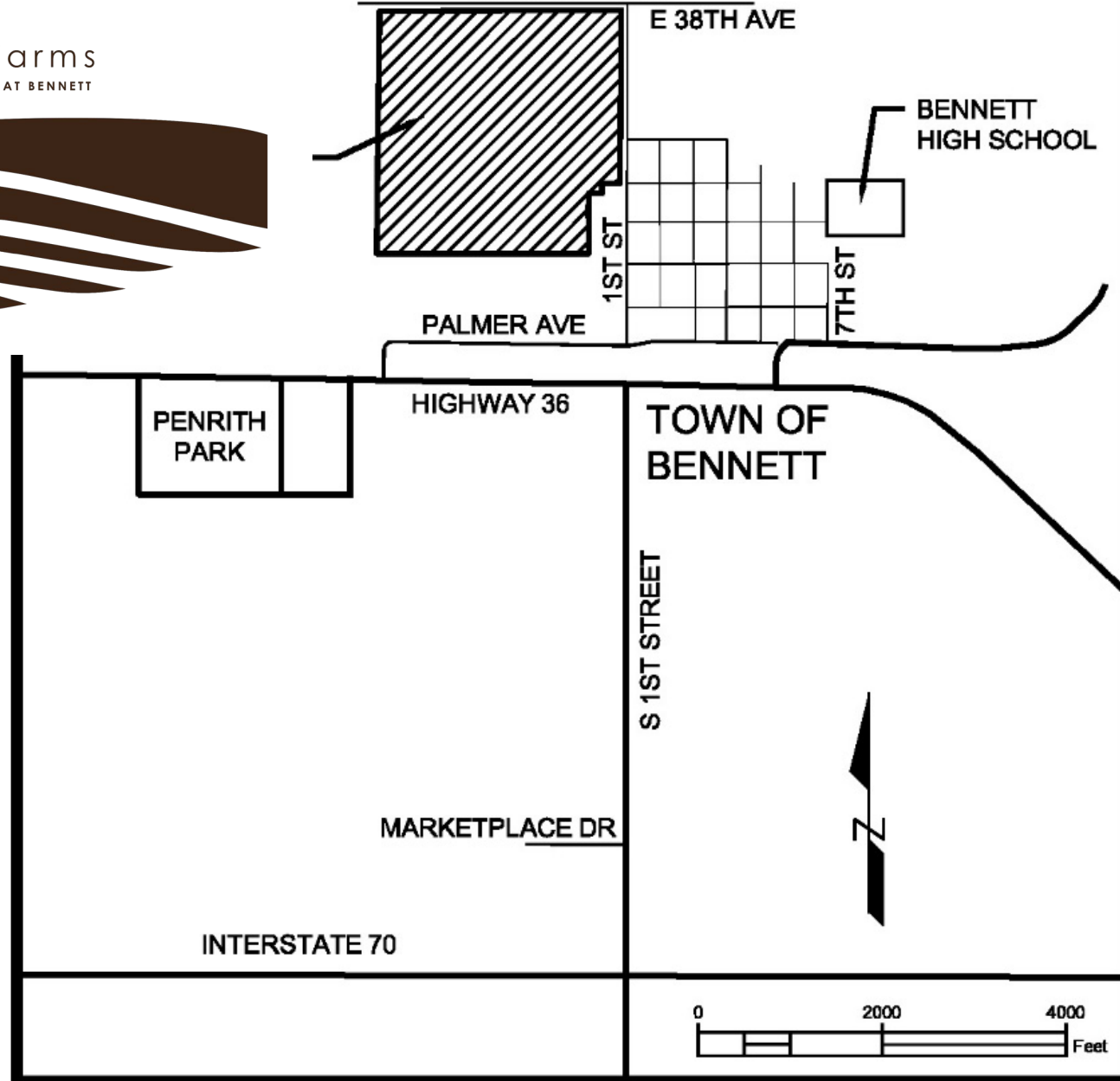


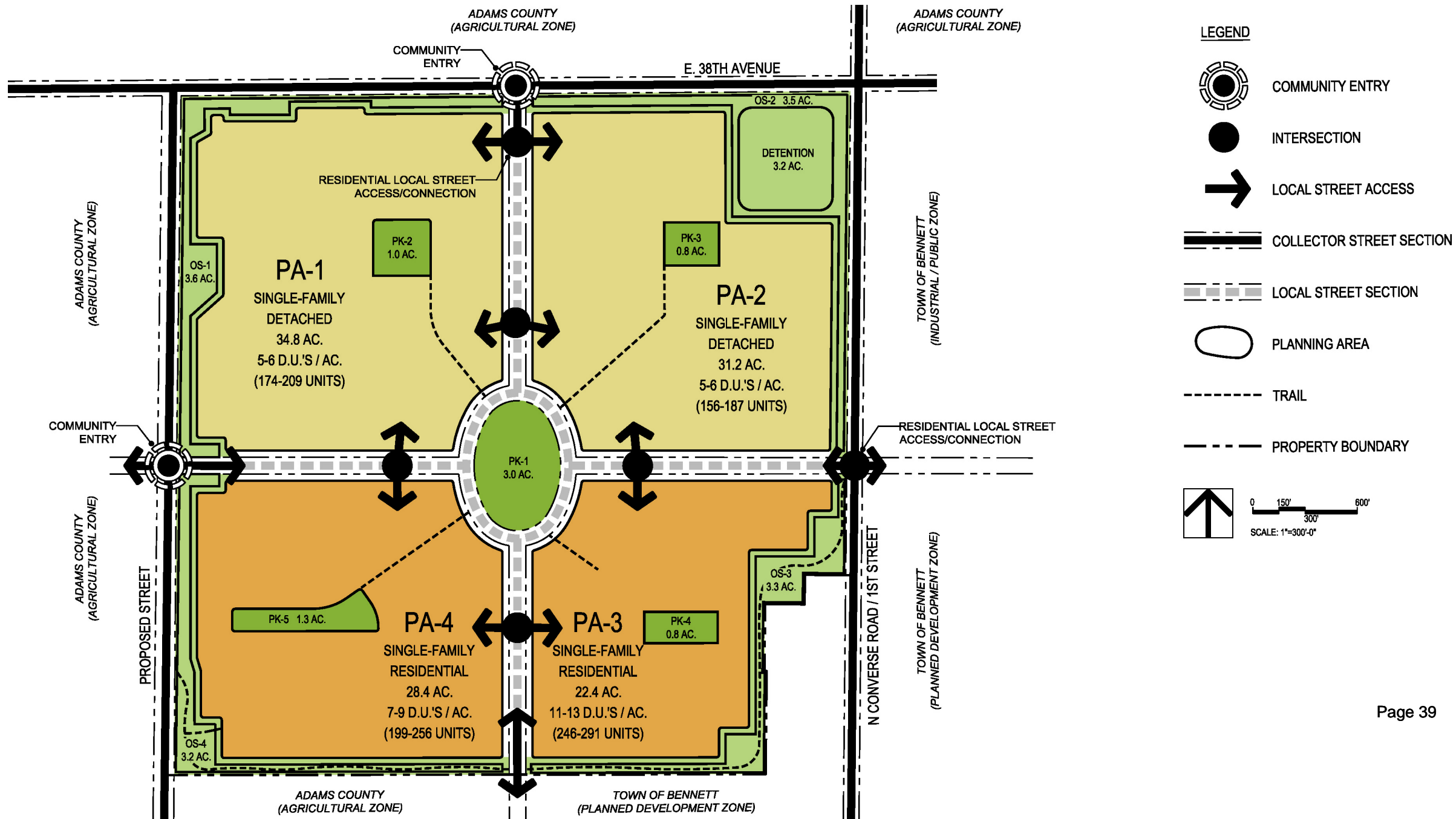


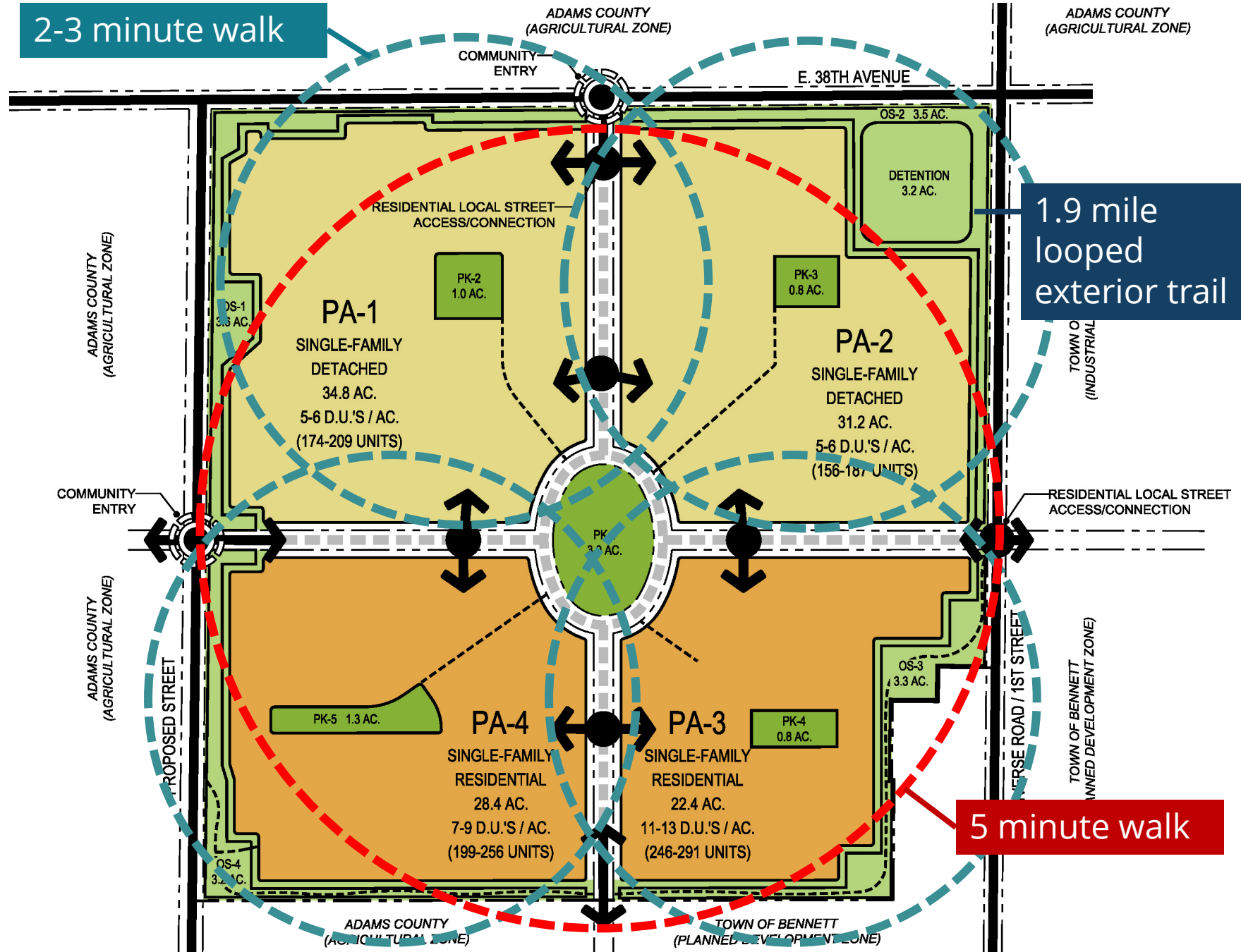
MUNDELL farms  
AT BENNETT

## VICINITY MAP

SCALE 1" = 2000'







## PARK & OPEN SPACE AREAS INTENT

To provide active and passive open space uses, including potential recreational facilities, to serve the residents of MUNDELL farms.

1. Pocket Park Standards
  - a. Size: Generally .75 to 3 acres in size
  - b. Location/Orientation: Centrally located within the residential development and/or easily accessible by residents without the use of vehicles. A 5 minute walking distance for most residents.
  - c. Frontage: Required on one, preferred two or more local streets.
  - d. Pocket Parks are required to include all of the following infrastructure:
    - i. Benches (two minimum)
    - ii. Bicycle Racks (min. to serve four bikes)
    - iii. Pet Waste Station
    - iv. Shade Structure
    - v. ADA Accessible Walkways
    - vi. Trash Receptacle
    - vii. Turf and landscape plantings to provide shade over at least 25% of the area.
    - viii. Irrigation
  - e. Pocket Parks are required to include at least one of the following components:
    - i. Display Garden
    - ii. Group Picnic Shelter (min. 500 sf and two picnic tables)
    - iii. Loop Walk (min. length 1,000 lf)
    - iv. Multi-level Play Structure
    - v. Basketball (one half court)
    - vi. Bocce Ball, Horseshoe Pits, Shuffleboard, or similar
    - vii. Boulder/Climbing Play Area
    - viii. Community Garden
    - ix. Fitness Course
    - x. Handball or Tennis Courts
    - xi. Turf play berm (min. 3 feet height)
    - xii. Playground with at least 3 pieces of play equipment
    - xiii. Public Art

## Permitted Uses (by Right)

1. Active public and private recreational uses, including but not limited to multi-purpose turf areas, playgrounds, swimming pools, and court games.
2. Passive public and private recreational uses, including but not limited to picnic grounds, native, naturalized or landscaped fields, and visual buffer open space.
3. Public Recreation Buildings.
4. Community Information/Sales Centers.
5. Picnic Pavilions and Shelters.
6. Public and quasi-public facilities.
7. Hiking and biking trails.
8. Accessory structures and uses.
9. Temporary construction yards and structures.
10. Signage, (including project identification signs and monuments) - subject to the sign permit requirements in the Bennett Municipal Code.
11. Utilities and appurtenant facilities.
12. Roads and parking.
13. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
14. Drainage and detention facilities
15. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

## Conditional Uses

(Conditional uses will be reviewed and processed in accordance with the Bennett Municipal Code)

1. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

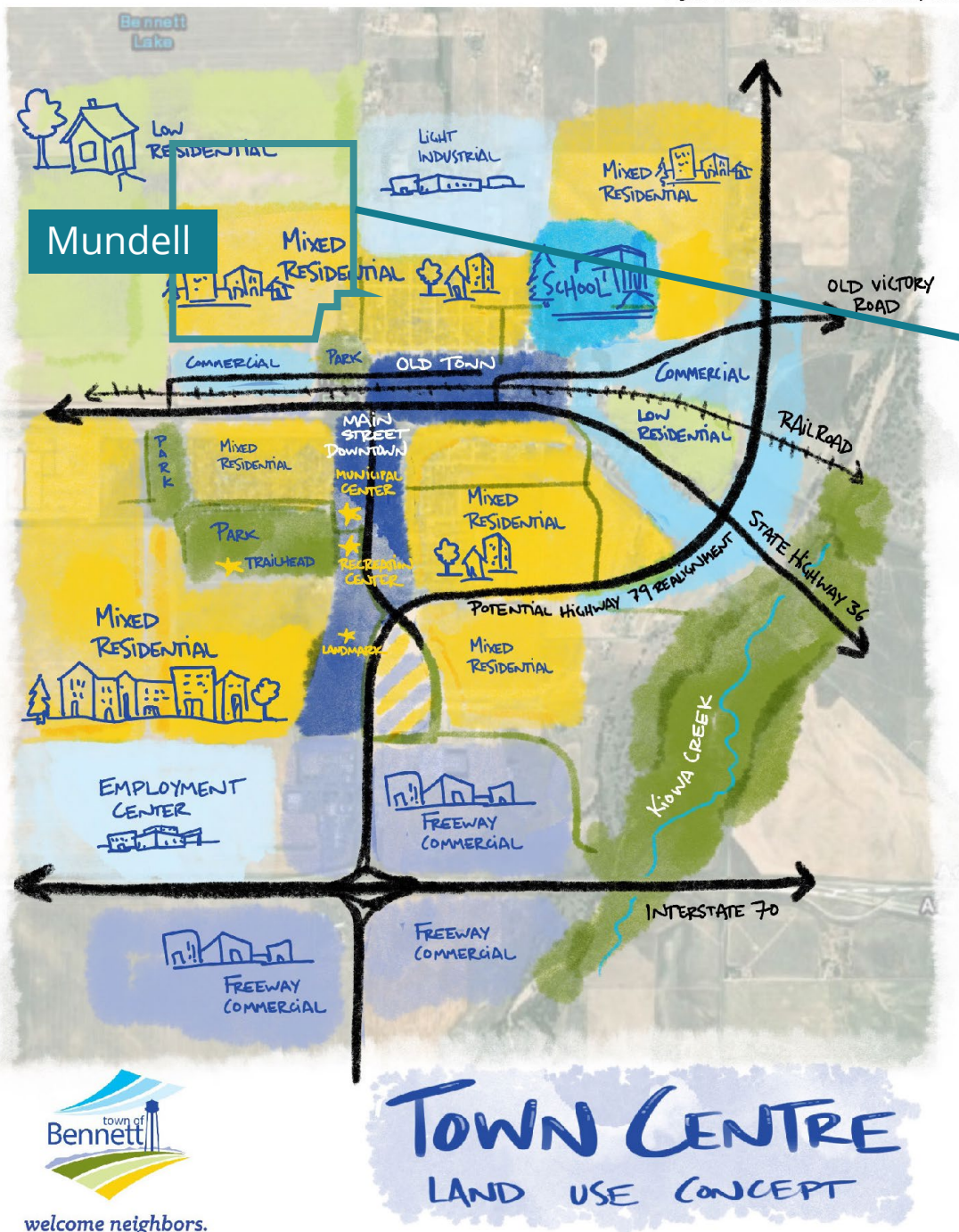
## Temporary Uses

(Temporary uses will be reviewed and processed in accordance with the Bennett Municipal Code)

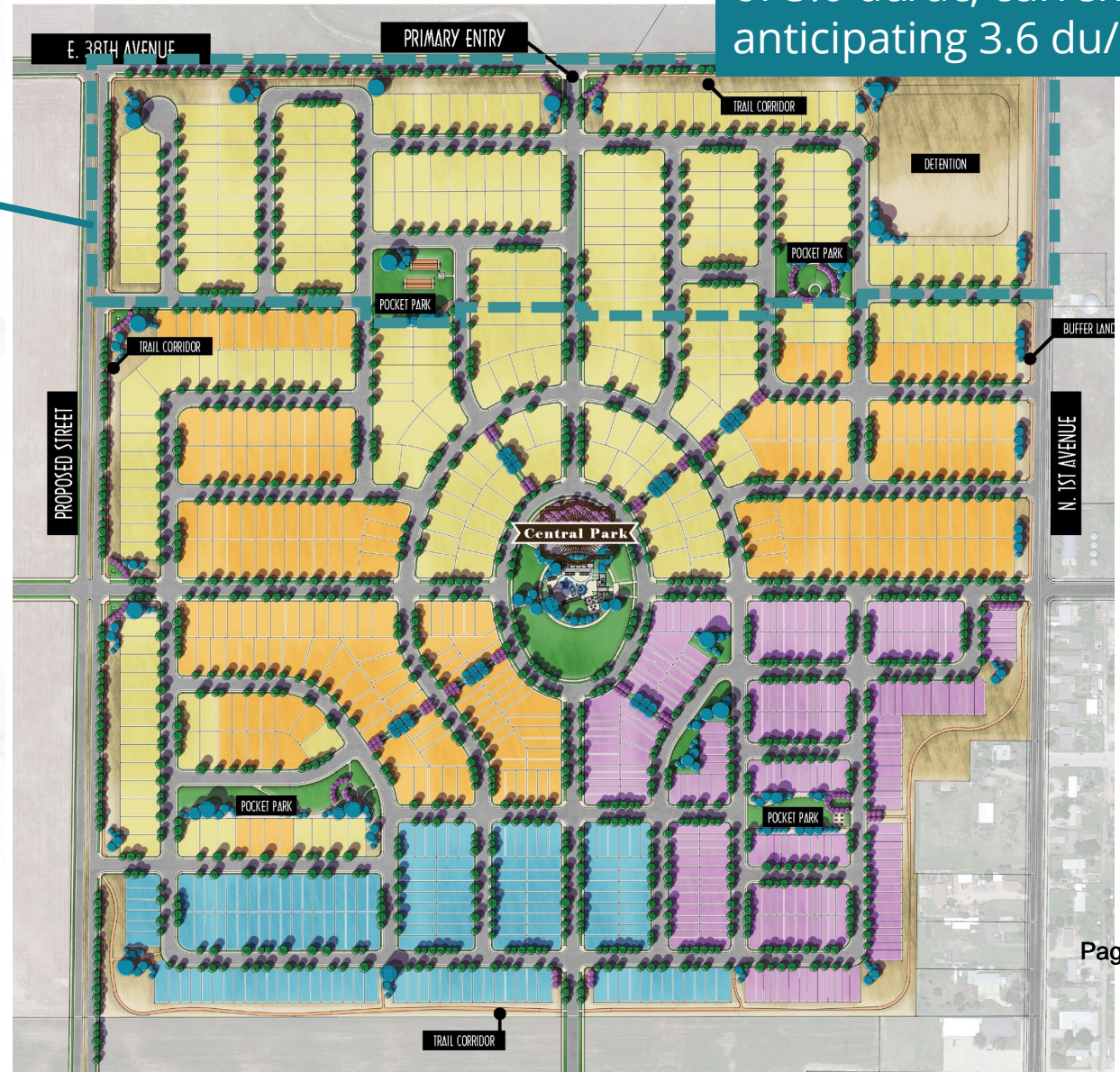
1. Special community events
2. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.



Figure 7: Town Centre Land Use Concept Plan



ILLUSTRATIVE CONCEPT PLAN



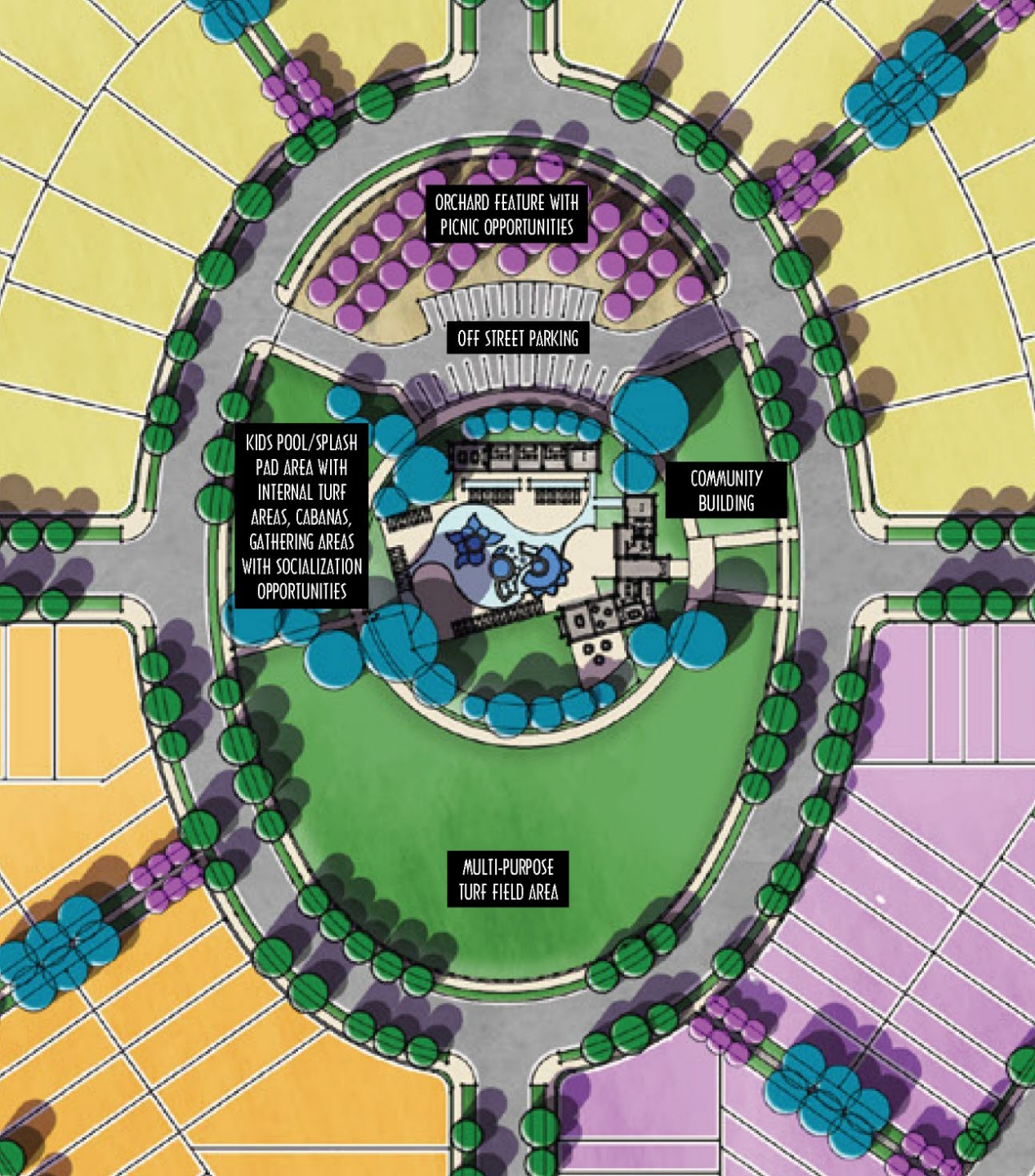
Low Residential Area, limited to a maximum of 5.0 du/ac, currently anticipating 3.6 du/ac.



# • SUMMARY

- Is a logical extension to the Town of Bennett, will contribute to required future road connectivity for the Town of Bennett.
- The property is already annexed to the Town of Bennett.
- Is the first step in the design process for a new community, and is in compliance with the Comprehensive Plan.
- The proposal is consistent with the Town of Bennett requirements.

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Steve Hebert, AICP  
Planning and Economic Development Manager  
303-644-3249 ext. 1030  
shebert@bennett.co.us

## **MUNDELL FARMS**

### DEVELOPMENT CONCEPT AND INTENT

The idea for living at MUNDELL farms is pure and natural: Surround homes with a central park, additional pocket parks, and a perimeter trail. The parks and open space energize the residents and the perimeter trail provides an active social amenity for the community. The homes will be diverse, for all generations and lifestyles. It is anticipated that MUNDELL farms will start with both traditional detached and attached homes. A community goal is to have every home within 300 feet of a park or trail that connects to the 1-mile perimeter trail network.

Overall MUNDELL FARMS proposes a maximum of 900 homes of the approximately 154 acres, an average density of 5.9 du/ac. The applicant is requesting an ODP Zoning for the property and has prepared all the required documents for submittal.

Sincerely,

President, RLA, PCS Group, Inc.

OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 1 of 8

LEGAL DESCRIPTION

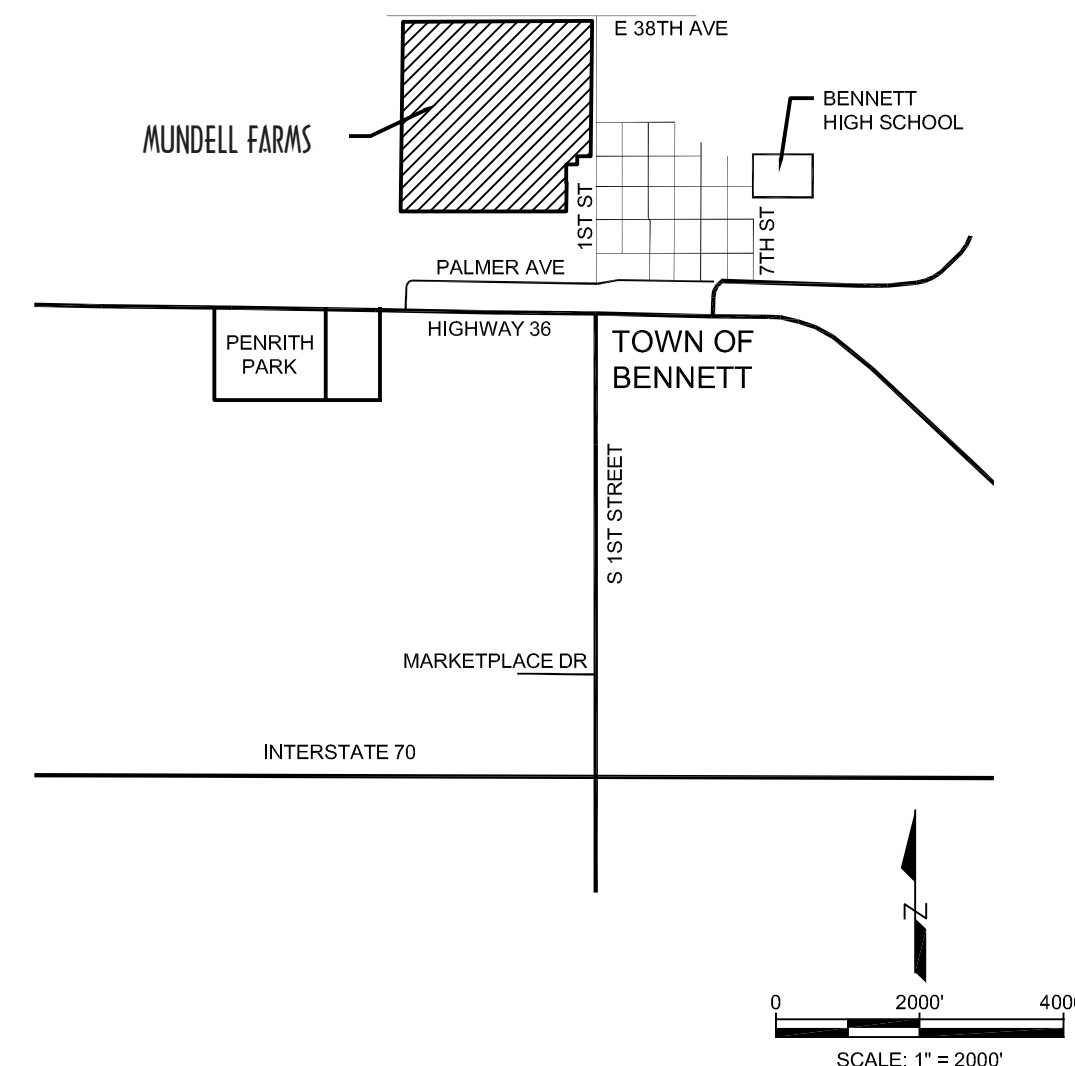
THE NE1/4 SECTION 28, TOWNSHIP 3, RANGE 63,  
  
EXCEPT THREE ACRES IN THE SE1/4 OF THE NE1/4 OF SAID SECTION 28 DESCRIBED AS:  
BEGINNING AT THE SOUTHEAST CORNER OF THE NE1/4;  
THENCE NORTH 396'; THENCE WEST 330'; THENCE SOUTH 396'; THENCE EAST 330' TO THE POINT OF BEGINNING.  
  
AND EXCEPT A PARCEL OF LAND SITUATED IN THE NE1/4 OF SAID SECTION 28 DESCRIBED AS:  
BEGINNING AT A POINT 396.0' N00°01'E OF THE SE CORNER OF THE NE1/4 OF SAID SECTION 28; THENCE N00°01'E A DISTANCE OF 365.0'; THENCE N89°59'W A DISTANCE OF 187.0'; THENCE S00°01'W A DISTANCE OF 113.0'; THENCE N89°59'W A DISTANCE OF 151.5 FEET; THENCE S00°01'W A DISTANCE OF 257.0'; THENCE N89°10'13"E A DISTANCE OF 338.5', MORE OR LESS, TO POINT OF BEGINNING.

ABOVE PARCEL OF LAND INCLUDES 153.62 ACRES MORE OR LESS.



SHEET INDEX

Sheet No.	Sheet Name
1	Cover
2	Introduction/Development Concept
3	Introduction/Development Concept
4	ODP Zoning Map
5	Illustrative Concept
6	Development Standards
7	Development Standards
8	Community Patterns & Lot Types
9	Lot Types



Land Use Summary Chart

Land Use Type	Gross Acreage	% of Total
Open Space and Trail Corridors	16.8	10.9%
Parks & Recreation Areas	6.3	4.1%
Development Areas (All Residential)	117.4	76.4%
Major Roadways	13.1	8.5%
Total Map Acreage	153.6	100.0%
Maximum # of Dwelling Units	900	
Residential Density	5.9 du/ac	

APPROVALS

Approved by the Town Board of Trustees of the Town of Bennett on \_\_\_\_\_, 20\_\_ by Ordinance No. \_\_\_\_\_.

Mayor \_\_\_\_\_ ATTEST: Town Clerk \_\_\_\_\_

By signing this ODP, the owner acknowledges and accepts all of the requirements and intent set forth herein.

Marcia Mundell  
157 Maplewood South,  
Kyle, TX 78640

Samuel Ira Mundell  
754 F Street, Fernley, NV 89408

Claude Bennett  
8730 Westminster Terrace, #3410  
Dallas, TX 75243

Cindy Lou Paynter  
11530 Zimmerman Road, Port Richey, FL 34668

Jay Marie Snider  
1246 Sheldon Drive  
Brentwood, CA 94513

STATE OF COLORADO )  
COUNTY OF \_\_\_\_\_ )SS

The above and foregoing signature of \_\_\_\_\_ as \_\_\_\_\_ of \_\_\_\_\_, was subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Witness my hand and official seal.  
My commission expires on: \_\_\_\_\_

(SEAL) \_\_\_\_\_  
Notary Public

APPLICANT

MGV 36 NORTH LAND INVESTMENTS, LLC  
PO Box - 4701  
Greenwood Village, CO 80155  
(303) 507-6651

PLANNER/LANDSCAPE ARCHITECT

  
**pcs group inc.**  
200 Kalamath Street, Denver, CO 80223  
tel: 303.531.4905  
www.pcsgroupco.com

CIVIL ENGINEER

  
2006 S. Alton Way, Bldg F,  
Centennial, Colorado 80112  
303.694.1520

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OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED: SEPTEMBER 29, 2022  
REVISED:  
REVISED:

1 of 8

COVER

# OUTLINE DEVELOPMENT PLAN

## MUNDELL FARMS

### TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

#### SHEET 2 of 8

## DEVELOPMENT CONCEPT AND INTENT

# Good Living Grows NATURALLY HERE

The idea for living at MUNDELL farms is pure and natural: Surround homes with a central park, additional pocket parks, and a perimeter trail. The parks and open space energize the residents and the perimeter trail provides an active social amenity for the community. The homes will be diverse, for all generations and lifestyles. It is anticipated that MUNDELL farms will start with both traditional detached and attached homes. A community goal is to have every home within 300 feet of a park or trail that connects to the 1-mile perimeter trail network.

## PLAN AMENDMENTS

The size of any Planning Area may increase or decrease by an administrative amendment for no more than 10% as determined by the Town's Zoning Administrator after final determination of: internal street alignments, arterial street alignments, park and open space and buffer zone areas. The initial boundary of any Planning Area will be established with the final plat that is prepared for that area. Amendments to planning areas shall be subject to the Town of Bennett Municipal Code, as amended.

## TOWN OF BENNETT MUNICIPAL CODE STANDARDS AND DESIGN GUIDELINES

The Town standards, as amended, apply for landscaping, lighting and parking unless modified by this document. In addition, design guidelines adopted by the Town of Bennett shall apply to this development in conjunction with design statements included in this document.

## RESIDENTIAL NEIGHBORHOOD USES

THE COMMUNITY contains four primarily residential neighborhoods organized around the central neighborhood park, pocket parks, or adjacent roadways. Each neighborhood will allow for a range of residential uses, from single-family attached, small lot and larger lot single-family detached homes. In general it is anticipated that densities will be less along the north and western border of the property. This range of housing types is proposed to ensure economic success for the project, and to attract a range of home buyers. While the actual mix of home types and lot sizes within individual neighborhoods may vary based on market conditions and economic factors at the time of development, a maximum number of units and density within each neighborhood will be maintained.

Given the conceptual nature of the plan, some minor variations in the boundaries, acreages and densities of individual neighborhoods will be allowed, but will not exceed a variation of 10% for any area as described in this ODP. In addition the overall gross project density of 5.9 du/ac and a total residential build out of 900 homes will not be exceeded.

## PARKS AND OPEN SPACE SYSTEM

THE PROPOSED Parks and Open Space for MUNDELL farms will exceed the minimum 10%

requirement for the Town of Bennett as required for a PD District. As depicted the Parks and Open Space system is approximately 15% of the total property, the areas are anticipated for active play and recreation opportunities, trail corridors, perimeter open space buffers, community entryways and natural open space areas designed to serve the future residents of the Town of Bennett.

The plan anticipates a centrally located neighborhood park, that is connected to the community's trail corridors. Pedestrian walkways and trail connections within individual parcels will link the neighborhood amenities such as the 4 additional centrally located pocket parks.

## ENVIRONMENTAL STATEMENT

THE PROPERTY has no identified floodplain. We do not believe there are any wetlands, wildlife migration routes, or any sites of historic, archaeological, or paleontological significance.

## SITE ACCESS AND CIRCULATION

THE COMMUNITY includes several entry locations, a primary entry is anticipated from E-38th Ave which will create a strong community identity for the community. The primary entry road will terminate at the Neighborhood Park. The entryways and roadways will incorporate a consistent streetscape character, including streetscape landscaping, sidewalks, fencing and signage to produce a positive impression upon entering the community, as well as enhancing the comfortable neighborhood environment for the larger community.

## SCHOOLS

SCHOOL LAND DEDICATION will be satisfied with cash-in-lieu or dedication, this will be determined at the time of subdivision plat.

## FIRE PROTECTION SERVICES

FIRE PROTECTION SERVICES for MUNDELL farms will be provided by the Bennett -Watkins Fire Rescue.

## WATER & SEWER SERVICE

The MUNDELL Farms property is currently annexed into the Town of Bennett, water and sanitary sewer service will be provided by the Town of Bennett.

## STORM DRAINAGE

PROPOSED IMPROVEMENTS for MUNDELL farms will require the design and construction of storm drainage facilities to reduce site run-off and the impact to historic proportions. Drainage facilities will be built to the Town of Bennett standards, a preliminary drainage study has been completed as a part of this ODP.

The project will incorporate several concepts in the design of drainage facilities for the site, including:

1. Measures to reduce erosion effects of concentrated flows from developed storm water

- runoff to adjacent agricultural fields (particularly the western drainage basins);
2. Evaluation of detention facilities for multiple use, such as parks and open space, recreation facilities, trail corridors, and storm water storage for irrigation of common/public open space areas;
3. Detention and erosion control requirements for phased construction; and
4. Storm water quality enhancement in accordance with the best management practices, particularly in the neighborhood commercial areas.

## GENERAL DEVELOPMENT PHASING

DEVELOPMENT is generally anticipated to proceed from the north to the south. The first phase of the community, at the time of subdivision plat, shall be limited to a maximum number of residential units that can be adequately accommodated on the existing road network, and in accordance with the Traffic Impact Analysis (TIA) prepared for Mundell Farms. Development of the interior road network will provide access to individual residential parcels as this network is extended through the property, and the centrally located Neighborhood Park will be in the first phase of the community. Future phases of the community shall include adequate off-site road improvements as determined by specific updates to the TIA at the time of subdivision plat. Public facilities/services, infrastructure, utilities, and amenities will be constructed to serve the residential neighborhoods in a reasonable and efficient manner as those areas are developed.

We will continue to work with the Town of Bennett through the development process to determine the ultimate phasing.

The total project build-out time frame will be determined by market conditions.

PLANNING  
LANDSCAPE ARCHITECTURE



200 Kalamath Street, Denver, CO -  
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tel: 303.531.4905  
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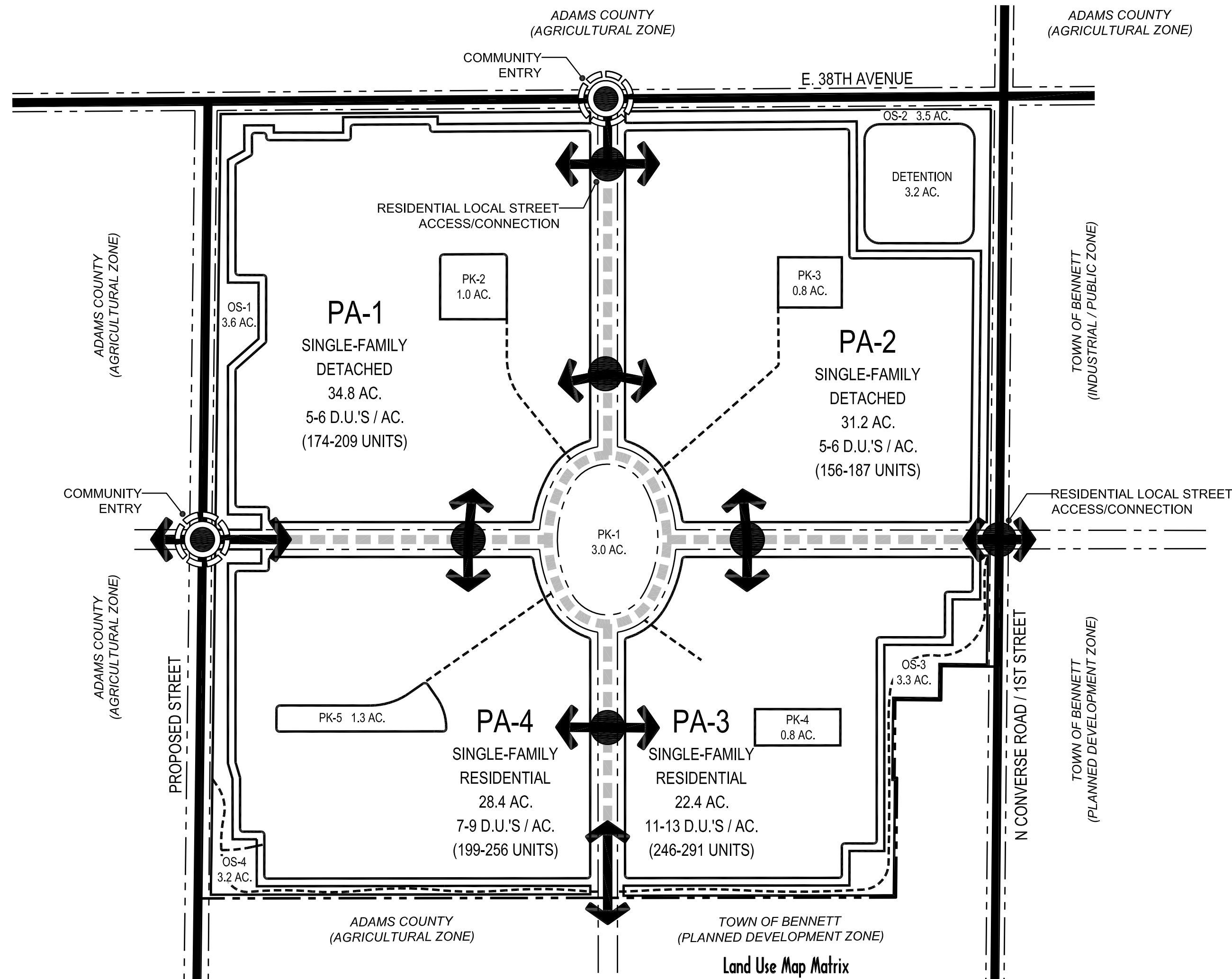
2 of 8

INTRODUCTION

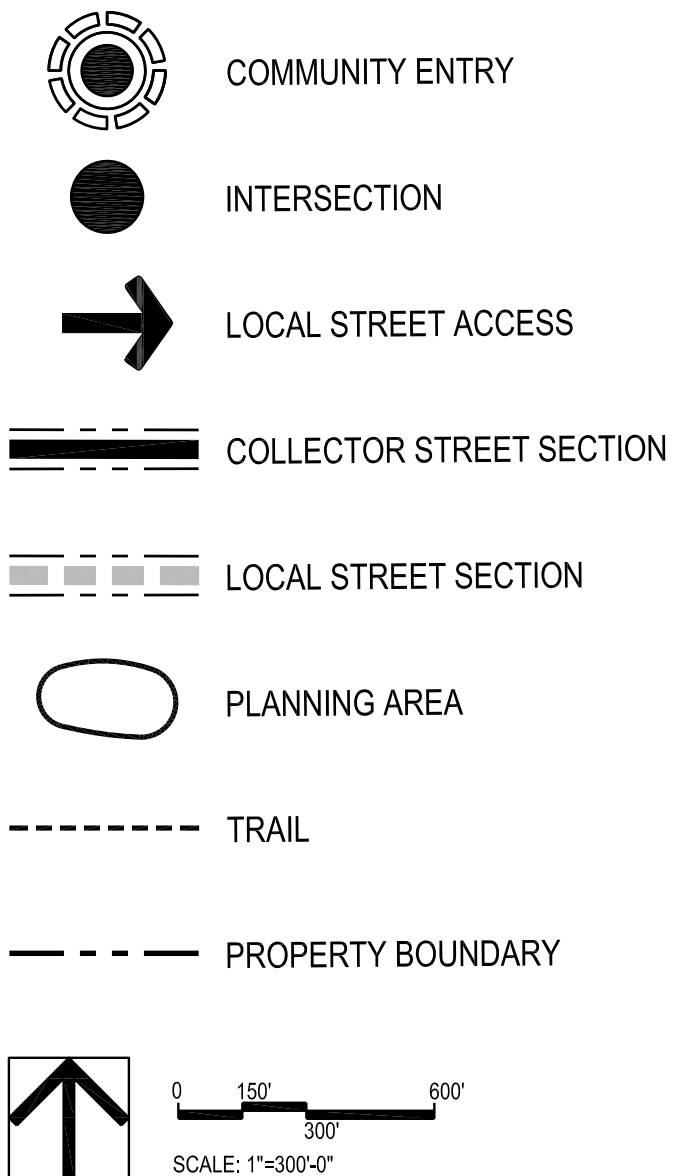


OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 3 of 8

OUTLINE DEVELOPMENT PLAN MAP



LEGEND



NOTES:

1. The projected mix of single family attached/detached homes, lot sizes and densities will depend on market conditions and economic factors at the time of development, but will not exceed 900 homes.
2. See Lot standards and Development standards for more specific lot and building parameters for proposed residential uses and lot types.
3. Open Space and Trail Corridor area includes perimeter and internal open space and buffers, trail connections, drainage corridors, detention areas and community entries.
4. Access locations shown on this plan are conceptual and are subject to change. Final access locations and allowed turn movements determined with later development applications such as Final Development Plan or Final Plat.
5. Local street alignments shown herein as subject to change based on future development plans for each planning area.
6. Lands that qualify for the public land dedication requirement in the Town of Bennett Municipal Code will be determined at the time of subdivision plat.

Land Use Map Matrix

A. Land Use Item	B. Planning Area Map Number	C. Gross Land Area in Acres	D. Percentage of Total Land Area	E. Land Use Formula (DU/AC)	F. Proposed Maximum Density (In DUs)	G. Phasing, Details and Comments
1. OPEN SPACE AND TRAIL CORRIDORS	OS-1	3.6	2.3%			Dedicated Open Space
	OS-2	6.7	4.4%			Dedicated Open Space - includes detention area
	OS-3	3.3	2.1%			Dedicated Open Space
	OS-4	3.2	2.1%			Dedicated Open Space
2. PARK & RECREATION AREAS	PK-1	3.0	2.0%			Anticipated Neighborhood Park & Primary Amenity
	PK-2	0.8	0.5%			Anticipated Pocket Park
	PK-3	0.5	0.3%			Anticipated Pocket Park
	PK-4	0.7	0.5%			Anticipated Pocket Park
	PK-5	1.3	0.8%			Anticipated Pocket Park
3. DEVELOPMENT AREAS	PA-1	35.0	22.8%	5 - 7 DU/AC	184 - 224	Primarily Single Family Residential - Attached allowed
	PA-2	31.5	20.5%	5 - 7 DU/AC	172 - 210	Primarily Single Family Residential - Attached allowed
	PA-3	22.5	14.6%	11 - 13 DU/AC	245 - 299	Primarily Single Family Attached Residential - Detached allowed
	PA-4	28.4	18.5%	7 - 9 DU/AC	205 - 251	Mix of Single Family Detached and Attached
4. MAJOR ROADWAYS		13.1	8.5%			
5. Total Map Acreage (Total figures above)		153.6	100.0%	5.9	900	
6. Applicant's Acreage Listed in Application		153.6				

PLANNING  
LANDSCAPE ARCHITECTURE



pcs group inc.

200 Kalamath Street, Denver, CO - 80223

tel: 303.531.4905

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CIVIL ENGINEERING



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303.694.1520

APPLICANT

MGV 36 NORTH LAND INVESTMENTS, LLC

PO Box - 4701

Greenwood Village, CO 80155

(303) 507-6651

OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS

TOWN OF BENNETT

COUNTY OF ADAMS, COLORADO

DATE: MAY 2022

REVISED: SEPTEMBER 29, 2022

REVISED:

REVISED:

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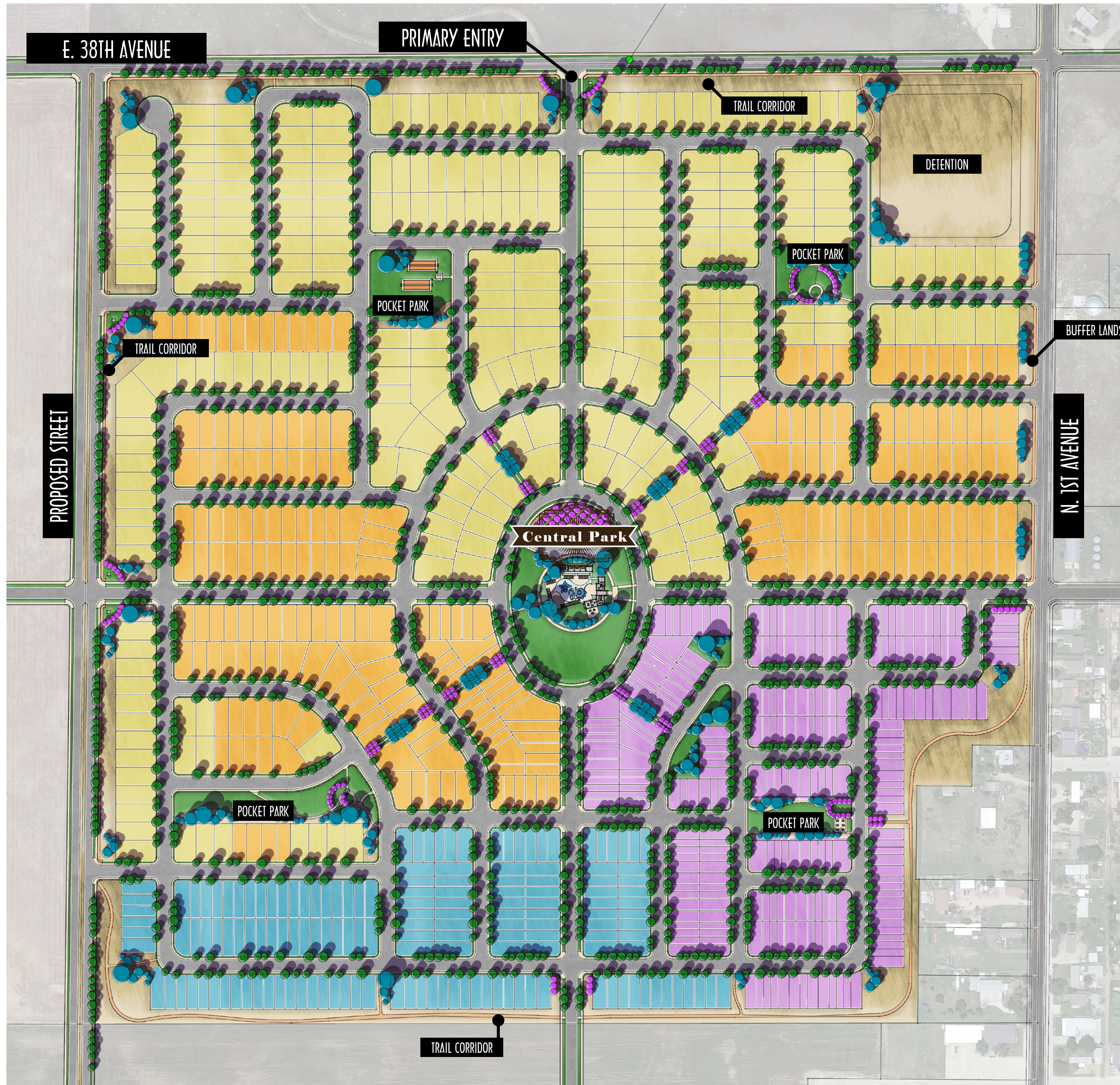
ODP ZONING MAP



# OUTLINE DEVELOPMENT PLAN

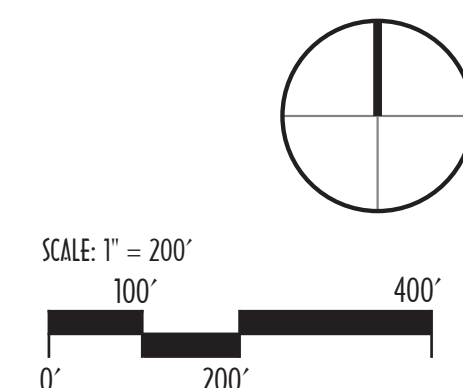
MUNDELL FARMS  
TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 4 of 8

## ILLUSTRATIVE CONCEPT PLAN



## ROOM to GROW

At MUNDELL farms, the entire cycle of life - from raising food to raising families - evolved in one healthy place. The first fresh, green community including its own orchard in the park! MUNDELL farms is rooted in the most up to date neighborhood and environmental thinking. Yet, it is down to earth and friendly with parks, paths, open space and easy access to amenities that make life easier, healthier, sustainable and comfortable.



PLANNING  
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## OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED: SEPTEMBER 29, 2022  
REVISED:  
REVISED:

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ILLUSTRATIVE CONCEPT



## DEVELOPMENT STANDARDS INTRODUCTION

The following Development Standards have been prepared to ensure a responsible site planning process which will help minimize potential land use conflicts, provide visual interest and diversity of homes, as well as enhance the small town, country character and open feeling of the Community. The standards also provide the flexibility necessary to support a range of single family-residential housing types and lot sizes, depending on market conditions at the time of development.

The Development Standards have been established for each major land use type within the Community. Projects permitted within each area and land use type shall be constructed in accordance with these Development Standards and permitted uses. These standards are considered preliminary guidelines which may require more specific information and detail at the time of Final Development Plan Review. The architectural character and intent for special/innovative residential solutions will also need to be established at Final Plan as determined by the Town. This may include prototypical site plans, and architectural character sketches and elevations.

Development Standards with respect to parking (including commercial off-street parking), sign control and landscape requirements shall be controlled by the provisions of the Town's Zoning Code and Subdivision Regulations.

## ARCHITECTURAL STANDARDS

Each neighborhood shall contain architectural diversity, high quality and attention to design detail in accordance with a set of design guidelines and standards to be created for the project at the time of final plat. The following general standards shall apply to all residential neighborhoods and become the basis for more specific architectural guidelines.

1. Varied architectural styles shall be encouraged within each neighborhood. (Architectural building forms and elevations should be varied but compatible along the streetscape, simple forms are preferred over complex forms)
2. Where floor plans are offered on a repeating basis, alternate elevations shall be developed. Identical floor plans with similar exterior elevations shall not be located adjacent to, or immediately across from one another.
3. A variety of design elements and details shall contribute to the overall character of a home's elevation and its appearance from the street, including the use of front porches and covered entries, bay and box windows, and the handling of windows and door openings.
4. Careful scrutiny shall be given to the massing, proportions, and the overall scale of each design. A home's mass will be "broken up" to reduce its apparent scale, provide visual interest and depth, and achieve a more articulated building form. Massing of individual homes should be simple and reflect the architectural style of the home. This requires the careful application of elevation styles to appropriate floorplans. For example, the strong two-story vertical massing of colonial style homes is most compatible with a simple rectilinear two-story stacked floorplan while the asymmetrical two-story massing or single story massing of a craftsman lends itself better to second floor recessed or single story plan. Builders are encouraged to develop floor plans that are responsive to both architectural style objectives as well as energy efficient building objectives. These two objectives can be satisfied by creating simple floor plan forms which minimize jogs and avoid unnecessary complicated massing solutions.
5. Large, flat, unbroken building planes on the front and rear elevations shall be prohibited. Side elevations without windows shall be discouraged.
6. Size, shapes, proportions, and trim of doors and windows shall be consistent with the architectural style of the home.
7. Garage-dominated homes and streetscenes shall be avoided through various design techniques, including providing varied garage orientations, locations and setbacks, as well as recessing garages into the main plane of front facades and providing design elements to help them blend with front architecture.
8. Maximum single family residential buildings heights will be limited to 35 feet.

# OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 5 of 8  
SINGLE-FAMILY RESIDENTIAL INTENT

To provide for a variety of residential development of single-family homes on a mix of single-family lot types, including the potential for attached homes. Special residential housing types and lot configurations, including but not limited to, rear-load homes with alley access, will be allowed if consistent with the intent, standards, and residential character of this section.

### Permitted Uses (by Right)

1. Single-family attached and detached dwelling units
2. Attached or detached private garages (with front and rear-loaded access, including alleys.)
3. Community information centers and kiosks
4. Accessory structures and uses (see below)
5. Public and private open space and recreational facilities
6. HOA facilities and trails
7. Signage (including project identification signs and monuments)-subject to the sign permit requirements in the Bennett Municipal Code.
8. Utilities and appurtenant facilities
9. Roads and parking
10. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
11. Drainage and detention facilities
12. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Conditional Uses

(Conditional uses will be reviewed and processed in accordance with the Bennett Municipal Code)

1. Child care centers
2. Public and quasi-public facilities
3. Institutional facilities
4. Special community buildings/facilities and events
5. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Temporary Uses

(Temporary uses will be reviewed and processed in accordance with the Bennett Municipal Code)

1. Show home complexes and/or residential sales offices
2. Temporary construction yards and structures
3. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

## PARK & OPEN SPACE AREAS INTENT

To provide active and passive open space uses, including potential recreational facilities, to serve the residents of MUNDELL farms.

1. Pocket Park Standards
  - a. Size: Generally .75 to 3 acres in size
  - b. Location/Orientation: Centrally located within the residential development and/or easily accessible by residents without the use of vehicles. A 5 minute walking distance for most residents.
  - c. Frontage: Required on one, preferred two or more local streets.
  - d. Pocket Parks are required to include all of the following infrastructure:
    - i. Benches (two minimum)
    - ii. Bicycle Racks (min. to serve four bikes)
    - iii. Pet Waste Station
    - iv. Shade Structure
    - v. ADA Accessible Walkways
    - vi. Trash Receptacle

- vii. Turf and landscape plantings to provide shade over at least 25% of the area.
  - viii. Irrigation
- e. Pocket Parks are required to include at least one of the following components:
    - i. Display Garden
    - ii. Group Picnic Shelter (min. 500 sf and two picnic tables)
    - iii. Loop Walk (min. length 1,000 lf)
    - iv. Multi-level Play Structure
    - v. Basketball (one half court)
    - vi. Bocce Ball, Horseshoe Pits, Shuffleboard, or similar
    - vii. Boulder/Climbing Play Area
    - viii. Community Garden
    - ix. Fitness Course
    - x. Handball or Tennis Courts
    - xi. Turf play berm (min. 3 feet hieght)
    - xii. Playground with at least 3 pieces of play equipment
    - xiii. Public Art

### Permitted Uses (by Right)

1. Active public and private recreational uses, including but not limited to multi-purpose turf areas, playgrounds, swimming pools, and court games.
2. Passive public and private recreational uses, including but not limited to picnic grounds, native, naturalized or landscaped fields, and visual buffer open space.
3. Public Recreation Buildings.
4. Community Information/Sales Centers.
5. Picnic Pavilions and Shelters.
6. Public and quasi-public facilities.
7. Hiking and biking trails.
8. Accessory structures and uses.
9. Temporary construction yards and structures.
10. Signage, (including project identification signs and monuments) - subject to the sign permit requirements in the Bennet Municipal Code.
11. Utilities and appurtenant facilities.
12. Roads and parking.
13. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
14. Drainage and detention facilities
15. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Conditional Uses

(Conditional uses will be reviewed and processed in accordance with the Bennett Municipal Code)

1. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Temporary Uses

(Temporary uses will be reviewed and processed in accordance with the Bennett Municipal Code)

1. Special community events
2. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Park & Open Space Development Standards

Projects permitted in Open Space Areas shall be constructed in accordance with the following Development Standards.

1. Minimum Building Setbacks:
  - Adjacent to other land use planning areas = 30 feet
  - Adjacent to public roadway = 30 feet
2. Minimum building separation = 20 feet (or as required by applicable fire codes)
3. Maximum building height = 35 feet (2 stories)
4. Minimum off-street parking - shall be controlled by the provisions of the Bennett

## PLANNING LANDSCAPE ARCHITECTURE



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## APPLICANT

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PO Box - 4701  
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# OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED: SEPTEMBER 29, 2022  
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DEVELOPMENT STANDARDS



# OUTLINE DEVELOPMENT PLAN

## MUNDELL FARMS

### TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO

#### SHEET 6 of 8

- Municipal Code.
- Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
  - Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Detention Areas and Drainage Channels

The landscape for detention areas and drainage channels will be designed in a manner that will reinforce the character of MUNDELL farms and the high plains prairie, as well as provide the greatest benefit to the community. All detention areas and related conveyance facilities shall strive for a natural vs. an "engineered" look. The designs shall strive to create a landscape concept for drainage channels and detention areas that will be aesthetically pleasing as well as environmentally responsible in terms of water use. It is considered beneficial to allow for passive recreational activities near detention areas.

- Detention facilities, manmade drainage channels other than those through residential front or side yards, and disturbed drainage channels, shall be planted with drought tolerant native grasses and plant materials. Front and side yard residential drainages shall be planted to match the front or side yard of the residence. Natural drainage channels containing existing vegetation and non-irrigated native grasses are exempt. Detention areas or drainage channels shall be designed to blend with adjacent areas.
- Natural drainage corridors containing existing native grasses and established vegetation may be supplemented with native trees, shrubs and ornamental grasses that could enhance wildlife habitat and the pedestrian environment. Areas of disturbance within the natural drainage corridors shall be re-vegetated with native plant materials.
- Consideration should be given to locating pedestrian focal points along drainages including overlooks, and seating areas.
- Plant materials should be used to strengthen the edge of drainage ways.
- Landscape adjacent to drainage ways should be naturalistic and include riparian vegetation.

### ACCESSORY STRUCTURES AND USES INTENT

To provide Development Standards applicable to all land use areas within MUNDELL farms (exclusive of Open Space areas). Accessory Structures or Uses shall refer to detached, subordinate buildings or structures, the use of which is customarily incidental to that of the principal building or to the main use of the land and which is located on the same lot with the main building or use.

#### Permitted Uses (by Right)

- Private parking garages (attached or detached from single-family homes)
- Service structures (utility/storage, garden sheds and greenhouses)
- Patio/privacy enclosures and walls
- Patio shade structures and gazebos
- Secondary living units including but not limited to living space, home offices, or recreation uses, within a detached garage or other detached building/structure.
- Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

#### Accessory Structures Development Standards

- Permitted accessory uses shall conform to the setbacks outlined in the Residential Development Standard Matrix.
- Maximum building height = 28 feet (or 2 stories)
- Maximum number of accessory structures = 1 per lot as a use by right, any additional structure would need to be submitted to the Town for review and approval.
- Detached parking garages shall be architecturally compatible with the main building or

house, including similar design styles, details, materials, and color.

- Service structures, such as garden sheds, utility storage and greenhouses, are only permitted in the Single Family Detached lot types if attached to the main structure and successfully integrated into the residential architecture. Such structures may be detached in, if compatible with the architecture of the main building.
- Patio shade structures and gazebos should be compatible with the architectural styles of their related homes.
- Patio/privacy enclosures and walls should be architecturally compatible and reflect details and materials consistent with the residential buildings they serve.
- Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### RESIDENTIAL STREET DESIGN CONCEPT AND STANDARDS

Residential streets contribute significantly to neighborhood quality. They offer a place to walk, to meet neighbors, and of course, to park. Street network will include a hierarchy of streets that reflect the different residential densities and traffic conditions within the Community. The proposed street system is designed to provide a tree-lined streetscape, characteristic of traditional neighborhoods. The intent is to utilize the standard street sections and standards from the Town of Bennett's standards.

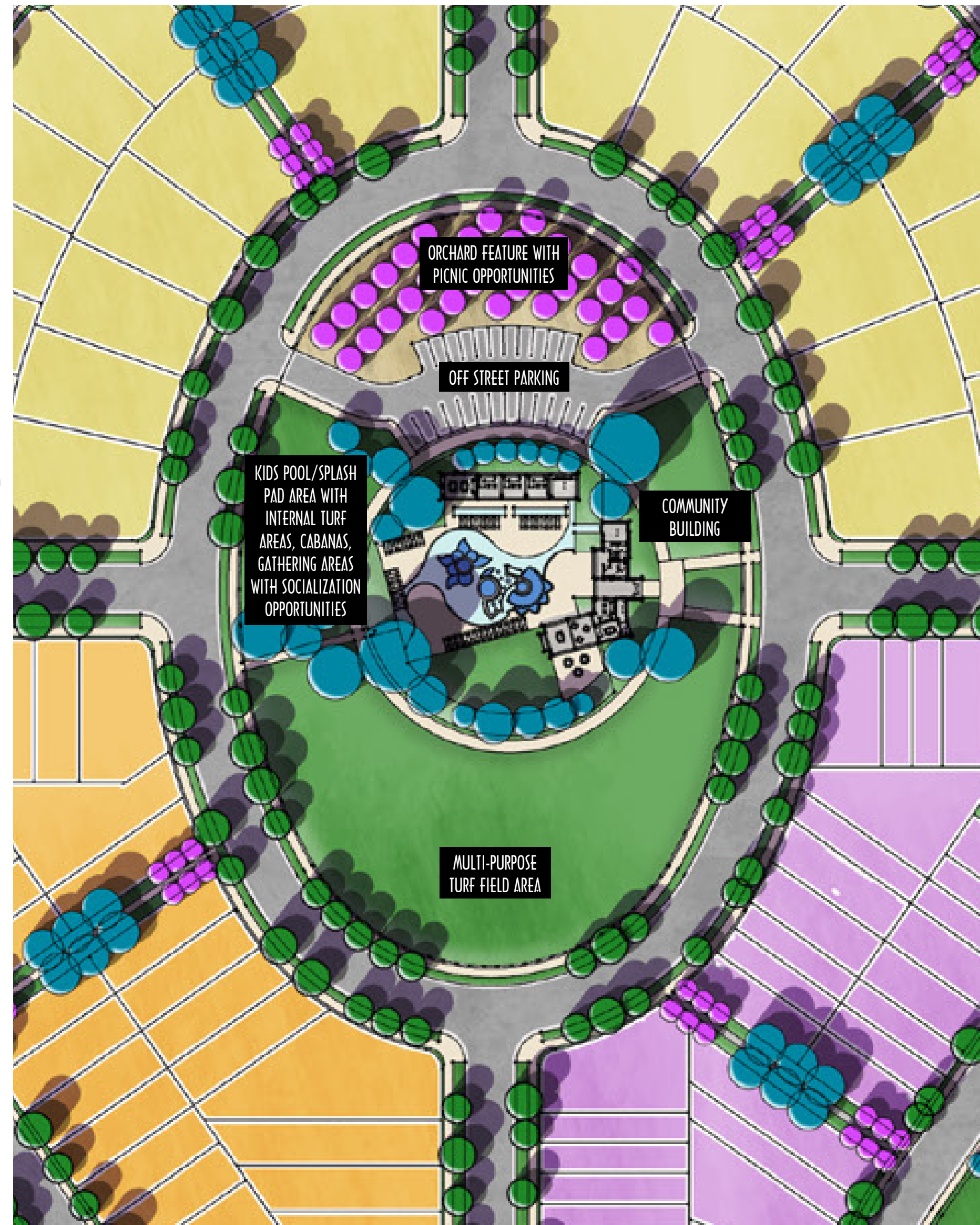
### COMMUNITY PATTERNS OVERVIEW

THE COMMUNITY PATTERNS SECTION contains specific information for placing houses and buildings within the future development parcels, as well as information related to the density and character of specific lot types. These guidelines were developed as part of the master planning process, and are meant to ensure that the community develops with the diversity and character anticipated in the overall vision for the community.

The central Neighborhood Park organized the entire community, play in the splash pad with your neighbors! Enjoy time with friends by the outdoor fireplace. Throw a

BBQ, play in the great lawn, pick apples from the orchard. Schedule a get-together in the outdoor pavilion. At the Park, MUNDELL farms residents and their guests can truly indulge in a full range of recreational amenities.

THE NEIGHBORHOODS at MUNDELL farms are loosely defined by a pocket park giving identity to the residents in that particular area. Great neighborhoods are walkable, drivable, and bike-able. To be socially connected, the neighborhoods include areas to linger, sit and talk with neighbors and provide both passive and active recreation. Neighborhoods are composed of a variety of blocks knitted together by roads, walks, trails, paths and open spaces that connect residents from their homes to these public spaces.



PLANNING  
LANDSCAPE ARCHITECTURE



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APPLICANT

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# OUTLINE DEVELOPMENT PLAN

## MUNDELL FARMS

### TOWN OF BENNETT

#### COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
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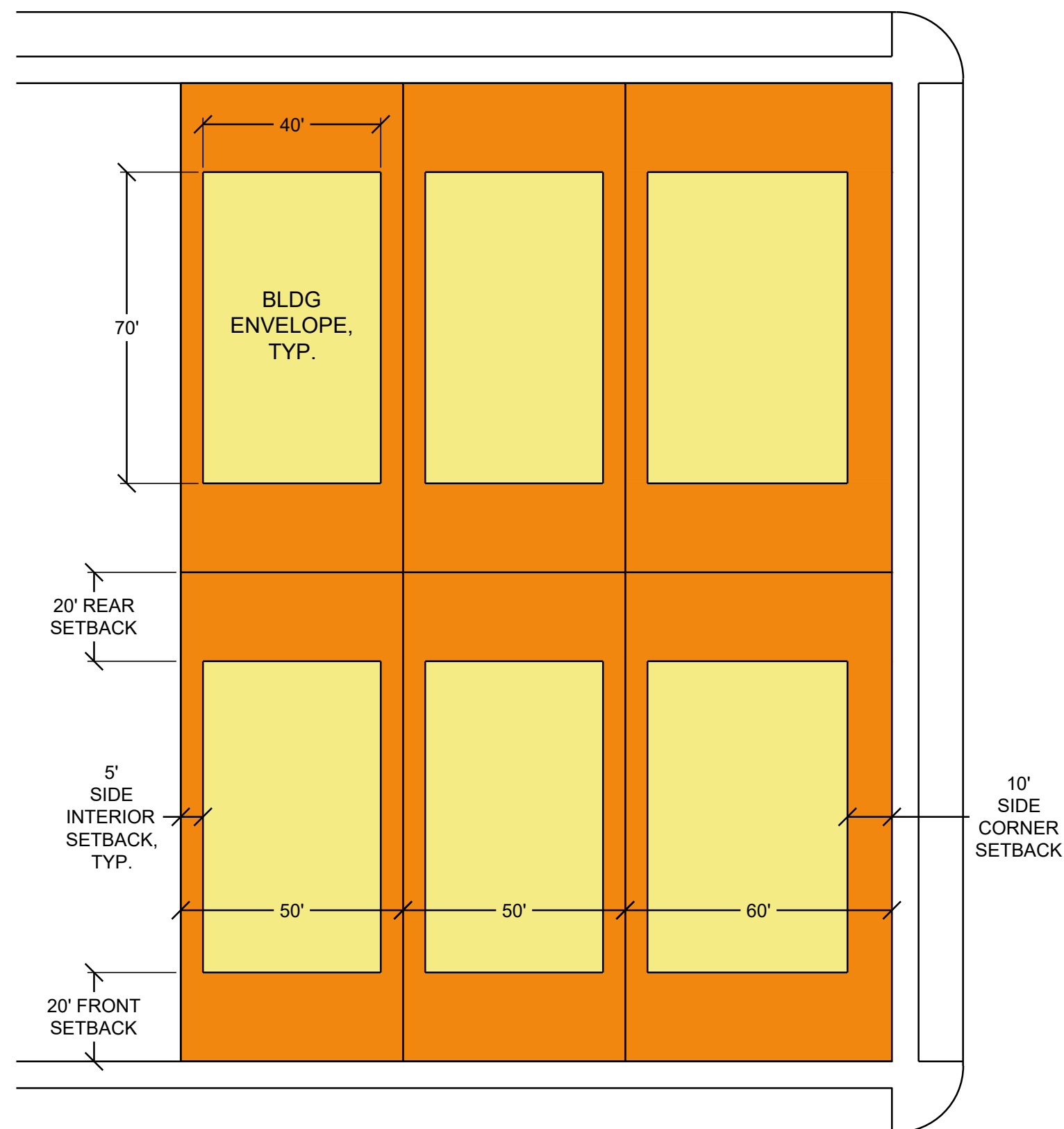
DEVELOPMENT STANDARDS



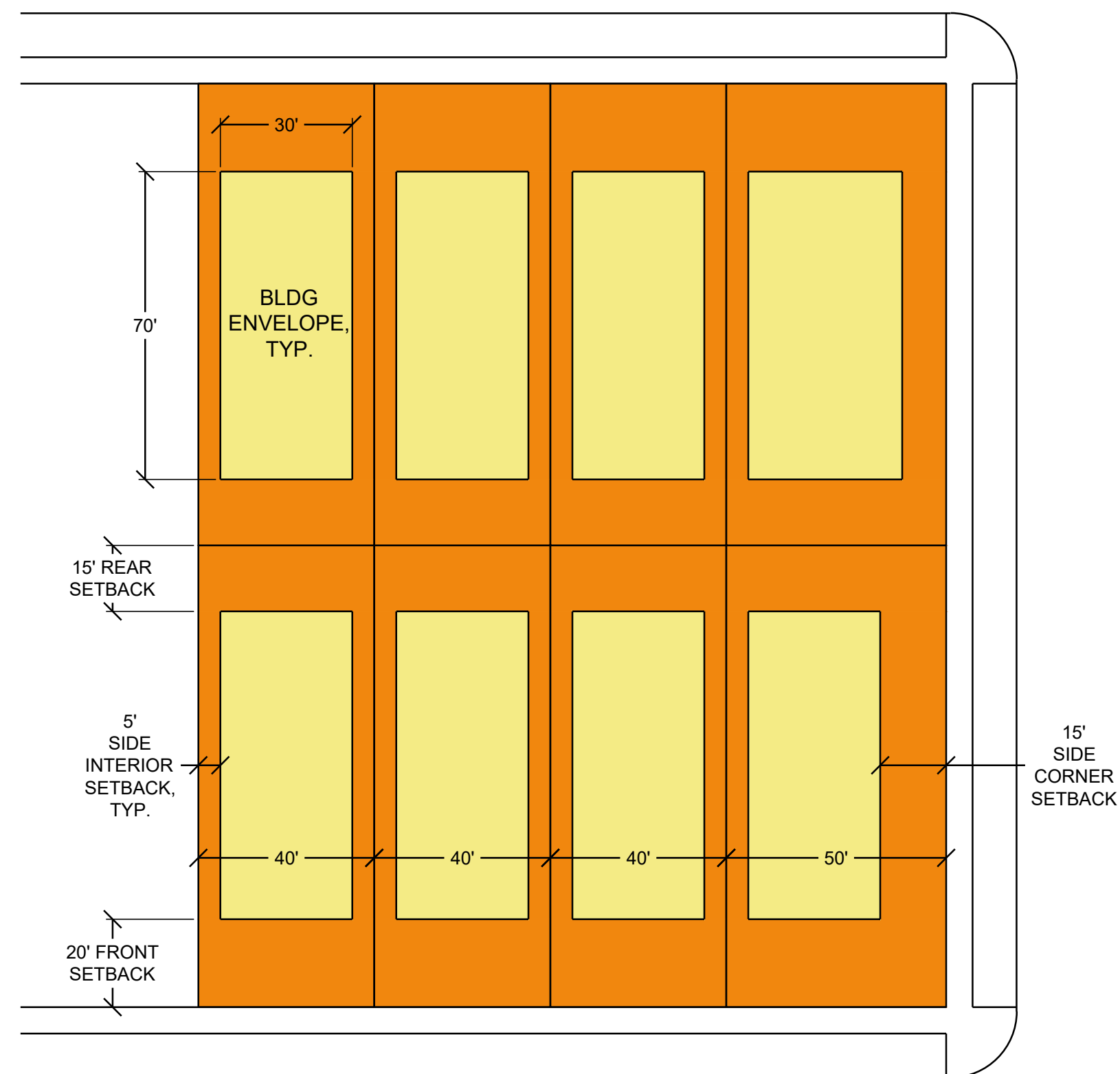
# OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 7 of 8

## 50x110 - GENERAL CONDITIONS



## 40x105 - GENERAL CONDITIONS



### LOT TYPES

MUNDELL farms will offer at least three different lot types, ranging from attached townhomes and duplexes to single family detached lots. These lot types are not intended to be all inclusive, but are intended to depict the variety and quality anticipated for the community. The lot types depicted in this document include Townhomes, Duplexes, and various sizes of Single Family Detached front loaded lots. Additional products may be used in the project.

### SINGLE FAMILY DETACHED FRONT LOADED - GENERAL CONDITIONS

#### LOT SIZE

The lots range from 40 feet wide by 105 feet deep to 50 feet wide by 110 feet deep. Corner lots are range from a minimum of 50-60 feet wide. These lots are front-loaded.

#### SETBACKS

Setbacks shall be unoccupied and unobstructed by any structure or portion of a structure from 30 inches

above grade upward; provided, however, that fences, walls, trellises, poles, posts, ornaments, furniture and other customary yard accessories may be permitted in any setback subject to height limitations and requirements limiting obstruction of visibility.

#### PROJECTIONS INTO REQUIRED SETBACKS, GENERAL

The following structures may project into required front, side or rear setbacks:

- Paved patios or terraces may project into any required setback, provided that no structures placed on them shall violate other easement requirements.
- Unroofed landings, decks and stairs may project into required setbacks, provided that the floor shall not extend higher than 30 inches above the finished grade level and the projection is at least 5 feet from the lot line.
- Unroofed exterior balconies may project into a required side or rear setback provided these projections are at least 5 feet from the side lot line and 10 feet from the rear lot line.
- Cornices, eaves, canopies, window wells, chimneys, bay windows, ornamental features,

and other similar architectural features may project not more than 3 feet into any required setback.

- Roofs over porches, stairways, landings, terraces, or other exterior approaches to pedestrian doorways may project up to 5 feet into a front setback. The covered porch or entrance area projecting into the front setback shall remain exterior to the building and enclosed by no more than a railing. The projection shall be at least 5 feet from the property line.

#### FRONT YARD SETBACK

Minimum 20-foot setback from the front property line to the house.

#### SIDE YARD SETBACK

Minimum 5-foot setbacks from the side property line.

#### SIDE STREET SETBACK

A minimum 15-foot setback from the side street property line to the house.

#### REAR YARD SETBACK

All structures shall be set back a minimum of 20 feet from the rear property line.

#### ENCROACHMENTS

Porches, bay windows and window wells may not encroach into both the Front Yard and Side Yard Street Setback Zones.

#### GARAGE REQUIREMENTS

A minimum of two parking spaces per home is required. A diversity of garage styles is required. Diversity shall be achieved by providing a minimum of 2 of the garage variation choices listed below. To meet the diversity requirement each garage variation chosen shall each be used on at least 25 percent of the single family homes within the development. The 2 variations chosen will be a minimum of 50 percent of the development; the remaining 50 percent may be any of the choices listed below.

- Side-loaded garages;
- Garages recessed a minimum of 4 feet behind the front facade of the living space within the house;

- Garages that protrude no less than 2 feet or no more than 5 feet in front of the dwelling unit portion of the structure; and
- Garages recessed a minimum of 2 feet beneath a second floor bay.

#### FENCING RECOMMENDATIONS

Front yard fences are a permitted upgrade and shall not exceed 4 feet in height. No fencing may be installed within sight distance easements. Rear and side yard fences are required for privacy.

#### YARD REQUIREMENT

A minimum functional yard area of 15 feet by 20 feet is required.

PLANNING  
LANDSCAPE ARCHITECTURE



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## OUTLINE DEVELOPMENT PLAN

### MUNDELL FARMS

### TOWN OF BENNETT

### COUNTY OF ADAMS, COLORADO

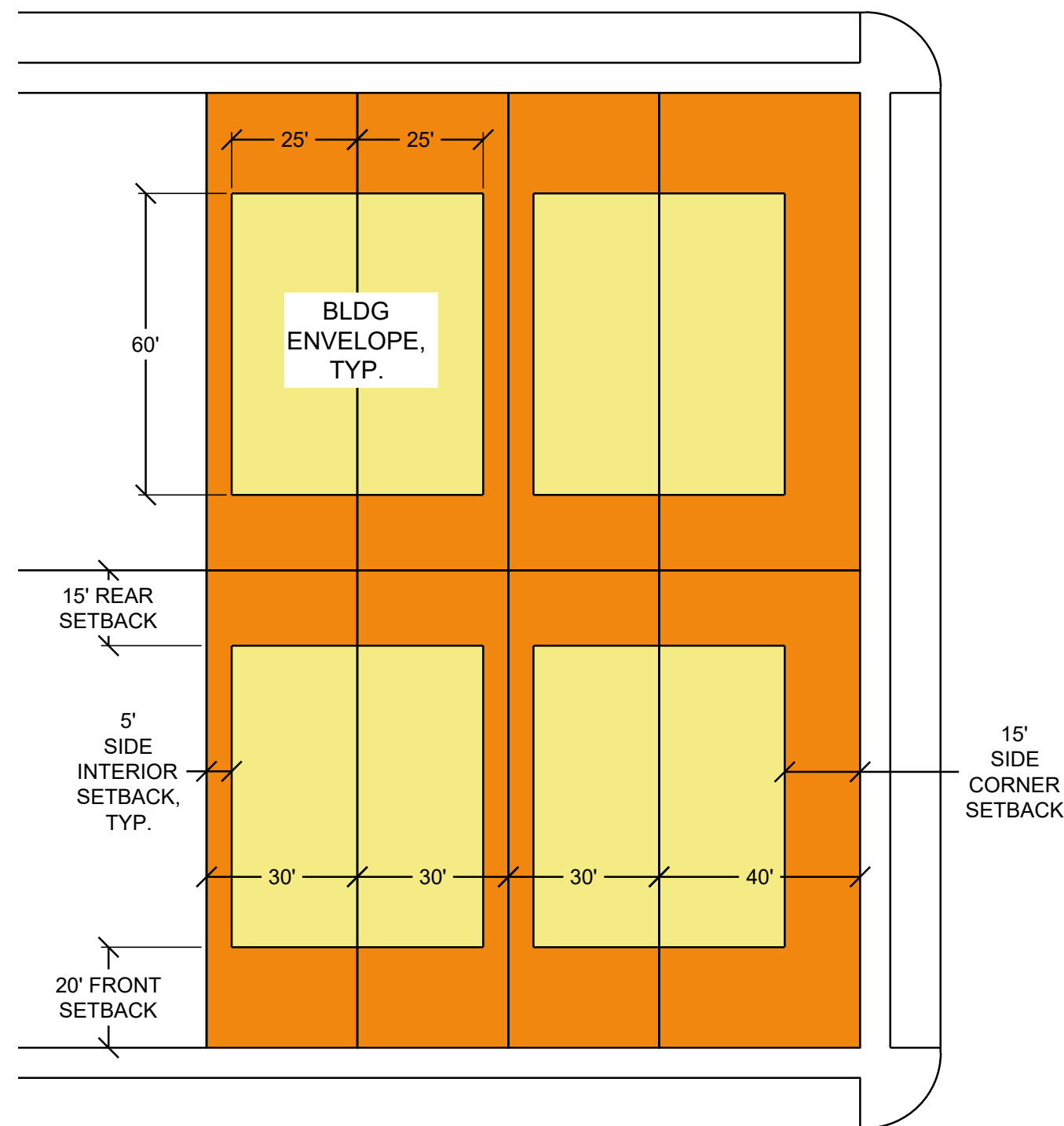
DATE: MAY 2022  
REVISED: SEPTEMBER 29, 2022  
REVISED:

7 of 8  
DETACHED LOTS

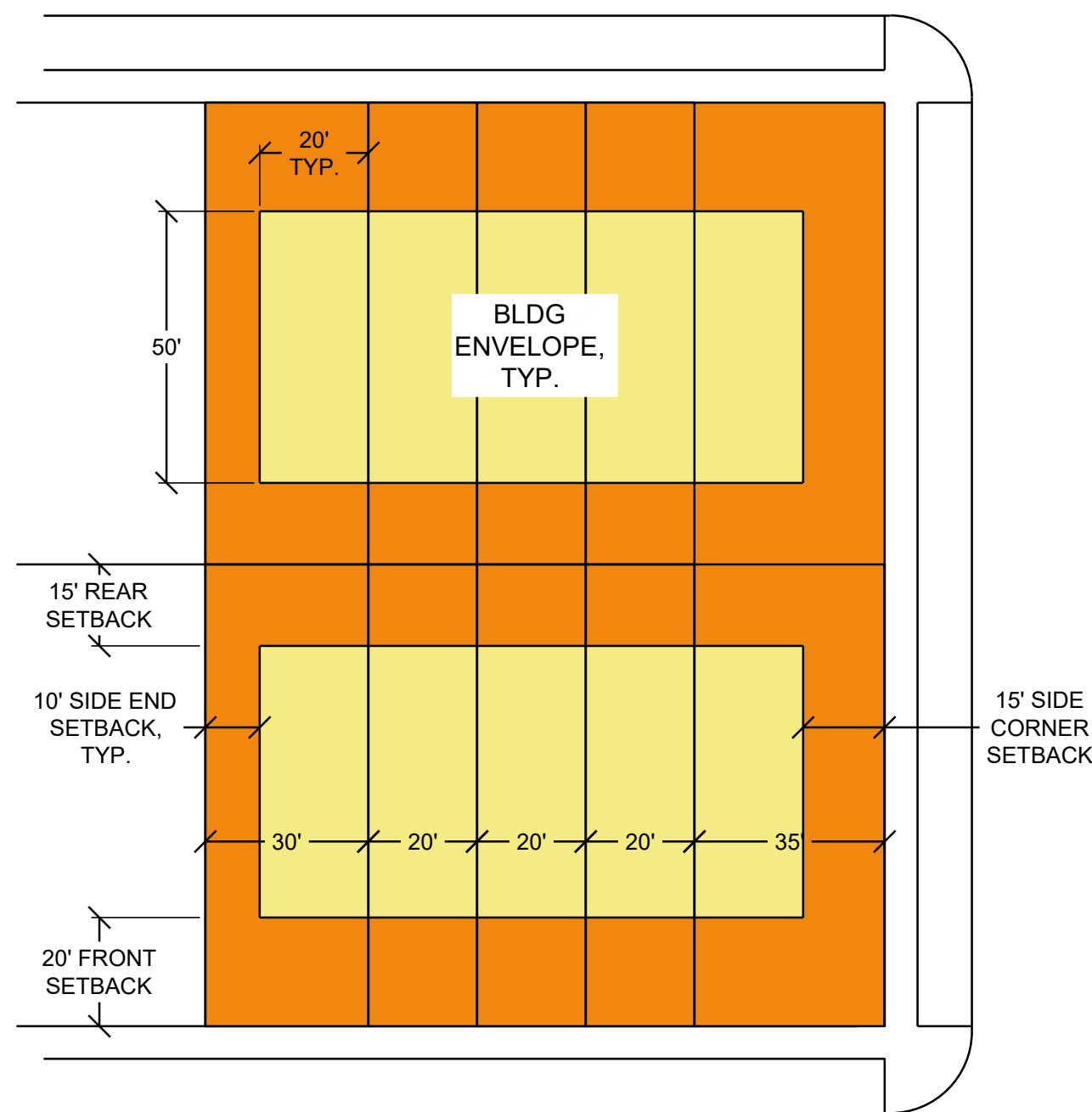
# OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT, COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 8 of 8

## DUPLEX - GENERAL CONDITIONS



## TOWNHOMES - GENERAL CONDITIONS



## SINGLE FAMILY ATTACHED FRONT LOADED - GENERAL CONDITIONS

### LOT SIZE

The lots range from 20 feet wide by 85 feet deep for Townhome Lots to 30 feet wide by 95 feet deep for Duplex Lots. These lots are front-loaded.

### SETBACKS

Setbacks shall be unoccupied and unobstructed by any structure or portion of a structure from 30 inches above grade upward; provided, however, that fences, walls, trellises, poles, posts, ornaments, furniture and other customary yard accessories may be permitted in any setback subject to height limitations and requirements limiting obstruction of visibility.

### PROJECTIONS INTO REQUIRED SETBACKS, GENERAL

The following structures may project into required front, side or rear setbacks:

- Paved patios or terraces may project into any required setback, provided that no structures placed on them shall violate other easement requirements.
- Unroofed landings, decks and stairs may project into required setbacks, provided that the floor shall not extend higher than 30 inches above the finished grade level and the projection is at least 5 feet from the lot line.

- Unroofed exterior balconies may project into a required side or rear setback provided these projections are at least 5 feet from the side lot line and 10 feet from the rear lot line.
- Cornices, eaves, canopies, window wells, chimneys, bay windows, ornamental features, and other similar architectural features may project not more than 3 feet into any required setback.
- Roofs over porches, stairways, landings, terraces, or other exterior approaches to pedestrian doorways may project up to 6 feet into a front setback. The covered porch or entrance area projecting into the front setback shall remain exterior to the building and enclosed by no more than a railing. The projection shall be at least 5 feet from the property line.

### FRONT YARD SETBACK

Minimum 20-foot setback from the front property line to the house.

### SIDE YARD SETBACK

Minimum 5-foot setbacks from the side property line.

### SIDE STREET SETBACK

A minimum 15-foot setback from the side street property line to the house.

### REAR YARD SETBACK

All structures shall be set back a minimum of 20 feet from the rear property line.

### ENCROACHMENTS

Porches, bay windows and window wells may not encroach into both the Front Yard and Side Yard Street Setback Zones.

### GARAGE REQUIREMENTS

A minimum of two parking spaces per home is required. Townhomes are permitted to have a single garage space, and one space in front of the garage.

### TOWNHOME SPECIFIC GUIDELINES

- No more than 6 townhome dwelling units may be attached in any single row or building cluster.
- Within each town home row or cluster, individual dwelling units shall be differentiated, or may express a purposely uniform design. When dwelling units are to be differentiated, they shall be differentiated through 2 or more of the following methods:
  - Use of distinct color variation between individual dwelling units;
  - Use of distinct variations in materials between individual dwelling units;
  - Use of distinct variations in architectural style or features, such as a porch or similar feature,

- between individual dwelling units;
  - Use of distinct variations in roof form,
  - A variation in the plane of the front facade to provide a minimum 3 foot variation between individual dwelling units.
- When uniformity (sameness or pattern repetition) in design is proposed, this shall be expressed through repetition of 2 or more of the following methods,
- Use of materials both in type and location;
  - Size, style, and patterning of windows;
  - Size and detailing of front porches;
  - Roof dormers, roof form, and roof pitch.

### DUPLEX SPECIFIC GUIDELINES

A continuous row of identical homes along a block shall be prohibited. Individual structures shall be differentiated through 2 or more of the following methods:

- Use of distinct color variation and materials between individual structures;
  - Use of distinct variations in roof form, or
  - Use of distinct variations in architectural features, such as porches, roof form, windows, or similar feature, between individual structures.
- Models with identical facades shall not be placed adjacent to or across the street from 1 another.

### FENCING RECOMMENDATIONS

Front yard fences are a permitted upgrade and shall not exceed 4 feet in height. No fencing may be installed within sight distance easements. Rear and side yard fences are required for privacy.

### YARD REQUIREMENT

A minimum functional yard area of 15 feet by 20 feet is required.

PLANNING  
LANDSCAPE ARCHITECTURE



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### APPLICANT

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## OUTLINE DEVELOPMENT PLAN MUNDELL FARMS TOWN OF BENNETT COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED: SEPTEMBER 29, 2022  
REVISED:  
REVISED:

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ATTACHED LOTS



November 15, 2022

Mr. John Vitella  
MGV 36 North Land Investments, LLC  
PO Box 4701  
Greenwood Village, CO 80155

Re: Mundell Farms  
Bennett, CO  
LSC #220820

Dear Mr. Vitella:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated Traffic Impact Analysis for the proposed Mundell Farms residential development to address Town comments. As shown on Figure 1, the site is located south of E. 38<sup>th</sup> Avenue and west of 1<sup>st</sup> Street (SH 79) in Bennett, Colorado.

## **REPORT CONTENTS**

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the site's traffic impacts.

## **LAND USE AND ACCESS**

The site is proposed to include about 510 single-family detached dwelling units and about 390 single-family attached dwelling units. Access is proposed in several locations as shown in the conceptual site plan in Figure 2. Phase 1 is currently proposed to be limited to 150 dwelling units in the area of PA 2 and will be the limit of home construction until an off-site connection to the southwest is available.

## **ROADWAY AND TRAFFIC CONDITIONS**

### **Area Roadways**

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **State Highway 79 (SH 79)** is a north-south, two-lane state highway approximately one mile east of the site. It is classified by CDOT as NR-B (non-rural highway). The CDOT straight line diagram is attached. The intersection with E. 38<sup>th</sup> Avenue is stop-sign controlled. The posted speed limit in the vicinity of the site is 45 mph. The existing SH 79 alignment is expected to be shifted by 2030 per the preferred realignment from the *SH 79 and Kiowa-Bennett Corridor PEL Study* by CDOT. The existing alignment heads north from I-70 as 1<sup>st</sup> Street, then east on E. Colfax Avenue (US 36), the north on Adams Street, and east on Palmer Avenue before turning north on the Kiowa-Bennett Road alignment as it leaves Town.
- **1<sup>st</sup> Street (Local Street)** is a two-lane local street immediately east of the site. The intersections with E. 38<sup>th</sup> Avenue and Palmer Avenue are stop-sign controlled. The posted speed limit is 25 mph. It is a gravel roadway adjacent to the site. It includes residential driveways and varying right-of-way south of Truman Avenue.
- **E. 38<sup>th</sup> Avenue** is an east-west, two-lane local roadway north of the site. The intersection with 1<sup>st</sup> Street (SH 79) is stop-sign controlled.
- **Lincoln Avenue** is an east-west, two-lane local roadway south of the site. The intersection with 1<sup>st</sup> Street (Local Street) is stop-sign controlled.
- **Palmer Avenue** is an east-west, two-lane roadway south of the site. The intersections with Adams Street (US 36) and Colfax Avenue (US 36) are stop-sign controlled. There is an existing at-grade railroad crossing just north of the Colfax Avenue (US 36)/Palmer Avenue intersection.
- **E. Colfax Avenue (US 36)** is an east-west, two-lane federal highway south of the site that is classified as a rural highway (R-B) by CDOT. The CDOT straight line diagram is attached. The intersections with S. 1<sup>st</sup> Street (SH 79) and Adams Street are stop-sign controlled. The posted speed limit in the vicinity of Penrith Road is 55 mph. It drops to 45 mph further east and 35 mph east of the Colfax Avenue (US 36)/1<sup>st</sup> Street (SH 79) intersection.

### Existing Traffic Conditions

Figure 3a shows the existing traffic volumes in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes and daily traffic counts are from the attached traffic counts conducted by Counter Measures in August, 2022 for Intersections #4, #12, #17, #20, and #21. The volumes for Intersections #5, #22, #23, and #24 are based on the Bennett Ranch TIA, Penrith Park TIA, Brunner Subdivision TIA, and Worthman Acres TIA, respectively. The existing traffic volume figures from these studies are attached for reference. Figure 3b shows the existing lane geometries and traffic controls.

### 2025, 2030, and 2042 Background Traffic

Figure 4a shows the estimated 2025 background traffic for Phase 1 which assumes an annual growth rate of two percent. Figure 4b shows the 2025 background traffic, lane geometry, and traffic control.

Figure 5a shows the estimated 2030 background traffic for the short-term impacts of site build-out. These estimates are based on a combination of a two percent annual growth rate and the long-term projections in the Brunner Subdivision TIA, the Penrith TIA, the Worthman Acres TIA, and the Bennett Ranch TIA. Figure 5b shows the 2030 background traffic, lane geometry, and traffic control.

Figure 6a shows the estimated 2042 background traffic for the long-term impacts of site build-out. These estimates are based on a combination of a two percent annual growth rate and the long-term projections in the *Brunner Subdivision TIA*, the *Penrith TIA*, the *Worthman Acres TIA*, and the *Bennett Ranch TIA*. Figure 6b shows the 2042 background traffic, lane geometry, and traffic control.

### **Existing, 2025, 2030, and 2042 Background Levels of Service**

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for unsignalized intersections.

The intersections in Figures 3a through 6b were analyzed to determine the existing, 2025, 2030, and 2042 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

1. **E. 38<sup>th</sup> Avenue/Penrith Road:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
2. **E. 38<sup>th</sup> Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
3. **E. 38<sup>th</sup> Avenue/Site Access:** This intersection was analyzed only in the total traffic scenarios.
4. **E. 38<sup>th</sup> Avenue/1<sup>st</sup> Street:** All movements at this unsignalized intersection currently operate at LOS “A” during both morning and afternoon peak-hours and are expected to operate at LOS “B” or better through 2042.
5. **E. 38<sup>th</sup> Avenue/SH 79:** All movements at this unsignalized intersection currently operate at LOS “A” during both morning and afternoon peak-hours and are expected to operate at LOS “B” or better through 2042.
6. **Internal Collector/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
7. **1<sup>st</sup> Street/Site Access:** This intersection was analyzed only in the total traffic scenarios.
8. **1<sup>st</sup> Street/Site Access:** This intersection was analyzed only in the total traffic scenarios.



9. **1<sup>st</sup> Street/Site Access:** This intersection was analyzed only in the total traffic scenarios.
10. **Penrith Road/Truman Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
11. **Truman Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
12. **1<sup>st</sup> Street/Truman Avenue:** All movements at this unsignalized intersection currently operate at LOS “A” during both morning and afternoon peak-hours and are expected to do so through 2042.
13. **Internal Collector/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
14. **Penrith Road/Lincoln Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
15. **Lincoln Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
16. **Lincoln Avenue/Site Access:** This intersection was analyzed only in the total traffic scenarios.
17. **1<sup>st</sup> Street/Lincoln Avenue:** All movements at this unsignalized intersection currently operate at LOS “A” during both morning and afternoon peak-hours and are expected to operate at LOS “B” or better through 2042.
18. **Penrith Road/Palmer Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better during both morning and afternoon peak-hours through 2042.
19. **Palmer Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
20. **Palmer Avenue/1<sup>st</sup> Street:** All movements at this unsignalized intersection currently operate at LOS “B” or better during both morning and afternoon peak-hours and are expected to do so through 2042.
21. **Palmer Avenue/Adams Street:** All movements at this unsignalized intersection currently operate at LOS “B” or better during both morning and afternoon peak-hours and are expected to do so through 2042.



- 22. Penrith Road/E. Colfax Avenue (US 36):** All movements at this unsignalized intersection currently operate at LOS “A” during both morning and afternoon peak-hours and are expected to operate at LOS “B” or better through 2025. By 2030, the northbound and southbound left-turn movements are expected to operate at LOS “F” and “E” in the afternoon peak-hour. By 2042, several movements are expected to operate at LOS “E” or “F” in one or both peak-hours. This intersection is expected to be signalized once warrants are met.
- 23. E. Colfax Avenue (US 36)/Palmer Avenue:** All movements at this unsignalized intersection currently operate at LOS “B” or better during both morning and afternoon peak-hours and are expected to do so through 2025. The north leg is expected to be closed and the railroad crossing shifted west to the Penrith Road alignment by 2030.
- 24. E. Colfax Avenue (US 36)/Adams Street:** All movements at this unsignalized intersection currently operate at LOS “D” or better during both morning and afternoon peak-hours. In 2025, the northbound and southbound approaches are expected to operate at LOS “E” during one or both peak-hours. By 2042, the southbound approach is expected to operate at LOS “F” in the afternoon peak-hour. Traffic signal or roundabout control will likely be needed between 2025 and 2030.

## TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed site based on the rates from *Trip Generation, 11<sup>th</sup> Edition, 2021* by the Institute of Transportation Engineers (ITE).

Phase 1 of the site is projected to generate about 1,415 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 27 vehicles would enter and about 78 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 89 vehicles would enter and about 52 vehicles would exit.

At buildout, the site is projected to generate about 7,617 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 151 vehicles would enter and about 393 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 429 vehicles would enter and about 272 vehicles would exit.

## TRIP DISTRIBUTION

Figure 7 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; and the site’s proposed land use. The 2025 estimate assumed SH 79 stays in the current alignment and the railroad crossing south of the site remains at Palmer Avenue. The 2030 and 2042 estimates assume SH 79 has been relocated per the CDOT PEL Study and the railroad crossing has been shifted west to Penrith Road. Page 57

## TRIP ASSIGNMENT

Figure 8a shows the estimated Phase 1 site-generated traffic volumes based on the directional distribution percentages (from Figure 7) and the Phase 1 trip generation estimate (from Table 2). These volumes are used in the 2025 total analysis.

Figure 8b shows the estimated buildout site-generated traffic volumes based on the directional distribution percentages (from Figure 7) and the buildout trip generation estimate (from Table 2). These volumes are used in the 2030 and 2042 total scenarios.

## 2025 AND 2042 TOTAL TRAFFIC

Figure 9a shows the estimated 2025 total traffic (Phase 1) which is the sum of the 2025 background traffic volumes (from Figure 4a) and the Phase 1 site-generated traffic volumes (from Figure 8a). Figure 9b shows the recommended 2025 lane geometry and traffic control.

Figure 10a shows the estimated 2030 total traffic which is the sum of the 2030 background traffic volumes (from Figure 5a) and the buildout site-generated traffic volumes (from Figure 8b). Figure 10b shows the recommended 2030 lane geometry and traffic control.

Figure 11a shows the estimated 2042 total traffic which is the sum of the 2042 background traffic volumes (from Figure 6a) and the buildout site-generated traffic volumes (from Figure 8b). Figure 11b shows the recommended 2042 lane geometry and traffic control.

## PROJECTED LEVELS OF SERVICE

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for unsignalized intersections.

The intersections in Figures 9a through 11b were analyzed to determine the 2025, 2030, and 2042 total levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

1. **E. 38<sup>th</sup> Avenue/Penrith Road:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
2. **E. 38<sup>th</sup> Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
3. **E. 38<sup>th</sup> Avenue/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
4. **E. 38<sup>th</sup> Avenue/1<sup>st</sup> Street:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.

5. **E. 38<sup>th</sup> Avenue/SH 79:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better during both morning and afternoon peak-hours through 2042.
6. **Internal Collector/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
7. **1<sup>st</sup> Street/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
8. **1<sup>st</sup> Street/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
9. **1<sup>st</sup> Street/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
10. **Penrith Road/Truman Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
11. **Truman Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
12. **1<sup>st</sup> Street/Truman Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
13. **Internal Collector/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
14. **Penrith Road/Lincoln Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better during both morning and afternoon peak-hours through 2042.
15. **Lincoln Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
16. **Lincoln Avenue/Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “A” during both morning and afternoon peak-hours through 2042.
17. **1<sup>st</sup> Street/Lincoln Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.

- 18. Penrith Road/Palmer Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better through 2030 and at LOS “E” or better during the morning peak-hour in 2042 with the addition of site traffic. Traffic signal or roundabout control may be needed by 2042.
- 19. Palmer Avenue/Internal Collector:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
- 20. Palmer Avenue/1<sup>st</sup> Street:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042.
- 21. Palmer Avenue/Adams Street:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better during both morning and afternoon peak-hours through 2042.
- 22. E. Colfax Avenue (US 36)/Penrith Road:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2042 with the following exceptions: The northbound and southbound movements are expected to operate at LOS “E” or “F” in one or both peak-hours by 2030. Some of these poor levels of service are from the impact of the site. Traffic signal control is planned when warranted.
- 23. E. Colfax Avenue (US 36)/Palmer Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2025. The north leg is expected to be closed and the railroad crossing shifted west to the Penrith Road alignment by 2030.
- 24. E. Colfax Avenue (US 36)/Adams Street:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better during both morning and afternoon peak-hours through 2042 with the following exceptions: The northbound and southbound movements are expected to operate at LOS “E” or “F” in the afternoon peak-hours by 2025. Some of these poor levels of service are from the impact of the site. Traffic signal or roundabout control will likely be needed by 2030.

## **RECOMMENDED IMPROVEMENTS**

### **2025 Background Traffic Improvements (Figure 4b) - by Bennett Ranch**

#### SH 79/E. 38<sup>th</sup> Avenue (#5):

- NB Left-Turn Lane = 378 feet + 222-foot transition taper (by Bennett Ranch)

### **2025 Total Traffic Improvements (Figure 9b)**

- Improve 1<sup>st</sup> Street adjacent to the site and south to current end of pavement - by Applicant.

**2030 Background Traffic Improvements (Figure 5b) - by Town/CDOT**SH 79/E. 38<sup>th</sup> Avenue (#5)

- Intersection improvements by SH 79 Relocation Project

E. Colfax Avenue (US 36)/Penrith Road (#22) & E. Colfax Avenue (US 36)/Palmer Avenue (#23):

- Relocation of existing RR crossing between Intersections #19 (Palmer Avenue/Internal Collector) and #23 (E. Colfax Avenue (US 36)/Palmer Avenue) to between Intersections #18 (Penrith Road/Palmer Avenue) and #22 (E. Colfax Avenue (US 36)/Penrith Road) (may involve contribution from applicant).

**2030 Total Traffic Improvements (Figure 10b) - by Applicant**Penrith Road/Lincoln Avenue (#14)

- SB Left-Turn Lane = 150 feet + 120-foot transition taper
- NB Right-Turn Lane = 200 feet + 120-foot transition taper
- WB Left-Turn Lane = 200 feet + 120-foot transition taper

Lincoln Avenue/Internal Collector (15)

- SB Left-Turn Lane = 150 feet + 120-foot transition taper
- NB Left-Turn Lane = 150 feet + 120-foot transition taper
- EB Left-Turn Lane = 150 feet + 120-foot transition taper
- WB Left-Turn Lane = 150 feet + 120-foot transition taper

Penrith Road/Palmer Avenue (#18)

- SB Left-Turn Lane = 150 feet + 120-foot transition taper
- NB Right-Turn Lane = 150 feet + 120-foot transition taper
- WB Left-Turn Lane = 225 feet + 120-foot transition taper

Palmer Avenue/Internal Collector (19)

- SB Left-Turn Lane = 150 feet + 120-foot transition taper
- EB Left-Turn Lane = 150 feet + 120-foot transition taper
- WB Right-Turn Lane = 150 feet + 120-foot transition taper

Palmer Avenue/1st Street (#20)

- EB Left-Turn Lane = 150 feet + 120-foot transition taper

E. Colfax Avenue (US 36)/Penrith Road (#22)

- Potential traffic signal or roundabout by 2030

E. Colfax Avenue (US 36)/Adams Street (#24)

- SB Right-Turn Lane = 150 feet + 120-foot transition taper
- EB Left-Turn Lane = 300 feet (190' for decel + 110 feet for storage) + 120-foot transition taper
- WB Left-Turn Lane = Short stacking lane to offset EB LT with 120-foot transition taper
- Potential traffic signal or roundabout by 2030

**2042 Background Traffic Improvements (Figure 6b) - by future development west of the site**Penrith Road/Truman Avenue (#10)

- SB Left-Turn Lane = 150 feet + 10:1 transition taper
- NB Right-Turn Lane = 150 feet + 10:1 transition taper
- WB Left-Turn Lane = 150 feet + 10:1 transition taper

**2042 Total Traffic Improvements (Figure 11b) - by Applicant if not previously completed**Penrith Road/Truman Avenue (#10)

- SB Left-Turn Lane = 150 feet + 120-foot transition taper (10:1)
- NB Right-Turn Lane = 150 feet + 120-foot transition taper (10:1)
- WB Left-Turn Lane = 150 feet + 120-foot transition taper (10:1)

**CONCLUSIONS AND RECOMMENDATIONS****Trip Generation**

1. Phase 1 of the site is projected to generate about 1,415 vehicle-trips on the average week-day, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 27 vehicles would enter and about 78 vehicles would exit the site. During the afternoon peak-hour, about 89 vehicles would enter and about 52 vehicles would exit.
2. The overall site is projected to generate about 7,617 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 151 vehicles would enter and about 393 vehicles would exit the site. During the afternoon peak-hour, about 429 vehicles would enter and about 272 vehicles would exit.

**Projected Levels of Service**

3. All movements at the intersections analyzed are expected to operate at LOS "D" or better during both morning and afternoon peak-hours through 2042 with the following exceptions: A few movements at Intersections #18 (Penrith Road/Palmer Avenue), #22 (E. Colfax Avenue (US 36)/Penrith Road), and #24 (E. Colfax Avenue (US 36)/Adams Street) are expected to operate at LOS "E" or "F" in one or both peak-hours. All three may need traffic signal or roundabout control by 2030 or 2042.

**Conclusions**

4. The impact of the Mundell Farms residential development can be accommodated by the existing roadway network with the recommended improvements.



## Recommendations

5. Phase 1 should include a maximum of 150 lots so the impacts can be supported by the existing roadway system without additional off-site connections to the southwest. The applicant will coordinate with Town staff on the most appropriate size of Phase 1.
6. The recommended improvements are summarized above in the report narrative and are shown in Figures 4b, 5b, 6b, 10b and 11b.

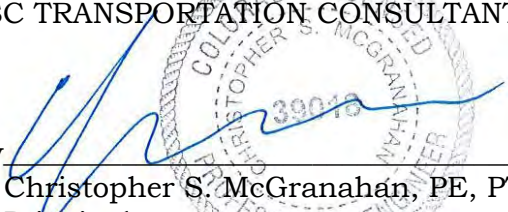
\* \* \* \* \*

We trust our findings will assist you in gaining approval of the proposed Mundell Farms residential development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By

  
\_\_\_\_\_  
Christopher S. McGranahan, PE, PTOE  
Principal

CSM/wc

11-15-22

Enclosures: Tables 1 and 2  
Figures 1 - 11b  
SH 79 Straight Line Diagram  
US 36 Straight Line Diagram  
Traffic Count Reports  
Existing Traffic Volume Figures From Bennett Ranch TIA, Penrith Park TIA,  
Brunner Subdivision TIA, and Worthman Acres TIA by LSC  
Figure 7 from Penrith Park TIA by LSC  
Level of Service Definitions  
Level of Service Reports

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Table 1 (Page 1 of 3)  
Intersection Levels of Service Analysis  
Mundell Farms  
Bennett, CO  
LSC #220820; November, 2022

Intersection Location	Traffic Control	Existing Traffic		2025 Background Traffic		2025 Total Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Mitigated		2042 Background Traffic		2042 Total Traffic		2042 Total Traffic Mitigated	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1) <u>E. 38th Avenue/Penrith Road</u>	TWSC	--	--	--	--	--	--	A	A	A	A			A	B	A	B		
NB Approach		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
EB Approach		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
WB Approach		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
SB Approach		--	--	--	--	--	--	A	A	A	A			A	A	B	B		
Critical Movement Delay		--	--	--	--	--	--	9.3	9.4	9.6	9.7			9.7	10.0	10.1	10.1		
2) <u>E. 38th Avenue/Internal Collector</u>	TWSC	--	--	--	--	--	--	--	--	A	A			A	A	A	A		
NB Approach		--	--	--	--	--	--	--	--	A	A			A	A	A	A		
EB Left/Through		--	--	--	--	--	--	--	--	A	A			A	A	A	A		
Critical Movement Delay		--	--	--	--	--	--	--	--	9.0	9.2			8.8	8.9	9.2	9.3		
3) <u>E. 38th Avenue/Site Access</u>	TWSC	--	--	--	--	A	A	--	--	A	A			--	--	A	A		
NB Approach		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
WB Left/Through		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	8.4	8.4	--	--	9.0	9.1			--	--	9.1	9.3		
4) <u>E. 38th Avenue/1st Street/N. Converse Road</u>	TWSC	A	A	A	A	A	A	A	A	A	A			A	A	A	A		
NB Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
EB Approach		A	A	A	A	A	A	A	A	B	B			A	A	B	B		
WB Approach		A	A	A	A	A	A	B	A	B	B			A	A	B	B		
SB Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
Critical Movement Delay		9.1	8.9	9.1	9.0	9.1	9.2	10.0	9.7	10.1	10.8			9.8	9.9	10.5	11.1		
5) <u>E. 38th Avenue/SH 79</u>	TWSC	A	A	A	A	A	A	A	A	A	A			A	A	A	A		
NB Left or Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
EB Approach		A	A	A	A	A	A	B	B	B	B			B	B	B	B		
WB Approach		A	A	A	A	A	A	B	B	B	B			B	B	B	C		
SB Left or Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
Critical Movement Delay		9.4	9.4	9.5	9.5	9.5	9.5	10.9	11.9	11.9	14.4			11.8	13.4	13.2	16.8		
6) <u>Internal Collector/Site Access</u>	TWSC	--	--	--	--	--	--	--	--	--	--			A	A	A	A		
NB Approach		--	--	--	--	--	--	--	--	--	--			A	A	A	A		
EB Approach		--	--	--	--	--	--	--	--	--	--			A	A	A	A		
WB Approach		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
SB Approach		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	--	--	--	--	8.7	8.8			8.6	8.6	9.3	9.7		
7) <u>1st Street/Site Access</u>	TWSC	--	--	--	--	A	A	--	--	A	A			--	--	A	A		
NB Left/Through		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
EB Approach		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	8.6	8.5	--	--	9.0	9.2			--	--	9.0	9.2		
8) <u>1st Street/Site Access</u>	TWSC	--	--	--	--	A	A	--	--	A	A			--	--	A	A		
NB Left/Through		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
EB Approach		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	8.7	8.6	--	--	9.0	9.2			--	--	9.1	9.2		
9) <u>1st Street/Site Access</u>	TWSC	--	--	--	--	A	A	--	--	A	A			--	--	A	A		
NB Left/Through		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
EB Approach		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	8.8	8.6	--	--	9.0	9.1			--	--	9.1	9.2		

Table 1 (Page 2 of 3)  
Intersection Levels of Service Analysis  
Mundell Farms  
Bennett, CO  
LSC #220820; November, 2022

Intersection Location	Traffic Control	Existing Traffic		2025 Background Traffic		2025 Total Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Mitigated		2042 Background Traffic		2042 Total Traffic		2042 Total Traffic Mitigated	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
10) <u>Penrith Road/Truman Avenue</u>	TWSC	--	--	--	--	--	--	--	--	A	A			B	B	B	B		
WB Left or Approach		--	--	--	--	--	--	--	--	--	--			A	A	A	A		
WB Right		--	--	--	--	--	--	--	--	--	--			A	A	A	A		
SB Left or Approach		--	--	--	--	--	--	--	--	A	A			A	A	A	A		
Critical Movement Delay		--	--	--	--	--	--	--	--	9.3	9.4			10.0	10.2	10.8	10.7		
11) <u>Truman Avenue/Internal Collector</u>	TWSC	--	--	--	--	--	--	--	--	A	A			A	A	A	A		
NB Approach		--	--	--	--	--	--	--	--	A	A			A	A	A	A		
EB Approach		--	--	--	--	--	--	--	--	A	B			A	A	A	B		
WB Approach		--	--	--	--	--	--	--	--	A	B			--	--	B	B		
SB Approach		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	--	--	--	--	9.8	10.2			8.9	9.2	11.2	12.1		
12) <u>1st Street/Truman Avenue</u>	TWSC	--	--	--	--	A	A	--	--	A	A			--	--	A	A		
NB Approach		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
EB Approach		--	--	--	--	A	A	--	--	A	A			--	--	A	A		
WB Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	B		
SB Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
Critical Movement Delay		8.8	8.7	8.9	8.7	9.5	9.5	8.9	9.0	9.4	9.8			9.0	9.1	9.5	10.0		
13) <u>Internal Collector/Site Access</u>	TWSC	--	--	--	--	--	--	--	--	--	--			A	A	A	A		
NB Approach		--	--	--	--	--	--	--	--	--	--			A	A	A	A		
EB Approach		--	--	--	--	--	--	--	--	--	--			A	A	A	A		
WB Approach		--	--	--	--	--	--	--	--	A	A			--	--	B	B		
SB Approach		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	--	--	--	--	9.1	9.3			9.1	8.9	10.8	11.5		
14) <u>Penrith Road/Lincoln Avenue</u>	TWSC	--	--	--	--	--	--	A	A	B	B			B	B	C	B		
WB Left		--	--	--	--	--	--	A	A	B	B			B	B	C	B		
WB Right		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
SB Left		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
Critical Movement Delay		--	--	--	--	--	--	9.3	9.2	10.7	10.5			12.3	11.9	15.6	14.8		
15) <u>Lincoln Avenue/Internal Collector</u>	TWSC	--	--	--	--	--	--	A	A	A	A			A	A	A	A		
NB Left		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
EB Left		--	--	--	--	--	--	A	A	A	B			A	A	B	B		
EB Through/Right		--	--	--	--	--	--	A	A	A	B			A	A	B	B		
WB Left		--	--	--	--	--	--	A	A	A	B			A	A	B	B		
WB Through/Right		--	--	--	--	--	--	A	A	B	B			A	A	B	B		
SB Left		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
Critical Movement Delay		--	--	--	--	--	--	9.0	8.9	10.0	10.3			9.7	9.9	11.1	12.0		
16) <u>Lincoln Avenue/Site Access</u>	TWSC	--	--	--	--	--	--	--	--	A	A			--	--	A	A		
EB Left/Through		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
SB Approach		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
Critical Movement Delay		--	--	--	--	--	--	--	--	8.9	9.1			--	--	9.0	9.2		
17) <u>1st Street/Lincoln Avenue</u>	TWSC	A	A	A	A	A	A	A	A	A	A			A	A	A	A		
NB Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
EB Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	B		
WB Approach		A	A	A	A	B	B	A	A	B	B			B	A	B	B		
SB Approach		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
Critical Movement Delay		9.1	9.1	9.3	9.2	10.1	10.1	9.7	9.5	10.7	10.8			10.1	9.8	11.1	11.0		

Table 1 (Page 3 of 3)  
Intersection Levels of Service Analysis  
Mundell Farms  
Bennett, CO  
LSC #220820; November, 2022

Intersection Location	Traffic Control	Existing Traffic		2025 Background Traffic		2025 Total Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Mitigated		2042 Background Traffic		2042 Total Traffic		2042 Total Traffic Mitigated	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
18) <u>Penrith Road/W. Palmer Avenue</u>	TWSC	--	--	--	--	--	--	B	B	B	B			C	C	E	D	Potential Traffic Signal or Roundabout Control	
WB Left		--	--	--	--	--	--	A	A	A	A			A	B	A	B		
WB Right		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
SB Left		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
Critical Movement Delay		--	--	--	--	--	--	10.3	10.1	12.9	12.9			18.7	16.0	36.2	27.7		
19) <u>W. Palmer Avenue/Internal Collector</u>	TWSC	--	--	--	--	--	--	A	A	A	A			A	A	A	A		
EB Left		--	--	--	--	--	--	B	B	B	B			B	B	B	B		
SB Left		--	--	--	--	--	--	A	A	A	A			A	A	A	A		
SB Right		--	--	--	--	--	--	10.3	10.3	11.3	11.8			11.5	11.6	12.7	13.6		
Critical Movement Delay		--	--	--	--	--	--												
20) <u>W. Palmer Avenue/1st Street</u>	TWSC	A	A	A	A	A	A	A	A	A	A			A	A	A	A		
EB Left or Approach		A	A	A	A	B	B	B	A	B	B			B	B	B	B		
SB Approach		9.2	9.2	9.3	9.3	10.1	10.3	10.0	9.8	12.5	12.2			10.5	10.2	13.6	13.0		
Critical Movement Delay																			
21) <u>W. Palmer Avenue/Adams Street</u>	TWSC	A	A	A	A	A	A	A	A	A	A			A	A	A	A		
NB Left		B	B	B	B	C	B	B	B	B	B			B	B	C	C		
EB Approach		13.4	11.4	14.1	11.8	15.0	12.6	11.6	11.1	13.5	13.4			12.7	12.1	15.3	15.5		
Critical Movement Delay																			
22) <u>E. Colfax Avenue (US 36)/Penrith Road</u>	TWSC	B	B	B	B	B	B	D	F	F	F	Future Traffic Signal Control		F	F	F	F	Future Traffic Signal Control	
NB Left		A	A	A	A	A	A	B	C	C	F			D	F	E	F		
NB Right or Through/Right		--	--	--	--	--	--	A	A	A	A			A	A	A	B		
EB Left		A	A	A	A	A	A	A	A	A	A			A	A	A	A		
WB Left		--	--	--	--	--	--	C	E	D	F			F	F	F	F		
SB Left		--	--	--	--	--	--	B	C	C	F			F	F	F	F		
SB Through/Right		10.0	10.3	10.5	11.0	10.9	11.6	34.3	76.2	223.2	>240			>240	>240	>240	>240		
Critical Movement Delay																			
23) <u>E. Colfax Avenue (US 36)/W. Palmer Avenue</u>	TWSC	A	A	A	A	A	A	--	--	--	--			--	--	--	--		
EB Left		A	B	A	B	B	B	--	--	--	--			--	--	--	--		
SB Approach		9.5	10.1	9.7	10.3	10.0	10.8	--	--	--	--			--	--	--	--		
Critical Movement Delay																			
24) <u>E. Colfax Avenue (US 36)/Adams Street</u>	TWSC	D	D	D	E	E	E	C	C	C	D	Future Traffic Signal or Roundabout Control		C	C	C	E	Future Traffic Signal or Roundabout Control	
NB Approach		A	A	A	A	A	A	A	A	--	--			A	A	--	--		
EB Approach		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
EB Left		A	A	A	A	A	A	A	A	--	--			A	A	--	--		
WB Approach		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
WB Left		C	C	E	E	E	F	C	D	--	--			C	F	--	--		
SB Approach		--	--	--	--	--	--	--	--	D	F			--	--	D	F		
SB Left/Through		--	--	--	--	--	--	--	--	A	A			--	--	A	A		
SB Right		25.2	25.3	39.1	40.6	45.4	55.0	17.9	28.1	31.2	52.7			22.5	54.6	30.7	132.3		
Critical Movement Delay																			

**Table 2**  
**ESTIMATED TRAFFIC GENERATION**  
**Mundell Farms**  
**Bennett, CO**  
**LSC #220820; November, 2022**

Trip Generating Category	Quantity	Trip Generation Rates <sup>(1)</sup>						Total Trips Generated				
		Average Weekday	AM Peak-Hour		PM Peak-Hour		Average Weekday	AM Peak-Hour		PM Peak-Hour		
			In	Out	In	Out		In	Out	In	Out	
<b>CURRENTLY PROPOSED LAND USE - PHASE 1</b>												
<b>PA-2</b>												
Single Family Detached Housing	150 DU <sup>(3)</sup>	9.43	0.182	0.518	0.592	0.348	1,415	27	78	89	52	
<b>CURRENTLY PROPOSED LAND USE - BUILDOUT</b>												
<b>PA 1</b>												
Single Family Detached Housing <sup>(2)</sup>	205 DU <sup>(3)</sup>	9.43	0.182	0.518	0.592	0.348	1,933	37	106	121	71	
<b>PA-2</b>												
Single Family Detached Housing	190 DU	9.43	0.182	0.518	0.592	0.348	1,792	35	98	112	66	
<b>PA-3</b>												
Single Family Attached Housing <sup>(4)</sup>	275 DU	7.20	0.149	0.331	0.325	0.245	1,980	41	91	89	67	
<b>PA-4</b>												
Single Family Detached Housing	115 DU	9.43	0.182	0.518	0.592	0.348	1,084	21	60	68	40	
Single Family Attached Housing	115 DU	7.20	0.149	0.331	0.325	0.245	828	17	38	37	28	
<b>Total =</b>							<b>7,617</b>	<b>151</b>	<b>393</b>	<b>429</b>	<b>272</b>	

Notes:

- (1) Source: *Trip Generation*, Institute of Transportation Engineers, 11th Edition, 2021
- (2) ITE Land Use No. 210 - Single-Family Detached Housing
- (3) DU - Dwelling Units
- (4) Land Use No. 215 - Single-Family Attached Housing





Figure 1

# Vicinity Map

Mundell Farms (LSC #220820)

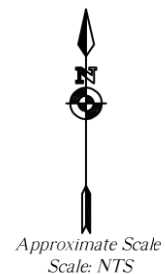
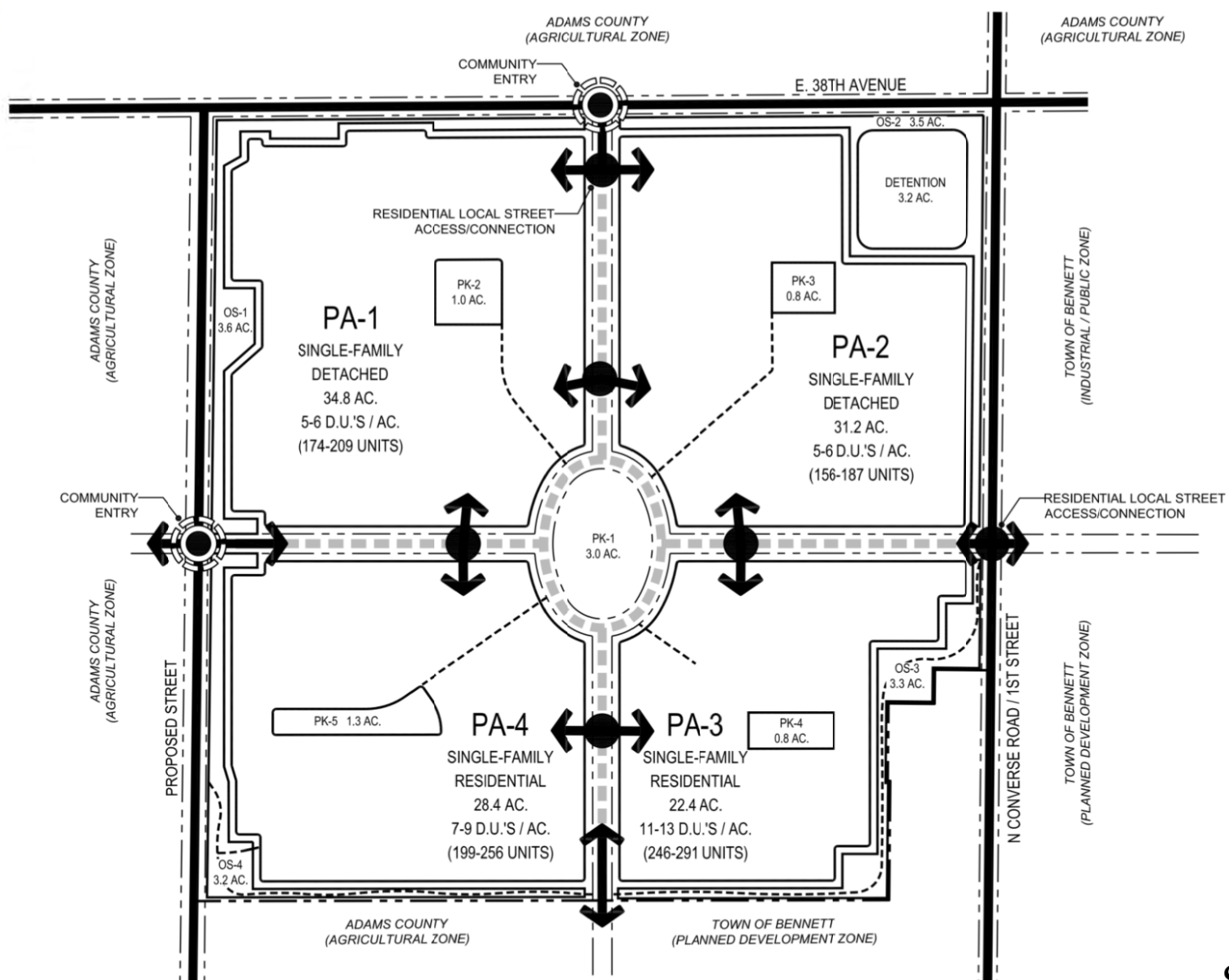
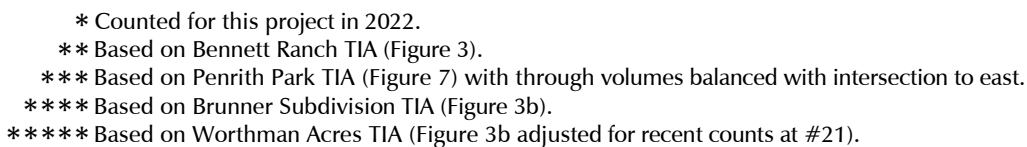
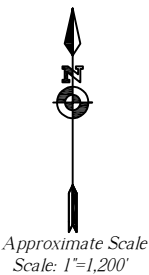


Figure 2

## Site Plan

Mundell Farms (LSC #220820)

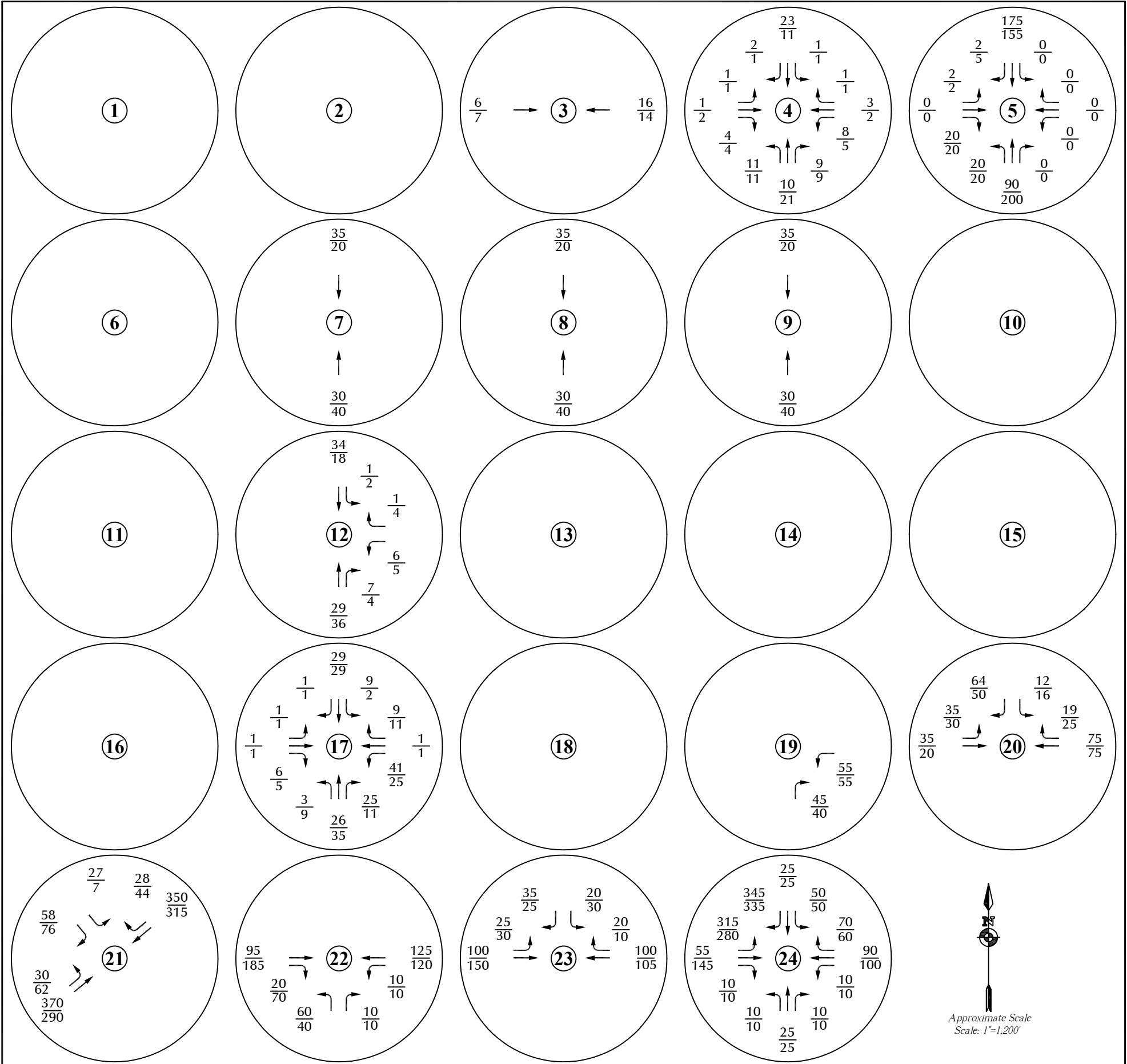



$$\frac{26}{35} = \frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$$
$$1,000 = \text{Average Daily Traffic}$$







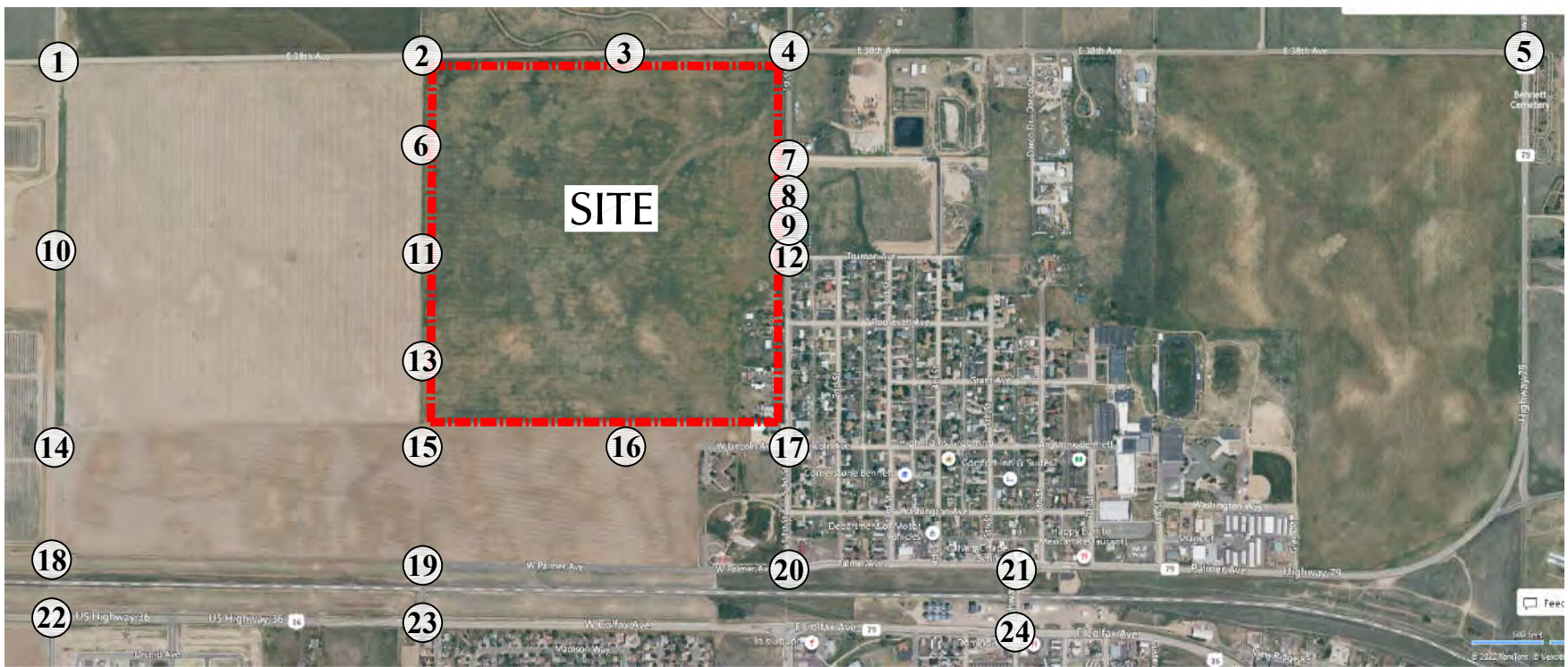
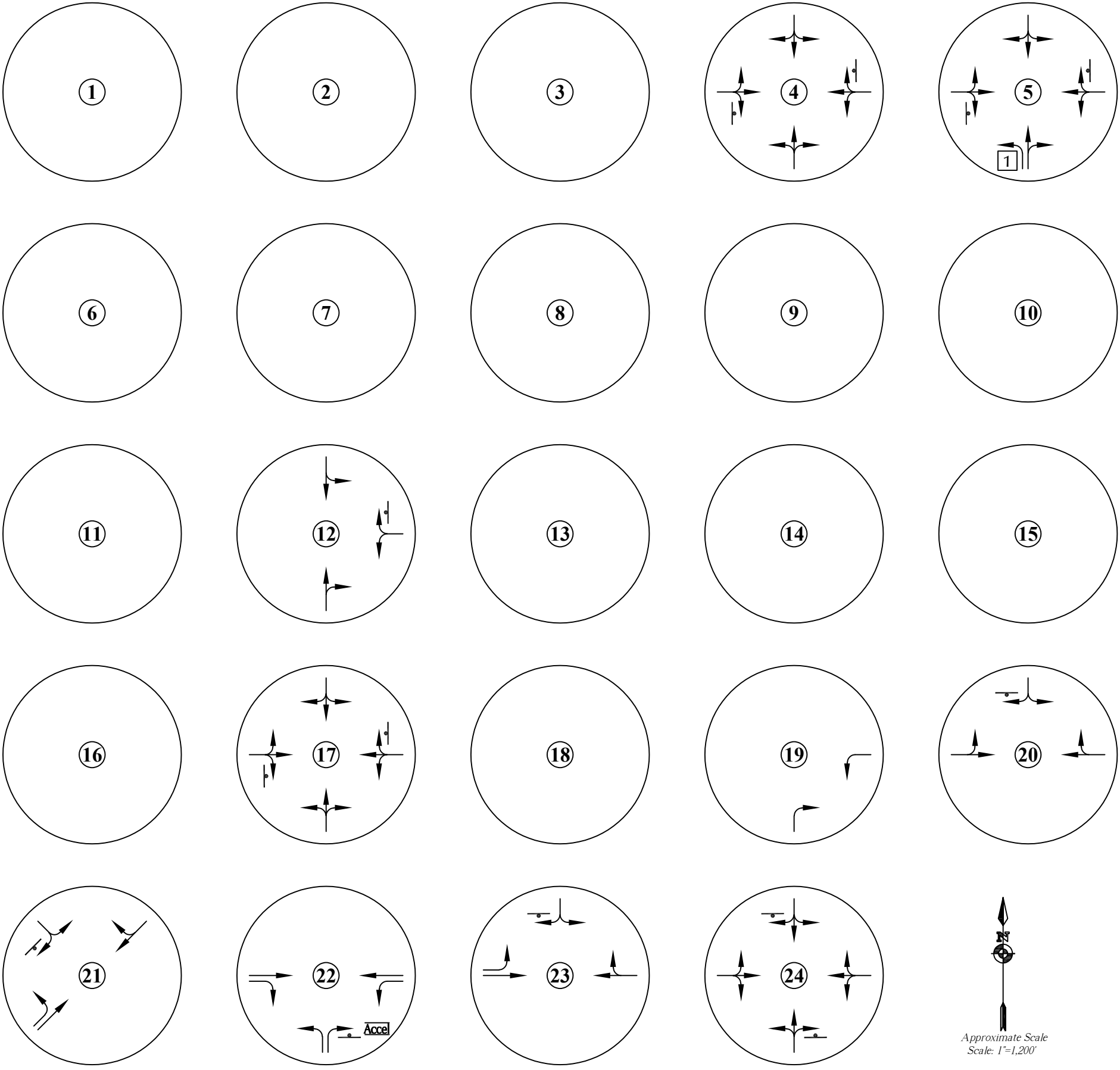


Note: This scenario will be for the short-term impacts of Phase 1. A two percent annual growth rate was assumed.

LEGEND:  
 $\frac{26}{35}$  = AM Peak Hour Traffic  
 $\frac{35}{26}$  = PM Peak Hour Traffic  
1,000 = Average Daily Traffic

Figure 4a  
**Year 2025**  
**Background Traffic**  
Mundell Farms (LSC #220620)





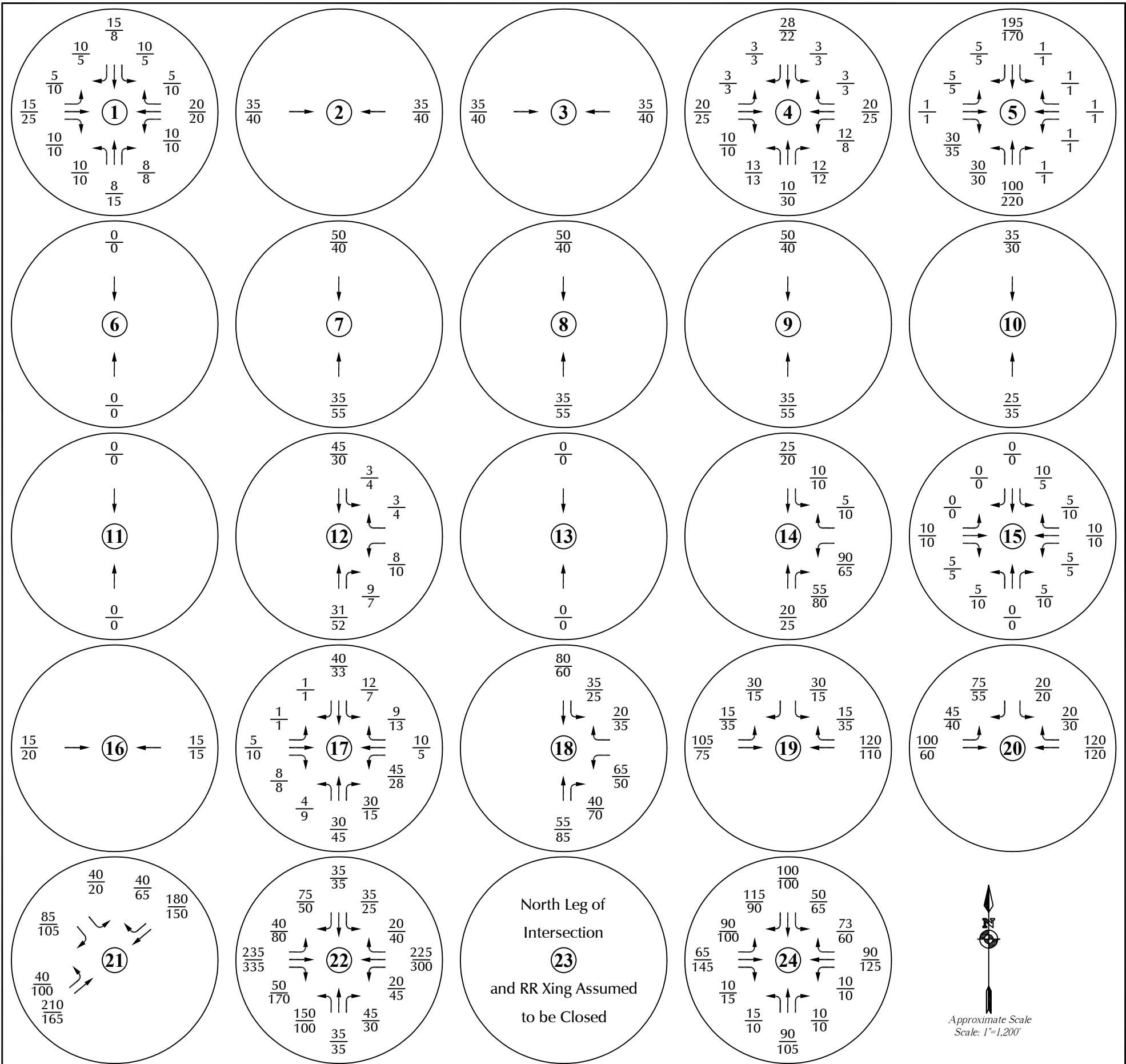
**1** NB LT = 378 feet + 222-foot transition taper (by Bennett Ranch)

LEGEND:  
 ↓ = Stop Sign  
 ● = Traffic Signal



Figure 4b  
**Year 2025 Background**  
**Lane Geometry and Traffic Control**





Note: This scenario will be for the short-term impacts of site buildout. These estimates are based on a combination of a two percent annual growth rate and the long-term projections in the Brunner Subdivision TIA, the Penrith Park TIA, the Worthman Acres TIA and the Bennett Ranch TIA.

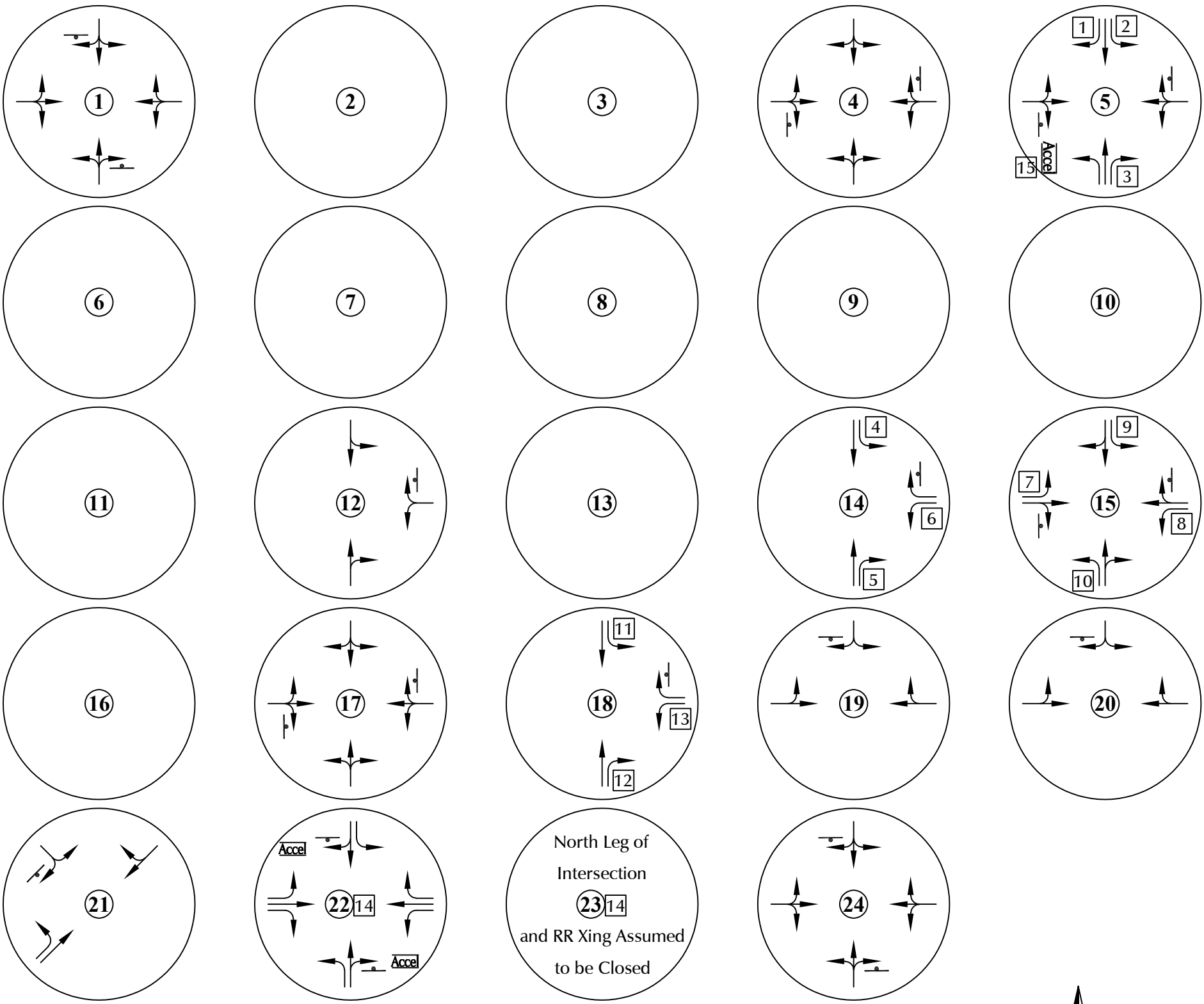
#### LEGEND:

$\frac{26}{35}$  = AM Peak Hour Traffic  
 $\frac{35}{26}$  = PM Peak Hour Traffic  
 1,000 = Average Daily Traffic



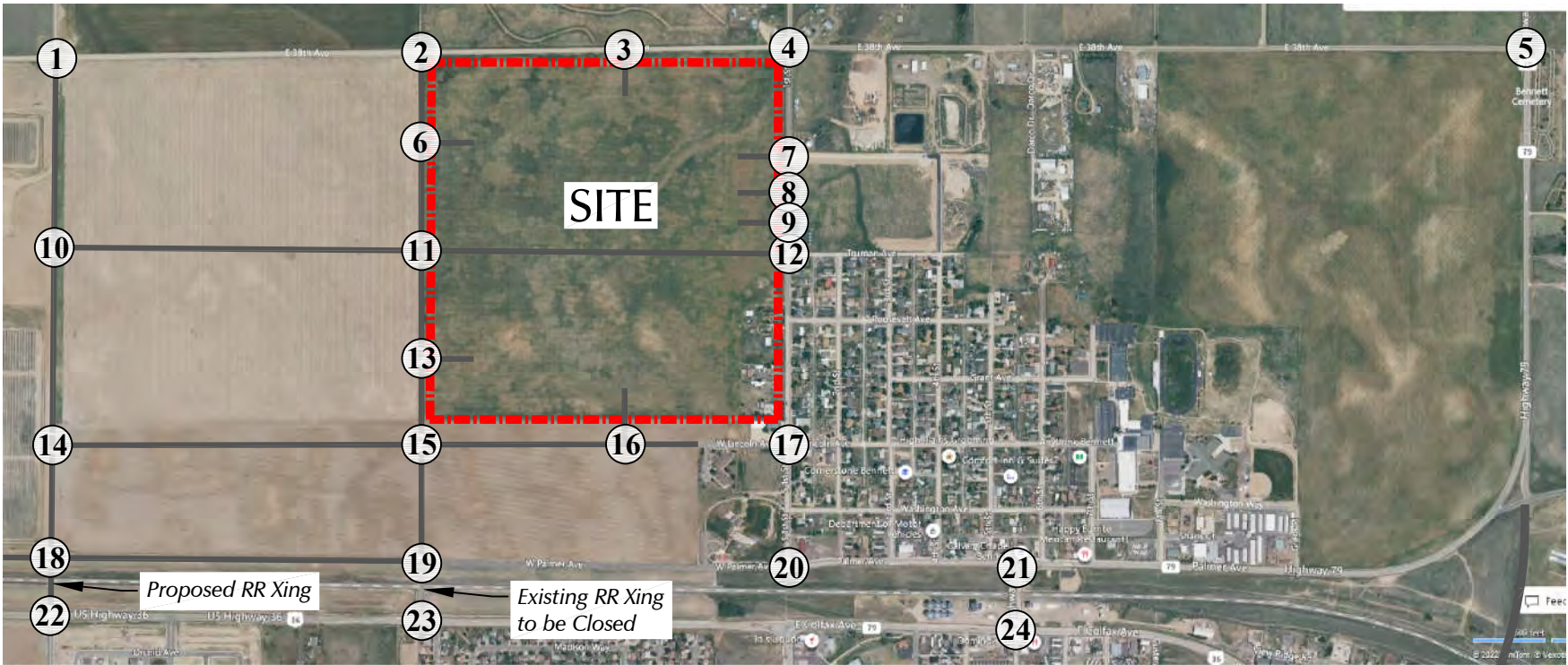
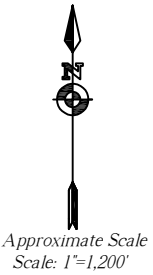
Figure 5a  
**Year 2030**  
**Background Traffic**  
 Mundell Farms (LSC #220624)





**Recommended Improvements:**

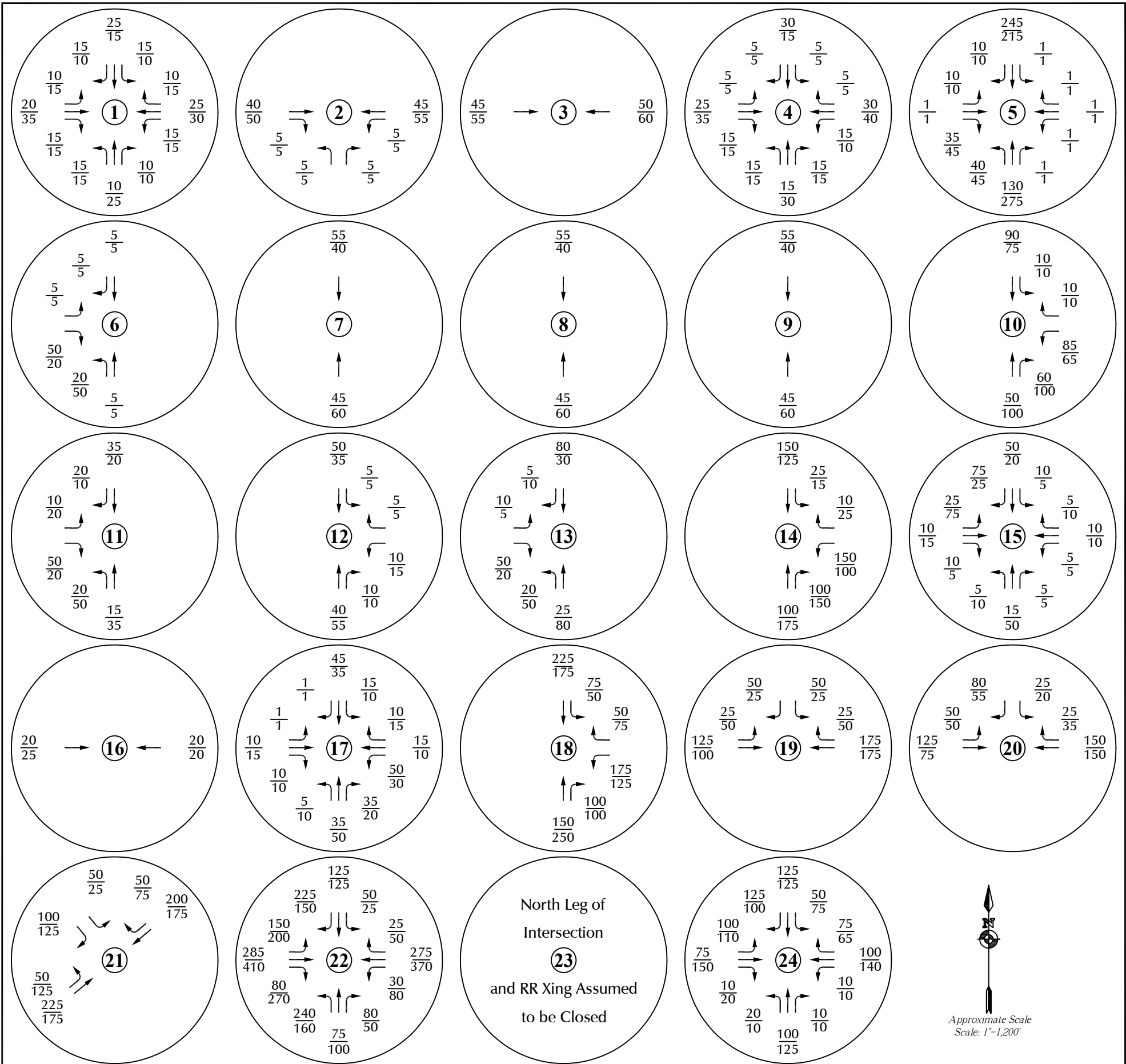
- |   |                           |  |
|---|---------------------------|--|
| 1 SB RT = Completed by SH 79 relocation project | 7 EB LT = See Figure 10b  | 13 WB LT = See Figure 10b  |
| 2 SB LT = Completed by SH 79 relocation project | 8 WB LT = See Figure 10b  | 14 Relocation of existing RR crossing between #19 and #23 to between #18 and #22 (may involve contribution from applicant) |
| 3 NB RT = Completed by SH 79 relocation project | 9 SB LT = See Figure 10b  | 15 Completed by SH 79 relocation project   |
| 4 SB LT = See Figure 10b                        | 10 NB LT = See Figure 10b |  |
| 5 NB RT = See Figure 10b                        | 11 SB LT = See Figure 10b |  |
| 6 WB LT = See Figure 10b                        | 12 NB RT = See Figure 10b |  |



- LEGEND:**
- = Stop Sign
  - = Traffic Signal

Figure 5b  
**Year 2030 Background  
 Lane Geometry and Traffic Control**





Note: This scenario will be for the long-term impacts of site buildout. These estimates are based on a combination of a two percent annual growth rate and the long-term projections in the Brunner Subdivision TIA, the Penrith Park TIA, the Worthman Acres TIA and the Bennett Ranch TIA.

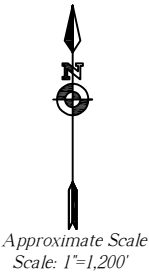
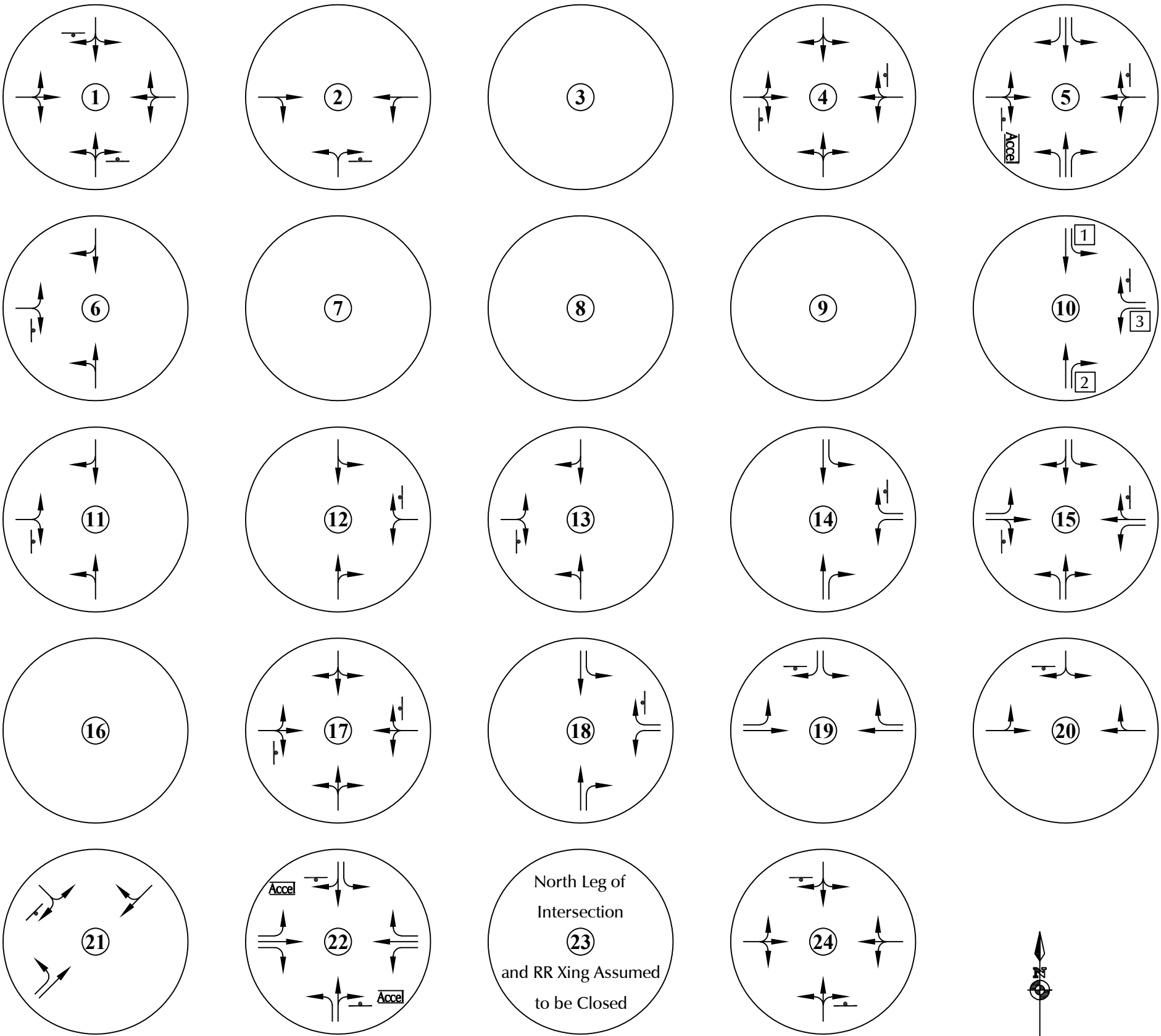
#### LEGEND:

$\frac{26}{35}$  = AM Peak Hour Traffic  
 $\frac{35}{26}$  = PM Peak Hour Traffic  
 1,000 = Average Daily Traffic



Figure 6a  
**Year 2042**  
**Background Traffic**  
 Mundell Farms (LSC #220624)





Recommended Improvements by Development located between #10 and #11. May be needed by applicant depending on timing of overall development:

- 1 SB LT = 150 feet + 10:1 transition taper
- 2 NB RT = 150 feet + 10:1 transition taper
- 3 WB LT = 150 feet + 10:1 transition taper

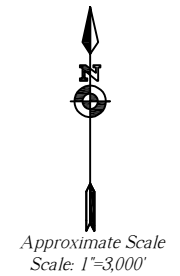
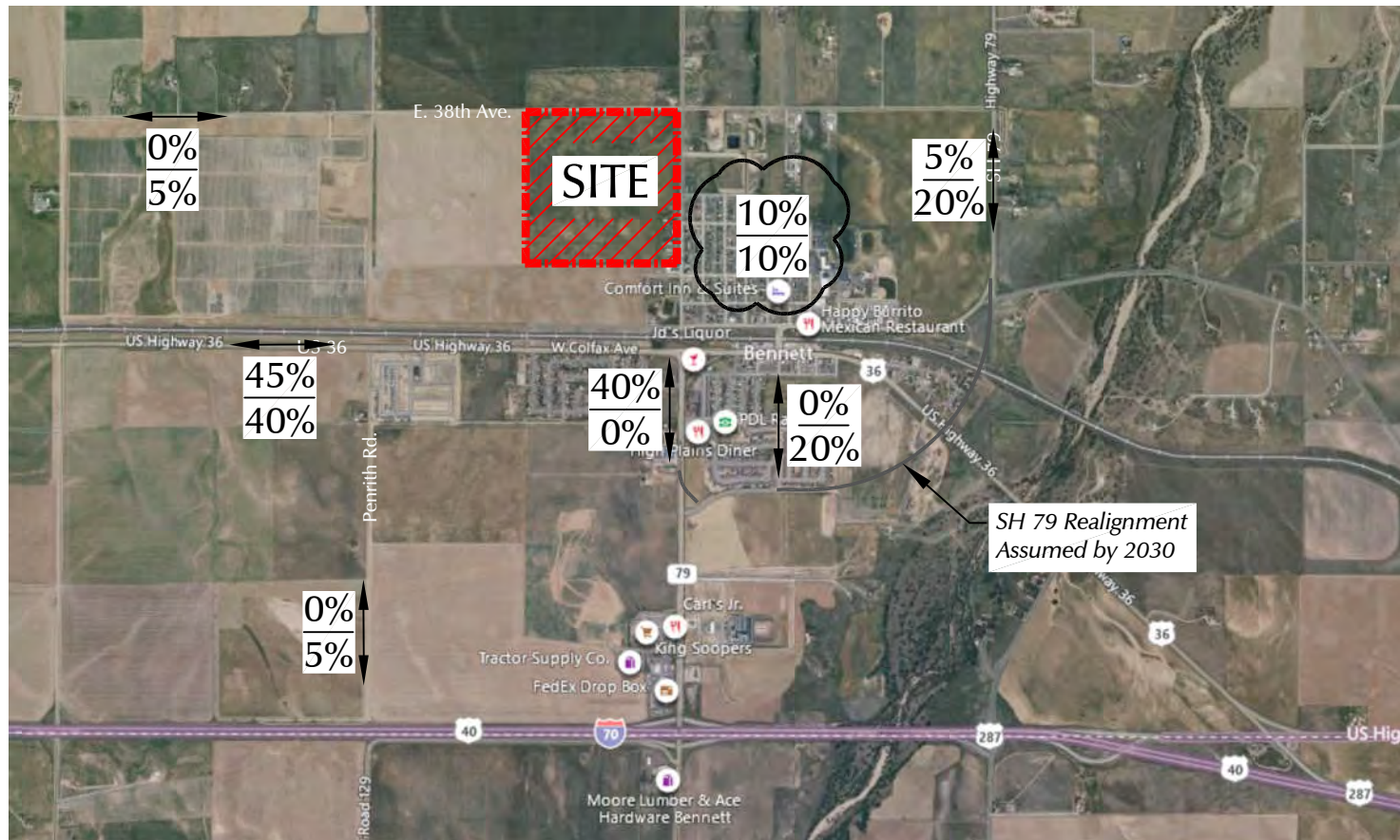


LEGEND:  
 T = Stop Sign  
 ● = Traffic Signal

Figure 6b  
 Year 2042 Background  
 Lane Geometry and Traffic Control







Note: the percentages shown on Colfax Avenue (US 36) west of the site are based on a relatively large number of residents working in the Denver metro area and traveling to/from the site via future roadways connecting to Colfax Avenue (US 36) at Penrith Road.

LEGEND:

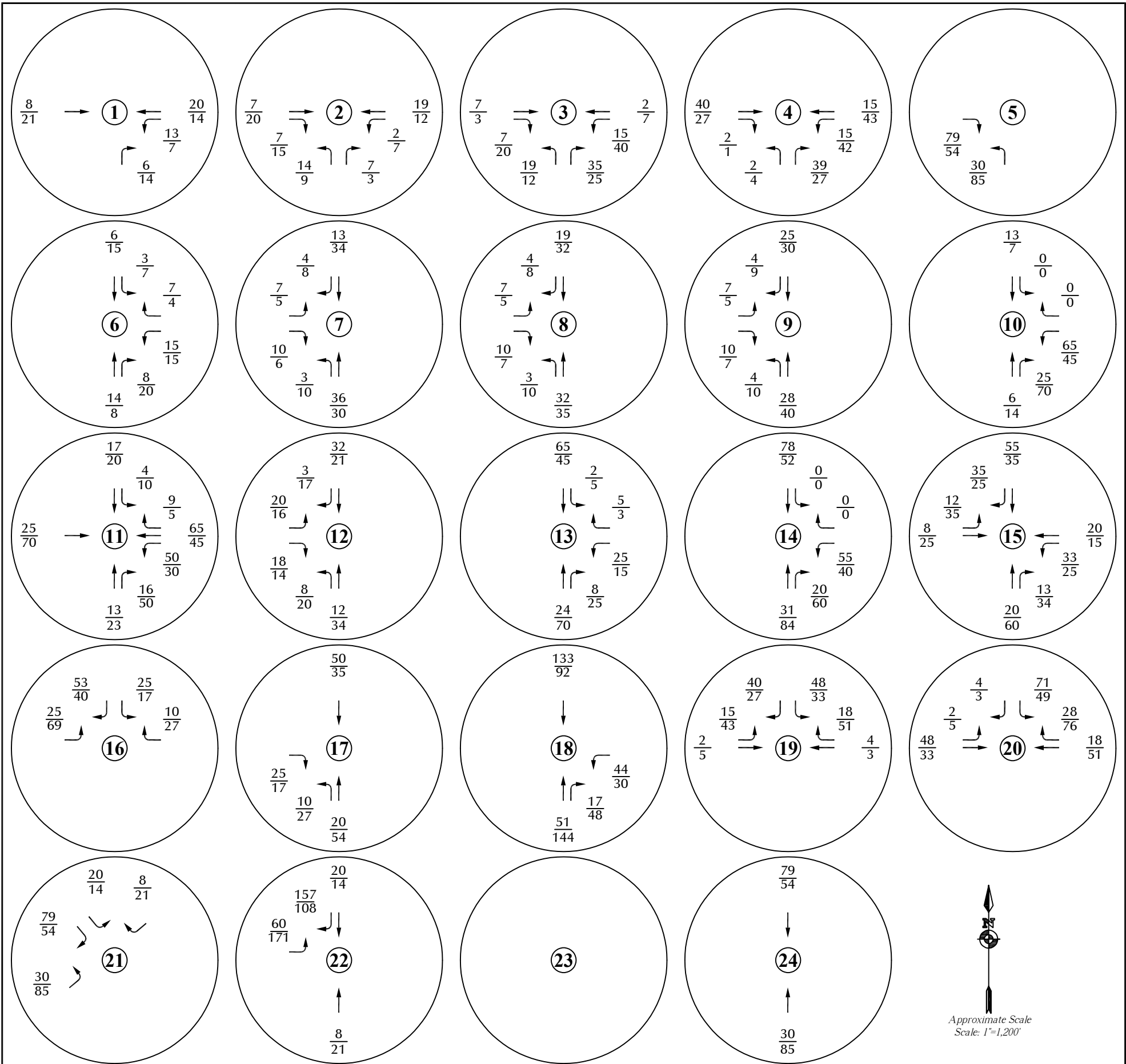
$\frac{5\%}{5\%}$  =  $\frac{\text{Phase 1 (2025) Percent Directional Distribution}}{\text{Buildout (2030 \& 2040) Percent Directional Distribution}}$

## Directional Distribution of Site-Generated Traffic

Mundell Farms (LSC #220820)







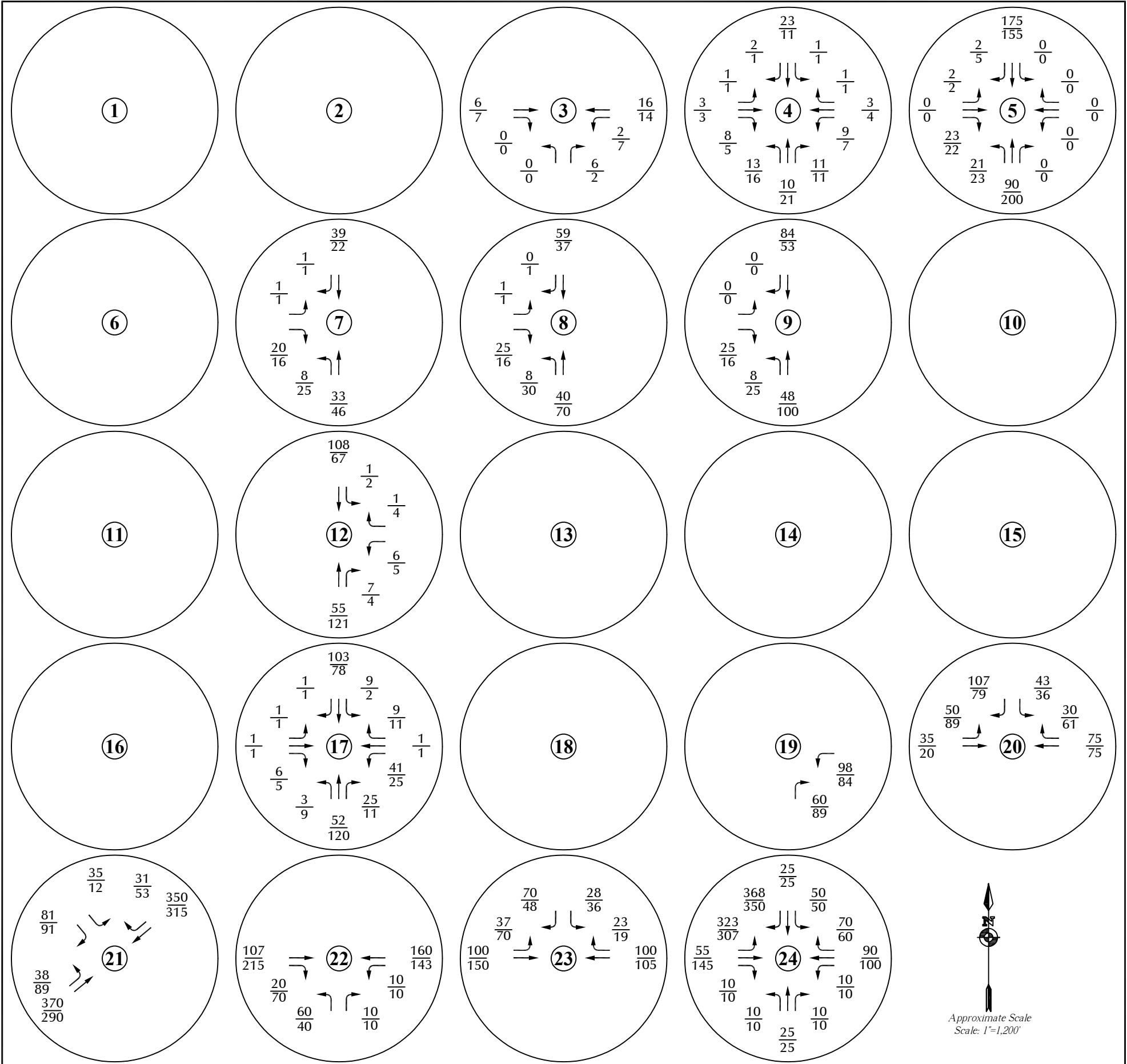
LEGEND:

- = Stop Sign
- = Traffic Signal
- $\frac{26}{35}$  = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1,000 = Average Daily Traffic



Figure 8b  
**Assignment of  
 Buildout Site-Generated Traffic**





LEGEND:

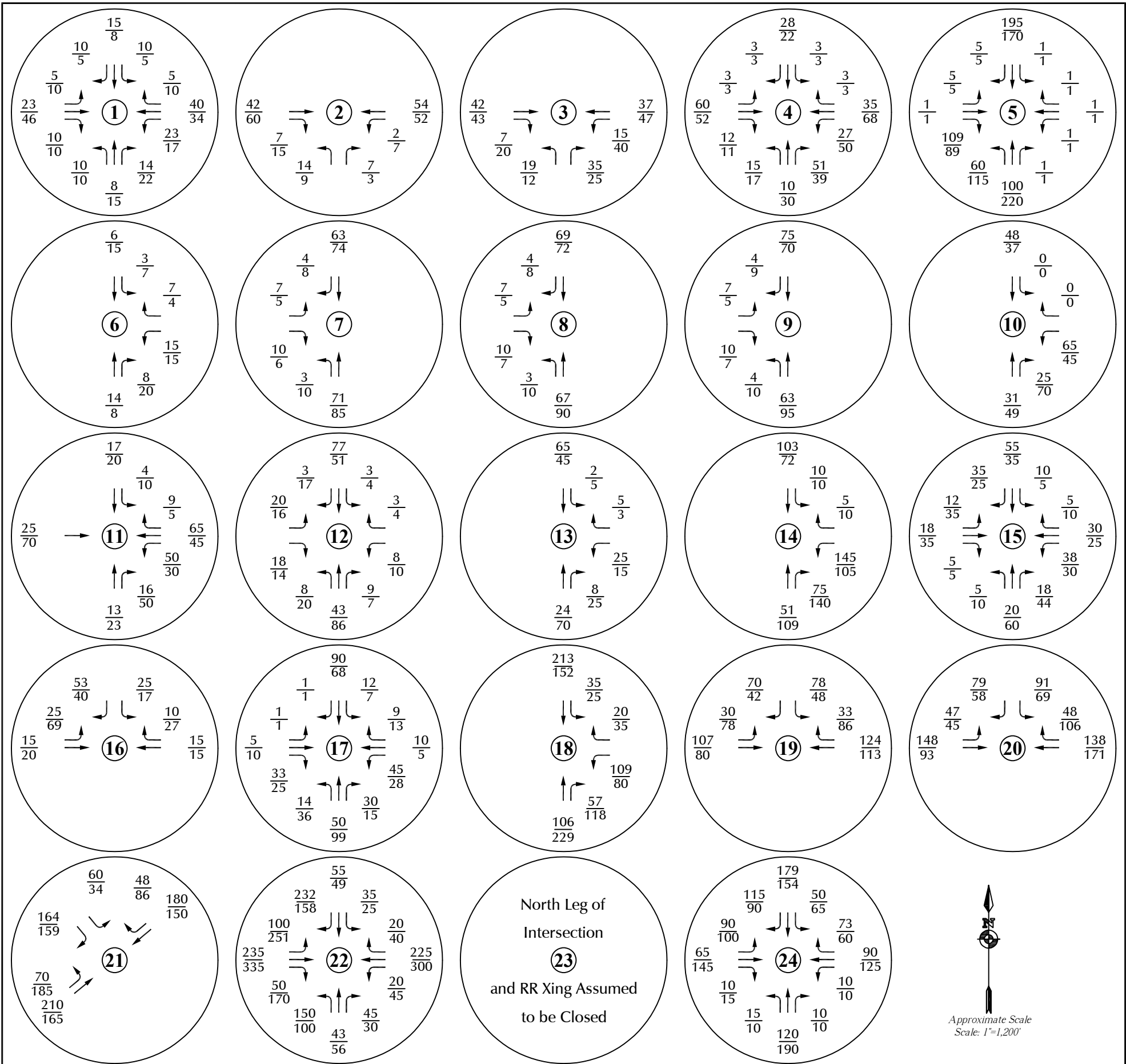
$\frac{26}{35}$  = AM Peak Hour Traffic  
 $\frac{35}{26}$  = PM Peak Hour Traffic  
 1,000 = Average Daily Traffic

Figure 9a  
**Year 2025**  
**Total Traffic**  
 Mundell Farms (LSC #220624)









#### LEGEND:

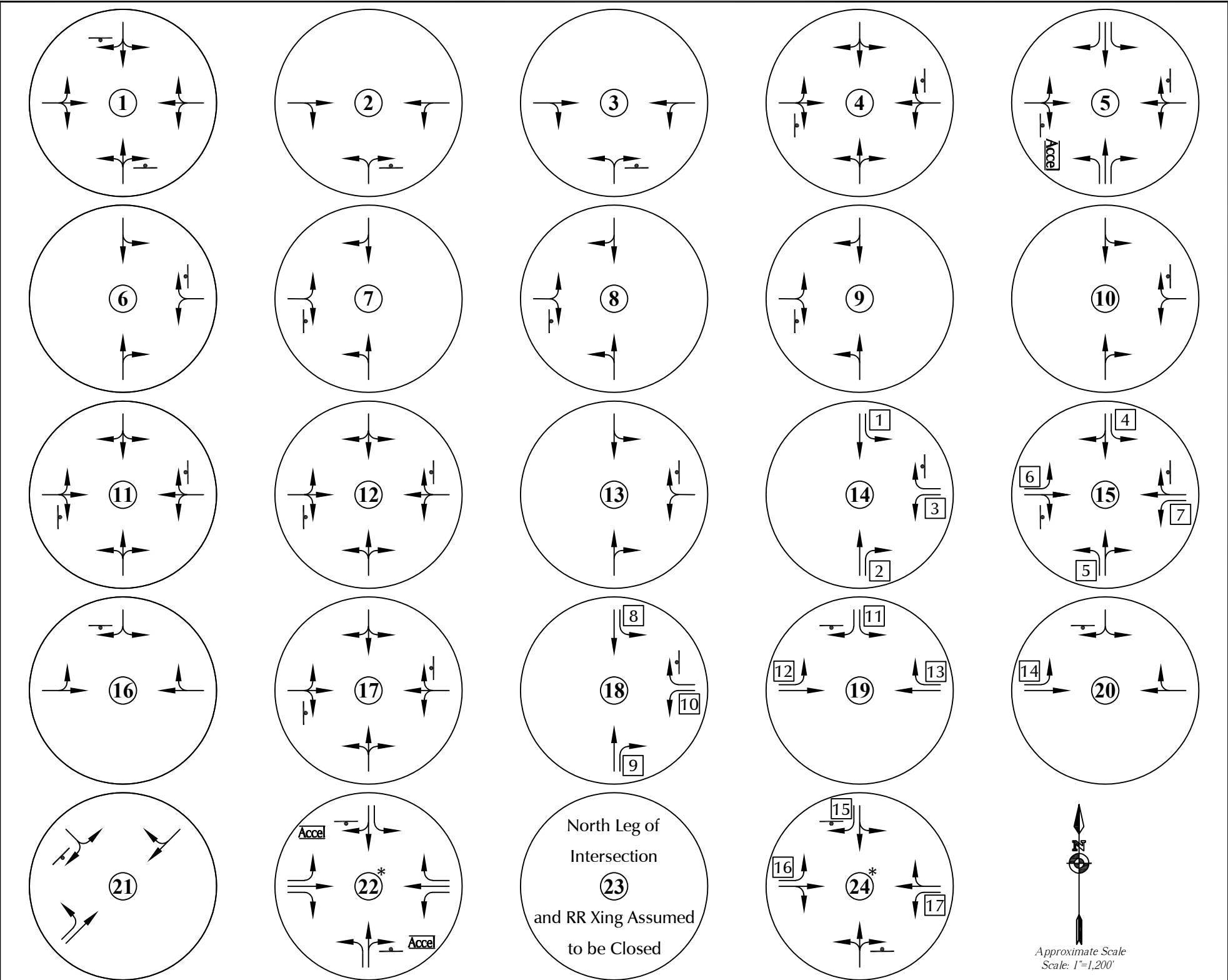
$\frac{26}{35}$  = AM Peak Hour Traffic  
 = PM Peak Hour Traffic  
 1,000 = Average Daily Traffic



Figure 10a

**Year 2030  
Total Traffic**





**Recommended Improvements:**

- |   |   |   |
|---|---|---|
| 1 SB LT = 150 feet + 120-foot transition taper (10:1) | 8 SB LT = 150 feet + 120-foot transition taper  | 15 SB RT = 150 feet + 120-foot transition taper   |
| 2 NB RT = 200 feet + 120-foot transition taper (10:1) | 9 NB RT = 150 feet + 120-foot transition taper  | 16 EB LT = 300 feet (190 feet for decel + 110 feet for storage) + 120-foot transition taper |
| 3 WB LT = 200 feet + 120-foot transition taper (10:1) | 10 WB LT = 225 feet + 120-foot transition taper | 17 WB LT = Short stacking lane to offset EB LT w/ 120-foot transition taper                 |
| 4 SB LT = 150 feet + 120-foot transition taper        | 11 SB LT = 150 feet + 120-foot transition taper |   |
| 5 NB LT = 150 feet + 120-foot transition taper        | 12 EB LT = 150 feet + 120-foot transition taper |   |
| 6 EB LT = 150 feet + 120-foot transition taper        | 13 WB RT = 150 feet + 120-foot transition taper |   |
| 7 WB LT = 150 feet + 120-foot transition taper        | 14 EB LT = 150 feet + 120-foot transition tape  |   |



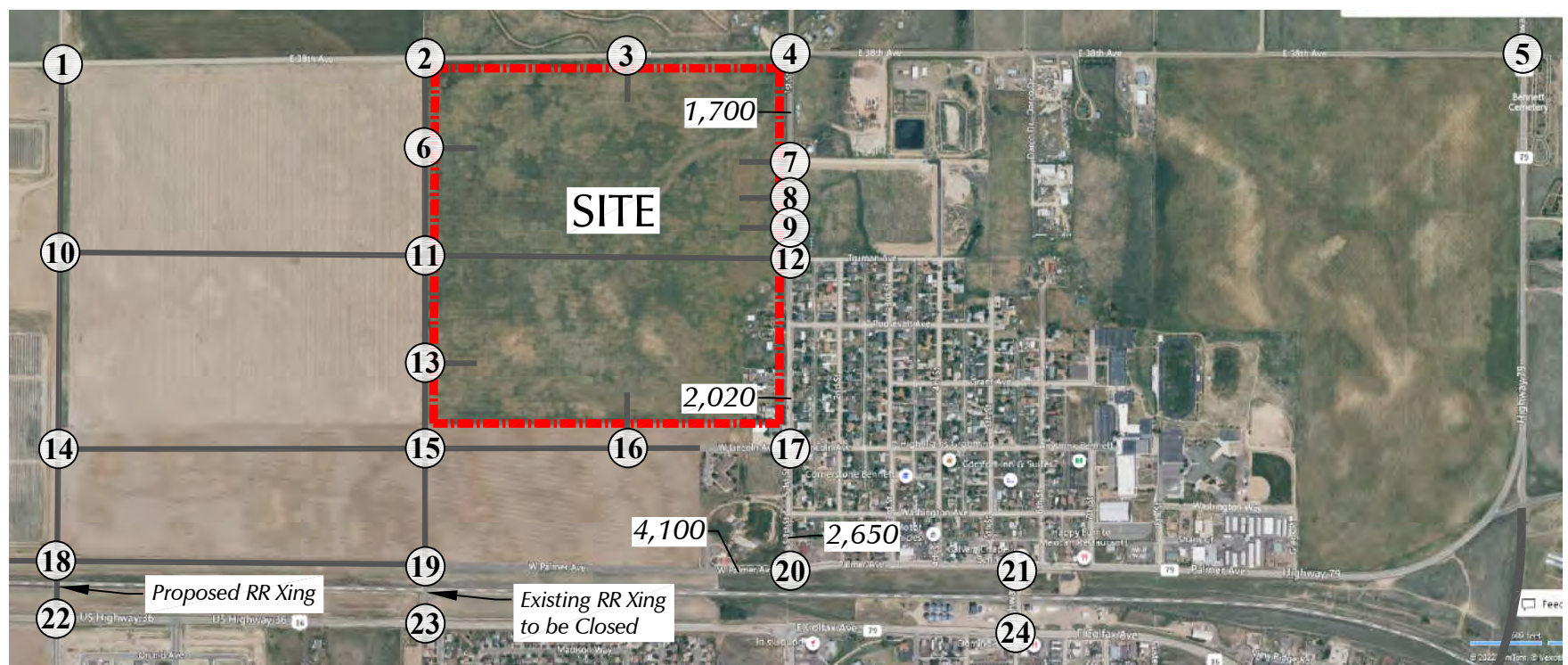
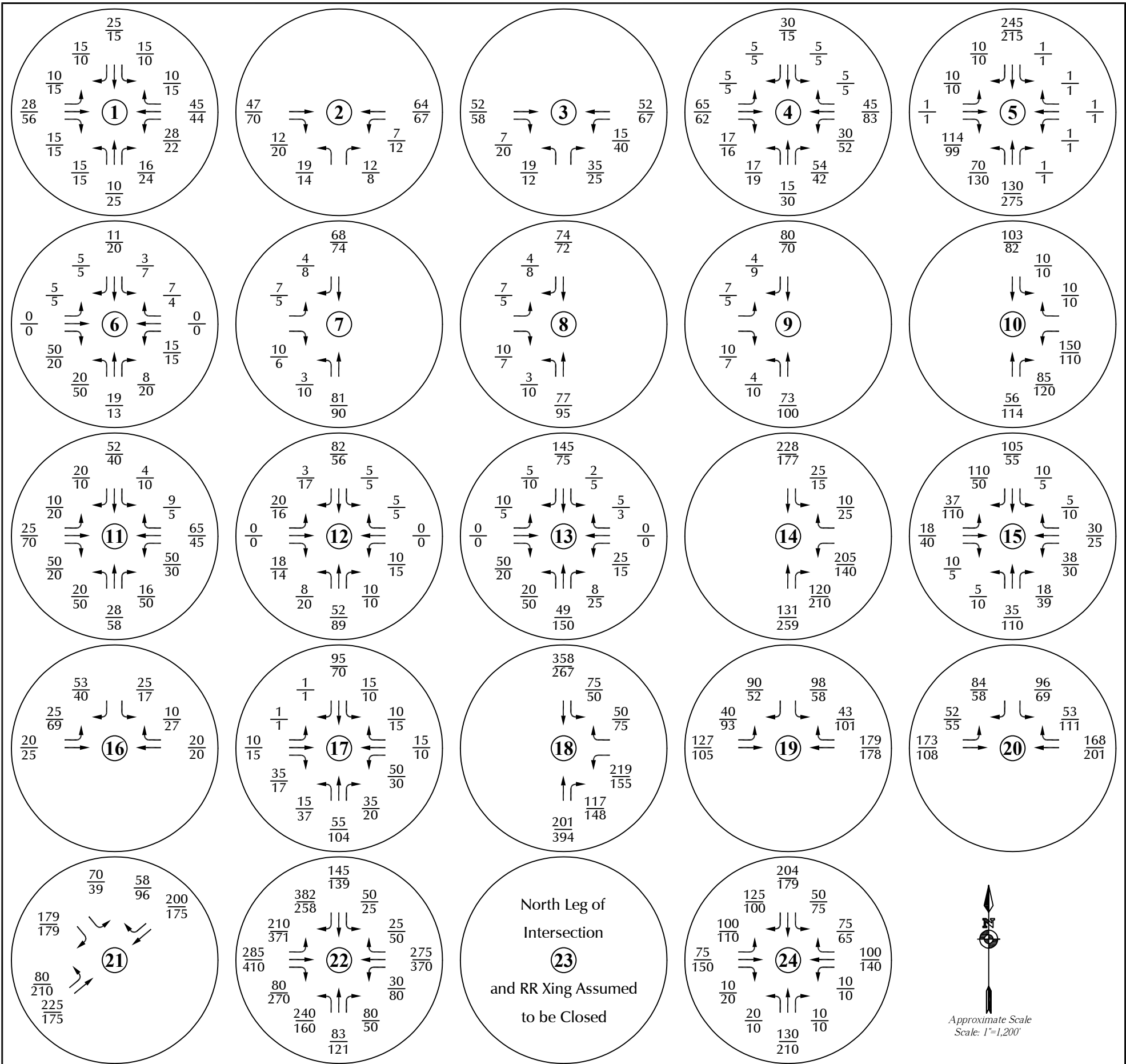
\* Potential Traffic Signal and/or Roundabout by 2030.

- LEGEND:**
- ⊥ = Stop Sign
  - = Traffic Signal



Figure 10b  
**Year 2030 Total  
Lane Geometry and Traffic Control**





LEGEND:

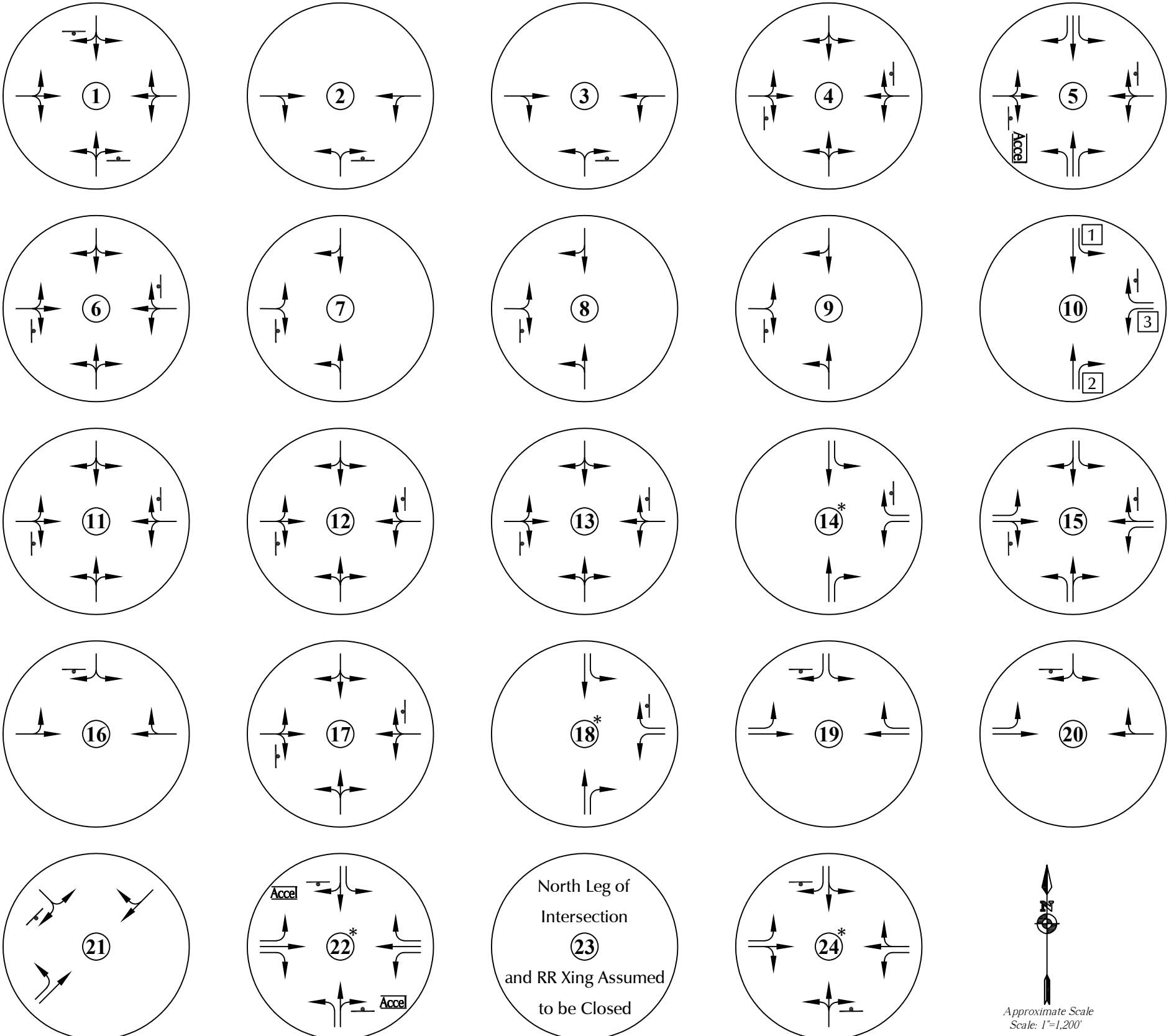
$\frac{26}{35}$  = AM Peak Hour Traffic  
 $\frac{35}{26}$  = PM Peak Hour Traffic  
 1,000 = Average Daily Traffic



Figure 11a

Year 2042  
 Total Traffic





Recommended Improvements by Applicant if not previously completed by others:

- 1 SB LT = 150 feet + 120-foot transition taper (10:1)
- 2 NB RT = 150 feet + 120-foot transition taper (10:1)
- 3 WB LT = 150 feet + 120-foot transition taper (10:1)

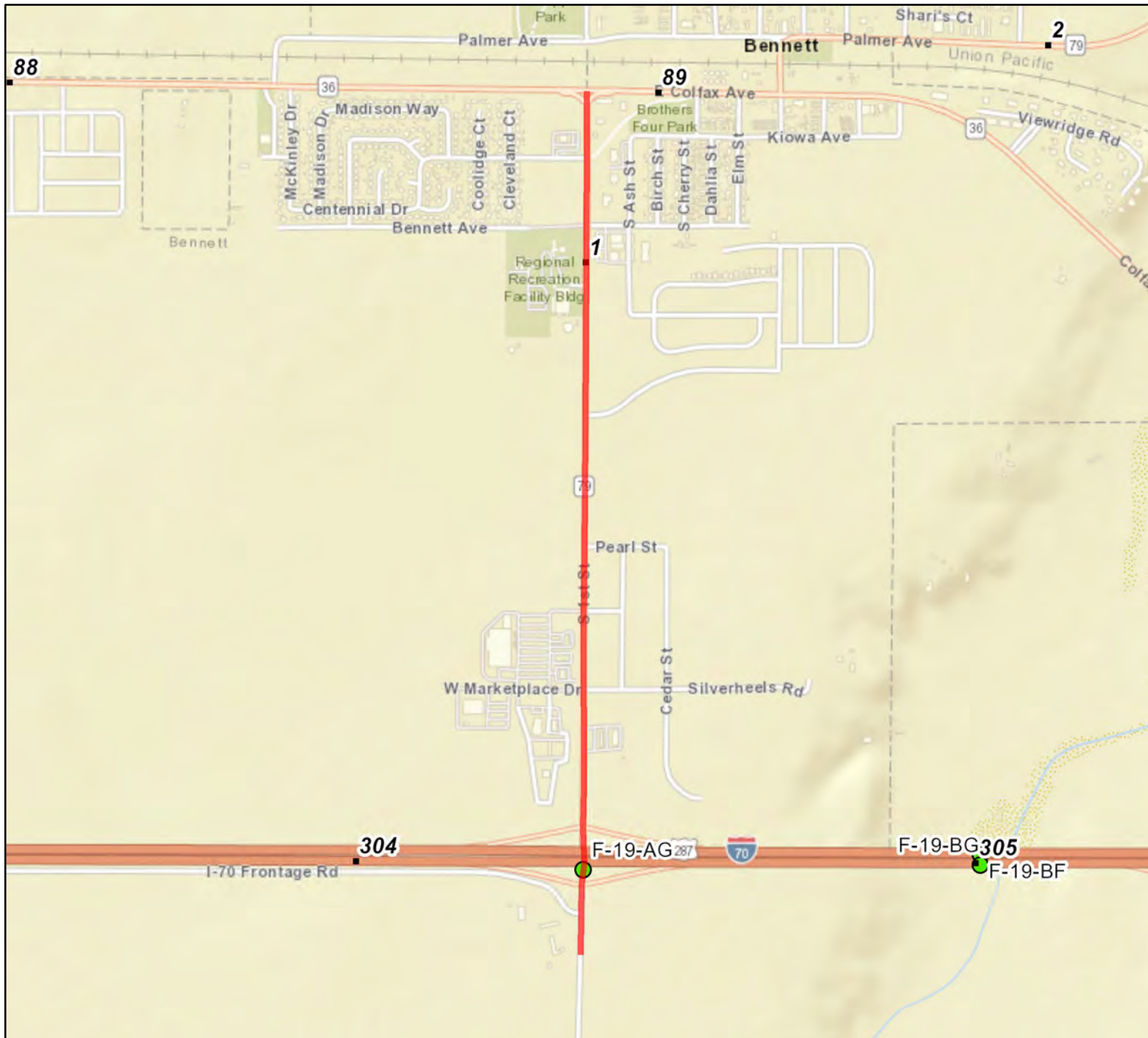


\* Potential Traffic Signal and/or Roundabout by 2042.

LEGEND:  
 T = Stop Sign  
 T with circle = Traffic Signal

Figure 11b  
**Year 2042 Total**  
**Lane Geometry and Traffic Control**

# Route 079A From 0 to 2



## Legend

Route

Milepoint

## Structures

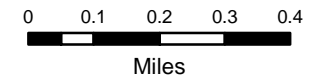
Major Structure

Minor Structure

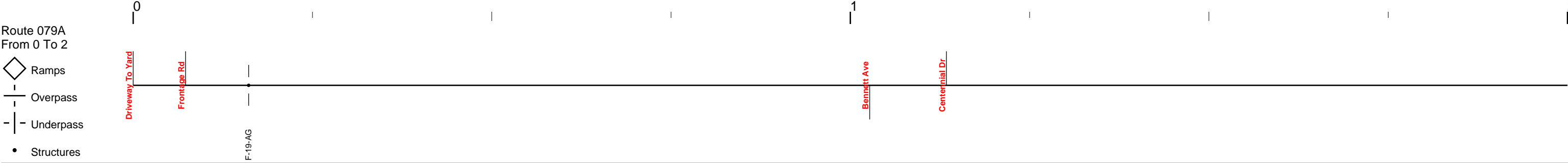
Created:

Date: 9/22/2022

Time: 10:53:28 AM



The information contained in this map is based on the most currently available data and has been checked for accuracy. CDOT does not guarantee the accuracy of any information presented, is not liable in any respect for any errors or omissions, and is not responsible for determining "fitness for use".



CLASSIFICATION			
Access Control	NR-B: Non-Rural Arterial		
Highway Designation	SH		

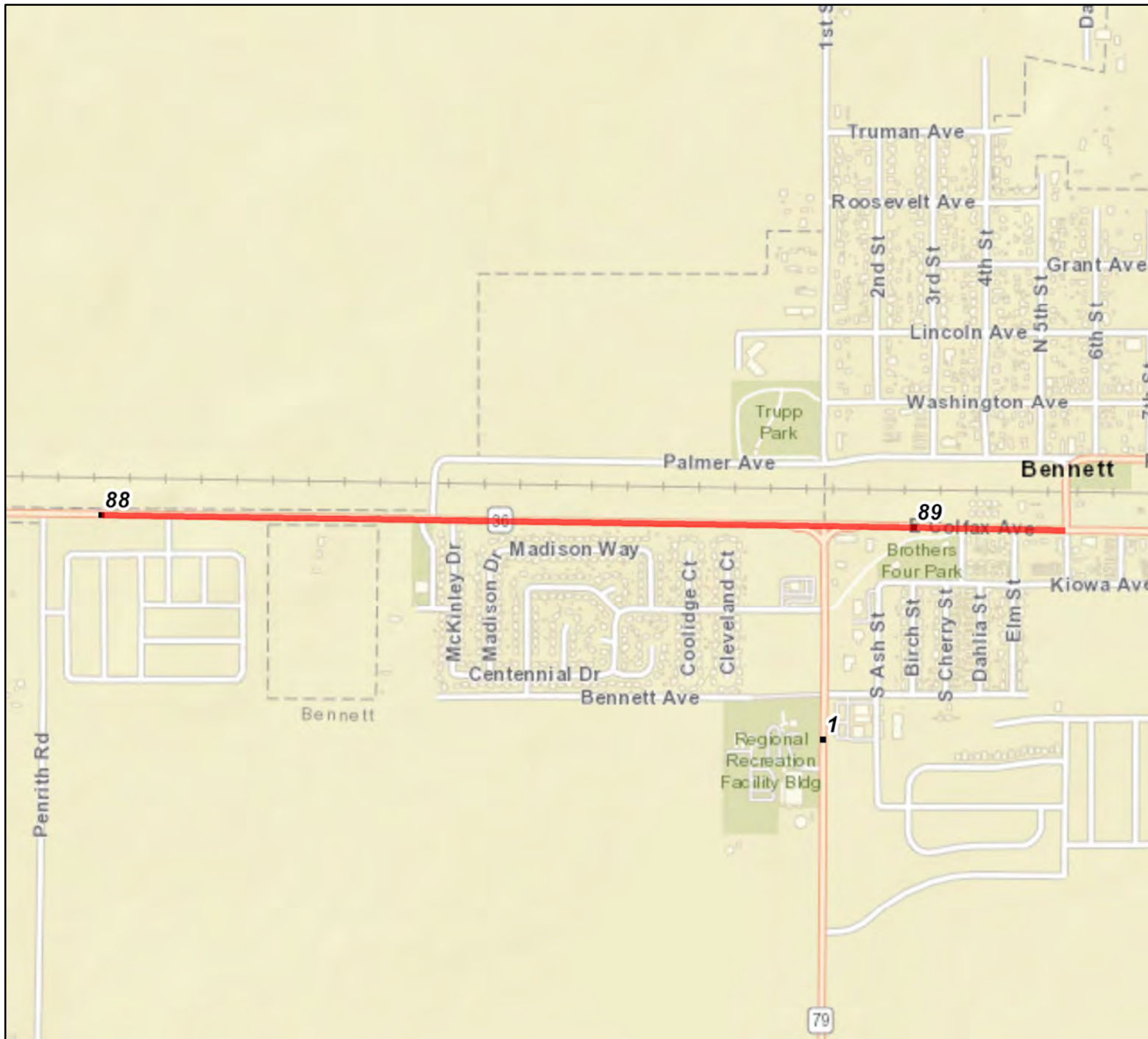
SAFETY			
Primary Speed Limit	45		35

TRAFFIC			
AADT	6600	11000	5800
V/C Ratio	0.26	0.54	0.33
Year 20 Factor	1.48	1.75	1.53

It may appear that information is missing from the straight line diagram. If so, reduce the number of miles/page and re-submit the request.



# Route 036C From 88 to 90



## Legend

Route

Milepoint

## Structures

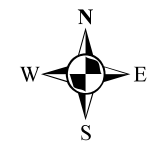
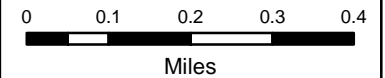
Major Structure

Minor Structure

Created:

Date: 9/22/2022

Time: 10:52:22 AM



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# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: 1ST STREET  
E/W STREET: E. LINCOLN AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTLINC  
Site Code : 00000025  
Start Date : 8/17/2022  
Page No : 1

## Groups Printed- VEHICLES

	1ST STREET Southbound			E. LINCOLN AVE Westbound			1ST STREET Northbound			E. LINCOLN AVE Eastbound			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	5	0	0	0	0	0	0	0	0	0	0	5
06:45 AM	0	7	0	1	0	0	1	2	1	0	0	0	12
Total	0	12	0	1	0	0	1	2	1	0	0	0	17
07:00 AM	0	8	0	1	0	1	0	2	1	0	0	1	14
07:15 AM	3	4	0	4	0	2	0	2	4	0	0	1	20
07:30 AM	3	5	0	13	1	3	1	6	10	0	1	1	44
07:45 AM	2	4	0	17	0	3	0	7	9	0	0	2	44
Total	8	21	0	35	1	9	1	17	24	0	1	5	122
08:00 AM	0	4	0	5	0	0	1	3	2	0	0	1	16
08:15 AM	1	5	0	3	0	0	0	3	3	0	0	1	16
Total	1	9	0	8	0	0	1	6	5	0	0	2	32
04:00 PM	0	5	0	11	0	6	2	8	4	1	0	1	38
04:15 PM	0	5	0	8	0	2	1	12	1	0	0	0	29
04:30 PM	1	7	0	3	0	2	2	8	3	0	0	1	27
04:45 PM	0	10	0	2	0	0	3	5	2	0	0	2	24
Total	1	27	0	24	0	10	8	33	10	1	0	4	118
05:00 PM	1	5	0	1	0	1	2	12	1	0	0	1	24
05:15 PM	1	6	0	2	0	1	2	8	2	0	0	2	24
05:30 PM	1	7	0	2	0	1	3	12	4	0	0	3	33
05:45 PM	2	9	1	6	0	1	2	8	3	0	0	1	33
Total	5	27	1	11	0	4	9	40	10	0	0	7	114
Grand Total	15	96	1	79	1	23	20	98	50	1	1	18	403
Apprch %	13.4	85.7	0.9	76.7	1.0	22.3	11.9	58.3	29.8	5.0	5.0	90.0	
Total %	3.7	23.8	0.2	19.6	0.2	5.7	5.0	24.3	12.4	0.2	0.2	4.5	



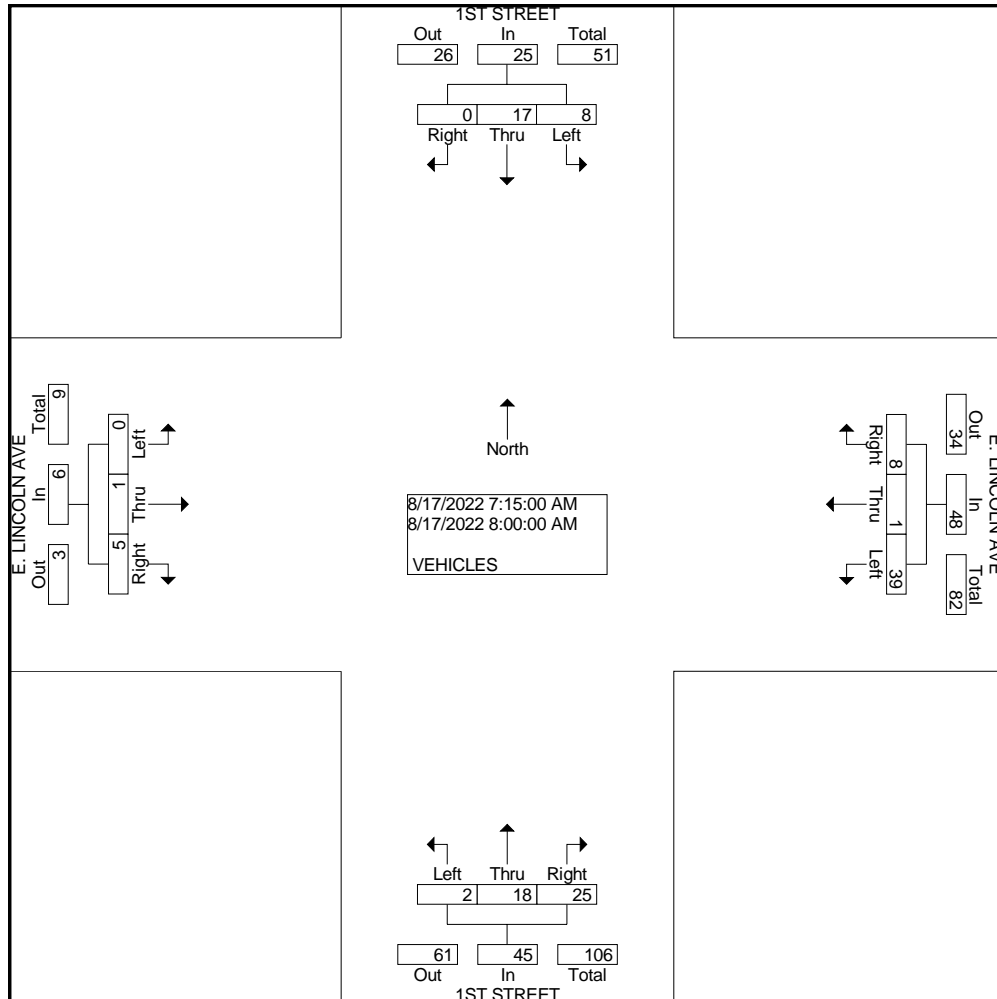
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER, COLORADO  
303-333-7409

N/S STREET: 1ST STREET  
E/W STREET: E. LINCOLN AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTLINC  
Site Code : 00000025  
Start Date : 8/17/2022  
Page No : 2

	1ST STREET Southbound				E. LINCOLN AVE Westbound				1ST STREET Northbound				E. LINCOLN AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	8	17	0	25	39	1	8	48	2	18	25	45	0	1	5	6	124
Percent	32.0	68.0	0.0		81.3	2.1	16.7		4.4	40.0	55.6		0.0	16.7	83.3		
07:45																	
Volume	2	4	0	6	17	0	3	20	0	7	9	16	0	0	2	2	44
Peak Factor																	0.705
High Int.	07:30 AM				07:45 AM				07:30 AM				07:30 AM				
Volume	3	5	0	8	17	0	3	20	1	6	10	17	0	1	1	2	
Peak Factor	0.781				0.600				0.662				0.750				



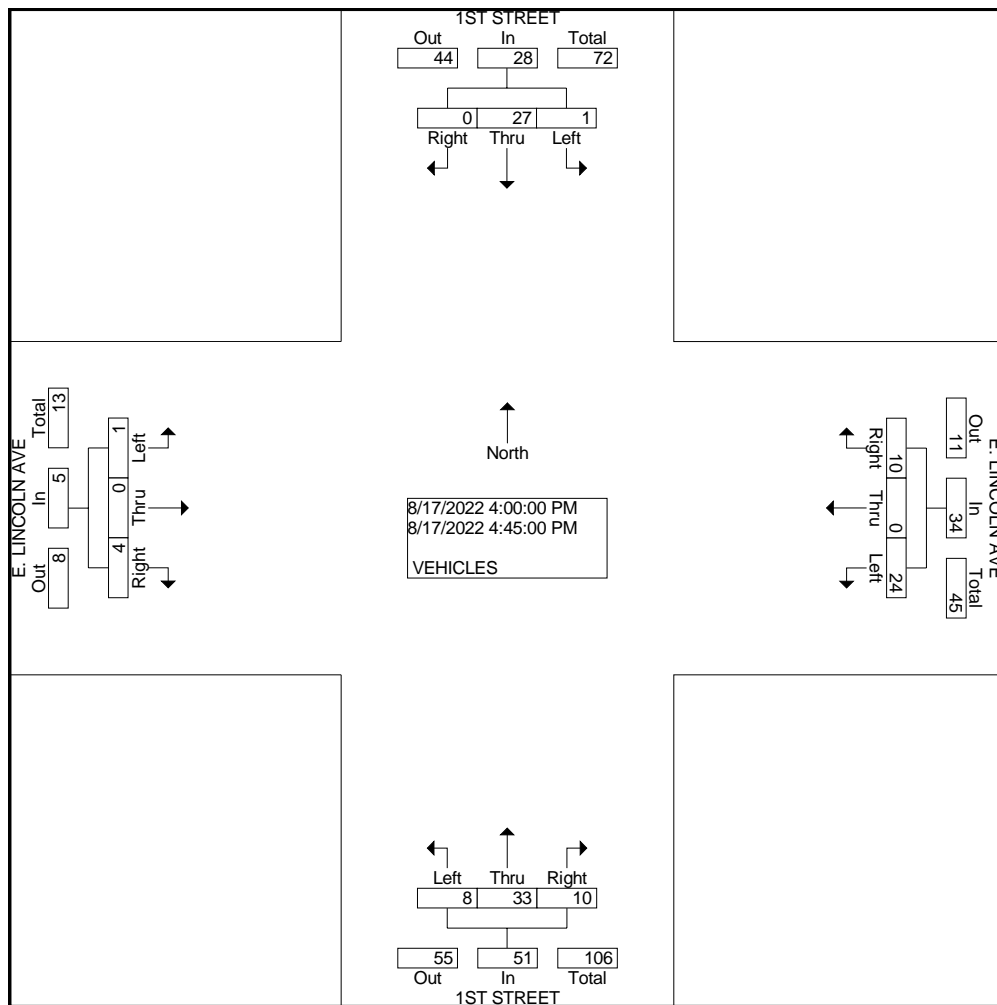
# COUNTER MEASURES INC.

1889 YORK STREET  
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303-333-7409

N/S STREET: 1ST STREET  
E/W STREET: E. LINCOLN AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTLINC  
Site Code : 00000025  
Start Date : 8/17/2022  
Page No : 3

	1ST STREET Southbound				E. LINCOLN AVE Westbound				1ST STREET Northbound				E. LINCOLN AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Intersection	04:00 PM																
Volume	1	27	0	28	24	0	10	34	8	33	10	51	1	0	4	5	118
Percent	3.6	96.4	0.0		70.6	0.0	29.4		15.7	64.7	19.6		20.0	0.0	80.0		
04:00	0	5	0	5	11	0	6	17	2	8	4	14	1	0	1	2	38
Volume																	
Peak Factor	0.776																
High Int.	04:45 PM				04:00 PM				04:00 PM				04:00 PM				
Volume	0	10	0	10	11	0	6	17	2	8	4	14	1	0	1	2	
Peak Factor	0.700				0.500				0.911				0.625				



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N/S STREET: 1ST STREET  
E/W STREET: PALMER AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTPALM2  
Site Code : 00000008  
Start Date : 8/25/2022  
Page No : 1

## Groups Printed- VEHICLES

	1ST STREET Southbound				PALMER AVE Westbound				NO ACCESS Northbound				PALMER AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	2	0	4	0	0	0	2	0	0	0	0	0	0	1	0	0	9
06:45 AM	4	0	4	0	0	3	2	0	0	0	0	0	0	3	0	0	16
Total	6	0	8	0	0	3	4	0	0	0	0	0	0	4	0	0	25
07:00 AM	5	0	1	0	0	3	2	1	0	0	0	0	0	2	0	0	14
07:15 AM	4	0	4	0	0	8	3	0	0	0	0	0	3	2	0	0	24
07:30 AM	2	0	17	0	0	20	3	0	0	0	0	0	16	26	0	0	84
07:45 AM	4	0	33	0	0	36	4	1	0	0	0	0	12	5	0	0	95
Total	15	0	55	0	0	67	12	2	0	0	0	0	31	35	0	0	217
08:00 AM	1	0	6	0	0	6	0	0	0	0	0	0	2	0	0	0	15
08:15 AM	2	0	7	0	0	1	2	0	0	0	0	0	0	2	0	0	14
Total	3	0	13	0	0	7	2	0	0	0	0	0	2	2	0	0	29
04:00 PM	1	0	23	0	0	28	5	0	0	0	0	0	10	2	0	0	69
04:15 PM	2	0	16	0	0	25	8	4	0	0	0	0	4	5	0	0	64
04:30 PM	5	0	8	0	0	16	4	0	0	0	0	0	6	5	0	0	44
04:45 PM	7	0	0	0	0	3	5	0	0	0	0	0	2	3	0	0	20
Total	15	0	47	0	0	72	22	4	0	0	0	0	22	15	0	0	197
05:00 PM	6	0	6	0	0	1	3	1	0	0	0	0	5	1	0	0	23
05:15 PM	3	0	2	0	0	4	4	1	0	0	0	0	3	2	0	1	20
05:30 PM	4	0	1	0	0	2	8	0	0	0	0	0	8	1	0	0	24
05:45 PM	7	0	4	0	0	4	0	0	0	0	0	0	5	8	0	0	28
Total	20	0	13	0	0	11	15	2	0	0	0	0	21	12	0	1	95
Grand Total	59	0	136	0	0	160	55	8	0	0	0	0	76	68	0	1	563
Apprch %	30.3	0.0	69.7	0.0	0.0	71.7	24.7	3.6	0.0	0.0	0.0	0.0	52.4	46.9	0.0	0.7	
Total %	10.5	0.0	24.2	0.0	0.0	28.4	9.8	1.4	0.0	0.0	0.0	0.0	13.5	12.1	0.0	0.2	



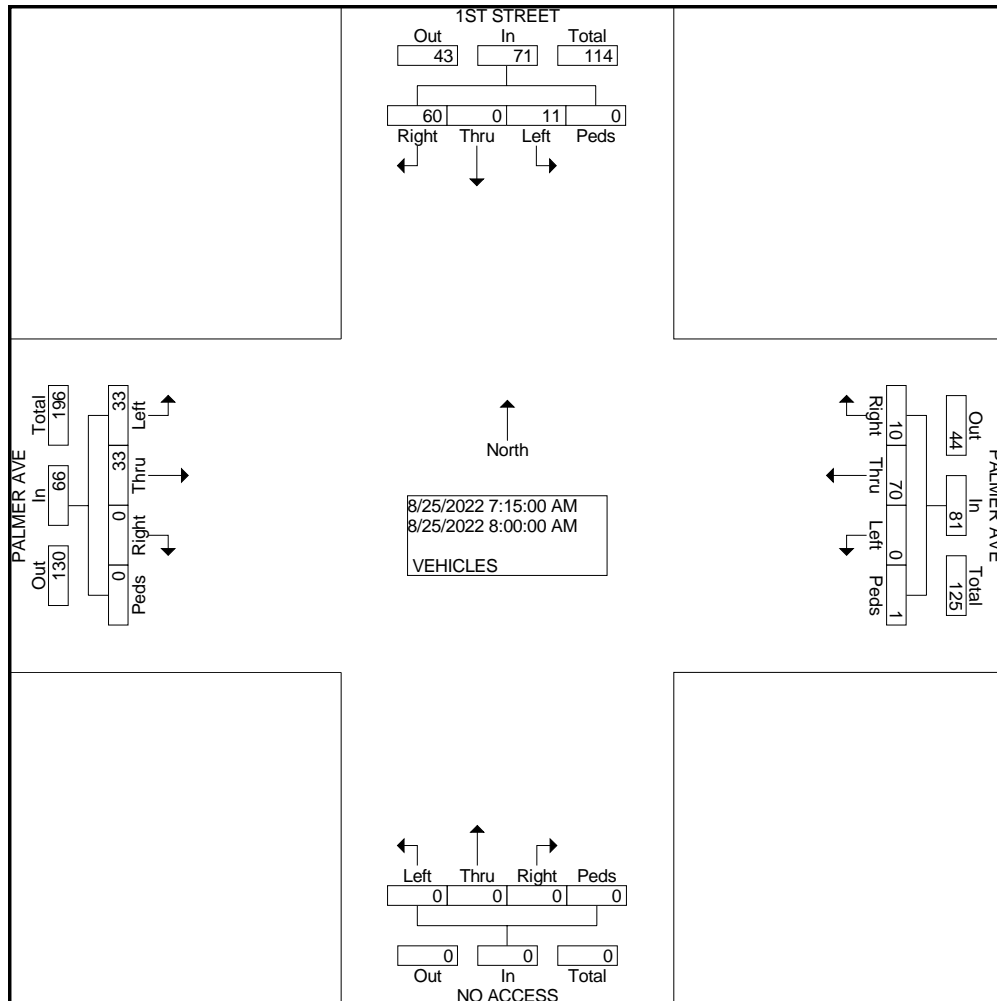
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: 1ST STREET  
E/W STREET: PALMER AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTPALM2  
Site Code : 00000008  
Start Date : 8/25/2022  
Page No : 2

	1ST STREET Southbound					PALMER AVE Westbound					NO ACCESS Northbound					PALMER AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	11	0	60	0	71	0	70	10	1	81	0	0	0	0	0	33	33	0	0	66	218
Percent	15.5	0.0	84.5	0.0		0.0	86.4	12.3	1.2		0.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0		
07:45																					
Volume	4	0	33	0	37	0	36	4	1	41	0	0	0	0	0	12	5	0	0	17	95
Peak Factor																					0.574
High Int.	07:45 AM					07:45 AM										07:30 AM					
Volume	4	0	33	0	37	0	36	4	1	41	0	0	0	0	0	16	26	0	0	42	
Peak Factor	0.48					0.49										0.39					3



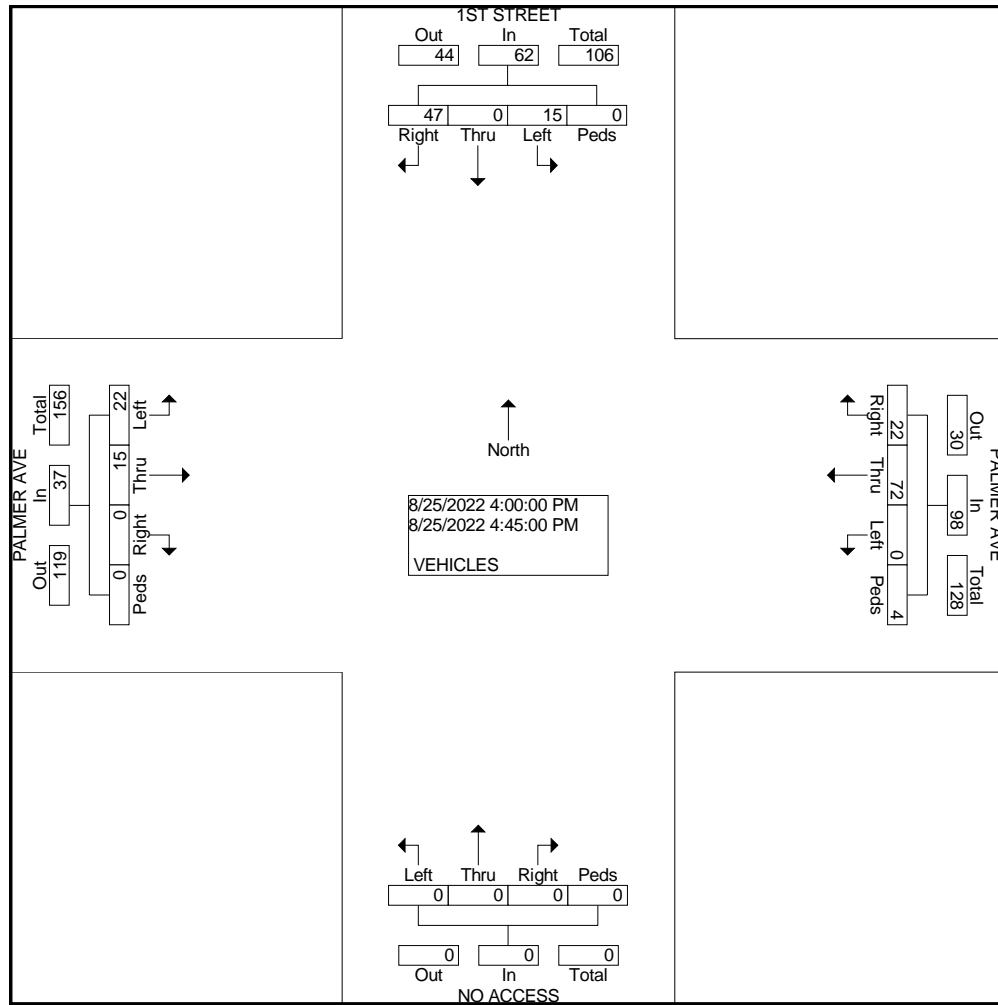
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: 1ST STREET  
E/W STREET: PALMER AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTPALM2  
Site Code : 00000008  
Start Date : 8/25/2022  
Page No : 3

	1ST STREET Southbound					PALMER AVE Westbound					NO ACCESS Northbound					PALMER AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Intersecti on	04:00 PM																				
Volume	15	0	47	0	62	0	72	22	4	98	0	0	0	0	0	22	15	0	0	37	197
Percent	24.2	0.0	75.8	0.0		0.0	73.5	22.4	4.1		0.0	0.0	0.0	0.0		59.5	40.5	0.0	0.0		
04:00 Volume	1	0	23	0	24	0	28	5	0	33	0	0	0	0	0	10	2	0	0	12	69
Peak Factor																					0.714
High Int.	04:00 PM					04:15 PM										04:00 PM					
Volume	1	0	23	0	24	0	25	8	4	37	0	0	0	0	0	10	2	0	0	12	
Peak Factor					0.646					0.662										0.771	



# COUNTER MEASURES INC.

1889 YORK STREET  
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303-333-7409

N/S STREET: 1ST STREET  
E/W STREET: TRUMAN AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTRUM  
Site Code : 00000005  
Start Date : 8/17/2022  
Page No : 1

## Groups Printed- VEHICLES

	1ST STREET Southbound			TRUMAN AVE Westbound			1ST STREET Northbound			NO ACCESS Eastbound			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	4	0	1	0	0	0	0	0	0	0	0	5
06:45 AM	0	3	0	1	0	1	0	2	0	0	0	0	7
Total	0	7	0	2	0	1	0	2	0	0	0	0	12
07:00 AM	0	6	0	0	0	0	0	2	1	0	0	0	9
07:15 AM	0	8	0	1	0	0	0	4	2	0	0	0	15
07:30 AM	0	5	0	2	0	0	0	8	2	0	0	0	17
07:45 AM	0	4	0	1	0	0	0	9	1	0	0	0	15
Total	0	23	0	4	0	0	0	23	6	0	0	0	56
08:00 AM	0	3	0	1	0	0	0	3	1	0	0	0	8
08:15 AM	0	2	0	1	0	0	0	2	0	0	0	0	5
Total	0	5	0	2	0	0	0	5	1	0	0	0	13
04:00 PM	0	4	0	2	0	0	0	14	1	0	0	0	21
04:15 PM	0	3	0	1	0	2	0	11	2	0	0	0	19
04:30 PM	1	6	0	0	0	0	0	7	0	0	0	0	14
04:45 PM	0	6	0	1	0	1	0	5	0	0	0	0	13
Total	1	19	0	4	0	3	0	37	3	0	0	0	67
05:00 PM	1	4	0	1	0	1	0	5	1	0	0	0	13
05:15 PM	0	4	0	0	0	0	0	8	0	0	0	0	12
05:30 PM	1	7	0	1	0	1	0	5	1	0	0	0	16
05:45 PM	0	8	0	0	0	0	0	7	0	0	0	0	15
Total	2	23	0	2	0	2	0	25	2	0	0	0	56
Grand Total	3	77	0	14	0	6	0	92	12	0	0	0	204
Apprch %	3.8	96.3	0.0	70.0	0.0	30.0	0.0	88.5	11.5	0.0	0.0	0.0	
Total %	1.5	37.7	0.0	6.9	0.0	2.9	0.0	45.1	5.9	0.0	0.0	0.0	



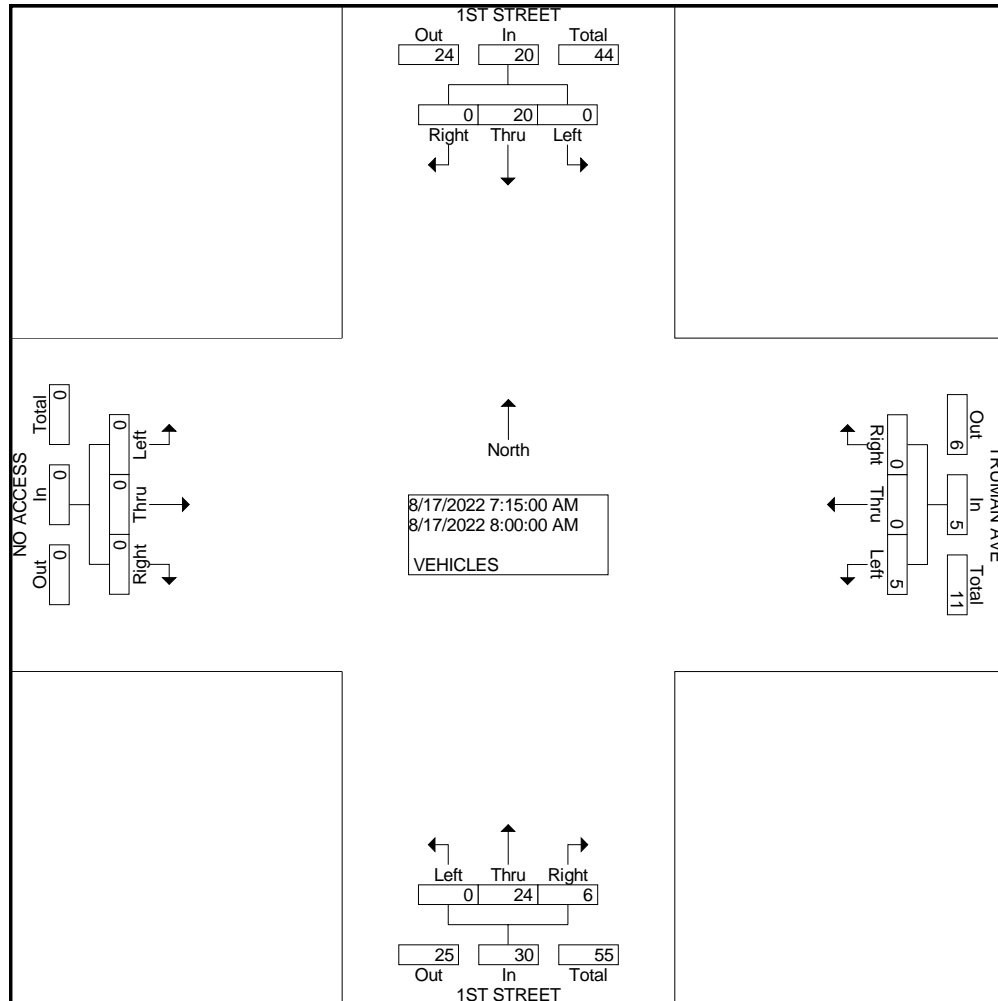
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: 1ST STREET  
E/W STREET: TRUMAN AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : 1STSTRUM  
Site Code : 00000005  
Start Date : 8/17/2022  
Page No : 2

	1ST STREET Southbound				TRUMAN AVE Westbound				1ST STREET Northbound				NO ACCESS Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Intersection 07:15 AM																	
Volume	0	20	0	20	5	0	0	5	0	24	6	30	0	0	0	0	55
Percent	0.0	100.0	0.0		100.0	0.0	0.0		0.0	80.0	20.0		0.0	0.0	0.0		
07:30																	
Volume	0	5	0	5	2	0	0	2	0	8	2	10	0	0	0	0	17
Peak Factor																	0.809
High Int. 07:15 AM					07:30 AM				07:30 AM								
Volume	0	8	0	8	2	0	0	2	0	8	2	10					
Peak Factor	0.625				0.625				0.750								



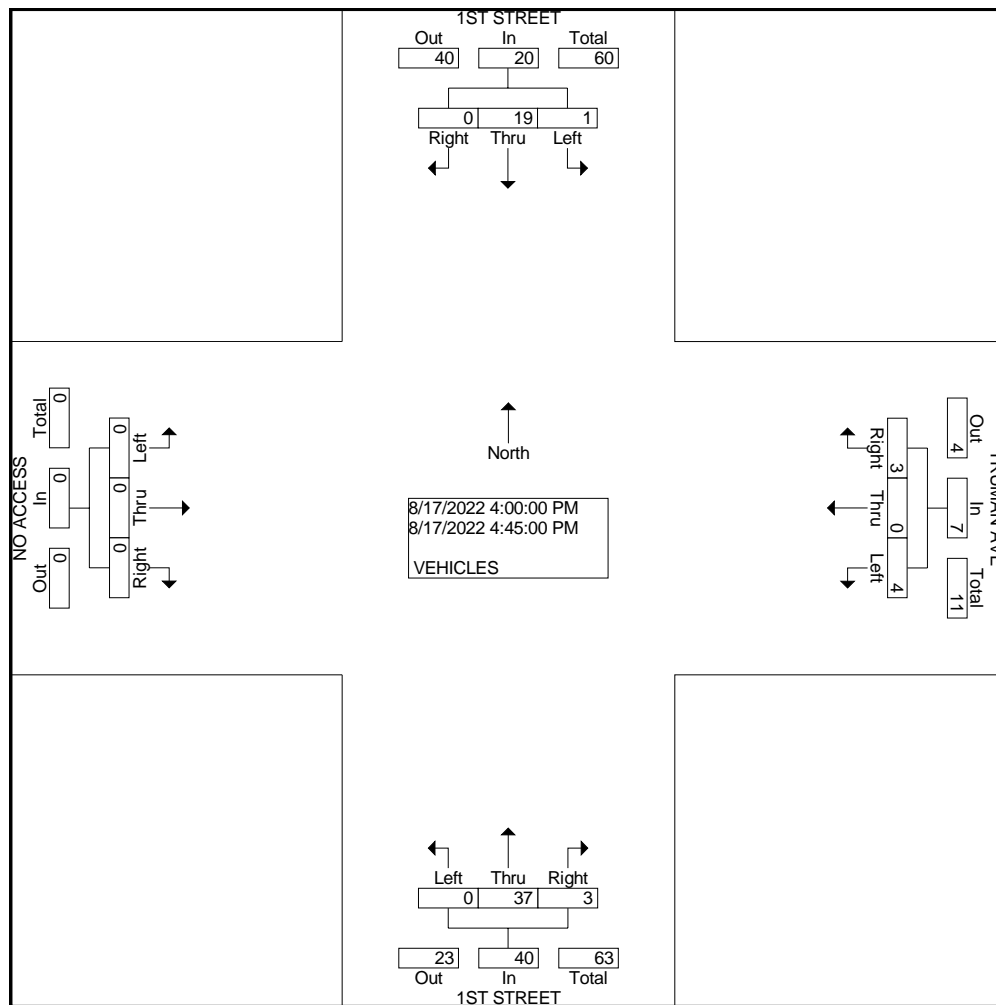
# COUNTER MEASURES INC.

N/S STREET: 1ST STREET  
E/W STREET: TRUMAN AVE  
CITY: BENNETT  
COUNTY: ADAMS

1889 YORK STREET  
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File Name : 1STSTRUM  
Site Code : 00000005  
Start Date : 8/17/2022  
Page No : 3

	1ST STREET Southbound				TRUMAN AVE Westbound				1ST STREET Northbound				NO ACCESS Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Intersection	04:00 PM																
Volume	1	19	0	20	4	0	3	7	0	37	3	40	0	0	0	0	67
Percent	5.0	95.0	0.0		57.1	0.0	42.9		0.0	92.5	7.5		0.0	0.0	0.0		
04:00	0	4	0	4	2	0	0	2	0	14	1	15	0	0	0	0	21
Volume																	
Peak Factor																	0.798
High Int.	04:30 PM				04:15 PM				04:00 PM								
Volume	1	6	0	7	1	0	2	3	0	14	1	15					
Peak Factor				0.714				0.583				0.667					



# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: ADAMS ST  
E/W STREET: PALMER AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : ADAMSPALM2  
Site Code : 00000016  
Start Date : 8/25/2022  
Page No : 1

## Groups Printed- VEHICLES

	NO ACCESS Southbound				PALMER AVE Westbound				ADAMS ST Northbound				PALMER AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	0	41	2	0	0	3	0	28	0	0	2	6	1	83
06:45 AM	0	0	0	0	32	6	0	0	8	0	47	0	0	2	9	0	104
Total	0	0	0	0	73	8	0	0	11	0	75	0	0	4	15	1	187
07:00 AM	0	0	0	2	40	2	0	2	4	0	46	0	0	4	10	0	110
07:15 AM	0	0	0	13	37	4	0	14	7	0	102	0	0	4	10	0	191
07:30 AM	0	0	0	14	93	7	0	14	10	0	121	0	0	17	15	1	292
07:45 AM	0	0	0	7	115	12	0	7	6	2	93	1	0	3	22	0	268
Total	0	0	0	36	285	25	0	37	27	2	362	1	0	28	57	1	861
08:00 AM	0	0	0	1	83	3	0	2	5	0	33	0	0	1	8	0	136
08:15 AM	0	0	0	1	39	2	0	1	10	0	31	0	0	1	8	1	94
Total	0	0	0	2	122	5	0	3	15	0	64	0	0	2	16	1	230
04:00 PM	0	0	0	22	87	16	0	24	23	0	83	0	0	3	29	0	287
04:15 PM	0	0	0	27	87	7	0	20	13	0	54	0	0	2	9	0	219
04:30 PM	0	0	0	3	75	8	0	2	13	0	67	0	0	0	16	0	184
04:45 PM	0	0	0	3	50	10	0	3	9	0	70	0	1	1	18	0	165
Total	0	0	0	55	299	41	0	49	58	0	274	0	1	6	72	0	855
05:00 PM	0	0	0	5	65	5	0	8	12	0	48	0	0	3	16	0	162
05:15 PM	0	0	0	7	41	2	0	6	17	0	59	3	0	3	18	0	156
05:30 PM	0	0	0	1	43	2	0	1	16	0	64	0	0	3	10	0	140
05:45 PM	0	0	0	1	59	3	0	0	14	0	70	0	0	11	6	0	164
Total	0	0	0	14	208	12	0	15	59	0	241	3	0	20	50	0	622
Grand Total	0	0	0	107	987	91	0	104	170	2	1016	4	1	60	210	3	2755
Apprch %	0.0	0.0	0.0	100.0	83.5	7.7	0.0	8.8	14.3	0.2	85.2	0.3	0.4	21.9	76.6	1.1	
Total %	0.0	0.0	0.0	3.9	35.8	3.3	0.0	3.8	6.2	0.1	36.9	0.1	0.0	2.2	7.6	0.1	



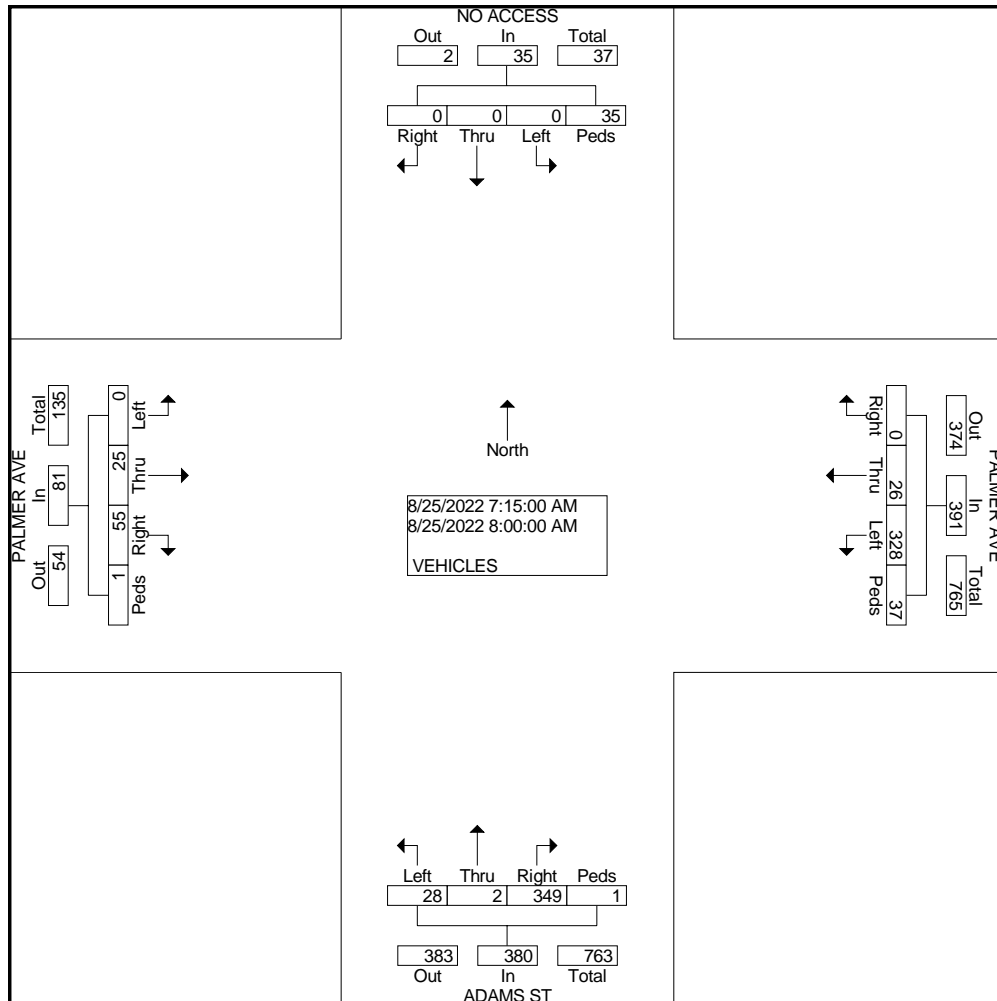
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: ADAMS ST  
E/W STREET: PALMER AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : ADAMSPALM2  
Site Code : 00000016  
Start Date : 8/25/2022  
Page No : 2

	NO ACCESS Southbound					PALMER AVE Westbound					ADAMS ST Northbound					PALMER AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 11:45 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	0	0	35	35	328	26	0	37	391	28	2	349	1	380	0	25	55	1	81	887
Percent	0.0	0.0	0.0	100.0		83.9	6.6	0.0	9.5		7.4	0.5	91.8	0.3		0.0	30.9	67.9	1.2		
07:30																					
Volume	0	0	0	14	14	93	7	0	14	114	10	0	121	0	131	0	17	15	1	33	292
Peak Factor	0.759																				
High Int.																					
Volume	07:30 AM					07:45 AM					07:30 AM					07:30 AM					
Volume	0	0	0	14	14	115	12	0	7	134	10	0	121	0	131	0	17	15	1	33	
Peak Factor	0.625					0.729					0.725					0.614					



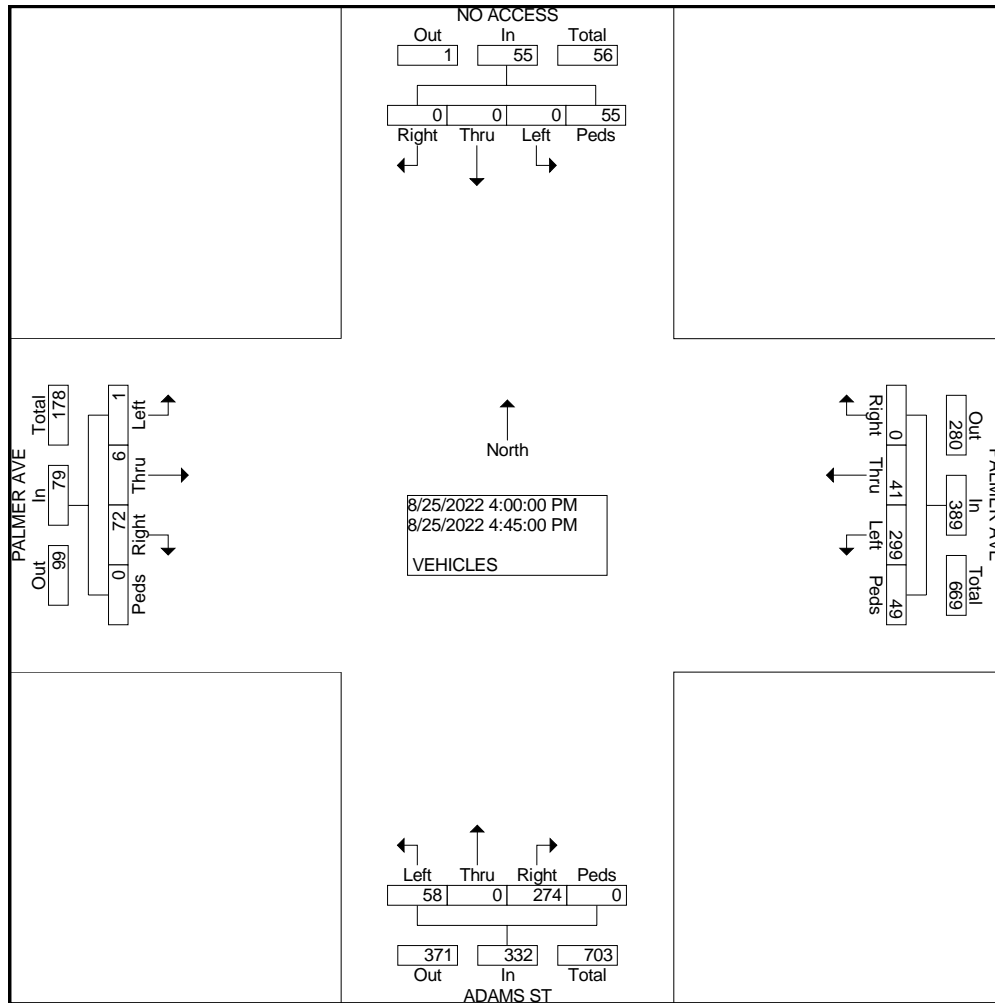
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: ADAMS ST  
E/W STREET: PALMER AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : ADAMSPALM2  
Site Code : 00000016  
Start Date : 8/25/2022  
Page No : 3

	NO ACCESS Southbound					PALMER AVE Westbound					ADAMS ST Northbound					PALMER AVE Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:00 PM																				
Volume	0	0	0	55	55	299	41	0	49	389	58	0	274	0	332	1	6	72	0	79	855
Percent	0.0	0.0	0.0	100.0		76.9	10.5	0.0	12.6		17.5	0.0	82.5	0.0		1.3	7.6	91.1	0.0		
04:00 Volume	0	0	0	22	22	87	16	0	24	127	23	0	83	0	106	0	3	29	0	32	287
Peak Factor																					0.745
High Int. Volume	04:15 PM					04:00 PM					04:00 PM					04:00 PM					
Peak Factor	0	0	0	27	27	87	16	0	24	127	23	0	83	0	106	0	3	29	0	32	
					0.509					0.766					0.783					0.617	



# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: N. CONVERSE RD  
E/W STREET: E. 38TH AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : NCONVE38TH  
Site Code : 00000008  
Start Date : 8/18/2022  
Page No : 1

## Groups Printed- VEHICLES

	N. CONVERSE RD Southbound			E. 38TH AVE Westbound			N. CONVERSE RD Northbound			E. 38TH AVE Eastbound			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	1	0	1	0	0	1	2	0	0	0	0	5
06:45 AM	0	2	0	2	1	0	1	0	1	0	0	2	9
Total	0	3	0	3	1	0	2	2	1	0	0	2	14
07:00 AM	1	3	1	2	0	0	1	1	1	0	0	1	11
07:15 AM	0	7	1	1	1	0	2	1	3	0	0	0	16
07:30 AM	1	9	1	3	0	0	2	2	2	0	0	2	22
07:45 AM	0	4	0	2	0	0	5	4	2	0	0	1	18
Total	2	23	3	8	1	0	10	8	8	0	0	4	67
08:00 AM	0	2	0	1	1	0	1	2	1	0	0	0	8
08:15 AM	0	1	0	1	0	0	1	0	0	0	0	0	3
Total	0	3	0	2	1	0	2	2	1	0	0	0	11
04:00 PM	0	4	0	0	0	0	3	6	5	0	0	0	18
04:15 PM	1	0	1	1	0	1	3	8	1	0	1	0	17
04:30 PM	0	4	0	2	0	0	2	2	2	0	0	3	15
04:45 PM	0	2	0	1	1	0	2	4	0	0	0	0	10
Total	1	10	1	4	1	1	10	20	8	0	1	3	60
05:00 PM	0	2	1	2	1	0	2	3	1	0	0	1	13
05:15 PM	1	2	0	2	0	1	2	2	0	0	0	1	11
05:30 PM	0	2	1	2	1	0	2	4	1	0	0	1	14
05:45 PM	0	1	0	1	0	0	1	2	0	0	0	2	7
Total	1	7	2	7	2	1	7	11	2	0	0	5	45
Grand Total	4	46	6	24	6	2	31	43	20	0	1	14	197
Apprch %	7.1	82.1	10.7	75.0	18.8	6.3	33.0	45.7	21.3	0.0	6.7	93.3	
Total %	2.0	23.4	3.0	12.2	3.0	1.0	15.7	21.8	10.2	0.0	0.5	7.1	



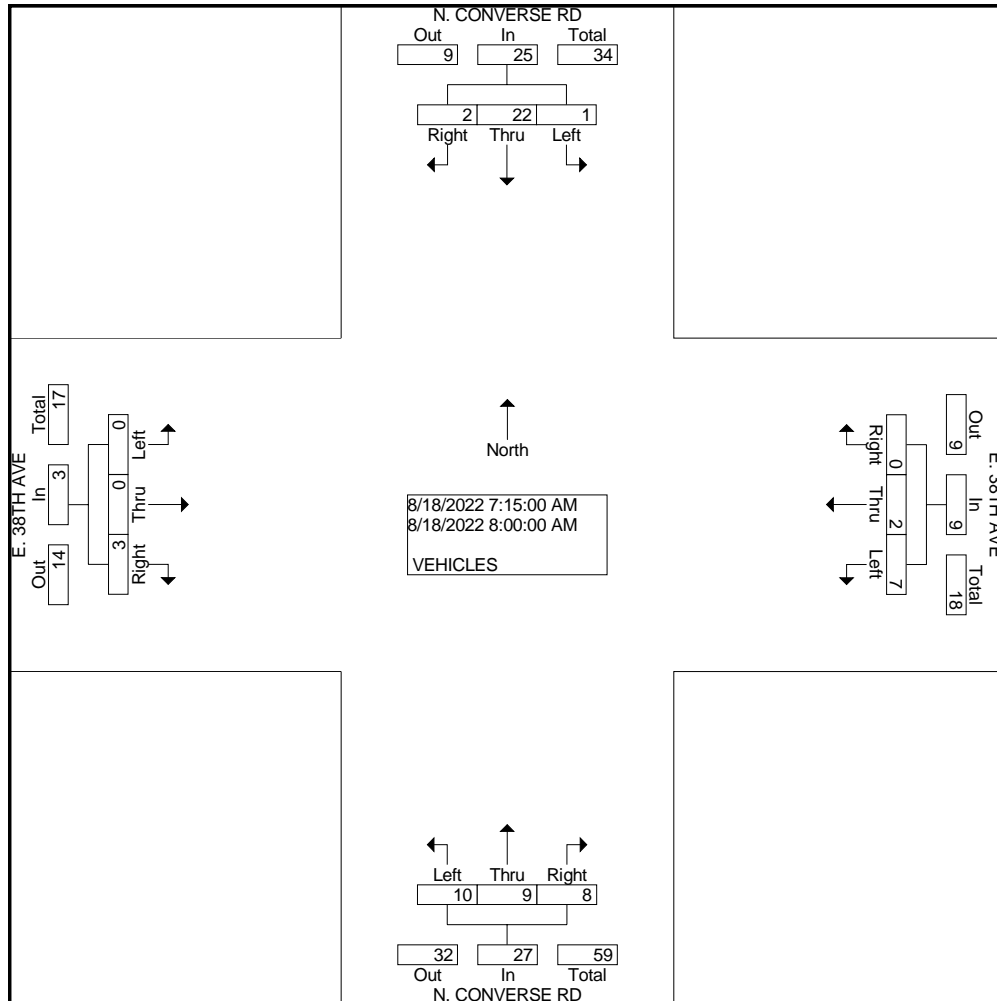
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER, COLORADO  
303-333-7409

N/S STREET: N. CONVERSE RD  
E/W STREET: E. 38TH AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : NCONVE38TH  
Site Code : 00000008  
Start Date : 8/18/2022  
Page No : 2

	N. CONVERSE RD Southbound				E. 38TH AVE Westbound				N. CONVERSE RD Northbound				E. 38TH AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Intersection 07:15 AM																	
Volume	1	22	2	25	7	2	0	9	10	9	8	27	0	0	3	3	64
Percent	4.0	88.0	8.0		77.8	22.2	0.0		37.0	33.3	29.6		0.0	0.0	100.0		
07:30																	
Volume	1	9	1	11	3	0	0	3	2	2	2	6	0	0	2	2	22
Peak Factor																	0.727
High Int. 07:30 AM					07:30 AM				07:45 AM				07:30 AM				
Volume	1	9	1	11	3	0	0	3	5	4	2	11	0	0	2	2	
Peak Factor	0.568				0.750				0.614				0.375				



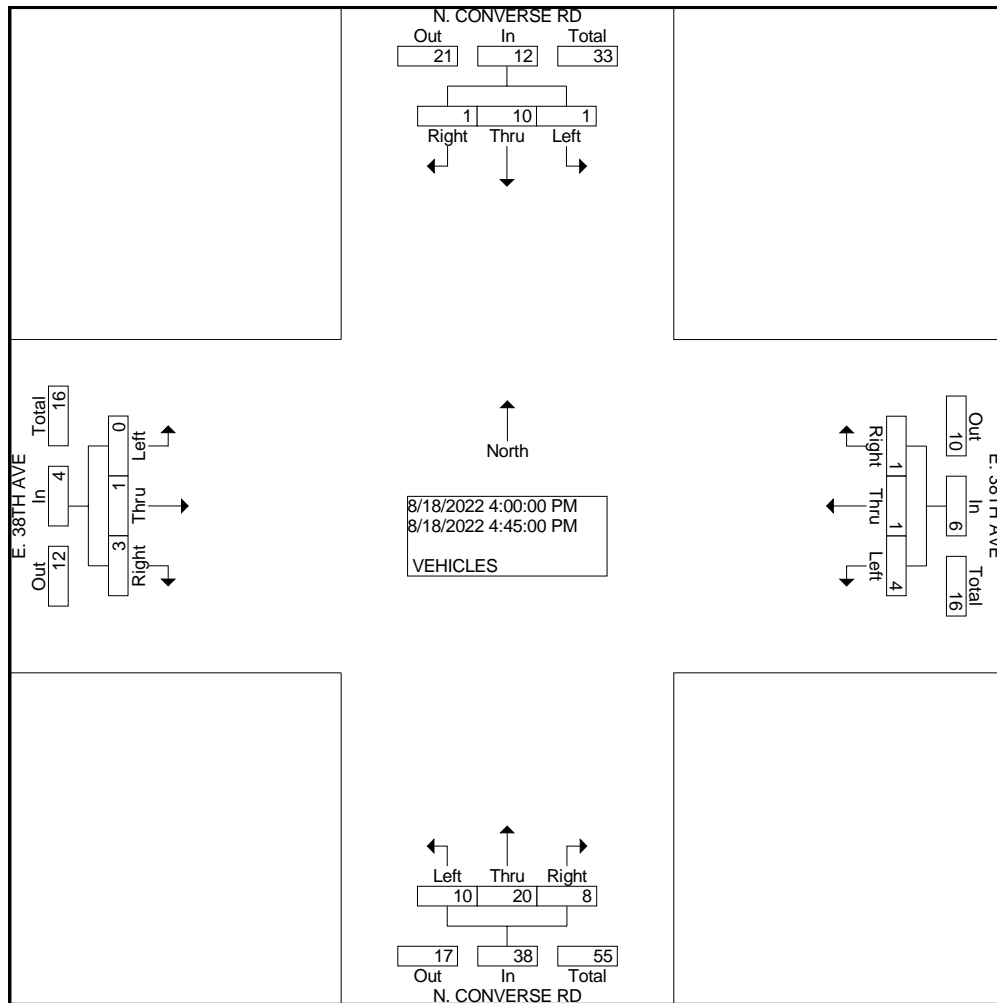
# COUNTER MEASURES INC.

1889 YORK STREET  
DENVER.COLORADO  
303-333-7409

N/S STREET: N. CONVERSE RD  
E/W STREET: E. 38TH AVE  
CITY: BENNETT  
COUNTY: ADAMS

File Name : NCONVE38TH  
Site Code : 00000008  
Start Date : 8/18/2022  
Page No : 3

	N. CONVERSE RD Southbound				E. 38TH AVE Westbound				N. CONVERSE RD Northbound				E. 38TH AVE Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Intersection	04:00 PM																
Volume	1	10	1	12	4	1	1	6	10	20	8	38	0	1	3	4	60
Percent	8.3	83.3	8.3		66.7	16.7	16.7		26.3	52.6	21.1		0.0	25.0	75.0		
04:00	0	4	0	4	0	0	0	0	3	6	5	14	0	0	0	0	18
Volume																	
Peak Factor	04:00 PM				04:15 PM				04:00 PM				04:30 PM				0.833
High Int.	0	4	0	4	1	0	1	2	3	6	5	14	0	0	3	3	
Volume																	
Peak Factor	0.750				0.750				0.679				0.333				



Location: 1ST STREET N-O PALMER AVE  
City: BENNETT  
County: ADAMS  
Direction: NORTH/SOUTH

**COUNTER MEASURES INC.**  
**1889 YORK STREET**  
**DENVER, COLORADO 80206**  
**303-333-7409**

Site Code: 221607  
Station ID: 221607

Start Time	17-Aug-22 Wed	NORTH	SOUTH							Total
12:00 AM		1	0							1
01:00		0	0							0
02:00		1	2							3
03:00		3	0							3
04:00		7	3							10
05:00		15	11							26
06:00		17	14							31
07:00		46	43							89
08:00		24	14							38
09:00		19	15							34
10:00		25	16							41
11:00		22	16							38
12:00 PM		26	15							41
01:00		25	15							40
02:00		25	19							44
03:00		32	18							50
04:00		51	41							92
05:00		47	42							89
06:00		35	28							63
07:00		15	11							26
08:00		19	11							30
09:00		9	5							14
10:00		3	1							4
11:00		4	4							8
Total		471	344							815
Percent		57.8%	42.2%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	46	43	-	-	-	-	-	-	89
PM Peak	-	16:00	17:00	-	-	-	-	-	-	16:00
Vol.	-	51	42	-	-	-	-	-	-	92
Grand Total		471	344							815
Percent		57.8%	42.2%							

ADT

ADT 731

AADT 731



Location: 1ST STREET S-O KENNEDY AVE  
City: BENNETT  
County: ADAMS  
Direction: NORTH/SOUTH

**COUNTER MEASURES INC.**  
**1889 YORK STREET**  
**DENVER, COLORADO 80206**  
**303-333-7409**

Site Code: 22160  
Station ID: 22160

Start Time	17-Aug-22 Wed	NORTH	SOUTH							Total
12:00 AM		2	0							2
01:00		0	0							0
02:00		0	2							2
03:00		0	0							0
04:00		0	1							1
05:00		14	12							26
06:00		6	15							21
07:00		18	22							40
08:00		10	11							21
09:00		11	19							30
10:00		21	10							31
11:00		10	13							23
12:00 PM		15	18							33
01:00		20	16							36
02:00		17	14							31
03:00		16	30							46
04:00		35	21							56
05:00		26	24							50
06:00		11	16							27
07:00		6	15							21
08:00		8	12							20
09:00		1	5							6
10:00		1	2							3
11:00		0	4							4
Total		248	282							530
Percent		46.8%	53.2%							
AM Peak	-	10:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	21	22	-	-	-	-	-	-	40
PM Peak	-	16:00	15:00	-	-	-	-	-	-	16:00
Vol.	-	35	30	-	-	-	-	-	-	56
Grand Total		248	282							530
Percent		46.8%	53.2%							

ADT

ADT 444

AADT 444

Location: PALMER AVE W-O 1ST STREET  
City: BENNETT  
County: ADAMS  
Direction: EAST/WEST

**COUNTER MEASURES INC.**  
**1889 YORK STREET**  
**DENVER, COLORADO 80206**  
**303-333-7409**

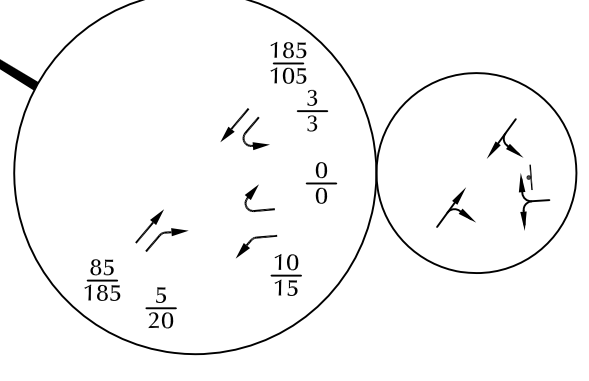
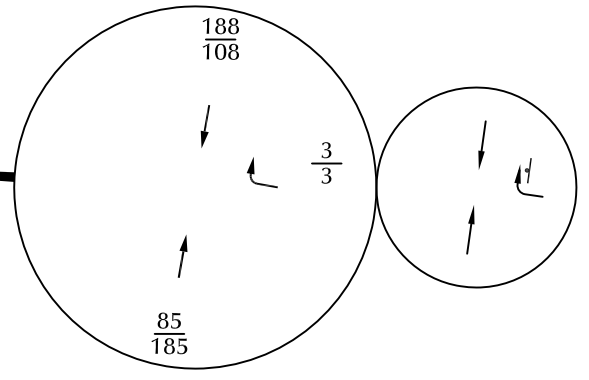
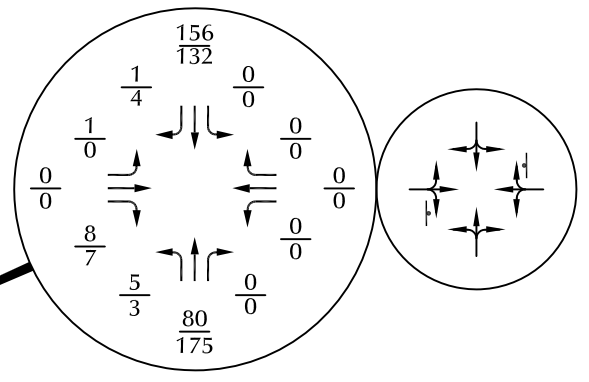
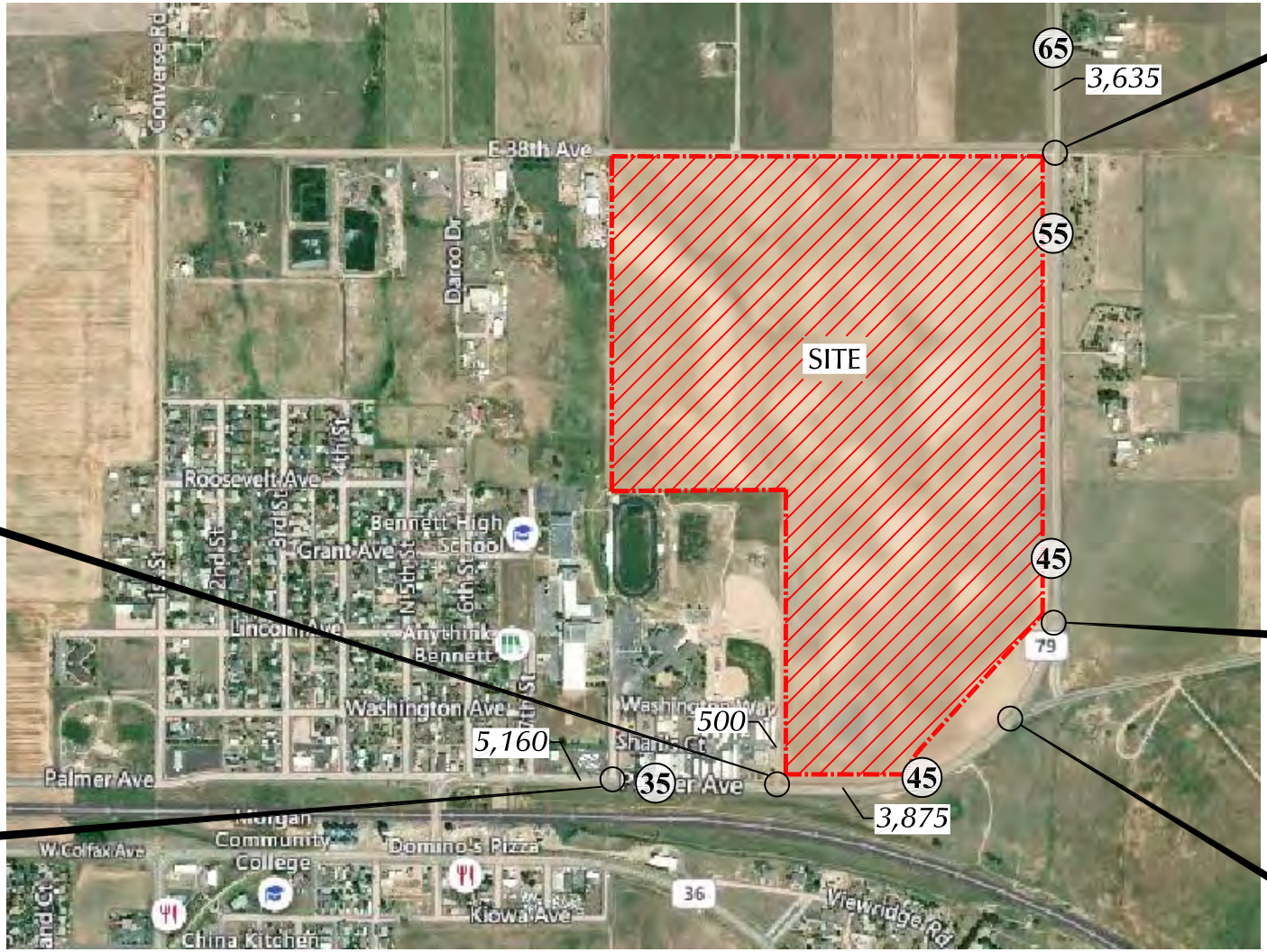
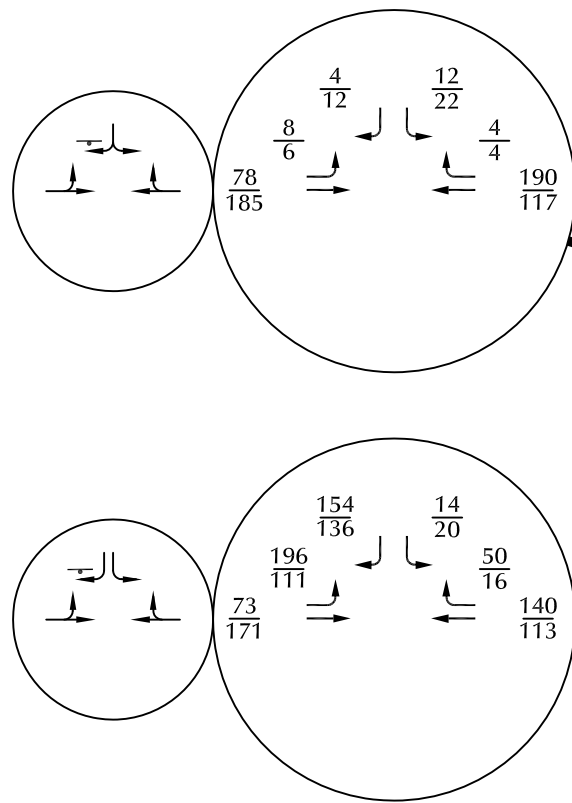
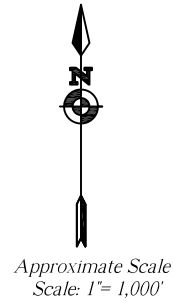
Site Code: 222303  
Station ID: 222303

Start Time	24-Aug-22 Wed	EAST	WEST							Total
12:00 AM		2	1							3
01:00		3	3							6
02:00		0	0							0
03:00		0	0							0
04:00		0	7							7
05:00		2	21							23
06:00		11	25							36
07:00		92	115							207
08:00		4	31							35
09:00		17	9							26
10:00		7	18							25
11:00		11	11							22
12:00 PM		18	26							44
01:00		12	16							28
02:00		10	12							22
03:00		28	25							53
04:00		35	102							137
05:00		33	23							56
06:00		24	25							49
07:00		18	16							34
08:00		9	9							18
09:00		9	4							13
10:00		3	2							5
11:00		3	1							4
Total		351	502							853
Percent		41.1%	58.9%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	92	115	-	-	-	-	-	-	207
PM Peak	-	16:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	35	102	-	-	-	-	-	-	137
Grand Total		351	502							853
Percent		41.1%	58.9%							

ADT

ADT 834

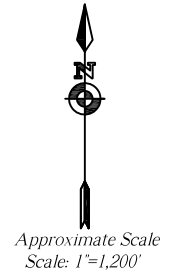
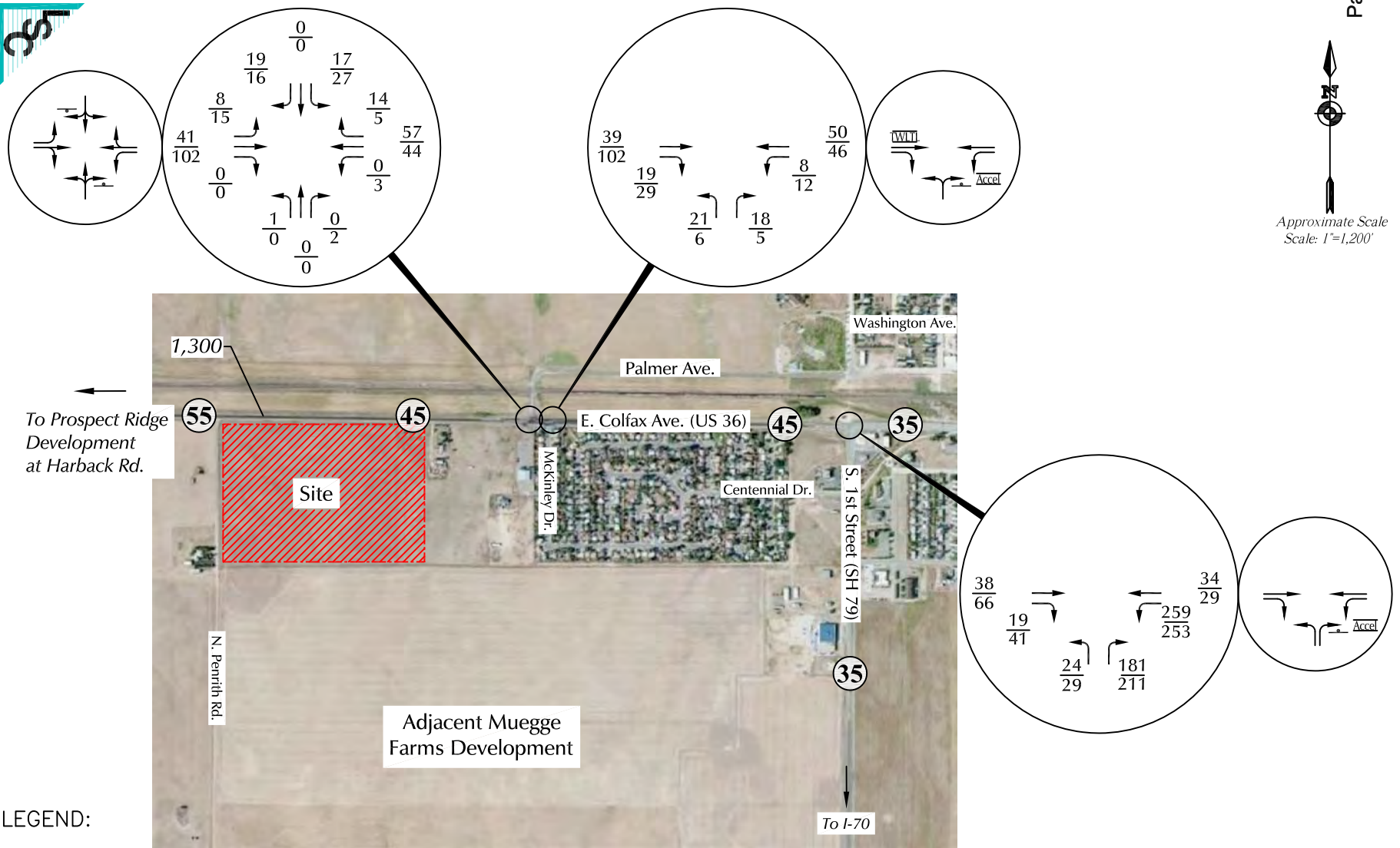
AADT 834



- LEGEND:
- ⊥ = Stop Sign
  - 30 = Speed Limit
  - $\frac{26}{35}$  =  $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$
  - 1,000 = Average Daily Traffic



Figure 3  
**Existing Traffic,  
Lane Geometry and Traffic Control**  
Bennett Ranch (LSC #181140)

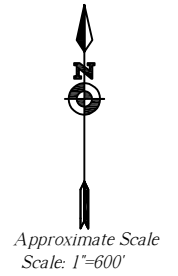
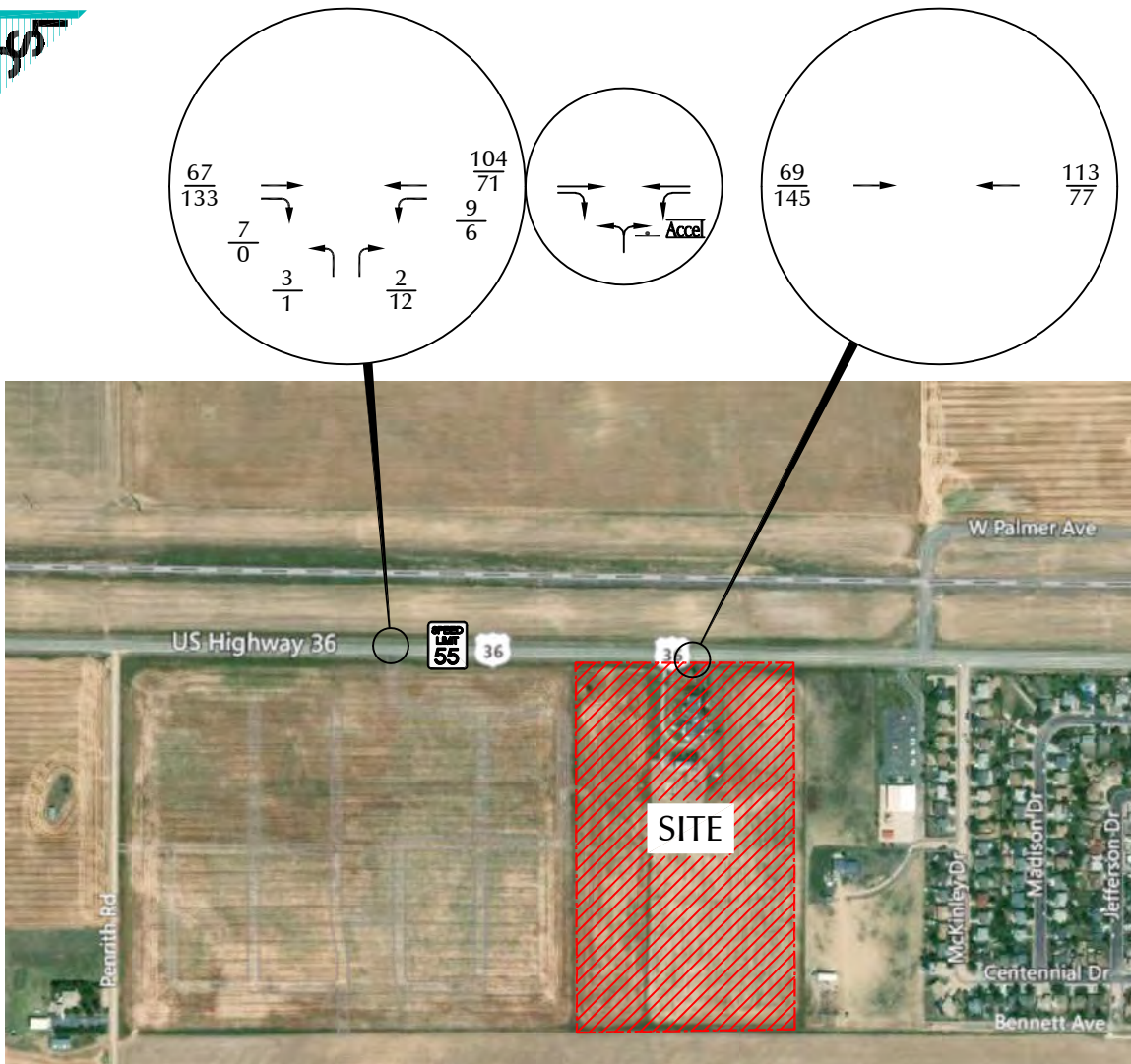


LEGEND:

- ⊥ = Stop Sign
- ⊙ = Traffic Signal
- 45 = Posted Speed Limit
- $\frac{26}{35}$  =  $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$
- 2,500 = Average Daily Traffic

Figure 3  
**Existing Traffic, Lane  
Geometry and Traffic Control**  
Penrith Park (LSC #170410)





LEGEND:


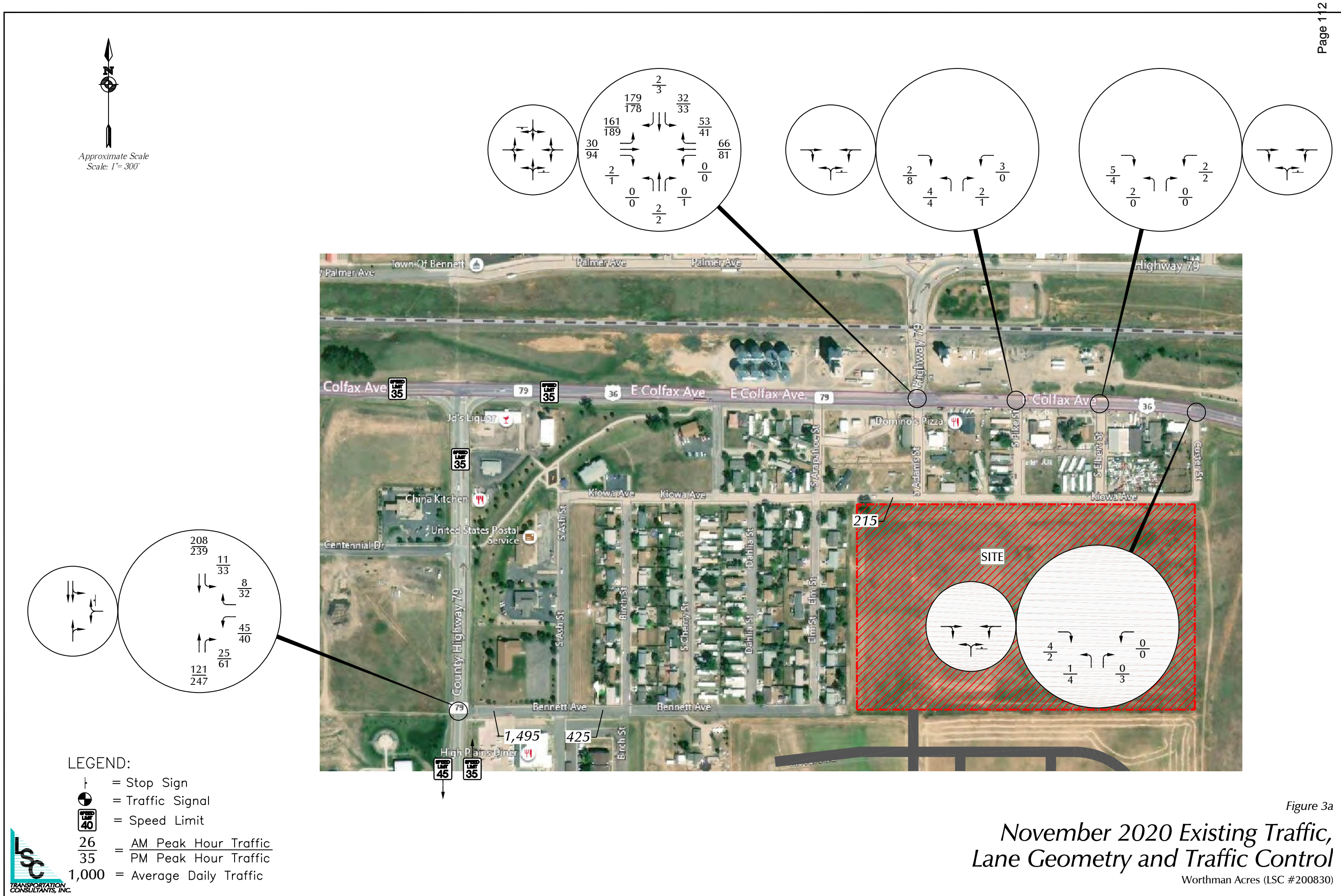
- ⌋ = Stop Sign
-  = Speed Limit
- $\frac{26}{35}$  =  $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$
- 1,000 = Average Daily Traffic

Figure 3a

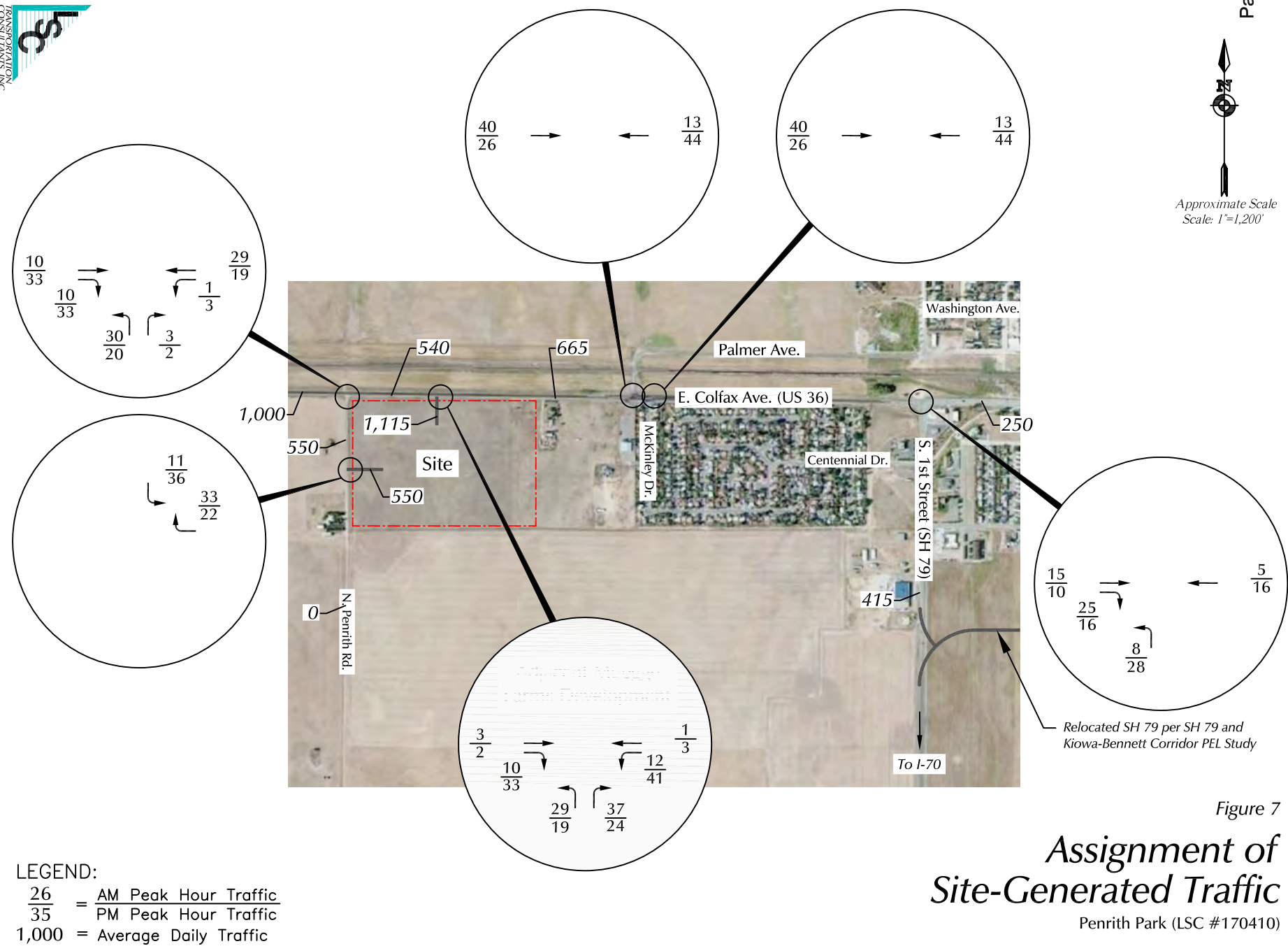
# Existing April, 2021 Traffic, Lane Geometry and Traffic Control

Brunner Property (LSC #200690)









## LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

### SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

<b>LOS</b>	<b><u>Average Vehicle Delay</u> sec/vehicle</b>	<b><u>Operational Characteristics</u></b>
<b>A</b>	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
<b>B</b>	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
<b>C</b>	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
<b>D</b>	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
<b>E</b>	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
<b>F</b>	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.



## LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

### UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. <u>The delay could be up to 15 seconds.</u> Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. <u>Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.</u>
D	25 to 35 seconds	<u>This is the point at which a traffic signal may be warranted for this intersection.</u> The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. <u>There is a high probability that this intersection will meet traffic signal warrants.</u> The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. <u>The only remedy for these long delays is installing a traffic signal or restricting the accesses.</u> The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

Existing  
AM Peak

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	3	7	2	0	10	9	8	1	22	2
Future Vol, veh/h	0	0	3	7	2	0	10	9	8	1	22	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	8	2	0	11	10	9	1	24	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	65	68	25	66	65	15	26	0	0	19	0	0
Stage 1	27	27	-	37	37	-	-	-	-	-	-	-
Stage 2	38	41	-	29	28	-	-	-	-	-	-	-
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	929	823	1051	927	826	1065	1588	-	-	1597	-	-
Stage 1	990	873	-	978	864	-	-	-	-	-	-	-
Stage 2	977	861	-	988	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	922	816	1051	919	819	1065	1588	-	-	1597	-	-
Mov Cap-2 Maneuver	922	816	-	919	819	-	-	-	-	-	-	-
Stage 1	983	872	-	971	858	-	-	-	-	-	-	-
Stage 2	968	855	-	984	871	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.4		9.1			2.7			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1588	-	-	1051	895	1597	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.003	0.011	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	8.4	9.1	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue

Existing  
AM Peak

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	1	0	8	0	0	0	5	85	0	0	165	1
Future Vol, veh/h	1	0	8	0	0	0	5	85	0	0	165	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	9	0	0	0	5	92	0	0	179	1




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	282	282	180	286	282	92	180	0	0	92	0	0
Stage 1	180	180	-	102	102	-	-	-	-	-	-	-
Stage 2	102	102	-	184	180	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	670	627	863	666	627	965	1396	-	-	1503	-	-
Stage 1	822	750	-	904	811	-	-	-	-	-	-	-
Stage 2	904	811	-	818	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	668	624	863	657	624	965	1396	-	-	1503	-	-
Mov Cap-2 Maneuver	668	624	-	657	624	-	-	-	-	-	-	-
Stage 1	819	750	-	900	808	-	-	-	-	-	-	-
Stage 2	900	808	-	810	750	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		0		0.4		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1396	-	-	836	-	1503	-
HCM Lane V/C Ratio	0.004	-	-	0.012	-	-	-
HCM Control Delay (s)	7.6	0	-	9.4	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-




HCM 6th TWSC  
12: 1st Street & Truman Avenue

Existing  
AM Peak

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	0	24	6	0	20
Future Vol, veh/h	5	0	24	6	0	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	5	0	26	7	0	22
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	52	30	0	0	33	0
Stage 1	30	-	-	-	-	-
Stage 2	22	-	-	-	-	-
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	957	1044	-	-	1579	-
Stage 1	993	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	957	1044	-	-	1579	-
Mov Cap-2 Maneuver	957	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.8	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 957		1579	-	
HCM Lane V/C Ratio	-	- 0.006		-	-	
HCM Control Delay (s)	-	- 8.8		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0		0	-	








Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	5	39	1	8	2	18	25	8	17	0
Future Vol, veh/h	0	1	5	39	1	8	2	18	25	8	17	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	5	42	1	9	2	20	27	9	18	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	79	87	18	77	74	34	18	0	0	47	0	0
Stage 1	36	36	-	38	38	-	-	-	-	-	-	-
Stage 2	43	51	-	39	36	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	910	803	1061	912	816	1039	1599	-	-	1560	-	-
Stage 1	980	865	-	977	863	-	-	-	-	-	-	-
Stage 2	971	852	-	976	865	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	896	797	1061	902	810	1039	1599	-	-	1560	-	-
Mov Cap-2 Maneuver	896	797	-	902	810	-	-	-	-	-	-	-
Stage 1	979	860	-	976	862	-	-	-	-	-	-	-
Stage 2	961	851	-	964	860	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.6		9.1			0.3			2.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1599	-	-	1005	920	1560	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.006	0.057	0.006	-	-				
HCM Control Delay (s)	7.3	0	-	8.6	9.1	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	33	70	10	11	60
Future Vol, veh/h	33	33	70	10	11	60
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	36	36	76	11	12	65
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	87	0	-	0	190	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	108	-
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	1509	-	-	-	799	978
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1509	-	-	-	780	978
Mov Cap-2 Maneuver	-	-	-	-	780	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	916	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.7	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1509	-	-	-	941	
HCM Lane V/C Ratio	0.024	-	-	-	0.082	
HCM Control Delay (s)	7.4	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue

Existing  
AM Peak

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	55	28	349	328	26
Future Vol, veh/h	25	55	28	349	328	26
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	-	75	-	-	-
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	60	30	379	357	28

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	810	371	385	0	-	0
Stage 1	371	-	-	-	-	-
Stage 2	439	-	-	-	-	-
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	349	675	1173	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	340	675	1173	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.6	0
HCM LOS	B		





Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1173	-	516	-	-
HCM Lane V/C Ratio	0.026	-	0.169	-	-
HCM Control Delay (s)	8.2	-	13.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Vol, veh/h	75	10	5	135	30	5
Future Vol, veh/h	75	10	5	135	30	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	200	-	-	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	82	11	5	147	33	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	93	0	239	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	157	-
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	-	-	1501	-	749	978
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1501	-	747	978
Mov Cap-2 Maneuver	-	-	-	-	747	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	868	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		9.8	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	747	978	-	-	1501	-
HCM Lane V/C Ratio	0.044	0.006	-	-	0.004	-
HCM Control Delay (s)	10	8.7	-	-	7.4	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-







HCM 6th TWSC  
23: E. Colfax Avenue & Internal Collector

Existing  
AM Peak

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	95	95	15	20	25
Future Vol, veh/h	10	95	95	15	20	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	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	103	103	16	22	27
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	119	0	-	0	236	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	125	-
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	-	-	-	752	942
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	901	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1469	-	-	-	747	942
Mov Cap-2 Maneuver	-	-	-	-	747	-
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	901	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		9.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1469	-	-	-	844	
HCM Lane V/C Ratio	0.007	-	-	-	0.058	
HCM Control Delay (s)	7.5	-	-	-	9.5	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

Existing  
AM Peak

Intersection												
Int Delay, s/veh	12.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	300	50	5	5	85	65	5	10	5	45	10	325
Future Vol, veh/h	300	50	5	5	85	65	5	10	5	45	10	325
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	326	54	5	5	92	71	5	11	5	49	11	353
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	59	0	0	1029	882	57	855	849	128
Stage 1	-	-	-	-	-	-	709	709	-	138	138	-
Stage 2	-	-	-	-	-	-	320	173	-	717	711	-
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	1416	-	-	1545	-	-	212	285	1009	278	298	922
Stage 1	-	-	-	-	-	-	425	437	-	865	782	-
Stage 2	-	-	-	-	-	-	692	756	-	421	436	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1416	-	-	1545	-	-	103	216	1009	217	226	922
Mov Cap-2 Maneuver	-	-	-	-	-	-	103	216	-	217	226	-
Stage 1	-	-	-	-	-	-	324	333	-	659	779	-
Stage 2	-	-	-	-	-	-	419	753	-	309	332	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7			0.2			25.2			21		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	200	1416	-	-	1545	-	-	629				
HCM Lane V/C Ratio	0.109	0.23	-	-	0.004	-	-	0.657				
HCM Control Delay (s)	25.2	8.3	0	-	7.3	0	-	21				
HCM Lane LOS	D	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.4	0.9	-	-	0	-	-	4.9				

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

Existing  
PM Peak

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	3	4	1	1	10	20	8	1	10	1
Future Vol, veh/h	0	1	3	4	1	1	10	20	8	1	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	3	4	1	1	11	22	9	1	11	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	64	67	12	65	63	27	12	0	0	31	0	0
Stage 1	14	14	-	49	49	-	-	-	-	-	-	-
Stage 2	50	53	-	16	14	-	-	-	-	-	-	-
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	930	824	1069	929	828	1048	1607	-	-	1582	-	-
Stage 1	1006	884	-	964	854	-	-	-	-	-	-	-
Stage 2	963	851	-	1004	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	923	817	1069	920	821	1048	1607	-	-	1582	-	-
Mov Cap-2 Maneuver	923	817	-	920	821	-	-	-	-	-	-	-
Stage 1	999	883	-	957	848	-	-	-	-	-	-	-
Stage 2	954	845	-	999	883	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.6		8.9			1.9			0.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1607	-	-	992	920	1582	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.004	0.007	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	8.6	8.9	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue

Existing  
PM Peak

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	7	0	0	0	3	190	0	0	145	4
Future Vol, veh/h	1	0	7	0	0	0	3	190	0	0	145	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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	8	0	0	0	3	207	0	0	158	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	373	373	160	377	375	207	162	0	0	207	0	0
Stage 1	160	160	-	213	213	-	-	-	-	-	-	-
Stage 2	213	213	-	164	162	-	-	-	-	-	-	-
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	584	557	885	580	556	833	1417	-	-	1364	-	-
Stage 1	842	766	-	789	726	-	-	-	-	-	-	-
Stage 2	789	726	-	838	764	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	583	556	885	574	555	833	1417	-	-	1364	-	-
Mov Cap-2 Maneuver	583	556	-	574	555	-	-	-	-	-	-	-
Stage 1	840	766	-	787	725	-	-	-	-	-	-	-
Stage 2	787	725	-	831	764	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	0	0.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1417	-	-	831	1364	-	-
HCM Lane V/C Ratio	0.002	-	-	0.01	-	-	-
HCM Control Delay (s)	7.5	0	-	9.4	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-






HCM 6th TWSC  
12: 1st Street & Truman Avenue

Existing  
PM Peak

Intersection

Int Delay, s/veh 1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	3	37	3	1	19
Future Vol, veh/h	4	3	37	3	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	3	40	3	1	21

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	65	42	0
Stage 1	42	-	-
Stage 2	23	-	-
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	941	1029	-
Stage 1	980	-	-
Stage 2	1000	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	940	1029	-
Mov Cap-2 Maneuver	940	-	-
Stage 1	980	-	-
Stage 2	999	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.4
HCM LOS	A		




Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	976	1566
HCM Lane V/C Ratio	-	-	0.008	0.001
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	4	24	0	10	8	33	10	1	27	0
Future Vol, veh/h	1	0	4	24	0	10	8	33	10	1	27	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	1	0	4	26	0	11	9	36	11	1	29	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	96	96	29	93	91	42	29	0	0	47	0	0
Stage 1	31	31	-	60	60	-	-	-	-	-	-	-
Stage 2	65	65	-	33	31	-	-	-	-	-	-	-
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	887	794	1046	891	799	1029	1584	-	-	1560	-	-
Stage 1	986	869	-	951	845	-	-	-	-	-	-	-
Stage 2	946	841	-	983	869	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	873	788	1046	883	793	1029	1584	-	-	1560	-	-
Mov Cap-2 Maneuver	873	788	-	883	793	-	-	-	-	-	-	-
Stage 1	980	868	-	945	840	-	-	-	-	-	-	-
Stage 2	930	836	-	978	868	-	-	-	-	-	-	-






Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		9.1		1.1		0.3	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1584	-	-	1006	921	1560	-
HCM Lane V/C Ratio	0.005	-	-	0.005	0.04	0.001	-
HCM Control Delay (s)	7.3	0	-	8.6	9.1	7.3	0
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	15	72	22	15	47
Future Vol, veh/h	22	15	72	22	15	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	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	16	78	24	16	51
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	102	0	-	0	154	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	64	-
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	1490	-	-	-	838	968
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	959	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1490	-	-	-	825	968
Mov Cap-2 Maneuver	-	-	-	-	825	-
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	959	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.4	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1490	-	-	-	929	
HCM Lane V/C Ratio	0.016	-	-	-	0.073	
HCM Control Delay (s)	7.5	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue







Existing  
PM Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	72	58	274	299	41
Future Vol, veh/h	6	72	58	274	299	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	78	63	298	325	45
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	772	348	370	0	-	0
Stage 1	348	-	-	-	-	-
Stage 2	424	-	-	-	-	-
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	368	695	1189	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	348	695	1189	-	-	-
Mov Cap-2 Maneuver	348	-	-	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.4	1.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1189	-	645	-	-	
HCM Lane V/C Ratio	0.053	-	0.131	-	-	
HCM Control Delay (s)	8.2	-	11.4	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-	



HCM 6th TWSC  
22: Penrith Road & E. Colfax Avenue

Existing  
PM Peak





Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	165	35	5	95	20	5
Future Vol, veh/h	165	35	5	95	20	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	200	-	-	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	179	38	5	103	22	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	217	0	292	179
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	113	-
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	-	-	1353	-	699	864
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1353	-	696	864
Mov Cap-2 Maneuver	-	-	-	-	696	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	908	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		10.1	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	696	864	-	-	1353	-
HCM Lane V/C Ratio	0.031	0.006	-	-	0.004	-
HCM Control Delay (s)	10.3	9.2	-	-	7.7	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

HCM 6th TWSC  
23: E. Colfax Avenue & Internal Collector

Existing  
PM Peak

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	140	100	5	30	20
Future Vol, veh/h	20	140	100	5	30	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	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	22	152	109	5	33	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	114	0	0 308 112
Stage 1	-	-	- 112 -
Stage 2	-	-	- 196 -
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	1475	-	- 684 941
Stage 1	-	-	- 913 -
Stage 2	-	-	- 837 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1475	-	- 674 941
Mov Cap-2 Maneuver	-	-	- 674 -
Stage 1	-	-	- 899 -
Stage 2	-	-	- 837 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	760
HCM Lane V/C Ratio	0.015	-	-	-	0.072
HCM Control Delay (s)	7.5	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

Existing  
PM Peak

Intersection												
Int Delay, s/veh	11.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	265	135	5	5	95	55	5	10	5	45	10	315
Future Vol, veh/h	265	135	5	5	95	55	5	10	5	45	10	315
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	288	147	5	5	103	60	5	11	5	49	11	342





Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	163	0	0	152	0	0	1046	899	150	877	871	133
Stage 1	-	-	-	-	-	-	726	726	-	143	143	-
Stage 2	-	-	-	-	-	-	320	173	-	734	728	-
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	1416	-	-	1429	-	-	206	279	896	269	289	916
Stage 1	-	-	-	-	-	-	416	430	-	860	779	-
Stage 2	-	-	-	-	-	-	692	756	-	412	429	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1416	-	-	1429	-	-	103	216	896	213	224	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	103	216	-	213	224	-
Stage 1	-	-	-	-	-	-	324	335	-	669	776	-
Stage 2	-	-	-	-	-	-	426	753	-	308	334	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.4			0.2			25.3			21.1		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	199	1416	-	-	1429	-	-	617
HCM Lane V/C Ratio	0.109	0.203	-	-	0.004	-	-	0.652
HCM Control Delay (s)	25.3	8.2	0	-	7.5	0	-	21.1
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.8	-	-	0	-	-	4.8

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2025 Background  
AM Peak




Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	4	8	3	1	11	10	9	1	23	2
Future Vol, veh/h	1	1	4	8	3	1	11	10	9	1	23	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	4	9	3	1	12	11	10	1	25	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	70	73	26	71	69	16	27	0	0	21	0	0
Stage 1	28	28	-	40	40	-	-	-	-	-	-	-
Stage 2	42	45	-	31	29	-	-	-	-	-	-	-
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	922	817	1050	920	822	1063	1587	-	-	1595	-	-
Stage 1	989	872	-	975	862	-	-	-	-	-	-	-
Stage 2	972	857	-	986	871	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	912	810	1050	909	815	1063	1587	-	-	1595	-	-
Mov Cap-2 Maneuver	912	810	-	909	815	-	-	-	-	-	-	-
Stage 1	981	871	-	967	855	-	-	-	-	-	-	-
Stage 2	960	850	-	980	870	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.7		9.1			2.7			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1587	-	-	977	894	1595	-	-				
HCM Lane V/C Ratio	0.008	-	-	0.007	0.015	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	8.7	9.1	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				



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	2	0	20	0	0	0	20	90	0	0	175	2
Future Vol, veh/h	2	0	20	0	0	0	20	90	0	0	175	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	-	-	-	-	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	22	0	0	0	22	98	0	0	190	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	333	333	191	344	334	98	192	0	0	98	0	0
Stage 1	191	191	-	142	142	-	-	-	-	-	-	-
Stage 2	142	142	-	202	192	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	620	587	851	610	586	958	1381	-	-	1495	-	-
Stage 1	811	742	-	861	779	-	-	-	-	-	-	-
Stage 2	861	779	-	800	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	613	578	851	587	577	958	1381	-	-	1495	-	-
Mov Cap-2 Maneuver	613	578	-	587	577	-	-	-	-	-	-	-
Stage 1	798	742	-	847	767	-	-	-	-	-	-	-
Stage 2	847	767	-	780	742	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.5		0		1.4		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1381	-	-	822	-	1495	-	-				
HCM Lane V/C Ratio	0.016	-	-	0.029	-	-	-	-				
HCM Control Delay (s)	7.6	-	-	9.5	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-				

Intersection





Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	1	29	7	1	34
Future Vol, veh/h	6	1	29	7	1	34
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	7	1	32	8	1	37

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	75	36	0
Stage 1	36	-	-
Stage 2	39	-	-
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	928	1037	-
Stage 1	986	-	-
Stage 2	983	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	927	1037	-
Mov Cap-2 Maneuver	927	-	-
Stage 1	986	-	-
Stage 2	982	-	-




Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	941	1570
HCM Lane V/C Ratio	-	-	0.008	0.001
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

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	1	1	6	41	1	9	3	26	25	9	29	1
Future Vol, veh/h	1	1	6	41	1	9	3	26	25	9	29	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	7	45	1	10	3	28	27	10	32	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	106	114	33	105	101	42	33	0	0	55	0	0
Stage 1	53	53	-	48	48	-	-	-	-	-	-	-
Stage 2	53	61	-	57	53	-	-	-	-	-	-	-
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	873	776	1041	875	789	1029	1579	-	-	1550	-	-
Stage 1	960	851	-	965	855	-	-	-	-	-	-	-
Stage 2	960	844	-	955	851	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	858	769	1041	863	782	1029	1579	-	-	1550	-	-
Mov Cap-2 Maneuver	858	769	-	863	782	-	-	-	-	-	-	-
Stage 1	958	845	-	963	853	-	-	-	-	-	-	-
Stage 2	948	842	-	941	845	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.7		9.3			0.4			1.7			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1579	-	-	972	886	1550	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.009	0.063	0.006	-	-				
HCM Control Delay (s)	7.3	0	-	8.7	9.3	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Intersection

Int Delay, s/veh 4





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	35	75	19	12	64
Future Vol, veh/h	35	35	75	19	12	64
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	38	38	82	21	13	70

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	103	0	0 207 93
Stage 1	-	-	- 93 -
Stage 2	-	-	- 114 -
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	1489	-	- 781 964
Stage 1	-	-	- 931 -
Stage 2	-	-	- 911 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1489	-	- 761 964
Mov Cap-2 Maneuver	-	-	- 761 -
Stage 1	-	-	- 907 -
Stage 2	-	-	- 911 -

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1489	-	-	-	925
HCM Lane V/C Ratio	0.026	-	-	-	0.089
HCM Control Delay (s)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	58	30	370	350	28
Future Vol, veh/h	27	58	30	370	350	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	63	33	402	380	30
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	863	395	410	0	-	0
Stage 1	395	-	-	-	-	-
Stage 2	468	-	-	-	-	-
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	325	654	1149	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	316	654	1149	-	-	-
Mov Cap-2 Maneuver	316	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1149	-	488	-	-	
HCM Lane V/C Ratio	0.028	-	0.189	-	-	
HCM Control Delay (s)	8.2	-	14.1	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-	

Intersection

Int Delay, s/veh 2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	95	20	10	125	60	10
Future Vol, veh/h	95	20	10	125	60	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	200	-	-	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	103	22	11	136	65	11





Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	125
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	-	-	1462
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1462
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	722	952	-	-	1462	-
HCM Lane V/C Ratio	0.09	0.011	-	-	0.007	-
HCM Control Delay (s)	10.5	8.8	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	100	100	20	20	35
Future Vol, veh/h	25	100	100	20	20	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	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	109	109	22	22	38

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	131	0	0 283 120
Stage 1	-	-	- - 120 -
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	1454	-	- - 707 931
Stage 1	-	-	- - 905 -
Stage 2	-	-	- - 866 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1454	-	- - 694 931
Mov Cap-2 Maneuver	-	-	- - 694 -
Stage 1	-	-	- - 888 -
Stage 2	-	-	- - 866 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.7
HCM LOS			A





Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1454	-	-	-	828
HCM Lane V/C Ratio	0.019	-	-	-	0.072
HCM Control Delay (s)	7.5	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection												
Int Delay, s/veh	20.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	315	55	10	10	90	70	10	25	10	50	25	345
Future Vol, veh/h	315	55	10	10	90	70	10	25	10	50	25	345
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	342	60	11	11	98	76	11	27	11	54	27	375
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	71	0	0	1109	946	66	927	913	136
Stage 1	-	-	-	-	-	-	750	750	-	158	158	-
Stage 2	-	-	-	-	-	-	359	196	-	769	755	-
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	1403	-	-	1529	-	-	187	262	998	249	273	913
Stage 1	-	-	-	-	-	-	403	419	-	844	767	-
Stage 2	-	-	-	-	-	-	659	739	-	394	417	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1529	-	-	79	194	998	177	202	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	194	-	177	202	-
Stage 1	-	-	-	-	-	-	301	313	-	630	761	-
Stage 2	-	-	-	-	-	-	371	733	-	265	311	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	7			0.4			34.5			39.1		
HCM LOS							D			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	170	1403	-	-	1529	-	-	536				
HCM Lane V/C Ratio	0.288	0.244	-	-	0.007	-	-	0.852				
HCM Control Delay (s)	34.5	8.4	0	-	7.4	0	-	39.1				
HCM Lane LOS	D	A	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	1.1	1	-	-	0	-	-	9				



HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2025 Background  
PM Peak

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	2	4	5	2	1	11	21	9	1	11	1
Future Vol, veh/h	1	2	4	5	2	1	11	21	9	1	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	2	4	5	2	1	12	23	10	1	12	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	69	72	13	70	67	28	13	0	0	33	0	0
Stage 1	15	15	-	52	52	-	-	-	-	-	-	-
Stage 2	54	57	-	18	15	-	-	-	-	-	-	-
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	923	818	1067	922	824	1047	1606	-	-	1579	-	-
Stage 1	1005	883	-	961	852	-	-	-	-	-	-	-
Stage 2	958	847	-	1001	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	914	811	1067	910	817	1047	1606	-	-	1579	-	-
Mov Cap-2 Maneuver	914	811	-	910	817	-	-	-	-	-	-	-
Stage 1	997	882	-	953	845	-	-	-	-	-	-	-
Stage 2	947	840	-	993	882	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.8		9			1.9			0.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1606	-	-	958	899	1579	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.008	0.01	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	8.8	9	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
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	2	0	20	0	0	0	20	200	0	0	155	5
Future Vol, veh/h	2	0	20	0	0	0	20	200	0	0	155	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	-	-	-	-	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	22	0	0	0	22	217	0	0	168	5




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	432	432	171	443	434	217	173	0	0	217	0	0
Stage 1	171	171	-	261	261	-	-	-	-	-	-	-
Stage 2	261	261	-	182	173	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	534	516	873	525	515	823	1404	-	-	1353	-	-
Stage 1	831	757	-	744	692	-	-	-	-	-	-	-
Stage 2	744	692	-	820	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	528	508	873	506	507	823	1404	-	-	1353	-	-
Mov Cap-2 Maneuver	528	508	-	506	507	-	-	-	-	-	-	-
Stage 1	818	757	-	732	681	-	-	-	-	-	-	-
Stage 2	732	681	-	800	756	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.5		0		0.7		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	824	-	1353	-
HCM Lane V/C Ratio	0.015	-	-	0.029	-	-	-
HCM Control Delay (s)	7.6	-	-	9.5	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

Intersection

Int Delay, s/veh 1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	4	36	4	2	18
Future Vol, veh/h	5	4	36	4	2	18
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	4	39	4	2	20

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	65	41	0
Stage 1	41	-	-
Stage 2	24	-	-
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	941	1030	-
Stage 1	981	-	-
Stage 2	999	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	940	1030	-
Mov Cap-2 Maneuver	940	-	-
Stage 1	981	-	-
Stage 2	998	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.7
HCM LOS	A		




Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1566
HCM Lane V/C Ratio	-	-	0.01	0.001
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	5	25	1	11	9	35	11	2	29	1
Future Vol, veh/h	1	1	5	25	1	11	9	35	11	2	29	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	5	27	1	12	10	38	12	2	32	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	108	107	33	104	101	44	33	0	0	50	0	0
Stage 1	37	37	-	64	64	-	-	-	-	-	-	-
Stage 2	71	70	-	40	37	-	-	-	-	-	-	-
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	871	783	1041	876	789	1026	1579	-	-	1557	-	-
Stage 1	978	864	-	947	842	-	-	-	-	-	-	-
Stage 2	939	837	-	975	864	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	854	777	1041	865	783	1026	1579	-	-	1557	-	-
Mov Cap-2 Maneuver	854	777	-	865	783	-	-	-	-	-	-	-
Stage 1	971	863	-	940	836	-	-	-	-	-	-	-
Stage 2	920	831	-	968	863	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.8		9.2			1.2			0.5			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1579	-	-	964	905	1557	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.008	0.044	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	8.8	9.2	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				



Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	20	75	25	16	50
Future Vol, veh/h	30	20	75	25	16	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	-	-	-	-	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	33	22	82	27	17	54






Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	109	0	0 184 96
Stage 1	-	-	- - 96 -
Stage 2	-	-	- - 88 -
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	1481	-	- - 805 960
Stage 1	-	-	- - 928 -
Stage 2	-	-	- - 935 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1481	-	- - 786 960
Mov Cap-2 Maneuver	-	-	- - 786 -
Stage 1	-	-	- - 907 -
Stage 2	-	-	- - 935 -

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1481	-	-	-	911
HCM Lane V/C Ratio	0.022	-	-	-	0.079
HCM Control Delay (s)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	76	62	290	315	44
Future Vol, veh/h	7	76	62	290	315	44
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	-	75	-	-	-
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	83	67	315	342	48

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	815	366	390
Stage 1	366	-	-
Stage 2	449	-	-
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	347	679	1169
Stage 1	702	-	-
Stage 2	643	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	327	679	1169
Mov Cap-2 Maneuver	327	-	-
Stage 1	662	-	-
Stage 2	643	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1169	-	622	-	-
HCM Lane V/C Ratio	0.058	-	0.145	-	-
HCM Control Delay (s)	8.3	-	11.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	185	70	10	120	40	10
Future Vol, veh/h	185	70	10	120	40	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	200	-	-	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	201	76	11	130	43	11





Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	277
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	-	-	1286
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1286
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	639	840	-	-	1286	-
HCM Lane V/C Ratio	0.068	0.013	-	-	0.008	-
HCM Control Delay (s)	11	9.3	-	-	7.8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	150	105	10	30	25
Future Vol, veh/h	30	150	105	10	30	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	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	33	163	114	11	33	27

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	125	0	0 349 120
Stage 1	-	-	- 120 -
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	1462	-	- 648 931
Stage 1	-	-	- 905 -
Stage 2	-	-	- 809 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1462	-	- 633 931
Mov Cap-2 Maneuver	-	-	- 633 -
Stage 1	-	-	- 884 -
Stage 2	-	-	- 809 -

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




Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1462	-	-	-	741
HCM Lane V/C Ratio	0.022	-	-	-	0.081
HCM Control Delay (s)	7.5	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Intersection												
Int Delay, s/veh	19.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	280	145	10	10	100	60	10	25	10	50	25	335
Future Vol, veh/h	280	145	10	10	100	60	10	25	10	50	25	335
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	304	158	11	11	109	65	11	27	11	54	27	364
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	169	0	0	1131	968	164	955	941	142
Stage 1	-	-	-	-	-	-	772	772	-	164	164	-
Stage 2	-	-	-	-	-	-	359	196	-	791	777	-
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	1403	-	-	1409	-	-	181	254	881	238	263	906
Stage 1	-	-	-	-	-	-	392	409	-	838	762	-
Stage 2	-	-	-	-	-	-	659	739	-	383	407	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1409	-	-	79	192	881	171	198	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	192	-	171	198	-
Stage 1	-	-	-	-	-	-	298	311	-	638	755	-
Stage 2	-	-	-	-	-	-	377	732	-	263	310	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.3			0.4			35			40.6		
HCM LOS							E			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	168	1403	-	-	1409	-	-	520				
HCM Lane V/C Ratio	0.291	0.217	-	-	0.008	-	-	0.857				
HCM Control Delay (s)	35	8.3	0	-	7.6	0	-	40.6				
HCM Lane LOS	E	A	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	1.1	0.8	-	-	0	-	-	9.1				





HCM 6th TWSC  
3: Site Access & E. 38th Avenue

2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	0	2	16	0	6
Future Vol, veh/h	6	0	2	16	0	6
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	7	0	2	17	0	7
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	28	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	21	-
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	-	-	1614	-	987	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1002	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1614	-	986	1075
Mov Cap-2 Maneuver	-	-	-	-	986	-
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1001	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.8		8.4	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1075	-	-	1614	-	
HCM Lane V/C Ratio	0.006	-	-	0.001	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	






HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2025 Total  
AM Peak

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	3	8	9	3	1	13	10	11	1	23	2
Future Vol, veh/h	1	3	8	9	3	1	13	10	11	1	23	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	9	10	3	1	14	11	12	1	25	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	75	79	26	79	74	17	27	0	0	23	0	0
Stage 1	28	28	-	45	45	-	-	-	-	-	-	-
Stage 2	47	51	-	34	29	-	-	-	-	-	-	-
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	915	811	1050	910	816	1062	1587	-	-	1592	-	-
Stage 1	989	872	-	969	857	-	-	-	-	-	-	-
Stage 2	967	852	-	982	871	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	904	803	1050	893	808	1062	1587	-	-	1592	-	-
Mov Cap-2 Maneuver	904	803	-	893	808	-	-	-	-	-	-	-
Stage 1	980	871	-	960	849	-	-	-	-	-	-	-
Stage 2	954	844	-	969	870	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.8		9.1			2.8			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1587	-	-	963	882	1592	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.014	0.016	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	8.8	9.1	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue




2025 Total  
AM Peak

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	23	0	0	0	21	90	0	0	175	2
Future Vol, veh/h	2	0	23	0	0	0	21	90	0	0	175	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	-	-	-	-	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	25	0	0	0	23	98	0	0	190	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	335	335	191	348	336	98	192	0	0	98	0	0
Stage 1	191	191	-	144	144	-	-	-	-	-	-	-
Stage 2	144	144	-	204	192	-	-	-	-	-	-	-
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	619	585	851	607	585	958	1381	-	-	1495	-	-
Stage 1	811	742	-	859	778	-	-	-	-	-	-	-
Stage 2	859	778	-	798	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	611	575	851	582	575	958	1381	-	-	1495	-	-
Mov Cap-2 Maneuver	611	575	-	582	575	-	-	-	-	-	-	-
Stage 1	797	742	-	844	765	-	-	-	-	-	-	-
Stage 2	845	765	-	775	742	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.5		0			1.4			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1381	-	-	825	-	1495	-	-				
HCM Lane V/C Ratio	0.017	-	-	0.033	-	-	-	-				
HCM Control Delay (s)	7.7	-	-	9.5	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	0	-	-				






HCM 6th TWSC  
7: 1st Street & Site Access

2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	20	8	33	39	1
Future Vol, veh/h	1	20	8	33	39	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	22	9	36	42	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	97	43	43	0	-	0
Stage 1	43	-	-	-	-	-
Stage 2	54	-	-	-	-	-
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	902	1027	1566	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	897	1027	1566	-	-	-
Mov Cap-2 Maneuver	897	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	1.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1566	-	1020	-	-	
HCM Lane V/C Ratio	0.006	-	0.022	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
8: 1st Street & Site Access

2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	25	8	40	59	0
Future Vol, veh/h	1	25	8	40	59	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	27	9	43	64	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	125	64	64	0	-	0
Stage 1	64	-	-	-	-	-
Stage 2	61	-	-	-	-	-
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	870	1000	1538	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	865	1000	1538	-	-	-
Mov Cap-2 Maneuver	865	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1538	-	994	-	-	
HCM Lane V/C Ratio	0.006	-	0.028	-	-	
HCM Control Delay (s)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC  
9: 1st Street & Site Access

2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	8	48	84	0
Future Vol, veh/h	0	25	8	48	84	0
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	0	27	9	52	91	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	161	91	91	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	830	967	1504	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	825	967	1504	-	-	-
Mov Cap-2 Maneuver	825	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1504	-	967	-	-	
HCM Lane V/C Ratio	0.006	-	0.028	-	-	
HCM Control Delay (s)	7.4	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC  
12: 1st Street & Truman Avenue

2025 Total  
AM Peak

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	6	0	1	0	55	7	1	108	0
Future Vol, veh/h	0	0	0	6	0	1	0	55	7	1	108	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	1	0	60	8	1	117	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	184	187	117	183	183	64	117	0	0	68	0	0
Stage 1	119	119	-	64	64	-	-	-	-	-	-	-
Stage 2	65	68	-	119	119	-	-	-	-	-	-	-
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	777	708	935	778	711	1000	1471	-	-	1533	-	-
Stage 1	885	797	-	947	842	-	-	-	-	-	-	-
Stage 2	946	838	-	885	797	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	775	707	935	777	710	1000	1471	-	-	1533	-	-
Mov Cap-2 Maneuver	775	707	-	777	710	-	-	-	-	-	-	-
Stage 1	885	796	-	947	842	-	-	-	-	-	-	-
Stage 2	945	838	-	884	796	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		9.5		0		0.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1471	-	-	-	803	1533	-
HCM Lane V/C Ratio	-	-	-	-	0.009	0.001	-
HCM Control Delay (s)	0	-	-	0	9.5	7.3	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-



HCM 6th TWSC  
17: 1st Street & Lincoln Avenue

2025 Total  
AM Peak

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	1	1	6	41	1	9	3	52	25	9	103	1
Future Vol, veh/h	1	1	6	41	1	9	3	52	25	9	103	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	7	45	1	10	3	57	27	10	112	1




Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	215	223	113	214	210	71	113	0	0	84	0	0
Stage 1	133	133	-	77	77	-	-	-	-	-	-	-
Stage 2	82	90	-	137	133	-	-	-	-	-	-	-
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	742	676	940	743	687	991	1476	-	-	1513	-	-
Stage 1	870	786	-	932	831	-	-	-	-	-	-	-
Stage 2	926	820	-	866	786	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	729	670	940	732	681	991	1476	-	-	1513	-	-
Mov Cap-2 Maneuver	729	670	-	732	681	-	-	-	-	-	-	-
Stage 1	868	780	-	930	829	-	-	-	-	-	-	-
Stage 2	914	818	-	853	780	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB				
HCM Control Delay, s	9.2		10.1		0.3			0.6				
HCM LOS	A		B									

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1476	-	-	865	766	1513	-
HCM Lane V/C Ratio	0.002	-	-	0.01	0.072	0.006	-
HCM Control Delay (s)	7.4	0	-	9.2	10.1	7.4	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-






HCM 6th TWSC  
20: W. Palmer Avenue & 1st Street

2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	35	75	30	43	107
Future Vol, veh/h	50	35	75	30	43	107
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	54	38	82	33	47	116
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	115	0	-	0	245	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	146	-
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	1474	-	-	-	743	957
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	881	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1474	-	-	-	716	957
Mov Cap-2 Maneuver	-	-	-	-	716	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	881	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.4	0		10.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1474	-	-	-	873	
HCM Lane V/C Ratio	0.037	-	-	-	0.187	
HCM Control Delay (s)	7.5	0	-	-	10.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	

HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue

2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	81	38	370	350	31
Future Vol, veh/h	35	81	38	370	350	31
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	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	88	41	402	380	34
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	881	397	414	0	-	0
Stage 1	397	-	-	-	-	-
Stage 2	484	-	-	-	-	-
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	317	652	1145	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	306	652	1145	-	-	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1145	-	486	-	-	
HCM Lane V/C Ratio	0.036	-	0.259	-	-	
HCM Control Delay (s)	8.3	-	15	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	1	-	-	

HCM 6th TWSC  
22: Penrith Road & E. Colfax Avenue





2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Vol, veh/h	107	20	10	160	60	10
Future Vol, veh/h	107	20	10	160	60	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	200	-	-	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	116	22	11	174	65	11
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	138	0	312	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	196	-
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	-	-	1446	-	681	936
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	837	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1446	-	676	936
Mov Cap-2 Maneuver	-	-	-	-	676	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	830	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		10.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	676	936	-	-	1446	-
HCM Lane V/C Ratio	0.096	0.012	-	-	0.008	-
HCM Control Delay (s)	10.9	8.9	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-



HCM 6th TWSC  
23: E. Colfax Avenue & Internal Collector

2025 Total  
AM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	100	100	23	28	70
Future Vol, veh/h	37	100	100	23	28	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	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	40	109	109	25	30	76

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	134	0	0	311	122
Stage 1	-	-	-	122	-
Stage 2	-	-	-	189	-
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	1451	-	-	681	929
Stage 1	-	-	-	903	-
Stage 2	-	-	-	843	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1451	-	-	662	929
Mov Cap-2 Maneuver	-	-	-	662	-
Stage 1	-	-	-	878	-
Stage 2	-	-	-	843	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1451	-	-	-	833
HCM Lane V/C Ratio	0.028	-	-	-	0.128
HCM Control Delay (s)	7.6	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

2025 Total  
AM Peak

Intersection												
Int Delay, s/veh	23.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	323	55	10	10	90	70	10	25	10	50	25	368
Future Vol, veh/h	323	55	10	10	90	70	10	25	10	50	25	368
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	351	60	11	11	98	76	11	27	11	54	27	400




Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	71	0	0	1140	964	66	945	931	136
Stage 1	-	-	-	-	-	-	768	768	-	158	158	-
Stage 2	-	-	-	-	-	-	372	196	-	787	773	-
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	1403	-	-	1529	-	-	178	255	998	242	267	913
Stage 1	-	-	-	-	-	-	394	411	-	844	767	-
Stage 2	-	-	-	-	-	-	648	739	-	385	409	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1403	-	-	1529	-	-	71	187	998	170	196	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	71	187	-	170	196	-
Stage 1	-	-	-	-	-	-	291	304	-	624	761	-
Stage 2	-	-	-	-	-	-	348	733	-	256	302	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	7			0.4			37.7			45.4		
HCM LOS							E			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	158	1403	-	-	1529	-	-	537
HCM Lane V/C Ratio	0.31	0.25	-	-	0.007	-	-	0.897
HCM Control Delay (s)	37.7	8.4	0	-	7.4	0	-	45.4
HCM Lane LOS	E	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	1.2	1	-	-	0	-	-	10.4

HCM 6th TWSC  
3: Site Access & E. 38th Avenue

2025 Total  
PM Peak

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	0	7	14	0	2
Future Vol, veh/h	7	0	7	14	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	8	15	0	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	8	0	39	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	31	-
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	-	-	1612	-	973	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	992	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1612	-	968	1074
Mov Cap-2 Maneuver	-	-	-	-	968	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	987	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.4		8.4	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1074	-	-	1612	-	
HCM Lane V/C Ratio	0.002	-	-	0.005	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2025 Total  
PM Peak

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	3	5	7	4	1	16	21	11	1	11	1
Future Vol, veh/h	1	3	5	7	4	1	16	21	11	1	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	3	5	8	4	1	17	23	12	1	12	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	81	84	13	82	78	29	13	0	0	35	0	0
Stage 1	15	15	-	63	63	-	-	-	-	-	-	-
Stage 2	66	69	-	19	15	-	-	-	-	-	-	-
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	907	806	1067	905	812	1046	1606	-	-	1576	-	-
Stage 1	1005	883	-	948	842	-	-	-	-	-	-	-
Stage 2	945	837	-	1000	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	894	796	1067	890	802	1046	1606	-	-	1576	-	-
Mov Cap-2 Maneuver	894	796	-	890	802	-	-	-	-	-	-	-
Stage 1	994	882	-	938	833	-	-	-	-	-	-	-
Stage 2	929	828	-	990	882	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.9		9.2			2.4			0.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1606	-	-	940	869	1576	-	-				
HCM Lane V/C Ratio	0.011	-	-	0.01	0.015	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	8.9	9.2	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				



HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue

2025 Total  
PM Peak

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	2	0	22	0	0	0	23	200	0	0	155	5
Future Vol, veh/h	2	0	22	0	0	0	23	200	0	0	155	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	-	-	-	-	-	-	200	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	24	0	0	0	25	217	0	0	168	5




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	438	438	171	450	440	217	173	0	0	217	0	0
Stage 1	171	171	-	267	267	-	-	-	-	-	-	-
Stage 2	267	267	-	183	173	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	529	512	873	519	511	823	1404	-	-	1353	-	-
Stage 1	831	757	-	738	688	-	-	-	-	-	-	-
Stage 2	738	688	-	819	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	522	503	873	498	502	823	1404	-	-	1353	-	-
Mov Cap-2 Maneuver	522	503	-	498	502	-	-	-	-	-	-	-
Stage 1	816	757	-	725	676	-	-	-	-	-	-	-
Stage 2	725	676	-	797	756	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	0	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	827	-	1353	-
HCM Lane V/C Ratio	0.018	-	-	0.032	-	-	-
HCM Control Delay (s)	7.6	-	-	9.5	0	0	-
HCM Lane LOS	A	-	-	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	0	-




HCM 6th TWSC  
7: 1st Street & Site Access

2025 Total  
PM Peak

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	16	25	46	22	1
Future Vol, veh/h	1	16	25	46	22	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	17	27	50	24	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	129	25	25	0	-	0
Stage 1	25	-	-	-	-	-
Stage 2	104	-	-	-	-	-
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	865	1051	1589	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	850	1051	1589	-	-	-
Mov Cap-2 Maneuver	850	-	-	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	2.6		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1589	-	1037	-	-	
HCM Lane V/C Ratio	0.017	-	0.018	-	-	
HCM Control Delay (s)	7.3	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	




HCM 6th TWSC  
8: 1st Street & Site Access

2025 Total  
PM Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	16	30	70	37	1
Future Vol, veh/h	1	16	30	70	37	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	17	33	76	40	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	183	41	41	0	-	0
Stage 1	41	-	-	-	-	-
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	806	1030	1568	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	788	1030	1568	-	-	-
Mov Cap-2 Maneuver	788	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	2.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1568	-	1012	-	-	
HCM Lane V/C Ratio	0.021	-	0.018	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC  
9: 1st Street & Site Access

2025 Total  
PM Peak

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	25	100	53	0
Future Vol, veh/h	0	16	25	100	53	0
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	0	17	27	109	58	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	221	58	58	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	163	-	-	-	-	-
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	767	1008	1546	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	752	1008	1546	-	-	-
Mov Cap-2 Maneuver	752	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	1.5		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1546	-	1008	-	-	
HCM Lane V/C Ratio	0.018	-	0.017	-	-	
HCM Control Delay (s)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	










Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	5	0	4	0	121	4	2	67	0
Future Vol, veh/h	0	0	0	5	0	4	0	121	4	2	67	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	5	0	4	0	132	4	2	73	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	213	213	73	211	211	134	73	0	0	136	0	0
Stage 1	77	77	-	134	134	-	-	-	-	-	-	-
Stage 2	136	136	-	77	77	-	-	-	-	-	-	-
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	744	684	989	746	686	915	1527	-	-	1448	-	-
Stage 1	932	831	-	869	785	-	-	-	-	-	-	-
Stage 2	867	784	-	932	831	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	740	683	989	745	685	915	1527	-	-	1448	-	-
Mov Cap-2 Maneuver	740	683	-	745	685	-	-	-	-	-	-	-
Stage 1	932	830	-	869	785	-	-	-	-	-	-	-
Stage 2	863	784	-	931	830	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		9.5		0		0.2	
HCM LOS	A		A					






Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1527	-	-	-	812	1448	-
HCM Lane V/C Ratio	-	-	-	-	0.012	0.002	-
HCM Control Delay (s)	0	-	-	0	9.5	7.5	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-

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	1	1	5	25	1	11	9	120	11	2	78	1
Future Vol, veh/h	1	1	5	25	1	11	9	120	11	2	78	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	5	27	1	12	10	130	12	2	85	1
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	253	252	86	249	246	136	86	0	0	142	0	0
Stage 1	90	90	-	156	156	-	-	-	-	-	-	-
Stage 2	163	162	-	93	90	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	700	651	973	705	656	913	1510	-	-	1441	-	-
Stage 1	917	820	-	846	769	-	-	-	-	-	-	-
Stage 2	839	764	-	914	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	686	646	973	696	651	913	1510	-	-	1441	-	-
Mov Cap-2 Maneuver	686	646	-	696	651	-	-	-	-	-	-	-
Stage 1	911	819	-	840	764	-	-	-	-	-	-	-
Stage 2	821	759	-	907	819	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	9.2		10.1		0.5			0.2				
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1510	-	-	859	747	1441	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.009	0.054	0.002	-	-				
HCM Control Delay (s)	7.4	0	-	9.2	10.1	7.5	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	20	75	61	36	79
Future Vol, veh/h	89	20	75	61	36	79
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	97	22	82	66	39	86
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	148	0	-	0	331	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	216	-
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	1434	-	-	-	664	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1434	-	-	-	619	937
Mov Cap-2 Maneuver	-	-	-	-	619	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	820	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.3	0		10.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1434	-	-	-	807	
HCM Lane V/C Ratio	0.067	-	-	-	0.155	
HCM Control Delay (s)	7.7	0	-	-	10.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	

HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue

2025 Total  
PM Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	91	89	290	315	53
Future Vol, veh/h	12	91	89	290	315	53
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	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	99	97	315	342	58

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	880	371	400	0	-	0
Stage 1	371	-	-	-	-	-
Stage 2	509	-	-	-	-	-
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	318	675	1159	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	291	675	1159	-	-	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	604	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1159	-	585	-	-
HCM Lane V/C Ratio	0.083	-	0.191	-	-
HCM Control Delay (s)	8.4	-	12.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.7	-	-

HCM 6th TWSC  
22: Penrith Road & E. Colfax Avenue

2025 Total  
PM Peak

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	215	70	10	143	40	10
Future Vol, veh/h	215	70	10	143	40	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	200	-	-	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	234	76	11	155	43	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	310
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	-	-	1250
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1250
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	592	805	-	-	1250	-
HCM Lane V/C Ratio	0.073	0.014	-	-	0.009	-
HCM Control Delay (s)	11.6	9.5	-	-	7.9	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-







HCM 6th TWSC  
23: E. Colfax Avenue & Internal Collector

2025 Total  
PM Peak

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	70	150	105	19	36	48
Future Vol, veh/h	70	150	105	19	36	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	200	-	-	-	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	163	114	21	39	52

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	135	0	0 440 125
Stage 1	-	-	- 125 -
Stage 2	-	-	- 315 -
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	1449	-	- 574 926
Stage 1	-	-	- 901 -
Stage 2	-	-	- 740 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1449	-	- 544 926
Mov Cap-2 Maneuver	-	-	- 544 -
Stage 1	-	-	- 854 -
Stage 2	-	-	- 740 -

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1449	-	-	-	712
HCM Lane V/C Ratio	0.053	-	-	-	0.128
HCM Control Delay (s)	7.6	-	-	-	10.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

2025 Total  
PM Peak

Intersection												
Int Delay, s/veh	25.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	307	145	10	10	100	60	10	25	10	50	25	350
Future Vol, veh/h	307	145	10	10	100	60	10	25	10	50	25	350
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	334	158	11	11	109	65	11	27	11	54	27	380
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	169	0	0	1199	1028	164	1015	1001	142
Stage 1	-	-	-	-	-	-	832	832	-	164	164	-
Stage 2	-	-	-	-	-	-	367	196	-	851	837	-
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	1403	-	-	1409	-	-	162	234	881	217	243	906
Stage 1	-	-	-	-	-	-	363	384	-	838	762	-
Stage 2	-	-	-	-	-	-	653	739	-	355	382	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1409	-	-	66	171	881	150	177	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	171	-	150	177	-
Stage 1	-	-	-	-	-	-	268	283	-	618	755	-
Stage 2	-	-	-	-	-	-	362	732	-	234	282	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.6			0.4			41.6			55		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	146	1403	-	-	1409	-	-	494				
HCM Lane V/C Ratio	0.335	0.238	-	-	0.008	-	-	0.935				
HCM Control Delay (s)	41.6	8.4	0	-	7.6	0	-	55				
HCM Lane LOS	E	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	1.4	0.9	-	-	0	-	-	11.3				

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	15	10	10	20	5	10	8	8	10	15	10
Future Vol, veh/h	5	15	10	10	20	5	10	8	8	10	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	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	16	11	11	22	5	11	9	9	11	16	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	27	0	0	27	0	0	92	81	22	88	84	25
Stage 1	-	-	-	-	-	-	32	32	-	47	47	-
Stage 2	-	-	-	-	-	-	60	49	-	41	37	-
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	1587	-	-	1587	-	-	892	809	1055	897	806	1051
Stage 1	-	-	-	-	-	-	984	868	-	967	856	-
Stage 2	-	-	-	-	-	-	951	854	-	974	864	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1587	-	-	1587	-	-	863	801	1055	875	798	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	801	-	875	798	-
Stage 1	-	-	-	-	-	-	981	865	-	964	850	-
Stage 2	-	-	-	-	-	-	917	848	-	953	861	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			2.1			9.2			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	892	1587	-	-	1587	-	-	881				
HCM Lane V/C Ratio	0.032	0.003	-	-	0.007	-	-	0.043				
HCM Control Delay (s)	9.2	7.3	0	-	7.3	0	-	9.3				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2030 Background  
AM Peak

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	20	10	12	20	3	13	10	12	30	28	3
Future Vol, veh/h	3	20	10	12	20	3	13	10	12	30	28	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	22	11	13	22	3	14	11	13	33	30	3
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	156	150	32	160	145	18	33	0	0	24	0	0
Stage 1	98	98	-	46	46	-	-	-	-	-	-	-
Stage 2	58	52	-	114	99	-	-	-	-	-	-	-
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	810	742	1042	806	746	1061	1579	-	-	1591	-	-
Stage 1	908	814	-	968	857	-	-	-	-	-	-	-
Stage 2	954	852	-	891	813	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	771	720	1042	762	724	1061	1579	-	-	1591	-	-
Mov Cap-2 Maneuver	771	720	-	762	724	-	-	-	-	-	-	-
Stage 1	900	797	-	959	849	-	-	-	-	-	-	-
Stage 2	918	844	-	840	796	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.7		10			2.7			3.6			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1579	-	-	800	758	1591	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.045	0.05	0.02	-	-				
HCM Control Delay (s)	7.3	0	-	9.7	10	7.3	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				

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	5	1	30	1	1	1	30	100	1	1	195	5
Future Vol, veh/h	5	1	30	1	1	1	30	100	1	1	195	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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	33	1	1	1	33	109	1	1	212	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	391	390	212	409	394	109	217	0	0	110	0	0
Stage 1	214	214	-	175	175	-	-	-	-	-	-	-
Stage 2	177	176	-	234	219	-	-	-	-	-	-	-
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	568	545	828	553	542	945	1353	-	-	1480	-	-
Stage 1	788	725	-	827	754	-	-	-	-	-	-	-
Stage 2	825	753	-	769	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	556	531	828	520	528	945	1353	-	-	1480	-	-
Mov Cap-2 Maneuver	556	531	-	520	528	-	-	-	-	-	-	-
Stage 1	769	724	-	807	736	-	-	-	-	-	-	-
Stage 2	803	735	-	737	721	-	-	-	-	-	-	-




Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.9	1.8	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1353	-	-	764	615	1480	-
HCM Lane V/C Ratio	0.024	-	-	0.051	0.005	0.001	-
HCM Control Delay (s)	7.7	-	-	10	10.9	7.4	-
HCM Lane LOS	A	-	-	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-



Intersection

Int Delay, s/veh 1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	3	31	9	3	45
Future Vol, veh/h	8	3	31	9	3	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	3	34	10	3	49







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	94	39	0
Stage 1	39	-	-
Stage 2	55	-	-
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	906	1033	-
Stage 1	983	-	-
Stage 2	968	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	904	1033	-
Mov Cap-2 Maneuver	904	-	-
Stage 1	983	-	-
Stage 2	966	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	936	1564
HCM Lane V/C Ratio	-	-	0.013	0.002
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection









Int Delay, s/veh 4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	5	20	55	10	25
Future Vol, veh/h	90	5	20	55	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	98	5	22	60	11	27

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	71	22	0
Stage 1	22	-	-
Stage 2	49	-	-
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	933	1055	-
Stage 1	1001	-	-
Stage 2	973	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	926	1055	-
Mov Cap-2 Maneuver	926	-	-
Stage 1	1001	-	-
Stage 2	966	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	2.1
HCM LOS	A		







Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	926	1055
HCM Lane V/C Ratio	-	-	0.106	0.005
HCM Control Delay (s)	-	-	9.3	8.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	10	5	5	10	5	5	0	5	10	0	0
Future Vol, veh/h	0	10	5	5	10	5	5	0	5	10	0	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	150	-	-	150	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	5	5	11	5	5	0	5	11	0	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	43	37	0	43	35	3	0	0	0	5	0	0
Stage 1	22	22	-	13	13	-	-	-	-	-	-	-
Stage 2	21	15	-	30	22	-	-	-	-	-	-	-
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	960	855	-	960	857	1081	-	-	-	1616	-	-
Stage 1	996	877	-	1007	885	-	-	-	-	-	-	-
Stage 2	998	883	-	987	877	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	941	849	-	-	851	1081	-	-	-	1616	-	-
Mov Cap-2 Maneuver	941	849	-	-	851	-	-	-	-	-	-	-
Stage 1	996	871	-	1007	885	-	-	-	-	-	-	-
Stage 2	981	883	-	968	871	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	7.2											
HCM LOS	-											
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	-	-	-	-	-	-	-	916	1616	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.018	0.007	-	-	
HCM Control Delay (s)	-	-	-	0	-	-	-	9	7.2	-	-	
HCM Lane LOS	-	-	-	A	-	-	-	A	A	-	-	
HCM 95th %tile Q(veh)	-	-	-	-	-	-	-	0.1	0	-	-	

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	5	8	45	10	9	4	30	30	12	40	1
Future Vol, veh/h	1	5	8	45	10	9	4	30	30	12	40	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	5	9	49	11	10	4	33	33	13	43	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	138	144	44	135	128	50	44	0	0	66	0	0
Stage 1	70	70	-	58	58	-	-	-	-	-	-	-
Stage 2	68	74	-	77	70	-	-	-	-	-	-	-
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	833	747	1026	836	763	1018	1564	-	-	1536	-	-
Stage 1	940	837	-	954	847	-	-	-	-	-	-	-
Stage 2	942	833	-	932	837	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	809	738	1026	817	754	1018	1564	-	-	1536	-	-
Mov Cap-2 Maneuver	809	738	-	817	754	-	-	-	-	-	-	-
Stage 1	937	829	-	951	844	-	-	-	-	-	-	-
Stage 2	918	831	-	910	829	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.1		9.7			0.5			1.7			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1564	-	-	886	829	1536	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.017	0.084	0.008	-	-				
HCM Control Delay (s)	7.3	0	-	9.1	9.7	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-				

Intersection

Int Delay, s/veh 3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	20	55	40	35	80
Future Vol, veh/h	65	20	55	40	35	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	71	22	60	43	38	87

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	223	60	0
Stage 1	60	-	-
Stage 2	163	-	-
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	765	1005	-
Stage 1	963	-	-
Stage 2	866	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	745	1005	-
Mov Cap-2 Maneuver	745	-	-
Stage 1	963	-	-
Stage 2	843	-	-







Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 745 1005 1489	-	-
HCM Lane V/C Ratio	-	- 0.095 0.022 0.026	-	-
HCM Control Delay (s)	-	- 10.3 8.7 7.5	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.3 0.1 0.1	-	-



Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	105	120	15	30	30
Future Vol, veh/h	15	105	120	15	30	30
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	-	-	150	75	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	114	130	16	33	33




Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	146	0	0 276 130
Stage 1	-	-	- - 130 -
Stage 2	-	-	- - 146 -
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	1436	-	- - 714 920
Stage 1	-	-	- - 896 -
Stage 2	-	-	- - 881 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1436	-	- - 706 920
Mov Cap-2 Maneuver	-	-	- - 706 -
Stage 1	-	-	- - 886 -
Stage 2	-	-	- - 881 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1436	-	-	-	706	920
HCM Lane V/C Ratio	0.011	-	-	-	0.046	0.035
HCM Control Delay (s)	7.5	-	-	-	10.3	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	100	120	20	20	75
Future Vol, veh/h	45	100	120	20	20	75
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	49	109	130	22	22	82






Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	152	0	0 348 141
Stage 1	-	-	- 141 -
Stage 2	-	-	- 207 -
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	1429	-	- 649 907
Stage 1	-	-	- 886 -
Stage 2	-	-	- 828 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1429	-	- 626 907
Mov Cap-2 Maneuver	-	-	- 626 -
Stage 1	-	-	- 854 -
Stage 2	-	-	- 828 -

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1429	-	-	-	829
HCM Lane V/C Ratio	0.034	-	-	-	0.125
HCM Control Delay (s)	7.6	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection











Int Delay, s/veh 2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	85	40	210	180	40
Future Vol, veh/h	40	85	40	210	180	40
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	-	75	-	-	-
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	43	92	43	228	196	43

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	532	218	239
Stage 1	218	-	-
Stage 2	314	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	508	822	1328
Stage 1	818	-	-
Stage 2	741	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	492	822	1328
Mov Cap-2 Maneuver	492	-	-
Stage 1	792	-	-
Stage 2	741	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1328	-	677	-	-
HCM Lane V/C Ratio	0.033	-	0.201	-	-
HCM Control Delay (s)	7.8	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection												
Int Delay, s/veh	9.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	235	50	20	225	20	150	35	45	35	35	75
Future Vol, veh/h	40	235	50	20	225	20	150	35	45	35	35	75
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	255	54	22	245	22	163	38	49	38	38	82
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	267	0	0	309	0	0	701	652	255	701	684	245
Stage 1	-	-	-	-	-	-	341	341	-	289	289	-
Stage 2	-	-	-	-	-	-	360	311	-	412	395	-
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	1297	-	-	1252	-	-	353	387	784	353	371	794
Stage 1	-	-	-	-	-	-	674	639	-	719	673	-
Stage 2	-	-	-	-	-	-	658	658	-	617	605	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1297	-	-	1252	-	-	280	368	784	293	352	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	280	368	-	293	352	-
Stage 1	-	-	-	-	-	-	652	618	-	695	661	-
Stage 2	-	-	-	-	-	-	547	646	-	525	585	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.6			27			14.5		
HCM LOS							D			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	280	525	1297	-	-	1252	-	-	293	567		
HCM Lane V/C Ratio	0.582	0.166	0.034	-	-	0.017	-	-	0.13	0.211		
HCM Control Delay (s)	34.3	13.2	7.9	-	-	7.9	-	-	19.1	13		
HCM Lane LOS	D	B	A	-	-	A	-	-	C	B		
HCM 95th %tile Q(veh)	3.4	0.6	0.1	-	-	0.1	-	-	0.4	0.8		

Intersection												
Int Delay, s/veh	10.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	65	10	10	90	73	15	90	10	50	100	115
Future Vol, veh/h	90	65	10	10	90	73	15	90	10	50	100	115
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	98	71	11	11	98	79	16	98	11	54	109	125
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	177	0	0	82	0	0	550	472	77	487	438	138
Stage 1	-	-	-	-	-	-	273	273	-	160	160	-
Stage 2	-	-	-	-	-	-	277	199	-	327	278	-
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	1399	-	-	1515	-	-	446	490	984	491	512	910
Stage 1	-	-	-	-	-	-	733	684	-	842	766	-
Stage 2	-	-	-	-	-	-	729	736	-	686	680	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1399	-	-	1515	-	-	297	451	984	381	471	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	297	451	-	381	471	-
Stage 1	-	-	-	-	-	-	679	634	-	781	760	-
Stage 2	-	-	-	-	-	-	535	730	-	532	630	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.2			0.4			16.3			17.9		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	442	1399	-	-	1515	-	-	564				
HCM Lane V/C Ratio	0.283	0.07	-	-	0.007	-	-	0.511				
HCM Control Delay (s)	16.3	7.8	0	-	7.4	0	-	17.9				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.1	0.2	-	-	0	-	-	2.9				






Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	25	10	10	20	10	10	15	8	5	8	5
Future Vol, veh/h	10	25	10	10	20	10	10	15	8	5	8	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	27	11	11	22	11	11	16	9	5	9	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	33	0	0	38	0	0	112	110	33	117	110	28
Stage 1	-	-	-	-	-	-	55	55	-	50	50	-
Stage 2	-	-	-	-	-	-	57	55	-	67	60	-
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	1579	-	-	1572	-	-	866	780	1041	859	780	1047
Stage 1	-	-	-	-	-	-	957	849	-	963	853	-
Stage 2	-	-	-	-	-	-	955	849	-	943	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1579	-	-	1572	-	-	845	769	1041	829	769	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	845	769	-	829	769	-
Stage 1	-	-	-	-	-	-	950	843	-	956	847	-
Stage 2	-	-	-	-	-	-	934	843	-	911	839	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.6			1.8			9.4			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	846	1579	-	-	1572	-	-	849				
HCM Lane V/C Ratio	0.042	0.007	-	-	0.007	-	-	0.023				
HCM Control Delay (s)	9.4	7.3	0	-	7.3	0	-	9.3				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2030 Background  
PM Peak

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	25	10	8	25	3	13	30	12	3	22	3
Future Vol, veh/h	3	25	10	8	25	3	13	30	12	3	22	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	27	11	9	27	3	14	33	13	3	24	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	115	106	26	119	101	40	27	0	0	46	0	0
Stage 1	32	32	-	68	68	-	-	-	-	-	-	-
Stage 2	83	74	-	51	33	-	-	-	-	-	-	-
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	862	784	1050	857	789	1031	1587	-	-	1562	-	-
Stage 1	984	868	-	942	838	-	-	-	-	-	-	-
Stage 2	925	833	-	962	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	829	775	1050	818	780	1031	1587	-	-	1562	-	-
Mov Cap-2 Maneuver	829	775	-	818	780	-	-	-	-	-	-	-
Stage 1	975	866	-	934	830	-	-	-	-	-	-	-
Stage 2	884	826	-	920	866	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.5		9.7		1.7		0.8					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1587	-	-	837	805	1562	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.049	0.049	0.002	-	-				
HCM Control Delay (s)	7.3	0	-	9.5	9.7	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-				

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↕	↕	↑	↕
Traffic Vol, veh/h	5	1	35	1	1	1	30	220	1	1	170	5
Future Vol, veh/h	5	1	35	1	1	1	30	220	1	1	170	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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	38	1	1	1	33	239	1	1	185	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	494	493	185	514	497	239	190	0	0	240	0	0
Stage 1	187	187	-	305	305	-	-	-	-	-	-	-
Stage 2	307	306	-	209	192	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	486	477	857	471	475	800	1384	-	-	1327	-	-
Stage 1	815	745	-	705	662	-	-	-	-	-	-	-
Stage 2	703	662	-	793	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	475	465	857	441	463	800	1384	-	-	1327	-	-
Mov Cap-2 Maneuver	475	465	-	441	463	-	-	-	-	-	-	-
Stage 1	795	744	-	688	646	-	-	-	-	-	-	-
Stage 2	684	646	-	756	741	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10		11.9		0.9		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1384	-	-	766	528	1327	-	-				
HCM Lane V/C Ratio	0.024	-	-	0.058	0.006	0.001	-	-				
HCM Control Delay (s)	7.7	-	-	10	11.9	7.7	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-				

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	4	52	7	4	30
Future Vol, veh/h	10	4	52	7	4	30
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	4	57	8	4	33







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	102	61	0
Stage 1	61	-	-
Stage 2	41	-	-
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	896	1004	-
Stage 1	962	-	-
Stage 2	981	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	893	1004	-
Mov Cap-2 Maneuver	893	-	-
Stage 1	962	-	-
Stage 2	978	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	1537
HCM Lane V/C Ratio	-	-	0.017	0.003
HCM Control Delay (s)	-	-	9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection

Int Delay, s/veh 3.6









Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	10	25	80	10	20
Future Vol, veh/h	65	10	25	80	10	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	75	0	-	150	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	71	11	27	87	11	22

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	71	27	0
Stage 1	27	-	-
Stage 2	44	-	-
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	933	1048	-
Stage 1	996	-	-
Stage 2	978	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	926	1048	-
Mov Cap-2 Maneuver	926	-	-
Stage 1	996	-	-
Stage 2	971	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 926 1048 1475	-	-
HCM Lane V/C Ratio	-	- 0.076 0.01 0.007	-	-
HCM Control Delay (s)	-	- 9.2 8.5 7.5	-	-
HCM Lane LOS	-	- A A A	-	-
HCM 95th %tile Q(veh)	-	- 0.2 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	0	10	5	5	10	10	10	0	10	5	0	0
Future Vol, veh/h	0	10	5	5	10	10	10	0	10	5	0	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	150	-	-	150	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	5	5	11	11	11	0	11	5	0	0

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	49	43	0	46	38	6	0	0
Stage 1	10	10	-	28	28	-	-	-
Stage 2	39	33	-	18	10	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	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	-
Pot Cap-1 Maneuver	951	849	-	955	854	1077	-	-
Stage 1	1011	887	-	989	872	-	-	-
Stage 2	976	868	-	1001	887	-	-	-
Platoon blocked, %							-	-
Mov Cap-1 Maneuver	930	846	-	-	851	1077	-	-
Mov Cap-2 Maneuver	930	846	-	-	851	-	-	-
Stage 1	1011	884	-	989	872	-	-	-
Stage 2	954	868	-	986	884	-	-	-







Approach	EB	WB	NB	SB
HCM Control Delay, s				7.2
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	-	-	-	-	951	1608	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.023	0.003	-
HCM Control Delay (s)	-	-	-	0	-	-	-	8.9	7.2	-
HCM Lane LOS	-	-	-	A	-	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-	-	-	0.1	0	-

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	1	10	8	28	5	13	9	45	15	7	33	1
Future Vol, veh/h	1	10	8	28	5	13	9	45	15	7	33	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	11	9	30	5	14	10	49	16	8	36	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	140	138	37	140	130	57	37	0	0	65	0	0
Stage 1	53	53	-	77	77	-	-	-	-	-	-	-
Stage 2	87	85	-	63	53	-	-	-	-	-	-	-
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	830	753	1035	830	761	1009	1574	-	-	1537	-	-
Stage 1	960	851	-	932	831	-	-	-	-	-	-	-
Stage 2	921	824	-	948	851	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	807	744	1035	807	752	1009	1574	-	-	1537	-	-
Mov Cap-2 Maneuver	807	744	-	807	752	-	-	-	-	-	-	-
Stage 1	953	847	-	925	825	-	-	-	-	-	-	-
Stage 2	896	818	-	923	847	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.4		9.5			1			1.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1574	-	-	848	848	1537	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.024	0.059	0.005	-	-				
HCM Control Delay (s)	7.3	0	-	9.4	9.5	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-				

Intersection

Int Delay, s/veh 3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	35	85	70	25	60
Future Vol, veh/h	50	35	85	70	25	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	54	38	92	76	27	65







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	211	92	0
Stage 1	92	-	-
Stage 2	119	-	-
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	777	965	-
Stage 1	932	-	-
Stage 2	906	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	762	965	-
Mov Cap-2 Maneuver	762	-	-
Stage 1	932	-	-
Stage 2	889	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 762 965 1410	-	-
HCM Lane V/C Ratio	-	- 0.071 0.039 0.019	-	-
HCM Control Delay (s)	-	- 10.1 8.9 7.6	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.2 0.1 0.1	-	-

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	75	110	35	15	15
Future Vol, veh/h	35	75	110	35	15	15
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	-	-	150	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	82	120	38	16	16




Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	158	0	0 278 120
Stage 1	-	-	- 120 -
Stage 2	-	-	- 158 -
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	1422	-	- 712 931
Stage 1	-	-	- 905 -
Stage 2	-	-	- 871 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1422	-	- 693 931
Mov Cap-2 Maneuver	-	-	- 693 -
Stage 1	-	-	- 881 -
Stage 2	-	-	- 871 -

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1422	-	-	-	693	931
HCM Lane V/C Ratio	0.027	-	-	-	0.024	0.018
HCM Control Delay (s)	7.6	-	-	-	10.3	8.9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

Intersection

Int Delay, s/veh 3.2






Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	60	120	30	20	55
Future Vol, veh/h	40	60	120	30	20	55
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	43	65	130	33	22	60

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	163	0	0 298 147
Stage 1	-	-	- 147 -
Stage 2	-	-	- 151 -
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	1416	-	- 693 900
Stage 1	-	-	- 880 -
Stage 2	-	-	- 877 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1416	-	- 671 900
Mov Cap-2 Maneuver	-	-	- 671 -
Stage 1	-	-	- 852 -
Stage 2	-	-	- 877 -

Approach	EB	WB	SB
HCM Control Delay, s	3	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1416	-	-	-	825
HCM Lane V/C Ratio	0.031	-	-	-	0.099
HCM Control Delay (s)	7.6	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3













Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	105	100	165	150	65
Future Vol, veh/h	20	105	100	165	150	65
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	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	114	109	179	163	71

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	596	199	234	0	-	0
Stage 1	199	-	-	-	-	-
Stage 2	397	-	-	-	-	-
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	466	842	1333	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	428	842	1333	-	-	-
Mov Cap-2 Maneuver	428	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	679	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1333	-	729	-	-
HCM Lane V/C Ratio	0.082	-	0.186	-	-
HCM Control Delay (s)	7.9	-	11.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.7	-	-

Intersection												
Int Delay, s/veh	10.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	335	170	45	300	40	100	35	30	25	35	50
Future Vol, veh/h	80	335	170	45	300	40	100	35	30	25	35	50
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	364	185	49	326	43	109	38	33	27	38	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	549	0	0	1030	1005	364	1090	1147	326
Stage 1	-	-	-	-	-	-	538	538	-	424	424	-
Stage 2	-	-	-	-	-	-	492	467	-	666	723	-
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	1190	-	-	1021	-	-	212	241	681	193	199	715
Stage 1	-	-	-	-	-	-	527	522	-	608	587	-
Stage 2	-	-	-	-	-	-	558	562	-	449	431	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1190	-	-	1021	-	-	149	213	681	145	176	715
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	213	-	145	176	-
Stage 1	-	-	-	-	-	-	489	484	-	564	559	-
Stage 2	-	-	-	-	-	-	457	535	-	365	400	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			1			54			24.3		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	149	312	1190	-	-	1021	-	-	145	316		
HCM Lane V/C Ratio	0.73	0.226	0.073	-	-	0.048	-	-	0.187	0.292		
HCM Control Delay (s)	76.2	19.9	8.3	-	-	8.7	-	-	35.5	21		
HCM Lane LOS	F	C	A	-	-	A	-	-	E	C		
HCM 95th %tile Q(veh)	4.3	0.9	0.2	-	-	0.2	-	-	0.7	1.2		

Intersection												
Int Delay, s/veh	12.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	100	145	15	10	125	60	10	105	10	65	100	90
Future Vol, veh/h	100	145	15	10	125	60	10	105	10	65	100	90
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	109	158	16	11	136	65	11	114	11	71	109	98
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	201	0	0	174	0	0	678	607	166	638	583	169
Stage 1	-	-	-	-	-	-	384	384	-	191	191	-
Stage 2	-	-	-	-	-	-	294	223	-	447	392	-
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	1371	-	-	1403	-	-	366	411	878	389	424	875
Stage 1	-	-	-	-	-	-	639	611	-	811	742	-
Stage 2	-	-	-	-	-	-	714	719	-	591	606	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1371	-	-	1403	-	-	236	372	878	273	383	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	372	-	273	383	-
Stage 1	-	-	-	-	-	-	583	557	-	740	735	-
Stage 2	-	-	-	-	-	-	536	713	-	423	553	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3			0.4			20.1			28.1		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	372	1371	-	-	1403	-	-	424				
HCM Lane V/C Ratio	0.365	0.079	-	-	0.008	-	-	0.654				
HCM Control Delay (s)	20.1	7.9	0	-	7.6	0	-	28.1				
HCM Lane LOS	C	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	1.6	0.3	-	-	0	-	-	4.5				




HCM 6th TWSC  
1: Penrith Road & E. 38th Avenue

2030 Total  
AM Peak

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	23	10	23	40	5	10	8	14	10	15	10
Future Vol, veh/h	5	23	10	23	40	5	10	8	14	10	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	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	25	11	25	43	5	11	9	15	11	16	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	36	0	0	150	139	31	149	142	46
Stage 1	-	-	-	-	-	-	41	41	-	96	96	-
Stage 2	-	-	-	-	-	-	109	98	-	53	46	-
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	1559	-	-	1575	-	-	818	752	1043	819	749	1023
Stage 1	-	-	-	-	-	-	974	861	-	911	815	-
Stage 2	-	-	-	-	-	-	896	814	-	960	857	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1575	-	-	784	738	1043	788	735	1023
Mov Cap-2 Maneuver	-	-	-	-	-	-	784	738	-	788	735	-
Stage 1	-	-	-	-	-	-	971	858	-	908	802	-
Stage 2	-	-	-	-	-	-	855	801	-	934	854	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			2.5			9.3			9.6		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	864	1559	-	-	1575	-	-	816				
HCM Lane V/C Ratio	0.04	0.003	-	-	0.016	-	-	0.047				
HCM Control Delay (s)	9.3	7.3	0	-	7.3	0	-	9.6				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

HCM 6th TWSC  
2: Internal Collector & E. 38th Avenue

2030 Total  
AM Peak

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	7	2	54	14	7
Future Vol, veh/h	42	7	2	54	14	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	8	2	59	15	8

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	54	0	113
Stage 1	-	-	-	-	50
Stage 2	-	-	-	-	63
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	-	-	1551	-	884
Stage 1	-	-	-	-	972
Stage 2	-	-	-	-	960
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1551	-	883
Mov Cap-2 Maneuver	-	-	-	-	883
Stage 1	-	-	-	-	972
Stage 2	-	-	-	-	959

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	924	-	-	1551	-
HCM Lane V/C Ratio	0.025	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-






HCM 6th TWSC  
3: Site Access & E. 38th Avenue

2030 Total  
AM Peak

Intersection

Int Delay, s/veh 3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	7	15	37	19	35
Future Vol, veh/h	42	7	15	37	19	35
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	46	8	16	40	21	38

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	54
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	-	-	1551
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1551
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	957	-	-	1551	-
HCM Lane V/C Ratio	0.061	-	-	0.011	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	60	12	27	35	3	15	10	51	3	28	3
Future Vol, veh/h	3	60	12	27	35	3	15	10	51	3	28	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	65	13	29	38	3	16	11	55	3	30	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	129	136	32	148	110	39	33	0	0	66	0	0
Stage 1	38	38	-	71	71	-	-	-	-	-	-	-
Stage 2	91	98	-	77	39	-	-	-	-	-	-	-
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	844	755	1042	820	780	1033	1579	-	-	1536	-	-
Stage 1	977	863	-	939	836	-	-	-	-	-	-	-
Stage 2	916	814	-	932	862	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	802	745	1042	748	770	1033	1579	-	-	1536	-	-
Mov Cap-2 Maneuver	802	745	-	748	770	-	-	-	-	-	-	-
Stage 1	966	861	-	929	827	-	-	-	-	-	-	-
Stage 2	862	805	-	849	860	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.1		10.1		1.4		0.6					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1579	-	-	783	770	1536	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.104	0.092	0.002	-	-				
HCM Control Delay (s)	7.3	0	-	10.1	10.1	7.3	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0	-	-				

HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue

2030 Total  
AM Peak

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	5	1	109	1	1	1	60	100	1	1	195	5
Future Vol, veh/h	5	1	109	1	1	1	60	100	1	1	195	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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	118	1	1	1	65	109	1	1	212	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	455	454	212	515	458	109	217	0	0	110	0	0
Stage 1	214	214	-	239	239	-	-	-	-	-	-	-
Stage 2	241	240	-	276	219	-	-	-	-	-	-	-
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	515	502	828	470	499	945	1353	-	-	1480	-	-
Stage 1	788	725	-	764	708	-	-	-	-	-	-	-
Stage 2	762	707	-	730	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	494	477	828	387	475	945	1353	-	-	1480	-	-
Mov Cap-2 Maneuver	494	477	-	387	475	-	-	-	-	-	-	-
Stage 1	750	724	-	727	674	-	-	-	-	-	-	-
Stage 2	723	673	-	624	721	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.3		11.9		2.9		0	
HCM LOS	B		B					




Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1353	-	-	799	522	1480	-
HCM Lane V/C Ratio	0.048	-	-	0.156	0.006	0.001	-
HCM Control Delay (s)	7.8	-	-	10.3	11.9	7.4	-
HCM Lane LOS	A	-	-	B	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0	0	-

HCM 6th TWSC  
6: Internal Collector & Site Access

2030 Total  
AM Peak

Intersection

Int Delay, s/veh 4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	7	14	8	3	6
Future Vol, veh/h	15	7	14	8	3	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	16	8	15	9	3	7




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	33	20	0
Stage 1	20	-	-
Stage 2	13	-	-
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	980	1058	-
Stage 1	1003	-	-
Stage 2	1010	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	978	1058	-
Mov Cap-2 Maneuver	978	-	-
Stage 1	1003	-	-
Stage 2	1008	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1002	1591
HCM Lane V/C Ratio	-	-	0.024	0.002
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th TWSC  
7: 1st Street & Site Access




2030 Total  
AM Peak

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	10	3	71	63	4
Future Vol, veh/h	7	10	3	71	63	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	3	77	68	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	153	70	72	0	-	0
Stage 1	70	-	-	-	-	-
Stage 2	83	-	-	-	-	-
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	839	993	1528	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	837	993	1528	-	-	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1528	-	922	-	-	
HCM Lane V/C Ratio	0.002	-	0.02	-	-	
HCM Control Delay (s)	7.4	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	






HCM 6th TWSC  
8: 1st Street & Site Access

2030 Total  
AM Peak

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	10	3	67	69	4
Future Vol, veh/h	7	10	3	67	69	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	3	73	75	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	156	77	79	0	-	0
Stage 1	77	-	-	-	-	-
Stage 2	79	-	-	-	-	-
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	835	984	1519	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	944	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	833	984	1519	-	-	-
Mov Cap-2 Maneuver	833	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	944	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1519	-	916	-	-	
HCM Lane V/C Ratio	0.002	-	0.02	-	-	
HCM Control Delay (s)	7.4	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
9: 1st Street & Site Access

2030 Total  
AM Peak

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	10	4	63	75	4
Future Vol, veh/h	7	10	4	63	75	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	4	68	82	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	160	84	86	0	-	0
Stage 1	84	-	-	-	-	-
Stage 2	76	-	-	-	-	-
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	831	975	1510	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	829	975	1510	-	-	-
Mov Cap-2 Maneuver	829	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1510	-	909	-	-	
HCM Lane V/C Ratio	0.003	-	0.02	-	-	
HCM Control Delay (s)	7.4	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	





HCM 6th TWSC  
10: Penrith Road & Truman Avenue

2030 Total  
AM Peak

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	0	31	25	0	48
Future Vol, veh/h	65	0	31	25	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	71	0	34	27	0	52
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	100	48	0	0	61	0
Stage 1	48	-	-	-	-	-
Stage 2	52	-	-	-	-	-
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	899	1021	-	-	1542	-
Stage 1	974	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	899	1021	-	-	1542	-
Mov Cap-2 Maneuver	899	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	899		1542	-	
HCM Lane V/C Ratio	-	0.079		-	-	
HCM Control Delay (s)	-	9.3		0	-	
HCM Lane LOS	-	A		A	-	
HCM 95th %tile Q(veh)	-	0.3		0	-	





HCM 6th TWSC  
11: Internal Collector & Truman Avenue

2030 Total  
AM Peak

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	25	0	50	65	9	0	13	16	4	17	0
Future Vol, veh/h	0	25	0	50	65	9	0	13	16	4	17	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	27	0	54	71	10	0	14	17	4	18	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	89	57	18	63	49	23	18	0	0	31	0	0
Stage 1	26	26	-	23	23	-	-	-	-	-	-	-
Stage 2	63	31	-	40	26	-	-	-	-	-	-	-
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	896	834	1061	932	843	1054	1599	-	-	1582	-	-
Stage 1	992	874	-	995	876	-	-	-	-	-	-	-
Stage 2	948	869	-	975	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	829	831	1061	907	840	1054	1599	-	-	1582	-	-
Mov Cap-2 Maneuver	829	831	-	907	840	-	-	-	-	-	-	-
Stage 1	992	871	-	995	876	-	-	-	-	-	-	-
Stage 2	863	869	-	942	871	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.5		9.8			0			1.4			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1599	-	-	831	879	1582	-	-				
HCM Lane V/C Ratio	-	-	-	0.033	0.153	0.003	-	-				
HCM Control Delay (s)	0	-	-	9.5	9.8	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.5	0	-	-				

HCM 6th TWSC  
12: 1st Street & Truman Avenue




2030 Total  
AM Peak

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	18	8	0	3	8	43	9	3	77	3
Future Vol, veh/h	20	0	18	8	0	3	8	43	9	3	77	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	20	9	0	3	9	47	10	3	84	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	164	167	86	172	163	52	87	0	0	57	0	0
Stage 1	92	92	-	70	70	-	-	-	-	-	-	-
Stage 2	72	75	-	102	93	-	-	-	-	-	-	-
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	801	726	973	791	729	1016	1509	-	-	1547	-	-
Stage 1	915	819	-	940	837	-	-	-	-	-	-	-
Stage 2	938	833	-	904	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	794	720	973	770	723	1016	1509	-	-	1547	-	-
Mov Cap-2 Maneuver	794	720	-	770	723	-	-	-	-	-	-	-
Stage 1	910	817	-	934	832	-	-	-	-	-	-	-
Stage 2	929	828	-	884	816	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.3		9.4		1		0.3					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1509	-	-	870	824	1547	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.047	0.015	0.002	-	-				
HCM Control Delay (s)	7.4	0	-	9.3	9.4	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-				



HCM 6th TWSC  
13: Internal Collector & Site Access

2030 Total  
AM Peak

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	5	24	8	2	65
Future Vol, veh/h	25	5	24	8	2	65
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	5	26	9	2	71







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	106	31	0
Stage 1	31	-	-
Stage 2	75	-	-
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	892	1043	-
Stage 1	992	-	-
Stage 2	948	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	891	1043	-
Mov Cap-2 Maneuver	891	-	-
Stage 1	992	-	-
Stage 2	947	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	913	1576
HCM Lane V/C Ratio	-	-	0.036	0.001
HCM Control Delay (s)	-	-	9.1	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0









HCM 6th TWSC  
14: Penrith Road & Lincoln Avenue




2030 Total  
AM Peak

Intersection							
Int Delay, s/veh	4.3						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Vol, veh/h	145	5	51	75	10	103	
Future Vol, veh/h	145	5	51	75	10	103	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	75	0	-	150	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	158	5	55	82	11	112	
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	189	55	0	0	137	0	
Stage 1	55	-	-	-	-	-	
Stage 2	134	-	-	-	-	-	
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	800	1012	-	-	1447	-	
Stage 1	968	-	-	-	-	-	
Stage 2	892	-	-	-	-	-	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	794	1012	-	-	1447	-	
Mov Cap-2 Maneuver	794	-	-	-	-	-	
Stage 1	968	-	-	-	-	-	
Stage 2	885	-	-	-	-	-	
Approach	WB	NB		SB			
HCM Control Delay, s	10.6	0		0.7			
HCM LOS	B						
Minor Lane/Major Mvmt		NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)		-	-	794	1012	1447	-
HCM Lane V/C Ratio		-	-	0.198	0.005	0.008	-
HCM Control Delay (s)		-	-	10.7	8.6	7.5	-
HCM Lane LOS		-	-	B	A	A	-
HCM 95th %tile Q(veh)		-	-	0.7	0	0	-

HCM 6th TWSC  
15: Internal Collector & Lincoln Avenue

2030 Total  
AM Peak

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	18	5	38	30	5	5	20	18	10	55	35
Future Vol, veh/h	12	18	5	38	30	5	5	20	18	10	55	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	13	20	5	41	33	5	5	22	20	11	60	38
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	162	153	79	156	162	32	98	0	0	42	0	0
Stage 1	101	101	-	42	42	-	-	-	-	-	-	-
Stage 2	61	52	-	114	120	-	-	-	-	-	-	-
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	803	739	981	810	730	1042	1495	-	-	1567	-	-
Stage 1	905	811	-	972	860	-	-	-	-	-	-	-
Stage 2	950	852	-	891	796	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	765	732	981	783	723	1042	1495	-	-	1567	-	-
Mov Cap-2 Maneuver	765	732	-	783	723	-	-	-	-	-	-	-
Stage 1	902	805	-	969	857	-	-	-	-	-	-	-
Stage 2	906	849	-	858	790	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.8			9.9			0.9			0.7		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1495	-	-	765	775	783	756	1567	-	-		
HCM Lane V/C Ratio	0.004	-	-	0.017	0.032	0.053	0.05	0.007	-	-		
HCM Control Delay (s)	7.4	-	-	9.8	9.8	9.9	10	7.3	-	-		
HCM Lane LOS	A	-	-	A	A	A	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.2	0.2	0	-	-		

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	15	15	10	25	53
Future Vol, veh/h	25	15	15	10	25	53
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	27	16	16	11	27	58
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	27	0	-	0	92	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	70	-
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	1587	-	-	-	908	1055
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1587	-	-	-	893	1055
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	953	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.6	0		8.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1587	-	-	-	997	
HCM Lane V/C Ratio	0.017	-	-	-	0.085	
HCM Control Delay (s)	7.3	0	-	-	8.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th TWSC  
17: 1st Street & Lincoln Avenue







2030 Total  
AM Peak

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	1	5	33	45	10	9	14	50	30	12	90	1
Future Vol, veh/h	1	5	33	45	10	9	14	50	30	12	90	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	5	36	49	11	10	15	54	33	13	98	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	236	242	99	246	226	71	99	0	0	87	0	0
Stage 1	125	125	-	101	101	-	-	-	-	-	-	-
Stage 2	111	117	-	145	125	-	-	-	-	-	-	-
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	718	660	957	708	673	991	1494	-	-	1509	-	-
Stage 1	879	792	-	905	811	-	-	-	-	-	-	-
Stage 2	894	799	-	858	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	691	647	957	667	660	991	1494	-	-	1509	-	-
Mov Cap-2 Maneuver	691	647	-	667	660	-	-	-	-	-	-	-
Stage 1	869	785	-	895	802	-	-	-	-	-	-	-
Stage 2	864	790	-	813	785	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.2		10.7			1.1			0.9			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1494	-	-	893	698	1509	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.047	0.1	0.009	-	-				
HCM Control Delay (s)	7.4	0	-	9.2	10.7	7.4	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-				



HCM 6th TWSC  
18: Penrith Road & W. Palmer Avenue

2030 Total  
AM Peak







Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	20	106	57	35	213
Future Vol, veh/h	109	20	106	57	35	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	118	22	115	62	38	232
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	423	115	0	0	177	0
Stage 1	115	-	-	-	-	-
Stage 2	308	-	-	-	-	-
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	588	937	-	-	1399	-
Stage 1	910	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	572	937	-	-	1399	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.3	0	1.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 572 937 1399	-	-		
HCM Lane V/C Ratio	-	- 0.207 0.023 0.027	-	-		
HCM Control Delay (s)	-	- 12.9 8.9 7.6	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.8 0.1 0.1	-	-		

HCM 6th TWSC  
19: W. Palmer Avenue & Internal Collector

2030 Total  
AM Peak

Intersection





Int Delay, s/veh 4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	107	124	33	78	70
Future Vol, veh/h	30	107	124	33	78	70
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	-	-	150	75	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	33	116	135	36	85	76

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	171	0	0
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	1406	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1406	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1406	-	-	-	660	914
HCM Lane V/C Ratio	0.023	-	-	-	0.128	0.083
HCM Control Delay (s)	7.6	-	-	-	11.3	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.3

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	148	138	48	91	79
Future Vol, veh/h	47	148	138	48	91	79
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	51	161	150	52	99	86






Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	202	0	0	439	176
Stage 1	-	-	-	176	-
Stage 2	-	-	-	263	-
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	1370	-	-	575	867
Stage 1	-	-	-	855	-
Stage 2	-	-	-	781	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1370	-	-	554	867
Mov Cap-2 Maneuver	-	-	-	554	-
Stage 1	-	-	-	823	-
Stage 2	-	-	-	781	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1370	-	-	-	666
HCM Lane V/C Ratio	0.037	-	-	-	0.277
HCM Control Delay (s)	7.7	-	-	-	12.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue

2030 Total  
AM Peak

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	164	70	210	180	48
Future Vol, veh/h	60	164	70	210	180	48
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	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	178	76	228	196	52











Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	602	222	248
Stage 1	222	-	-
Stage 2	380	-	-
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	463	818	1318
Stage 1	815	-	-
Stage 2	691	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	436	818	1318
Mov Cap-2 Maneuver	436	-	-
Stage 1	768	-	-
Stage 2	691	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1318	-	663	-	-
HCM Lane V/C Ratio	0.058	-	0.367	-	-
HCM Control Delay (s)	7.9	-	13.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.7	-	-

HCM 6th TWSC  
22: Penrith Road & E. Colfax Avenue








2030 Total  
AM Peak

Intersection												
Int Delay, s/veh	34.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	235	50	20	225	20	150	43	45	35	55	232
Future Vol, veh/h	100	235	50	20	225	20	150	43	45	35	55	232
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	255	54	22	245	22	163	47	49	38	60	252
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	267	0	0	309	0	0	929	784	255	837	816	245
Stage 1	-	-	-	-	-	-	473	473	-	289	289	-
Stage 2	-	-	-	-	-	-	456	311	-	548	527	-
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	1297	-	-	1252	-	-	248	325	784	286	311	794
Stage 1	-	-	-	-	-	-	572	558	-	719	673	-
Stage 2	-	-	-	-	-	-	584	658	-	521	528	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1297	-	-	1252	-	-	~ 131	293	784	218	280	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 131	293	-	218	280	-
Stage 1	-	-	-	-	-	-	524	511	-	659	661	-
Stage 2	-	-	-	-	-	-	356	646	-	407	484	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.1			0.6			146.5			18.7		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	131	431	1297	-	-	1252	-	-	218	587		
HCM Lane V/C Ratio	1.245	0.222	0.084	-	-	0.017	-	-	0.175	0.531		
HCM Control Delay (s)	223.2	15.7	8	-	-	7.9	-	-	25	17.9		
HCM Lane LOS	F	C	A	-	-	A	-	-	D	C		
HCM 95th %tile Q(veh)	10.1	0.8	0.3	-	-	0.1	-	-	0.6	3.1		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			



HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

2030 Total  
AM Peak

Intersection												
Int Delay, s/veh	14.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	65	10	10	125	60	10	190	10	65	154	90
Future Vol, veh/h	90	65	10	10	125	60	10	190	10	65	154	90
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	285	-	-	200	-	-	-	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	71	11	11	136	65	11	207	11	71	167	98

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	201	0	0	82	0	0	596	496	77	573	469	169
Stage 1	-	-	-	-	-	-	273	273	-	191	191	-
Stage 2	-	-	-	-	-	-	323	223	-	382	278	-
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	1371	-	-	1515	-	-	415	475	984	430	492	875
Stage 1	-	-	-	-	-	-	733	684	-	811	742	-
Stage 2	-	-	-	-	-	-	689	719	-	640	680	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1371	-	-	1515	-	-	248	438	984	253	454	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	248	438	-	253	454	-
Stage 1	-	-	-	-	-	-	681	635	-	753	737	-
Stage 2	-	-	-	-	-	-	470	714	-	397	632	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.3			0.4			22.1			24.9		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	434	1371	-	-	1515	-	-	367	875
HCM Lane V/C Ratio	0.526	0.071	-	-	0.007	-	-	0.649	0.112
HCM Control Delay (s)	22.1	7.8	-	-	7.4	-	-	31.2	9.6
HCM Lane LOS	C	A	-	-	A	-	-	D	A
HCM 95th %tile Q(veh)	3	0.2	-	-	0	-	-	4.4	0.4

HCM 6th TWSC  
1: Penrith Road & E. 38th Avenue

2030 Total  
PM Peak




Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	46	10	17	34	10	10	15	22	5	8	5
Future Vol, veh/h	10	46	10	17	34	10	10	15	22	5	8	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	50	11	18	37	11	11	16	24	5	9	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	61	0	0	164	162	56	177	162	43
Stage 1	-	-	-	-	-	-	78	78	-	79	79	-
Stage 2	-	-	-	-	-	-	86	84	-	98	83	-
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	1559	-	-	1542	-	-	801	730	1011	785	730	1027
Stage 1	-	-	-	-	-	-	931	830	-	930	829	-
Stage 2	-	-	-	-	-	-	922	825	-	908	826	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1559	-	-	1542	-	-	778	716	1011	743	716	1027
Mov Cap-2 Maneuver	-	-	-	-	-	-	778	716	-	743	716	-
Stage 1	-	-	-	-	-	-	924	824	-	923	819	-
Stage 2	-	-	-	-	-	-	896	815	-	863	820	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			2.1			9.5			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	846	1559	-	-	1542	-	-	790				
HCM Lane V/C Ratio	0.06	0.007	-	-	0.012	-	-	0.025				
HCM Control Delay (s)	9.5	7.3	0	-	7.4	0	-	9.7				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

HCM 6th TWSC  
2: Internal Collector & E. 38th Avenue

2030 Total  
PM Peak

Intersection

Int Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	60	15	7	52	9	3
Future Vol, veh/h	60	15	7	52	9	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	16	8	57	10	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	81
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	-	-	1517
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1517
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.2
HCM LOS			A




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	874	-	-	1517	-
HCM Lane V/C Ratio	0.015	-	-	0.005	-
HCM Control Delay (s)	9.2	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC  
3: Site Access & E. 38th Avenue

2030 Total  
PM Peak

Intersection

Int Delay, s/veh 3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	43	20	40	47	12	25
Future Vol, veh/h	43	20	40	47	12	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	22	43	51	13	27

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	69
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	-	-	1532
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1532
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	917	-	-	1532	-
HCM Lane V/C Ratio	0.044	-	-	0.028	-
HCM Control Delay (s)	9.1	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2030 Total  
PM Peak

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	52	11	50	68	3	17	30	39	3	22	3
Future Vol, veh/h	3	52	11	50	68	3	17	30	39	3	22	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	57	12	54	74	3	18	33	42	3	24	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	161	143	26	156	123	54	27	0	0	75	0	0
Stage 1	32	32	-	90	90	-	-	-	-	-	-	-
Stage 2	129	111	-	66	33	-	-	-	-	-	-	-
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	804	748	1050	810	767	1013	1587	-	-	1524	-	-
Stage 1	984	868	-	917	820	-	-	-	-	-	-	-
Stage 2	875	804	-	945	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	734	738	1050	746	756	1013	1587	-	-	1524	-	-
Mov Cap-2 Maneuver	734	738	-	746	756	-	-	-	-	-	-	-
Stage 1	972	866	-	906	810	-	-	-	-	-	-	-
Stage 2	783	794	-	872	866	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.1		10.8		1.4		0.8					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1587	-	-	776	757	1524	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.092	0.174	0.002	-	-				
HCM Control Delay (s)	7.3	0	-	10.1	10.8	7.4	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.6	0	-	-				



HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue

2030 Total  
PM Peak




Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↱	↰	↱	↱	↰	↱
Traffic Vol, veh/h	5	1	89	1	1	1	115	220	1	1	170	5
Future Vol, veh/h	5	1	89	1	1	1	115	220	1	1	170	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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	97	1	1	1	125	239	1	1	185	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	678	677	185	728	681	239	190	0	0	240	0	0
Stage 1	187	187	-	489	489	-	-	-	-	-	-	-
Stage 2	491	490	-	239	192	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	366	375	857	339	373	800	1384	-	-	1327	-	-
Stage 1	815	745	-	561	549	-	-	-	-	-	-	-
Stage 2	559	549	-	764	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	339	341	857	279	339	800	1384	-	-	1327	-	-
Mov Cap-2 Maneuver	339	341	-	279	339	-	-	-	-	-	-	-
Stage 1	742	744	-	511	500	-	-	-	-	-	-	-
Stage 2	507	500	-	676	741	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.3		14.4			2.7			0			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1384	-	-	782	385	1327	-	-				
HCM Lane V/C Ratio	0.09	-	-	0.132	0.008	0.001	-	-				
HCM Control Delay (s)	7.9	-	-	10.3	14.4	7.7	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0	0	-	-				

HCM 6th TWSC  
6: Internal Collector & Site Access

2030 Total  
PM Peak

Intersection

Int Delay, s/veh 3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	4	8	20	7	15
Future Vol, veh/h	15	4	8	20	7	15
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	4	9	22	8	16




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	52	20	0
Stage 1	20	-	-
Stage 2	32	-	-
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	957	1058	-
Stage 1	1003	-	-
Stage 2	991	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	952	1058	-
Mov Cap-2 Maneuver	952	-	-
Stage 1	1003	-	-
Stage 2	986	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1582
HCM Lane V/C Ratio	-	-	0.021	0.005
HCM Control Delay (s)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0




HCM 6th TWSC  
7: 1st Street & Site Access

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	6	10	85	74	8
Future Vol, veh/h	5	6	10	85	74	8
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	7	11	92	80	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	199	85	89	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	114	-	-	-	-	-
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	974	1506	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	784	974	1506	-	-	-
Mov Cap-2 Maneuver	784	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	0.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1506	-	877	-	-	
HCM Lane V/C Ratio	0.007	-	0.014	-	-	
HCM Control Delay (s)	7.4	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC  
8: 1st Street & Site Access

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	7	10	95	72	8
Future Vol, veh/h	5	7	10	95	72	8
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	8	11	103	78	9




Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	208	83	87	0	-	0
Stage 1	83	-	-	-	-	-
Stage 2	125	-	-	-	-	-
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	780	976	1509	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	774	976	1509	-	-	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1509	-	880	-	-
HCM Lane V/C Ratio	0.007	-	0.015	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
9: 1st Street & Site Access

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	7	10	95	70	9
Future Vol, veh/h	5	7	10	95	70	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	5	8	11	103	76	10




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	206	81	86
Stage 1	81	-	-
Stage 2	125	-	-
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	782	979	1510
Stage 1	942	-	-
Stage 2	901	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	776	979	1510
Mov Cap-2 Maneuver	776	-	-
Stage 1	934	-	-
Stage 2	901	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1510	-	883	-	-
HCM Lane V/C Ratio	0.007	-	0.015	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
10: Penrith Road & Truman Avenue

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	45	0	49	70	0	37
Future Vol, veh/h	45	0	49	70	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	0	53	76	0	40
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	131	91	0	0	129	0
Stage 1	91	-	-	-	-	-
Stage 2	40	-	-	-	-	-
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	863	967	-	-	1457	-
Stage 1	933	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	863	967	-	-	1457	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	863		1457	-	
HCM Lane V/C Ratio	-	0.057		-	-	
HCM Control Delay (s)	-	9.4		0	-	
HCM Lane LOS	-	A		A	-	
HCM 95th %tile Q(veh)	-	0.2		0	-	



HCM 6th TWSC  
11: Internal Collector & Truman Avenue

2030 Total  
PM Peak

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	70	0	30	45	5	0	23	50	10	20	0
Future Vol, veh/h	0	70	0	30	45	5	0	23	50	10	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	76	0	33	49	5	0	25	54	11	22	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	123	123	22	134	96	52	22	0	0	79	0	0
Stage 1	44	44	-	52	52	-	-	-	-	-	-	-
Stage 2	79	79	-	82	44	-	-	-	-	-	-	-
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	852	767	1055	838	794	1016	1593	-	-	1519	-	-
Stage 1	970	858	-	961	852	-	-	-	-	-	-	-
Stage 2	930	829	-	926	858	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	803	762	1055	770	788	1016	1593	-	-	1519	-	-
Mov Cap-2 Maneuver	803	762	-	770	788	-	-	-	-	-	-	-
Stage 1	970	852	-	961	852	-	-	-	-	-	-	-
Stage 2	872	829	-	837	852	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.2		10.1			0			2.5			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1593	-	-	762	792	1519	-	-				
HCM Lane V/C Ratio	-	-	-	0.1	0.11	0.007	-	-				
HCM Control Delay (s)	0	-	-	10.2	10.1	7.4	0	-				
HCM Lane LOS	A	-	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0	-	-				




HCM 6th TWSC  
12: 1st Street & Truman Avenue

2030 Total  
PM Peak

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	0	14	10	0	4	20	86	7	4	51	17
Future Vol, veh/h	16	0	14	10	0	4	20	86	7	4	51	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	15	11	0	4	22	93	8	4	55	18
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	215	217	64	221	222	97	73	0	0	101	0	0
Stage 1	72	72	-	141	141	-	-	-	-	-	-	-
Stage 2	143	145	-	80	81	-	-	-	-	-	-	-
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	742	681	1000	735	677	959	1527	-	-	1491	-	-
Stage 1	938	835	-	862	780	-	-	-	-	-	-	-
Stage 2	860	777	-	929	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	729	669	1000	714	665	959	1527	-	-	1491	-	-
Mov Cap-2 Maneuver	729	669	-	714	665	-	-	-	-	-	-	-
Stage 1	924	832	-	849	768	-	-	-	-	-	-	-
Stage 2	843	765	-	912	826	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.5		9.8			1.3			0.4			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1527	-	-	835	770	1491	-	-				
HCM Lane V/C Ratio	0.014	-	-	0.039	0.02	0.003	-	-				
HCM Control Delay (s)	7.4	0	-	9.5	9.8	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

HCM 6th TWSC  
13: Internal Collector & Site Access

2030 Total  
PM Peak







Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	3	70	25	5	45
Future Vol, veh/h	15	3	70	25	5	45
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	3	76	27	5	49
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	149	90	0	0	103	0
Stage 1	90	-	-	-	-	-
Stage 2	59	-	-	-	-	-
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	843	968	-	-	1489	-
Stage 1	934	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	840	968	-	-	1489	-
Mov Cap-2 Maneuver	840	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		0.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 859		1489	-	
HCM Lane V/C Ratio	-	- 0.023		0.004	-	
HCM Control Delay (s)	-	- 9.3		7.4	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	

HCM 6th TWSC  
14: Penrith Road & Lincoln Avenue

2030 Total  
PM Peak

Intersection

Int Delay, s/veh 2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	10	109	140	10	72
Future Vol, veh/h	105	10	109	140	10	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	114	11	118	152	11	78









Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	218	118	0
Stage 1	118	-	-
Stage 2	100	-	-
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	770	934	-
Stage 1	907	-	-
Stage 2	924	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	763	934	-
Mov Cap-2 Maneuver	763	-	-
Stage 1	907	-	-
Stage 2	916	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	763	934
HCM Lane V/C Ratio	-	-	0.15	0.012
HCM Control Delay (s)	-	-	10.5	8.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0




HCM 6th TWSC  
15: Internal Collector & Lincoln Avenue

2030 Total  
PM Peak

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	35	5	30	25	10	10	60	44	5	35	25
Future Vol, veh/h	35	35	5	30	25	10	10	60	44	5	35	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	38	38	5	33	27	11	11	65	48	5	38	27
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	192	197	52	194	186	89	65	0	0	113	0	0
Stage 1	62	62	-	111	111	-	-	-	-	-	-	-
Stage 2	130	135	-	83	75	-	-	-	-	-	-	-
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	768	699	1016	765	708	969	1537	-	-	1476	-	-
Stage 1	949	843	-	894	804	-	-	-	-	-	-	-
Stage 2	874	785	-	925	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	731	692	1016	723	701	969	1537	-	-	1476	-	-
Mov Cap-2 Maneuver	731	692	-	723	701	-	-	-	-	-	-	-
Stage 1	942	840	-	888	798	-	-	-	-	-	-	-
Stage 2	829	780	-	875	831	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.3			10.1			0.6			0.6		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1537	-	-	731	721	723	761	1476	-	-		
HCM Lane V/C Ratio	0.007	-	-	0.052	0.06	0.045	0.05	0.004	-	-		
HCM Control Delay (s)	7.4	-	-	10.2	10.3	10.2	10	7.4	-	-		
HCM Lane LOS	A	-	-	B	B	B	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	0.2	0	-	-		

HCM 6th TWSC  
16: Lincoln Avenue & Site Access

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	20	15	27	17	40
Future Vol, veh/h	69	20	15	27	17	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	-	-	-	-	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	75	22	16	29	18	43
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	45	0	-	0	203	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	172	-
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	1563	-	-	-	786	1043
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1563	-	-	-	747	1043
Mov Cap-2 Maneuver	-	-	-	-	747	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	858	-
Approach	EB	WB		SB		
HCM Control Delay, s	5.8	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1563	-	-	-	933	
HCM Lane V/C Ratio	0.048	-	-	-	0.066	
HCM Control Delay (s)	7.4	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	









HCM 6th TWSC  
17: 1st Street & Lincoln Avenue

2030 Total  
PM Peak

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	10	25	28	5	13	36	99	15	7	68	1
Future Vol, veh/h	1	10	25	28	5	13	36	99	15	7	68	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	11	27	30	5	14	39	108	16	8	74	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	295	293	75	304	285	116	75	0	0	124	0	0
Stage 1	91	91	-	194	194	-	-	-	-	-	-	-
Stage 2	204	202	-	110	91	-	-	-	-	-	-	-
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	657	618	986	648	624	936	1524	-	-	1463	-	-
Stage 1	916	820	-	808	740	-	-	-	-	-	-	-
Stage 2	798	734	-	895	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	626	597	986	605	603	936	1524	-	-	1463	-	-
Mov Cap-2 Maneuver	626	597	-	605	603	-	-	-	-	-	-	-
Stage 1	890	815	-	785	719	-	-	-	-	-	-	-
Stage 2	758	713	-	854	815	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.6		10.8		1.8		0.7					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1524	-	-	824	672	1463	-	-				
HCM Lane V/C Ratio	0.026	-	-	0.047	0.074	0.005	-	-				
HCM Control Delay (s)	7.4	0	-	9.6	10.8	7.5	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-				







HCM 6th TWSC  
18: Penrith Road & W. Palmer Avenue

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	35	229	118	25	152
Future Vol, veh/h	80	35	229	118	25	152
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	87	38	249	128	27	165
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	468	249	0	0	377	0
Stage 1	249	-	-	-	-	-
Stage 2	219	-	-	-	-	-
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	553	790	-	-	1181	-
Stage 1	792	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	540	790	-	-	1181	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12	0	1.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 540 790	1181	-		
HCM Lane V/C Ratio	-	- 0.161 0.048	0.023	-		
HCM Control Delay (s)	-	- 12.9 9.8	8.1	-		
HCM Lane LOS	-	- B A	A	-		
HCM 95th %tile Q(veh)	-	- 0.6 0.2	0.1	-		

HCM 6th TWSC  
19: W. Palmer Avenue & Internal Collector

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	78	80	113	86	48	42
Future Vol, veh/h	78	80	113	86	48	42
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	-	-	150	75	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	85	87	123	93	52	46





Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	216	0	0	380	123
Stage 1	-	-	-	123	-
Stage 2	-	-	-	257	-
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	1354	-	-	622	928
Stage 1	-	-	-	902	-
Stage 2	-	-	-	786	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1354	-	-	583	928
Mov Cap-2 Maneuver	-	-	-	583	-
Stage 1	-	-	-	845	-
Stage 2	-	-	-	786	-

Approach	EB	WB	SB
HCM Control Delay, s	3.9	0	10.5
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1354	-	-	-	583	928
HCM Lane V/C Ratio	0.063	-	-	-	0.089	0.049
HCM Control Delay (s)	7.8	-	-	-	11.8	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	0.2

HCM 6th TWSC  
20: W. Palmer Avenue & 1st Street

2030 Total  
PM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	93	171	106	69	58
Future Vol, veh/h	45	93	171	106	69	58
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	49	101	186	115	75	63

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	301	0	0	443	244
Stage 1	-	-	-	244	-
Stage 2	-	-	-	199	-
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	-	-	572	795
Stage 1	-	-	-	797	-
Stage 2	-	-	-	835	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1260	-	-	550	795
Mov Cap-2 Maneuver	-	-	-	550	-
Stage 1	-	-	-	766	-
Stage 2	-	-	-	835	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	12.2
HCM LOS			B






Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1260	-	-	-	640
HCM Lane V/C Ratio	0.039	-	-	-	0.216
HCM Control Delay (s)	8	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue

2030 Total  
PM Peak

Intersection

Int Delay, s/veh 5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	159	185	165	150	86
Future Vol, veh/h	34	159	185	165	150	86
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	-	75	-	-	-
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	37	173	201	179	163	93













Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	791	210	256
Stage 1	210	-	-
Stage 2	581	-	-
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	358	830	1309
Stage 1	825	-	-
Stage 2	559	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	303	830	1309
Mov Cap-2 Maneuver	303	-	-
Stage 1	698	-	-
Stage 2	559	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	4.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1309	-	635	-	-
HCM Lane V/C Ratio	0.154	-	0.33	-	-
HCM Control Delay (s)	8.2	-	13.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	1.4	-	-

HCM 6th TWSC  
22: Penrith Road & E. Colfax Avenue








2030 Total  
PM Peak

Intersection												
Int Delay, s/veh	95.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	251	335	170	45	300	40	100	56	30	25	49	158
Future Vol, veh/h	251	335	170	45	300	40	100	56	30	25	49	158
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	273	364	185	49	326	43	109	61	33	27	53	172
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	549	0	0	1468	1377	364	1474	1519	326
Stage 1	-	-	-	-	-	-	910	910	-	424	424	-
Stage 2	-	-	-	-	-	-	558	467	-	1050	1095	-
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	1190	-	-	1021	-	-	~ 106	145	681	105	119	715
Stage 1	-	-	-	-	-	-	329	353	-	608	587	-
Stage 2	-	-	-	-	-	-	514	562	-	275	290	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1190	-	-	1021	-	-	~ 34	106	681	44	87	715
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 34	106	-	44	87	-
Stage 1	-	-	-	-	-	-	254	272	-	469	559	-
Stage 2	-	-	-	-	-	-	336	535	-	157	224	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3			1			\$ 692.7			76.8		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	34		150	1190	-	-	1021	-	-	44	264	
HCM Lane V/C Ratio	3.197		0.623	0.229	-	-	0.048	-	-	0.618	0.852	
HCM Control Delay (s)	\$ 1235		62.2	8.9	-	-	8.7	-	-	174.4	65	
HCM Lane LOS	F		F	A	-	-	A	-	-	F	F	
HCM 95th %tile Q(veh)	12.6		3.4	0.9	-	-	0.2	-	-	2.3	7.1	
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			



HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

2030 Total  
PM Peak




Intersection												
Int Delay, s/veh	19.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	145	15	10	125	60	10	190	10	65	154	90
Future Vol, veh/h	100	145	15	10	125	60	10	190	10	65	154	90
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	285	-	-	200	-	-	-	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	158	16	11	136	65	11	207	11	71	167	98

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	201	0	0	174	0	0	707	607	166	684	583	169
Stage 1	-	-	-	-	-	-	384	384	-	191	191	-
Stage 2	-	-	-	-	-	-	323	223	-	493	392	-
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	1371	-	-	1403	-	-	350	411	878	363	424	875
Stage 1	-	-	-	-	-	-	639	611	-	811	742	-
Stage 2	-	-	-	-	-	-	689	719	-	558	606	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1371	-	-	1403	-	-	193	375	878	190	387	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	375	-	190	387	-
Stage 1	-	-	-	-	-	-	588	562	-	746	736	-
Stage 2	-	-	-	-	-	-	469	713	-	321	558	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.4	29.3	40.1
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	369	1371	-	-	1403	-	-	296	875
HCM Lane V/C Ratio	0.619	0.079	-	-	0.008	-	-	0.804	0.112
HCM Control Delay (s)	29.3	7.9	-	-	7.6	-	-	52.7	9.6
HCM Lane LOS	D	A	-	-	A	-	-	F	A
HCM 95th %tile Q(veh)	4	0.3	-	-	0	-	-	6.5	0.4









Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	20	15	15	25	10	15	10	10	15	25	15
Future Vol, veh/h	10	20	15	15	25	10	15	10	10	15	25	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	22	16	16	27	11	16	11	11	16	27	16
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	38	0	0	38	0	0	138	122	30	128	125	33
Stage 1	-	-	-	-	-	-	52	52	-	65	65	-
Stage 2	-	-	-	-	-	-	86	70	-	63	60	-
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	1572	-	-	1572	-	-	833	768	1044	845	765	1041
Stage 1	-	-	-	-	-	-	961	852	-	946	841	-
Stage 2	-	-	-	-	-	-	922	837	-	948	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1572	-	-	1572	-	-	787	755	1044	816	752	1041
Mov Cap-2 Maneuver	-	-	-	-	-	-	787	755	-	816	752	-
Stage 1	-	-	-	-	-	-	954	846	-	939	833	-
Stage 2	-	-	-	-	-	-	869	829	-	920	839	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.6			2.2			9.5			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	836	1572	-	-	1572	-	-	833				
HCM Lane V/C Ratio	0.046	0.007	-	-	0.01	-	-	0.072				
HCM Control Delay (s)	9.5	7.3	0	-	7.3	0	-	9.7				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2				

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	5	5	45	5	5
Future Vol, veh/h	40	5	5	45	5	5
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	43	5	5	49	5	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	48	0	105	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	59	-
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	-	-	1559	-	893	1023
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1559	-	890	1023
Mov Cap-2 Maneuver	-	-	-	-	890	-
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	961	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		8.8	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	952	-	-	1559	-	
HCM Lane V/C Ratio	0.011	-	-	0.003	-	
HCM Control Delay (s)	8.8	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue




2042 Background  
AM Peak

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	25	15	15	30	5	15	15	15	5	30	5
Future Vol, veh/h	5	25	15	15	30	5	15	15	15	5	30	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	-	-	-	-	-	-	-	-	-	-	-	-
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	27	16	16	33	5	16	16	16	5	33	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	121	110	36	123	104	24	38	0	0	32	0	0
Stage 1	46	46	-	56	56	-	-	-	-	-	-	-
Stage 2	75	64	-	67	48	-	-	-	-	-	-	-
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	854	780	1037	852	786	1052	1572	-	-	1580	-	-
Stage 1	968	857	-	956	848	-	-	-	-	-	-	-
Stage 2	934	842	-	943	855	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	814	770	1037	808	776	1052	1572	-	-	1580	-	-
Mov Cap-2 Maneuver	814	770	-	808	776	-	-	-	-	-	-	-
Stage 1	958	854	-	946	840	-	-	-	-	-	-	-
Stage 2	884	834	-	896	852	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.5		9.8			2.4			0.9			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1572	-	-	848	807	1580	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.058	0.067	0.003	-	-				
HCM Control Delay (s)	7.3	0	-	9.5	9.8	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-				







Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	35	1	1	1	40	130	1	1	245	10
Future Vol, veh/h	10	1	35	1	1	1	40	130	1	1	245	10
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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	38	1	1	1	43	141	1	1	266	11
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	497	496	266	520	506	141	277	0	0	142	0	0
Stage 1	268	268	-	227	227	-	-	-	-	-	-	-
Stage 2	229	228	-	293	279	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	483	475	773	467	469	907	1286	-	-	1441	-	-
Stage 1	738	687	-	776	716	-	-	-	-	-	-	-
Stage 2	774	715	-	715	680	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	469	459	773	432	453	907	1286	-	-	1441	-	-
Mov Cap-2 Maneuver	469	459	-	432	453	-	-	-	-	-	-	-
Stage 1	714	686	-	750	692	-	-	-	-	-	-	-
Stage 2	746	691	-	678	679	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.8		11.8			1.8			0			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1286	-	-	669	533	1441	-	-				
HCM Lane V/C Ratio	0.034	-	-	0.075	0.006	0.001	-	-				
HCM Control Delay (s)	7.9	-	-	10.8	11.8	7.5	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-				




HCM 6th TWSC  
6: Internal Collector & Site Access




2042 Background  
AM Peak




Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	50	20	5	5	5
Future Vol, veh/h	5	50	20	5	5	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	54	22	5	5	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	57	8	10	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	49	-	-	-	-	-
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	950	1074	1610	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	937	1074	1610	-	-	-
Mov Cap-2 Maneuver	937	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	5.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1610	-	1060	-	-	
HCM Lane V/C Ratio	0.014	-	0.056	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	



Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	85	10	50	60	10	90
Future Vol, veh/h	85	10	50	60	10	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	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	92	11	54	65	11	98
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	174	54	0	0	119	0
Stage 1	54	-	-	-	-	-
Stage 2	120	-	-	-	-	-
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	816	1013	-	-	1469	-
Stage 1	969	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	810	1013	-	-	1469	-
Mov Cap-2 Maneuver	810	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.9	0	0.7			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 810 1013 1469	-	-		
HCM Lane V/C Ratio	-	- 0.114 0.011 0.007	-	-		
HCM Control Delay (s)	-	- 10 8.6 7.5	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.4 0 0	-	-		







Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	50	20	15	35	20
Future Vol, veh/h	10	50	20	15	35	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	11	54	22	16	38	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	109	49	60	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	60	-	-	-	-	-
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	888	1020	1544	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	876	1020	1544	-	-	-
Mov Cap-2 Maneuver	876	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.9	4.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1544	-	993	-	-	
HCM Lane V/C Ratio	0.014	-	0.066	-	-	
HCM Control Delay (s)	7.4	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	5	40	10	5	50
Future Vol, veh/h	10	5	40	10	5	50
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	43	11	5	54
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	113	49	0	0	54	0
Stage 1	49	-	-	-	-	-
Stage 2	64	-	-	-	-	-
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	884	1020	-	-	1551	-
Stage 1	973	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	881	1020	-	-	1551	-
Mov Cap-2 Maneuver	881	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		0.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	923	1551	-	
HCM Lane V/C Ratio	-	-	0.018	0.004	-	
HCM Control Delay (s)	-	-	9	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	50	20	25	80	5
Future Vol, veh/h	10	50	20	25	80	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	11	54	22	27	87	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	161	90	92	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	71	-	-	-	-	-
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	830	968	1503	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	818	968	1503	-	-	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	3.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1503	-	939	-	-	
HCM Lane V/C Ratio	0.014	-	0.069	-	-	
HCM Control Delay (s)	7.4	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection









Int Delay, s/veh 4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	10	100	100	25	150
Future Vol, veh/h	150	10	100	100	25	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	163	11	109	109	27	163

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	326	109	0
Stage 1	109	-	-
Stage 2	217	-	-
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	668	945	-
Stage 1	916	-	-
Stage 2	819	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	655	945	-
Mov Cap-2 Maneuver	655	-	-
Stage 1	916	-	-
Stage 2	803	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	655	945
HCM Lane V/C Ratio	-	-	0.249	0.012
HCM Control Delay (s)	-	-	12.3	8.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1	0

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	10	10	5	10	5	5	15	5	10	50	75
Future Vol, veh/h	25	10	10	5	10	5	5	15	5	10	50	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	27	11	11	5	11	5	5	16	5	11	54	82

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	154	148	95	157	187	19	136	0	0	21	0	0
Stage 1	117	117	-	29	29	-	-	-	-	-	-	-
Stage 2	37	31	-	128	158	-	-	-	-	-	-	-
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	813	743	962	809	708	1059	1448	-	-	1595	-	-
Stage 1	888	799	-	988	871	-	-	-	-	-	-	-
Stage 2	978	869	-	876	767	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	793	736	962	785	701	1059	1448	-	-	1595	-	-
Mov Cap-2 Maneuver	793	736	-	785	701	-	-	-	-	-	-	-
Stage 1	885	793	-	985	868	-	-	-	-	-	-	-
Stage 2	957	866	-	848	762	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.6		9.7		1.5		0.5	
HCM LOS	A		A					







Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1448	-	-	793	834	785	790	1595	-	-
HCM Lane V/C Ratio	0.004	-	-	0.034	0.026	0.007	0.021	0.007	-	-
HCM Control Delay (s)	7.5	-	-	9.7	9.4	9.6	9.7	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	0.1	0	-	-



Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	10	10	50	15	10	5	35	35	15	45	1
Future Vol, veh/h	1	10	10	50	15	10	5	35	35	15	45	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	11	11	54	16	11	5	38	38	16	49	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	163	168	50	160	149	57	50	0	0	76	0	0
Stage 1	82	82	-	67	67	-	-	-	-	-	-	-
Stage 2	81	86	-	93	82	-	-	-	-	-	-	-
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	802	725	1018	806	743	1009	1557	-	-	1523	-	-
Stage 1	926	827	-	943	839	-	-	-	-	-	-	-
Stage 2	927	824	-	914	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	772	715	1018	779	733	1009	1557	-	-	1523	-	-
Mov Cap-2 Maneuver	772	715	-	779	733	-	-	-	-	-	-	-
Stage 1	923	818	-	940	836	-	-	-	-	-	-	-
Stage 2	896	822	-	882	818	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.4		10.1			0.5			1.8			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1557	-	-	837	793	1523	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.027	0.103	0.011	-	-				
HCM Control Delay (s)	7.3	0	-	9.4	10.1	7.4	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-				

Intersection

Int Delay, s/veh 5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	175	50	150	100	75	225
Future Vol, veh/h	175	50	150	100	75	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	190	54	163	109	82	245







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	572	163	0
Stage 1	163	-	-
Stage 2	409	-	-
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	482	882	-
Stage 1	866	-	-
Stage 2	671	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	451	882	-
Mov Cap-2 Maneuver	451	-	-
Stage 1	866	-	-
Stage 2	628	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	451	882
HCM Lane V/C Ratio	-	-	0.422	0.062
HCM Control Delay (s)	-	-	18.7	9.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.1	0.2

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	125	175	25	50	50
Future Vol, veh/h	25	125	175	25	50	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	-	-	150	75	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	136	190	27	54	54




Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	217	0	0 380 190
Stage 1	-	-	- 190 -
Stage 2	-	-	- 190 -
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	1353	-	- 622 852
Stage 1	-	-	- 842 -
Stage 2	-	-	- 842 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1353	-	- 610 852
Mov Cap-2 Maneuver	-	-	- 610 -
Stage 1	-	-	- 825 -
Stage 2	-	-	- 842 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1353	-	-	-	610	852
HCM Lane V/C Ratio	0.02	-	-	-	0.089	0.064
HCM Control Delay (s)	7.7	-	-	-	11.5	9.5
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0.2

Intersection





Int Delay, s/veh 3.3











Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	125	150	25	25	80
Future Vol, veh/h	50	125	150	25	25	80
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	54	136	163	27	27	87

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	190	0	0 421 177
Stage 1	-	-	- 177 -
Stage 2	-	-	- 244 -
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	1384	-	- 589 866
Stage 1	-	-	- 854 -
Stage 2	-	-	- 797 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1384	-	- 564 866
Mov Cap-2 Maneuver	-	-	- 564 -
Stage 1	-	-	- 818 -
Stage 2	-	-	- 797 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	10.5
HCM LOS			B





Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1384	-	-	-	768
HCM Lane V/C Ratio	0.039	-	-	-	0.149
HCM Control Delay (s)	7.7	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	100	50	225	200	50
Future Vol, veh/h	50	100	50	225	200	50
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	-	75	-	-	-
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	109	54	245	217	54
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	597	244	271	0	-	0
Stage 1	244	-	-	-	-	-
Stage 2	353	-	-	-	-	-
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	466	795	1292	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	446	795	1292	-	-	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	764	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.7	1.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1292	-	631	-	-	
HCM Lane V/C Ratio	0.042	-	0.258	-	-	
HCM Control Delay (s)	7.9	-	12.7	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1	-	-	

Intersection												
Int Delay, s/veh	445											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	150	285	80	30	275	25	240	75	80	50	125	225
Future Vol, veh/h	150	285	80	30	275	25	240	75	80	50	125	225
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	163	310	87	33	299	27	261	82	87	54	136	245
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	397	0	0	1205	1028	310	1129	1088	299
Stage 1	-	-	-	-	-	-	636	636	-	365	365	-
Stage 2	-	-	-	-	-	-	569	392	-	764	723	-
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	1234	-	-	1162	-	-	~ 161	234	730	181	216	741
Stage 1	-	-	-	-	-	-	466	472	-	654	623	-
Stage 2	-	-	-	-	-	-	507	606	-	396	431	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1234	-	-	1162	-	-	~ 38	197	730	96	182	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 38	197	-	96	182	-
Stage 1	-	-	-	-	-	-	404	410	-	568	606	-
Stage 2	-	-	-	-	-	-	~ 256	589	-	243	374	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			0.7			\$ 1740.2			102.4		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	38	316	1234	-	-	1162	-	-	96	353		
HCM Lane V/C Ratio	6.865	0.533	0.132	-	-	0.028	-	-	0.566	1.078		
HCM Control Delay (s)	\$ 2845.6	28.7	8.4	-	-	8.2	-	-	83	105.2		
HCM Lane LOS	F	D	A	-	-	A	-	-	F	F		
HCM 95th %tile Q(veh)	31	3	0.5	-	-	0.1	-	-	2.6	13.8		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			



Intersection												
Int Delay, s/veh	12.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	100	75	10	10	100	75	20	100	10	50	125	125
Future Vol, veh/h	100	75	10	10	100	75	20	100	10	50	125	125
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	109	82	11	11	109	82	22	109	11	54	136	136
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	191	0	0	93	0	0	614	519	88	538	483	150
Stage 1	-	-	-	-	-	-	306	306	-	172	172	-
Stage 2	-	-	-	-	-	-	308	213	-	366	311	-
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	1383	-	-	1501	-	-	404	461	970	454	483	896
Stage 1	-	-	-	-	-	-	704	662	-	830	756	-
Stage 2	-	-	-	-	-	-	702	726	-	653	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1383	-	-	1501	-	-	244	420	970	336	440	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	244	420	-	336	440	-
Stage 1	-	-	-	-	-	-	646	607	-	761	750	-
Stage 2	-	-	-	-	-	-	484	720	-	486	603	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.2			0.4			19.2			22.5		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	393	1383	-	-	1501	-	-	524				
HCM Lane V/C Ratio	0.36	0.079	-	-	0.007	-	-	0.622				
HCM Control Delay (s)	19.2	7.8	0	-	7.4	0	-	22.5				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.6	0.3	-	-	0	-	-	4.2				




Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	35	15	15	30	15	15	25	10	10	15	10
Future Vol, veh/h	15	35	15	15	30	15	15	25	10	10	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	38	16	16	33	16	16	27	11	11	16	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	54	0	0	165	159	46	170	159	41
Stage 1	-	-	-	-	-	-	78	78	-	73	73	-
Stage 2	-	-	-	-	-	-	87	81	-	97	86	-
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	1558	-	-	1551	-	-	800	733	1023	794	733	1030
Stage 1	-	-	-	-	-	-	931	830	-	937	834	-
Stage 2	-	-	-	-	-	-	921	828	-	910	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1551	-	-	765	717	1023	750	717	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	765	717	-	750	717	-
Stage 1	-	-	-	-	-	-	921	821	-	927	825	-
Stage 2	-	-	-	-	-	-	883	819	-	861	815	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			1.8			10			9.7		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	778	1558	-	-	1551	-	-	796				
HCM Lane V/C Ratio	0.07	0.01	-	-	0.011	-	-	0.048				
HCM Control Delay (s)	10	7.3	0	-	7.3	0	-	9.7				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

# HCM 6th TWSC 2: Internal Collector & E. 38th Avenue

2042 Background  
PM Peak

## Intersection

Int Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	5	5	55	5	5
Future Vol, veh/h	50	5	5	55	5	5
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	54	5	5	60	5	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	59
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	-	-	1545
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1545
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	931	-	-	1545	-
HCM Lane V/C Ratio	0.012	-	-	0.004	-
HCM Control Delay (s)	8.9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2042 Background  
PM Peak

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	35	15	10	40	5	15	30	15	5	15	5
Future Vol, veh/h	5	35	15	10	40	5	15	30	15	5	15	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	-	-	-	-	-	-	-	-	-	-	-	-
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	38	16	11	43	5	16	33	16	5	16	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	126	110	19	129	104	41	21	0	0	49	0	0
Stage 1	29	29	-	73	73	-	-	-	-	-	-	-
Stage 2	97	81	-	56	31	-	-	-	-	-	-	-
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	848	780	1059	844	786	1030	1595	-	-	1558	-	-
Stage 1	988	871	-	937	834	-	-	-	-	-	-	-
Stage 2	910	828	-	956	869	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	800	770	1059	792	776	1030	1595	-	-	1558	-	-
Mov Cap-2 Maneuver	800	770	-	792	776	-	-	-	-	-	-	-
Stage 1	978	868	-	928	826	-	-	-	-	-	-	-
Stage 2	849	820	-	897	866	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.6		9.9			1.8			1.5			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1595	-	-	835	797	1558	-	-				
HCM Lane V/C Ratio	0.01	-	-	0.072	0.075	0.003	-	-				
HCM Control Delay (s)	7.3	0	-	9.6	9.9	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-				

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	10	1	45	1	1	1	45	275	1	1	215	10
Future Vol, veh/h	10	1	45	1	1	1	45	275	1	1	215	10
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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	49	1	1	1	49	299	1	1	234	11




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	635	634	234	664	644	299	245	0	0	300	0	0
Stage 1	236	236	-	397	397	-	-	-	-	-	-	-
Stage 2	399	398	-	267	247	-	-	-	-	-	-	-
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	391	397	805	374	391	741	1321	-	-	1261	-	-
Stage 1	767	710	-	629	603	-	-	-	-	-	-	-
Stage 2	627	603	-	738	702	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	378	382	805	340	376	741	1321	-	-	1261	-	-
Mov Cap-2 Maneuver	378	382	-	340	376	-	-	-	-	-	-	-
Stage 1	739	709	-	606	581	-	-	-	-	-	-	-
Stage 2	602	581	-	692	701	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	13.4	1.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	659 432	1261	-	-
HCM Lane V/C Ratio	0.037	-	-	0.092 0.008	0.001	-	-
HCM Control Delay (s)	7.8	-	-	11 13.4	7.9	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3 0	0	-	-

# HCM 6th TWSC 6: Internal Collector & Site Access







2042 Background  
PM Peak

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	20	50	5	5	5
Future Vol, veh/h	5	20	50	5	5	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	22	54	5	5	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	121	8	10	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	113	-	-	-	-	-
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	874	1074	1610	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	844	1074	1610	-	-	-
Mov Cap-2 Maneuver	844	-	-	-	-	-
Stage 1	980	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	6.6		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1610	-	1018	-	-	
HCM Lane V/C Ratio	0.034	-	0.027	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	



Intersection




Int Delay, s/veh 2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	10	100	100	10	75
Future Vol, veh/h	65	10	100	100	10	75
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	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	71	11	109	109	11	82

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	213	109	0
Stage 1	109	-	-
Stage 2	104	-	-
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	775	945	-
Stage 1	916	-	-
Stage 2	920	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	769	945	-
Mov Cap-2 Maneuver	769	-	-
Stage 1	916	-	-
Stage 2	913	-	-




Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 769 945 1352	-	-
HCM Lane V/C Ratio	-	- 0.092 0.012 0.008	-	-
HCM Control Delay (s)	-	- 10.2 8.9 7.7	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.3 0 0	-	-

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	20	50	35	20	10
Future Vol, veh/h	20	20	50	35	20	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	22	22	54	38	22	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	174	28	33	0	-	0
Stage 1	28	-	-	-	-	-
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	816	1047	1579	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	787	1047	1579	-	-	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	4.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1579	-	899	-	-	
HCM Lane V/C Ratio	0.034	-	0.048	-	-	
HCM Control Delay (s)	7.4	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

Intersection

Int Delay, s/veh 1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	5	55	10	5	35
Future Vol, veh/h	15	5	55	10	5	35
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	5	60	11	5	38

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	114	66	0
Stage 1	66	-	-
Stage 2	48	-	-
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	882	998	-
Stage 1	957	-	-
Stage 2	974	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	879	998	-
Mov Cap-2 Maneuver	879	-	-
Stage 1	957	-	-
Stage 2	971	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	906	1529
HCM Lane V/C Ratio	-	-	0.024	0.004
HCM Control Delay (s)	-	-	9.1	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

# HCM 6th TWSC 13: Internal Collector & Site Access

2042 Background  
PM Peak

## Intersection

Int Delay, s/veh 3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations 

Traffic Vol, veh/h	5	20	50	80	30	10
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Future Vol, veh/h	5	20	50	80	30	10
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Stop	Stop	Free	Free	Free	Free
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RT Channelized	-	None	-	None	-	None
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Storage Length	0	-	-	-	-	-
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Veh in Median Storage, #	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	5	22	54	87	33	11
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Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	234	39	44	0	-	0
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Stage 1	39	-	-	-	-	-
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Stage 2	195	-	-	-	-	-
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Critical Hdwy	6.42	6.22	4.12	-	-	-
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Critical Hdwy Stg 1	5.42	-	-	-	-	-
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Critical Hdwy Stg 2	5.42	-	-	-	-	-
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Follow-up Hdwy	3.518	3.318	2.218	-	-	-
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Pot Cap-1 Maneuver	754	1033	1564	-	-	-
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Stage 1	983	-	-	-	-	-
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Stage 2	838	-	-	-	-	-
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Platoon blocked, %	-	-	-	-	-	-
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Mov Cap-1 Maneuver	727	1033	1564	-	-	-
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Mov Cap-2 Maneuver	727	-	-	-	-	-
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Stage 1	948	-	-	-	-	-
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Stage 2	838	-	-	-	-	-
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Approach	EB	NB	SB
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HCM Control Delay, s	8.9	2.8	0
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HCM LOS	A		
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1564	-	953	-	-
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HCM Lane V/C Ratio	0.035	-	0.029	-	-
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HCM Control Delay (s)	7.4	0	8.9	-	-
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HCM Lane LOS	A	A	A	-	-
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HCM 95th %tile Q(veh)	0.1	-	0.1	-	-
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Intersection









Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	25	175	150	15	125
Future Vol, veh/h	100	25	175	150	15	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	75	0	-	150	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	109	27	190	163	16	136

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	358	190	0
Stage 1	190	-	-
Stage 2	168	-	-
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	640	852	-
Stage 1	842	-	-
Stage 2	862	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	632	852	-
Mov Cap-2 Maneuver	632	-	-
Stage 1	842	-	-
Stage 2	851	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	632	852
HCM Lane V/C Ratio	-	-	0.172	0.032
HCM Control Delay (s)	-	-	11.9	9.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	15	5	5	10	10	10	50	5	5	20	25
Future Vol, veh/h	75	15	5	5	10	10	10	50	5	5	20	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	16	5	5	11	11	11	54	5	5	22	27

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	136	127	36	135	138	57	49	0	0	59	0	0
Stage 1	46	46	-	79	79	-	-	-	-	-	-	-
Stage 2	90	81	-	56	59	-	-	-	-	-	-	-
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	835	764	1037	836	753	1009	1558	-	-	1545	-	-
Stage 1	968	857	-	930	829	-	-	-	-	-	-	-
Stage 2	917	828	-	956	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	811	756	1037	812	745	1009	1558	-	-	1545	-	-
Mov Cap-2 Maneuver	811	756	-	812	745	-	-	-	-	-	-	-
Stage 1	961	854	-	923	823	-	-	-	-	-	-	-
Stage 2	889	822	-	930	843	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.8		9.3		1.1		0.7	
HCM LOS	A		A					







Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	811	811	812	857	1545	-	-
HCM Lane V/C Ratio	0.007	-	-	0.101	0.027	0.007	0.025	0.004	-	-
HCM Control Delay (s)	7.3	-	-	9.9	9.6	9.5	9.3	7.3	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	0.1	0	-	-



Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	15	10	30	10	15	10	50	20	10	35	1
Future Vol, veh/h	1	15	10	30	10	15	10	50	20	10	35	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	16	11	33	11	16	11	54	22	11	38	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	162	159	39	161	148	65	39	0	0	76	0	0
Stage 1	61	61	-	87	87	-	-	-	-	-	-	-
Stage 2	101	98	-	74	61	-	-	-	-	-	-	-
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	803	733	1033	804	743	999	1571	-	-	1523	-	-
Stage 1	950	844	-	921	823	-	-	-	-	-	-	-
Stage 2	905	814	-	935	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	772	723	1033	773	733	999	1571	-	-	1523	-	-
Mov Cap-2 Maneuver	772	723	-	773	733	-	-	-	-	-	-	-
Stage 1	943	838	-	915	817	-	-	-	-	-	-	-
Stage 2	872	808	-	901	838	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.5		9.8			0.9			1.6			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1571	-	-	820	815	1523	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.034	0.073	0.007	-	-				
HCM Control Delay (s)	7.3	0	-	9.5	9.8	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-				

Intersection

Int Delay, s/veh 4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	125	75	250	100	50	175
Future Vol, veh/h	125	75	250	100	50	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	136	82	272	109	54	190







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	570	272	0
Stage 1	272	-	-
Stage 2	298	-	-
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	483	767	-
Stage 1	774	-	-
Stage 2	753	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	461	767	-
Mov Cap-2 Maneuver	461	-	-
Stage 1	774	-	-
Stage 2	718	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	461	767
HCM Lane V/C Ratio	-	-	0.295	0.106
HCM Control Delay (s)	-	-	16	10.3
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1.2	0.4

Intersection




Int Delay, s/veh 2.2






Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	100	175	50	25	25
Future Vol, veh/h	50	100	175	50	25	25
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	-	-	150	75	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	109	190	54	27	27











Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	244	0	0
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	1322	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1322	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1322	-	-	-	575	852
HCM Lane V/C Ratio	0.041	-	-	-	0.047	0.032
HCM Control Delay (s)	7.8	-	-	-	11.6	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	75	150	35	20	55
Future Vol, veh/h	50	75	150	35	20	55
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	54	82	163	38	22	60
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	201	0	-	0	372	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	190	-
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	1371	-	-	-	629	861
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1371	-	-	-	603	861
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	842	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.1	0		10.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1371	-	-	-	773	
HCM Lane V/C Ratio	0.04	-	-	-	0.105	
HCM Control Delay (s)	7.7	0	-	-	10.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	125	125	175	175	75
Future Vol, veh/h	25	125	125	175	175	75
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	-	75	-	-	-
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	136	136	190	190	82
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	693	231	272	0	-	0
Stage 1	231	-	-	-	-	-
Stage 2	462	-	-	-	-	-
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	409	808	1291	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	366	808	1291	-	-	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.1	3.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1291	-	673	-	-	
HCM Lane V/C Ratio	0.105	-	0.242	-	-	
HCM Control Delay (s)	8.1	-	12.1	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.4	-	0.9	-	-	

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	200	410	270	80	370	50	160	100	50	25	125	150
Future Vol, veh/h	200	410	270	80	370	50	160	100	50	25	125	150
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	217	446	293	87	402	54	174	109	54	27	136	163
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	456	0	0	739	0	0	1633	1510	446	1684	1749	402
Stage 1	-	-	-	-	-	-	880	880	-	576	576	-
Stage 2	-	-	-	-	-	-	753	630	-	1108	1173	-
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	1105	-	-	867	-	-	~ 81	120	612	75	~ 86	648
Stage 1	-	-	-	-	-	-	342	365	-	503	502	-
Stage 2	-	-	-	-	-	-	402	475	-	255	266	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1105	-	-	867	-	-	-	~ 87	612	-	~ 62	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 87	-	-	~ 62	-
Stage 1	-	-	-	-	-	-	275	293	-	404	452	-
Stage 2	-	-	-	-	-	-	189	428	-	117	214	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.1			1.5								
HCM LOS							-			-		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	-	122	1105	-	-	867	-	-	-	122		
HCM Lane V/C Ratio	-	1.336	0.197	-	-	0.1	-	-	-	2.45		
HCM Control Delay (s)	-	263.4	9.1	-	-	9.6	-	-	-	\$ 733.6		
HCM Lane LOS	-	F	A	-	-	A	-	-	-	F		
HCM 95th %tile Q(veh)	-	10.8	0.7	-	-	0.3	-	-	-	26.4		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			



Intersection												
Int Delay, s/veh	22.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	110	150	20	10	140	65	10	125	10	75	125	100
Future Vol, veh/h	110	150	20	10	140	65	10	125	10	75	125	100
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	120	163	22	11	152	71	11	136	11	82	136	109
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	223	0	0	185	0	0	746	659	174	698	635	188
Stage 1	-	-	-	-	-	-	414	414	-	210	210	-
Stage 2	-	-	-	-	-	-	332	245	-	488	425	-
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	1346	-	-	1390	-	-	330	384	869	355	396	854
Stage 1	-	-	-	-	-	-	616	593	-	792	728	-
Stage 2	-	-	-	-	-	-	681	703	-	561	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1346	-	-	1390	-	-	186	343	869	224	353	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	343	-	224	353	-
Stage 1	-	-	-	-	-	-	554	534	-	713	721	-
Stage 2	-	-	-	-	-	-	478	697	-	372	527	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.1			0.4			24.7			54.6		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	337	1346	-	-	1390	-	-	372				
HCM Lane V/C Ratio	0.468	0.089	-	-	0.008	-	-	0.877				
HCM Control Delay (s)	24.7	7.9	0	-	7.6	0	-	54.6				
HCM Lane LOS	C	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	2.4	0.3	-	-	0	-	-	8.6				

HCM 6th TWSC  
1: Penrith Road & E. 38th Avenue

2042 Total  
AM Peak




Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	28	15	28	45	10	15	10	16	15	25	15
Future Vol, veh/h	10	28	15	28	45	10	15	10	16	15	25	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	30	16	30	49	11	16	11	17	16	27	16
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	60	0	0	46	0	0	196	180	38	189	183	55
Stage 1	-	-	-	-	-	-	60	60	-	115	115	-
Stage 2	-	-	-	-	-	-	136	120	-	74	68	-
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	1544	-	-	1562	-	-	763	714	1034	771	711	1012
Stage 1	-	-	-	-	-	-	951	845	-	890	800	-
Stage 2	-	-	-	-	-	-	867	796	-	935	838	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1544	-	-	1562	-	-	713	695	1034	734	692	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	713	695	-	734	692	-
Stage 1	-	-	-	-	-	-	944	839	-	884	784	-
Stage 2	-	-	-	-	-	-	807	780	-	901	832	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			2.5			9.7			10.1		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	805	1544	-	-	1562	-	-	770				
HCM Lane V/C Ratio	0.055	0.007	-	-	0.019	-	-	0.078				
HCM Control Delay (s)	9.7	7.3	0	-	7.4	0	-	10.1				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.3				

HCM 6th TWSC  
2: Internal Collector & E. 38th Avenue

2042 Total  
AM Peak

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	12	7	64	19	12
Future Vol, veh/h	47	12	7	64	19	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	51	13	8	70	21	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	64
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	-	-	1538
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1538
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.2
HCM LOS			A




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	901	-	-	1538	-
HCM Lane V/C Ratio	0.037	-	-	0.005	-
HCM Control Delay (s)	9.2	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC  
3: Site Access & E. 38th Avenue

2042 Total  
AM Peak

Intersection

Int Delay, s/veh 3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	7	15	52	19	35
Future Vol, veh/h	52	7	15	52	19	35
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	57	8	16	57	21	38

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	65
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	-	-	1537
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1537
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	936	-	-	1537	-
HCM Lane V/C Ratio	0.063	-	-	0.011	-
HCM Control Delay (s)	9.1	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	65	17	30	45	5	17	15	54	5	30	5
Future Vol, veh/h	5	65	17	30	45	5	17	15	54	5	30	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	-	-	-	-	-	-	-	-	-	-	-	-
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	71	18	33	49	5	18	16	59	5	33	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	155	157	36	172	130	46	38	0	0	75	0	0
Stage 1	46	46	-	82	82	-	-	-	-	-	-	-
Stage 2	109	111	-	90	48	-	-	-	-	-	-	-
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	812	735	1037	791	761	1023	1572	-	-	1524	-	-
Stage 1	968	857	-	926	827	-	-	-	-	-	-	-
Stage 2	896	804	-	917	855	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	758	724	1037	711	750	1023	1572	-	-	1524	-	-
Mov Cap-2 Maneuver	758	724	-	711	750	-	-	-	-	-	-	-
Stage 1	956	854	-	915	817	-	-	-	-	-	-	-
Stage 2	828	794	-	824	852	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.3		10.5		1.4		0.9	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	771	747	1524	-
HCM Lane V/C Ratio	0.012	-	-	0.123	0.116	0.004	-
HCM Control Delay (s)	7.3	0	-	10.3	10.5	7.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4	0	-

HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	10	1	114	1	1	1	70	130	1	1	245	10
Future Vol, veh/h	10	1	114	1	1	1	70	130	1	1	245	10
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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	124	1	1	1	76	141	1	1	266	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	563	562	266	629	572	141	277	0	0	142	0	0
Stage 1	268	268	-	293	293	-	-	-	-	-	-	-
Stage 2	295	294	-	336	279	-	-	-	-	-	-	-
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	437	436	773	395	430	907	1286	-	-	1441	-	-
Stage 1	738	687	-	715	670	-	-	-	-	-	-	-
Stage 2	713	670	-	678	680	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	416	410	773	316	404	907	1286	-	-	1441	-	-
Mov Cap-2 Maneuver	416	410	-	316	404	-	-	-	-	-	-	-
Stage 1	694	686	-	673	630	-	-	-	-	-	-	-
Stage 2	669	630	-	568	679	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.2		13.2		2.8		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1286	-	-	719 445	1441	-	-
HCM Lane V/C Ratio	0.059	-	-	0.189 0.007	0.001	-	-
HCM Control Delay (s)	8	-	-	11.2 13.2	7.5	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7 0	0	-	-






HCM 6th TWSC  
6: Internal Collector & Site Access

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	50	15	0	7	20	19	8	3	11	5
Future Vol, veh/h	5	0	50	15	0	7	20	19	8	3	11	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	-	-	-	-	-	-	-	-	-	-	-	-
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	54	16	0	8	22	21	9	3	12	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	95	95	15	118	93	26	17	0	0	30	0	0
Stage 1	21	21	-	70	70	-	-	-	-	-	-	-
Stage 2	74	74	-	48	23	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	888	795	1065	858	797	1050	1600	-	-	1583	-	-
Stage 1	998	878	-	940	837	-	-	-	-	-	-	-
Stage 2	935	833	-	965	876	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	871	782	1065	804	784	1050	1600	-	-	1583	-	-
Mov Cap-2 Maneuver	871	782	-	804	784	-	-	-	-	-	-	-
Stage 1	984	876	-	927	825	-	-	-	-	-	-	-
Stage 2	915	821	-	914	874	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	8.7		9.3		3.1		1.1					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1600	-	-	1044	869	1583	-	-				
HCM Lane V/C Ratio	0.014	-	-	0.057	0.028	0.002	-	-				
HCM Control Delay (s)	7.3	0	-	8.7	9.3	7.3	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-				




HCM 6th TWSC  
7: 1st Street & Site Access

2042 Total  
AM Peak

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	10	3	81	68	4
Future Vol, veh/h	7	10	3	81	68	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	3	88	74	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	170	76	78	0	-	0
Stage 1	76	-	-	-	-	-
Stage 2	94	-	-	-	-	-
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	820	985	1520	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	818	985	1520	-	-	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1520	-	909	-	-	
HCM Lane V/C Ratio	0.002	-	0.02	-	-	
HCM Control Delay (s)	7.4	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
8: 1st Street & Site Access

2042 Total  
AM Peak

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	10	3	77	74	4
Future Vol, veh/h	7	10	3	77	74	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	3	84	80	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	172	82	84	0	-	0
Stage 1	82	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	818	978	1513	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	816	978	1513	-	-	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1513	-	904	-	-	
HCM Lane V/C Ratio	0.002	-	0.02	-	-	
HCM Control Delay (s)	7.4	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC  
9: 1st Street & Site Access

2042 Total  
AM Peak







Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	10	4	73	80	4
Future Vol, veh/h	7	10	4	73	80	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	11	4	79	87	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	176	89	91	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	814	969	1504	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	812	969	1504	-	-	-
Mov Cap-2 Maneuver	812	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1504	-	898	-	-	
HCM Lane V/C Ratio	0.003	-	0.021	-	-	
HCM Control Delay (s)	7.4	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC  
10: Penrith Road & Truman Avenue

2042 Total  
AM Peak

Intersection

Int Delay, s/veh 4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	10	56	85	10	103
Future Vol, veh/h	150	10	56	85	10	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	163	11	61	92	11	112





Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	195	61	0
Stage 1	61	-	-
Stage 2	134	-	-
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	794	1004	-
Stage 1	962	-	-
Stage 2	892	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	788	1004	-
Mov Cap-2 Maneuver	788	-	-
Stage 1	962	-	-
Stage 2	885	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 788 1004 1428	-	-
HCM Lane V/C Ratio	-	- 0.207 0.011 0.008	-	-
HCM Control Delay (s)	-	- 10.8 8.6 7.5	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.8 0 0	-	-

HCM 6th TWSC  
11: Internal Collector & Truman Avenue

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	25	50	50	65	9	20	28	16	4	52	20
Future Vol, veh/h	10	25	50	50	65	9	20	28	16	4	52	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	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	11	27	54	54	71	10	22	30	17	4	57	22
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	199	167	68	200	170	39	79	0	0	47	0	0
Stage 1	76	76	-	83	83	-	-	-	-	-	-	-
Stage 2	123	91	-	117	87	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	760	726	995	759	723	1033	1519	-	-	1560	-	-
Stage 1	933	832	-	925	826	-	-	-	-	-	-	-
Stage 2	881	820	-	888	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	686	713	995	687	710	1033	1519	-	-	1560	-	-
Mov Cap-2 Maneuver	686	713	-	687	710	-	-	-	-	-	-	-
Stage 1	919	830	-	911	814	-	-	-	-	-	-	-
Stage 2	785	808	-	810	821	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.7		11.2			2.3			0.4			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1519	-	-	851	717	1560	-	-				
HCM Lane V/C Ratio	0.014	-	-	0.109	0.188	0.003	-	-				
HCM Control Delay (s)	7.4	0	-	9.7	11.2	7.3	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.4	0.7	0	-	-				



HCM 6th TWSC  
12: 1st Street & Truman Avenue

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	0	18	10	0	5	8	52	10	5	82	3
Future Vol, veh/h	20	0	18	10	0	5	8	52	10	5	82	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	20	11	0	5	9	57	11	5	89	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	184	187	91	192	183	63	92	0	0	68	0	0
Stage 1	101	101	-	81	81	-	-	-	-	-	-	-
Stage 2	83	86	-	111	102	-	-	-	-	-	-	-
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	777	708	967	768	711	1002	1503	-	-	1533	-	-
Stage 1	905	811	-	927	828	-	-	-	-	-	-	-
Stage 2	925	824	-	894	811	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	768	702	967	747	705	1002	1503	-	-	1533	-	-
Mov Cap-2 Maneuver	768	702	-	747	705	-	-	-	-	-	-	-
Stage 1	900	809	-	921	823	-	-	-	-	-	-	-
Stage 2	914	819	-	873	809	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		9.5		0.8		0.4	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1503	-	-	851	816	1533	-
HCM Lane V/C Ratio	0.006	-	-	0.049	0.02	0.004	-
HCM Control Delay (s)	7.4	0	-	9.4	9.5	7.4	0
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-







HCM 6th TWSC  
13: Internal Collector & Site Access

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	50	25	0	5	20	49	8	2	145	5
Future Vol, veh/h	10	0	50	25	0	5	20	49	8	2	145	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	-	-	-	-	-	-	-	-	-	-	-	-
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	54	27	0	5	22	53	9	2	158	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	269	271	161	294	269	58	163	0	0	62	0	0
Stage 1	165	165	-	102	102	-	-	-	-	-	-	-
Stage 2	104	106	-	192	167	-	-	-	-	-	-	-
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	684	636	884	658	637	1008	1416	-	-	1541	-	-
Stage 1	837	762	-	904	811	-	-	-	-	-	-	-
Stage 2	902	807	-	810	760	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	672	625	884	609	626	1008	1416	-	-	1541	-	-
Mov Cap-2 Maneuver	672	625	-	609	626	-	-	-	-	-	-	-
Stage 1	824	761	-	890	798	-	-	-	-	-	-	-
Stage 2	883	794	-	759	759	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.6		10.8			2			0.1			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1416	-	-	840	652	1541	-	-				
HCM Lane V/C Ratio	0.015	-	-	0.078	0.05	0.001	-	-				
HCM Control Delay (s)	7.6	0	-	9.6	10.8	7.3	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-				









HCM 6th TWSC  
14: Penrith Road & Lincoln Avenue

2042 Total  
AM Peak

Intersection						
Int Delay, s/veh	4.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	205	10	131	120	25	228
Future Vol, veh/h	205	10	131	120	25	228
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	223	11	142	130	27	248
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	444	142	0	0	272	0
Stage 1	142	-	-	-	-	-
Stage 2	302	-	-	-	-	-
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	571	906	-	-	1291	-
Stage 1	885	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	559	906	-	-	1291	-
Mov Cap-2 Maneuver	559	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.3	0		0.8		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	559	906	1291	-
HCM Lane V/C Ratio	-	-	0.399	0.012	0.021	-
HCM Control Delay (s)	-	-	15.6	9	7.8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0	0.1	-

HCM 6th TWSC  
15: Internal Collector & Lincoln Avenue

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	18	10	38	30	5	5	35	18	10	105	110
Future Vol, veh/h	37	18	10	38	30	5	5	35	18	10	105	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	20	11	41	33	5	5	38	20	11	114	120

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	273	264	174	270	314	48	234	0	0	58	0	0
Stage 1	196	196	-	58	58	-	-	-	-	-	-	-
Stage 2	77	68	-	212	256	-	-	-	-	-	-	-
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	679	641	869	683	601	1021	1333	-	-	1546	-	-
Stage 1	806	739	-	954	847	-	-	-	-	-	-	-
Stage 2	932	838	-	790	696	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	642	634	869	653	594	1021	1333	-	-	1546	-	-
Mov Cap-2 Maneuver	642	634	-	653	594	-	-	-	-	-	-	-
Stage 1	803	734	-	950	844	-	-	-	-	-	-	-
Stage 2	888	835	-	754	691	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		11		0.7		0.3	
HCM LOS	B		B					




Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	642	702	653	632	1546	-	-
HCM Lane V/C Ratio	0.004	-	-	0.063	0.043	0.063	0.06	0.007	-	-
HCM Control Delay (s)	7.7	-	-	11	10.4	10.9	11.1	7.3	-	-
HCM Lane LOS	A	-	-	B	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.2	0.2	0	-	-

HCM 6th TWSC  
16: Lincoln Avenue & Site Access

2042 Total  
AM Peak

Intersection

Int Delay, s/veh 5.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	20	20	10	25	53
Future Vol, veh/h	25	20	20	10	25	53
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	27	22	22	11	27	58





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	33	0	0 104 28
Stage 1	-	-	- 28 -
Stage 2	-	-	- 76 -
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	1579	-	- 894 1047
Stage 1	-	-	- 995 -
Stage 2	-	-	- 947 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1579	-	- 879 1047
Mov Cap-2 Maneuver	-	-	- 879 -
Stage 1	-	-	- 978 -
Stage 2	-	-	- 947 -

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1579	-	-	-	987
HCM Lane V/C Ratio	0.017	-	-	-	0.086
HCM Control Delay (s)	7.3	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

HCM 6th TWSC  
17: 1st Street & Lincoln Avenue







2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	10	35	50	15	10	15	55	35	15	95	1
Future Vol, veh/h	1	10	35	50	15	10	15	55	35	15	95	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	11	38	54	16	11	16	60	38	16	103	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	261	266	104	271	247	79	104	0	0	98	0	0
Stage 1	136	136	-	111	111	-	-	-	-	-	-	-
Stage 2	125	130	-	160	136	-	-	-	-	-	-	-
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	692	640	951	682	655	981	1488	-	-	1495	-	-
Stage 1	867	784	-	894	804	-	-	-	-	-	-	-
Stage 2	879	789	-	842	784	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	660	626	951	636	641	981	1488	-	-	1495	-	-
Mov Cap-2 Maneuver	660	626	-	636	641	-	-	-	-	-	-	-
Stage 1	857	775	-	884	795	-	-	-	-	-	-	-
Stage 2	842	780	-	788	775	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.5		11.1			1.1			1			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1488	-	-	847	668	1495	-	-				
HCM Lane V/C Ratio	0.011	-	-	0.059	0.122	0.011	-	-				
HCM Control Delay (s)	7.4	0	-	9.5	11.1	7.4	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-	-				









HCM 6th TWSC  
18: Penrith Road & W. Palmer Avenue

2042 Total  
AM Peak

Intersection						
Int Delay, s/veh	8.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	219	50	201	117	75	358
Future Vol, veh/h	219	50	201	117	75	358
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	238	54	218	127	82	389
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	771	218	0	0	345	0
Stage 1	218	-	-	-	-	-
Stage 2	553	-	-	-	-	-
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	368	822	-	-	1214	-
Stage 1	818	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	343	822	-	-	1214	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	31.3		0		1.4	
HCM LOS	D					
Minor Lane/Major Mvmt			NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)			-	- 343 822	1214	-
HCM Lane V/C Ratio			-	- 0.694 0.066	0.067	-
HCM Control Delay (s)			-	- 36.2 9.7	8.2	-
HCM Lane LOS			-	- E A	A	-
HCM 95th %tile Q(veh)			-	- 4.9 0.2	0.2	-





HCM 6th TWSC  
19: W. Palmer Avenue & Internal Collector

2042 Total  
AM Peak

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	127	179	43	98	90
Future Vol, veh/h	40	127	179	43	98	90
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	-	-	150	75	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	43	138	195	47	107	98
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	242	0	-	0	419	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	224	-
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	1324	-	-	-	591	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1324	-	-	-	572	846
Mov Cap-2 Maneuver	-	-	-	-	572	-
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	813	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.9	0		11.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1324	-	-	-	572	846
HCM Lane V/C Ratio	0.033	-	-	-	0.186	0.116
HCM Control Delay (s)	7.8	-	-	-	12.7	9.8
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.4

HCM 6th TWSC  
20: W. Palmer Avenue & 1st Street

2042 Total  
AM Peak

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	173	168	53	96	84
Future Vol, veh/h	52	173	168	53	96	84
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	57	188	183	58	104	91






Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	241	0	0	514	212
Stage 1	-	-	-	212	-
Stage 2	-	-	-	302	-
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	1326	-	-	521	828
Stage 1	-	-	-	823	-
Stage 2	-	-	-	750	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1326	-	-	499	828
Mov Cap-2 Maneuver	-	-	-	499	-
Stage 1	-	-	-	788	-
Stage 2	-	-	-	750	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1326	-	-	-	613
HCM Lane V/C Ratio	0.043	-	-	-	0.319
HCM Control Delay (s)	7.8	-	-	-	13.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue

2042 Total  
AM Peak

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	179	80	225	200	58
Future Vol, veh/h	70	179	80	225	200	58
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	-	75	-	-	-
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	195	87	245	217	63













Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	668	249	280
Stage 1	249	-	-
Stage 2	419	-	-
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	423	790	1283
Stage 1	792	-	-
Stage 2	664	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	394	790	1283
Mov Cap-2 Maneuver	394	-	-
Stage 1	738	-	-
Stage 2	664	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1283	-	616	-	-
HCM Lane V/C Ratio	0.068	-	0.439	-	-
HCM Control Delay (s)	8	-	15.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.2	-	-








HCM 6th TWSC  
22: Penrith Road & E. Colfax Avenue

2042 Total  
AM Peak

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	210	285	80	30	275	25	240	83	80	50	145	382
Future Vol, veh/h	210	285	80	30	275	25	240	83	80	50	145	382
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	228	310	87	33	299	27	261	90	87	54	158	415
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	397	0	0	1431	1158	310	1263	1218	299
Stage 1	-	-	-	-	-	-	766	766	-	365	365	-
Stage 2	-	-	-	-	-	-	665	392	-	898	853	-
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	1234	-	-	1162	-	-	~ 112	196	730	147	181	741
Stage 1	-	-	-	-	-	-	395	412	-	654	623	-
Stage 2	-	-	-	-	-	-	449	606	-	334	376	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1234	-	-	1162	-	-	-	155	730	60	~ 143	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	155	-	60	~ 143	-
Stage 1	-	-	-	-	-	-	322	336	-	533	606	-
Stage 2	-	-	-	-	-	-	~ 142	589	-	175	306	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.1			0.7						\$ 325.2		
HCM LOS							-			F		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	-	253	1234	-	-	1162	-	-	60	345		
HCM Lane V/C Ratio	-	0.7	0.185	-	-	0.028	-	-	0.906	1.66		
HCM Control Delay (s)	-	46.8	8.6	-	-	8.2	-	-	201.6	336.9		
HCM Lane LOS	-	E	A	-	-	A	-	-	F	F		
HCM 95th %tile Q(veh)	-	4.7	0.7	-	-	0.1	-	-	4.2	34.7		
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

2042 Total  
AM Peak

Intersection												
Int Delay, s/veh	14.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	75	10	10	100	75	20	130	10	50	204	125
Future Vol, veh/h	100	75	10	10	100	75	20	130	10	50	204	125
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	285	-	-	200	-	-	-	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	82	11	11	109	82	22	141	11	54	222	136

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	191	0	0	93	0	0	657	519	88	554	483	150
Stage 1	-	-	-	-	-	-	306	306	-	172	172	-
Stage 2	-	-	-	-	-	-	351	213	-	382	311	-
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	1383	-	-	1501	-	-	378	461	970	443	483	896
Stage 1	-	-	-	-	-	-	704	662	-	830	756	-
Stage 2	-	-	-	-	-	-	666	726	-	640	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1383	-	-	1501	-	-	183	422	970	304	442	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	422	-	304	442	-
Stage 1	-	-	-	-	-	-	648	610	-	764	751	-
Stage 2	-	-	-	-	-	-	395	721	-	448	606	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.2			0.4			22.7			23.8		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	374	1383	-	-	1501	-	-	406	896
HCM Lane V/C Ratio	0.465	0.079	-	-	0.007	-	-	0.68	0.152
HCM Control Delay (s)	22.7	7.8	-	-	7.4	-	-	30.7	9.7
HCM Lane LOS	C	A	-	-	A	-	-	D	A
HCM 95th %tile Q(veh)	2.4	0.3	-	-	0	-	-	4.9	0.5






HCM 6th TWSC  
1: Penrith Road & E. 38th Avenue

2042 Total  
PM Peak

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	56	15	22	44	15	15	25	24	10	15	10
Future Vol, veh/h	15	56	15	22	44	15	15	25	24	10	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	61	16	24	48	16	16	27	26	11	16	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	64	0	0	77	0	0	219	213	69	232	213	56
Stage 1	-	-	-	-	-	-	101	101	-	104	104	-
Stage 2	-	-	-	-	-	-	118	112	-	128	109	-
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	1538	-	-	1522	-	-	737	684	994	723	684	1011
Stage 1	-	-	-	-	-	-	905	811	-	902	809	-
Stage 2	-	-	-	-	-	-	887	803	-	876	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1538	-	-	1522	-	-	701	666	994	668	666	1011
Mov Cap-2 Maneuver	-	-	-	-	-	-	701	666	-	668	666	-
Stage 1	-	-	-	-	-	-	895	802	-	892	796	-
Stage 2	-	-	-	-	-	-	846	790	-	815	796	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			2			10.1			10.1		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	770	1538	-	-	1522	-	-	739				
HCM Lane V/C Ratio	0.09	0.011	-	-	0.016	-	-	0.051				
HCM Control Delay (s)	10.1	7.4	0	-	7.4	0	-	10.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2				




HCM 6th TWSC  
2: Internal Collector & E. 38th Avenue

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	20	12	67	14	8
Future Vol, veh/h	70	20	12	67	14	8
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	76	22	13	73	15	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	98	0	186	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	99	-
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	-	-	1495	-	803	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1495	-	796	971
Mov Cap-2 Maneuver	-	-	-	-	796	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	917	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.1		9.3	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	852	-	-	1495	-	
HCM Lane V/C Ratio	0.028	-	-	0.009	-	
HCM Control Delay (s)	9.3	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC  
3: Site Access & E. 38th Avenue

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	20	40	67	12	25
Future Vol, veh/h	58	20	40	67	12	25
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	63	22	43	73	13	27
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	85	0	233	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	159	-
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	-	-	1512	-	755	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	870	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	732	988
Mov Cap-2 Maneuver	-	-	-	-	732	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	844	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.8		9.3	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	887	-	-	1512	-	
HCM Lane V/C Ratio	0.045	-	-	0.029	-	
HCM Control Delay (s)	9.3	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

HCM 6th TWSC  
4: 1st Street/1st Street (N. Converse Road) & E. 38th Avenue

2042 Total  
PM Peak

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	5	62	16	52	83	5	19	30	42	5	15	5
Future Vol, veh/h	5	62	16	52	83	5	19	30	42	5	15	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	-	-	-	-	-	-	-	-	-	-	-	-
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	67	17	57	90	5	21	33	46	5	16	5
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	175	150	19	169	129	56	21	0	0	79	0	0
Stage 1	29	29	-	98	98	-	-	-	-	-	-	-
Stage 2	146	121	-	71	31	-	-	-	-	-	-	-
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	788	742	1059	795	762	1011	1595	-	-	1519	-	-
Stage 1	988	871	-	908	814	-	-	-	-	-	-	-
Stage 2	857	796	-	939	869	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	702	729	1059	717	749	1011	1595	-	-	1519	-	-
Mov Cap-2 Maneuver	702	729	-	717	749	-	-	-	-	-	-	-
Stage 1	974	868	-	895	803	-	-	-	-	-	-	-
Stage 2	746	785	-	849	866	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.3		11.1			1.5			1.5			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1595	-	-	774	744	1519	-	-				
HCM Lane V/C Ratio	0.013	-	-	0.117	0.205	0.004	-	-				
HCM Control Delay (s)	7.3	0	-	10.3	11.1	7.4	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.4	0.8	0	-	-				

HCM 6th TWSC  
5: Kiowa-Bennett Road & E. 38th Avenue

2042 Total  
PM Peak

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↕	↕	↑	↕
Traffic Vol, veh/h	10	1	99	1	1	1	130	275	1	1	215	10
Future Vol, veh/h	10	1	99	1	1	1	130	275	1	1	215	10
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	-	-	-	-	-	-	200	-	0	200	-	200
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	1	108	1	1	1	141	299	1	1	234	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	819	818	234	877	828	299	245	0	0	300	0	0
Stage 1	236	236	-	581	581	-	-	-	-	-	-	-
Stage 2	583	582	-	296	247	-	-	-	-	-	-	-
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	294	311	805	269	306	741	1321	-	-	1261	-	-
Stage 1	767	710	-	499	500	-	-	-	-	-	-	-
Stage 2	498	499	-	712	702	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	269	277	805	213	273	741	1321	-	-	1261	-	-
Mov Cap-2 Maneuver	269	277	-	213	273	-	-	-	-	-	-	-
Stage 1	685	709	-	446	447	-	-	-	-	-	-	-
Stage 2	443	446	-	615	701	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.5		16.8		2.6		0	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1321	-	-	672 309	1261	-	-
HCM Lane V/C Ratio	0.107	-	-	0.178 0.011	0.001	-	-
HCM Control Delay (s)	8.1	-	-	11.5 16.8	7.9	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.6 0	0	-	-

HCM 6th TWSC  
6: Internal Collector & Site Access

2042 Total  
PM Peak

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	20	15	0	4	50	13	20	7	20	5
Future Vol, veh/h	5	0	20	15	0	4	50	13	20	7	20	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	-	-	-	-	-	-	-	-	-	-	-	-
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	22	16	0	4	54	14	22	8	22	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	176	185	25	185	176	25	27	0	0	36	0	0
Stage 1	41	41	-	133	133	-	-	-	-	-	-	-
Stage 2	135	144	-	52	43	-	-	-	-	-	-	-
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	786	709	1051	776	717	1051	1587	-	-	1575	-	-
Stage 1	974	861	-	870	786	-	-	-	-	-	-	-
Stage 2	868	778	-	961	859	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	759	681	1051	737	688	1051	1587	-	-	1575	-	-
Mov Cap-2 Maneuver	759	681	-	737	688	-	-	-	-	-	-	-
Stage 1	940	857	-	840	758	-	-	-	-	-	-	-
Stage 2	834	751	-	936	855	-	-	-	-	-	-	-




Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.8		9.7		4.4		1.6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	976	786	1575	-
HCM Lane V/C Ratio	0.034	-	-	0.028	0.026	0.005	-
HCM Control Delay (s)	7.3	0	-	8.8	9.7	7.3	0
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-






HCM 6th TWSC  
7: 1st Street & Site Access

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	6	10	90	74	8
Future Vol, veh/h	5	6	10	90	74	8
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	7	11	98	80	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	205	85	89	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	120	-	-	-	-	-
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	783	974	1506	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	777	974	1506	-	-	-
Mov Cap-2 Maneuver	777	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	0.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1506	-	873	-	-	
HCM Lane V/C Ratio	0.007	-	0.014	-	-	
HCM Control Delay (s)	7.4	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	




HCM 6th TWSC  
8: 1st Street & Site Access

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	7	10	95	72	8
Future Vol, veh/h	5	7	10	95	72	8
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	8	11	103	78	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	208	83	87	0	-	0
Stage 1	83	-	-	-	-	-
Stage 2	125	-	-	-	-	-
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	780	976	1509	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	774	976	1509	-	-	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	0.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1509	-	880	-	-	
HCM Lane V/C Ratio	0.007	-	0.015	-	-	
HCM Control Delay (s)	7.4	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC  
9: 1st Street & Site Access

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	7	10	100	70	9
Future Vol, veh/h	5	7	10	100	70	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	5	8	11	109	76	10

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	212	81	86
Stage 1	81	-	-
Stage 2	131	-	-
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	776	979	1510
Stage 1	942	-	-
Stage 2	895	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	770	979	1510
Mov Cap-2 Maneuver	770	-	-
Stage 1	934	-	-
Stage 2	895	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.7	0
HCM LOS	A		







Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1510	-	880	-	-
HCM Lane V/C Ratio	0.007	-	0.015	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

HCM 6th TWSC  
10: Penrith Road & Truman Avenue

2042 Total  
PM Peak

Intersection

Int Delay, s/veh 3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	110	10	114	120	10	82
Future Vol, veh/h	110	10	114	120	10	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	120	11	124	130	11	89





Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	235	124	0
Stage 1	124	-	-
Stage 2	111	-	-
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	753	927	-
Stage 1	902	-	-
Stage 2	914	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	747	927	-
Mov Cap-2 Maneuver	747	-	-
Stage 1	902	-	-
Stage 2	907	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 747 927 1311	-	-
HCM Lane V/C Ratio	-	- 0.16 0.012 0.008	-	-
HCM Control Delay (s)	-	- 10.7 8.9 7.8	-	-
HCM Lane LOS	-	- B A A	-	-
HCM 95th %tile Q(veh)	-	- 0.6 0 0	-	-

HCM 6th TWSC  
11: Internal Collector & Truman Avenue

2042 Total  
PM Peak

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	70	20	30	45	5	50	58	50	10	40	10
Future Vol, veh/h	20	70	20	30	45	5	50	58	50	10	40	10
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	22	76	22	33	49	5	54	63	54	11	43	11
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	296	296	49	318	274	90	54	0	0	117	0	0
Stage 1	71	71	-	198	198	-	-	-	-	-	-	-
Stage 2	225	225	-	120	76	-	-	-	-	-	-	-
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	656	616	1020	635	633	968	1551	-	-	1471	-	-
Stage 1	939	836	-	804	737	-	-	-	-	-	-	-
Stage 2	778	718	-	884	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	591	588	1020	541	605	968	1551	-	-	1471	-	-
Mov Cap-2 Maneuver	591	588	-	541	605	-	-	-	-	-	-	-
Stage 1	904	829	-	774	710	-	-	-	-	-	-	-
Stage 2	694	691	-	779	825	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	11.9		12.1			2.3			1.2			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1551	-	-	638	593	1471	-	-				
HCM Lane V/C Ratio	0.035	-	-	0.187	0.147	0.007	-	-				
HCM Control Delay (s)	7.4	0	-	11.9	12.1	7.5	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.5	0	-	-				

HCM 6th TWSC  
12: 1st Street & Truman Avenue

2042 Total  
PM Peak

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	16	0	14	15	0	5	20	89	10	5	56	17
Future Vol, veh/h	16	0	14	15	0	5	20	89	10	5	56	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	15	16	0	5	22	97	11	5	61	18

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	229	232	70	235	236	103	79	0	0	108	0	0
Stage 1	80	80	-	147	147	-	-	-	-	-	-	-
Stage 2	149	152	-	88	89	-	-	-	-	-	-	-
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	726	668	993	720	665	952	1519	-	-	1483	-	-
Stage 1	929	828	-	856	775	-	-	-	-	-	-	-
Stage 2	854	772	-	920	821	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	711	655	993	698	652	952	1519	-	-	1483	-	-
Mov Cap-2 Maneuver	711	655	-	698	652	-	-	-	-	-	-	-
Stage 1	915	825	-	843	763	-	-	-	-	-	-	-
Stage 2	836	760	-	902	818	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.6		10		1.2		0.5	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	820	748	1483	-
HCM Lane V/C Ratio	0.014	-	-	0.04	0.029	0.004	-
HCM Control Delay (s)	7.4	0	-	9.6	10	7.4	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

HCM 6th TWSC  
13: Internal Collector & Site Access

2042 Total  
PM Peak

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	5	0	20	15	0	3	50	150	25	5	75	10
Future Vol, veh/h	5	0	20	15	0	3	50	150	25	5	75	10
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	5	0	22	16	0	3	54	163	27	5	82	11

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	384	396	88	394	388	177	93	0	0	190	0	0
Stage 1	98	98	-	285	285	-	-	-	-	-	-	-
Stage 2	286	298	-	109	103	-	-	-	-	-	-	-
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	574	541	970	566	547	866	1501	-	-	1384	-	-
Stage 1	908	814	-	722	676	-	-	-	-	-	-	-
Stage 2	721	667	-	896	810	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	553	517	970	535	523	866	1501	-	-	1384	-	-
Mov Cap-2 Maneuver	553	517	-	535	523	-	-	-	-	-	-	-
Stage 1	872	811	-	693	649	-	-	-	-	-	-	-
Stage 2	690	640	-	872	807	-	-	-	-	-	-	-







Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		11.5		1.7		0.4	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1501	-	-	843	571	1384	-
HCM Lane V/C Ratio	0.036	-	-	0.032	0.034	0.004	-
HCM Control Delay (s)	7.5	0	-	9.4	11.5	7.6	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-











HCM 6th TWSC  
14: Penrith Road & Lincoln Avenue

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	140	25	259	210	15	177
Future Vol, veh/h	140	25	259	210	15	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	150	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	152	27	282	228	16	192
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	506	282	0	0	510	0
Stage 1	282	-	-	-	-	-
Stage 2	224	-	-	-	-	-
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	526	757	-	-	1055	-
Stage 1	766	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	518	757	-	-	1055	-
Mov Cap-2 Maneuver	518	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.1	0	0.7			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 518 757 1055	-	-		
HCM Lane V/C Ratio	-	- 0.294 0.036 0.015	-	-		
HCM Control Delay (s)	-	- 14.8 9.9 8.5	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 1.2 0.1 0	-	-		




HCM 6th TWSC  
15: Internal Collector & Lincoln Avenue

2042 Total  
PM Peak

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	40	5	30	25	10	10	110	39	5	55	50
Future Vol, veh/h	110	40	5	30	25	10	10	110	39	5	55	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	-	150	-	-
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	120	43	5	33	27	11	11	120	42	5	60	54
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	279	281	87	284	287	141	114	0	0	162	0	0
Stage 1	97	97	-	163	163	-	-	-	-	-	-	-
Stage 2	182	184	-	121	124	-	-	-	-	-	-	-
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	673	627	971	668	623	907	1475	-	-	1417	-	-
Stage 1	910	815	-	839	763	-	-	-	-	-	-	-
Stage 2	820	747	-	883	793	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	637	620	971	623	616	907	1475	-	-	1417	-	-
Mov Cap-2 Maneuver	637	620	-	623	616	-	-	-	-	-	-	-
Stage 1	904	812	-	833	758	-	-	-	-	-	-	-
Stage 2	775	742	-	828	790	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	11.7			10.8			0.5			0.3		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1475	-	-	637	646	623	678	1417	-	-		
HCM Lane V/C Ratio	0.007	-	-	0.188	0.076	0.052	0.056	0.004	-	-		
HCM Control Delay (s)	7.5	-	-	12	11	11.1	10.6	7.5	-	-		
HCM Lane LOS	A	-	-	B	B	B	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.7	0.2	0.2	0.2	0	-	-		

HCM 6th TWSC  
16: Lincoln Avenue & Site Access

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	25	20	27	17	40
Future Vol, veh/h	69	25	20	27	17	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	-	-	-	-	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	75	27	22	29	18	43
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	214	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	177	-
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	-	-	-	774	1035
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	736	1035
Mov Cap-2 Maneuver	-	-	-	-	736	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	854	-
Approach	EB	WB		SB		
HCM Control Delay, s	5.5	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1555	-	-	-	923	
HCM Lane V/C Ratio	0.048	-	-	-	0.067	
HCM Control Delay (s)	7.4	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	

HCM 6th TWSC  
17: 1st Street & Lincoln Avenue

2042 Total  
PM Peak

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	15	17	30	10	15	37	104	20	10	70	1
Future Vol, veh/h	1	15	17	30	10	15	37	104	20	10	70	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	16	18	33	11	16	40	113	22	11	76	1







Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	317	314	77	320	303	124	77	0	0	135	0	0
Stage 1	99	99	-	204	204	-	-	-	-	-	-	-
Stage 2	218	215	-	116	99	-	-	-	-	-	-	-
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	636	601	984	633	610	927	1522	-	-	1449	-	-
Stage 1	907	813	-	798	733	-	-	-	-	-	-	-
Stage 2	784	725	-	889	813	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	599	579	984	591	588	927	1522	-	-	1449	-	-
Mov Cap-2 Maneuver	599	579	-	591	588	-	-	-	-	-	-	-
Stage 1	882	806	-	776	712	-	-	-	-	-	-	-
Stage 2	737	705	-	848	806	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.1		11		1.7		0.9	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	736	655	1449	-
HCM Lane V/C Ratio	0.026	-	-	0.049	0.091	0.008	-
HCM Control Delay (s)	7.4	0	-	10.1	11	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.3	0	-







HCM 6th TWSC  
18: Penrith Road & W. Palmer Avenue

2042 Total  
PM Peak

Intersection							
Int Delay, s/veh	5.1						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Vol, veh/h	155	75	394	148	50	267	
Future Vol, veh/h	155	75	394	148	50	267	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	75	0	-	150	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	168	82	428	161	54	290	
Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	826	428	0	0	589	0	
Stage 1	428	-	-	-	-	-	
Stage 2	398	-	-	-	-	-	
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	342	627	-	-	986	-	
Stage 1	657	-	-	-	-	-	
Stage 2	678	-	-	-	-	-	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	323	627	-	-	986	-	
Mov Cap-2 Maneuver	323	-	-	-	-	-	
Stage 1	657	-	-	-	-	-	
Stage 2	641	-	-	-	-	-	
Approach	WB		NB		SB		
HCM Control Delay, s	22.4		0		1.4		
HCM LOS	C						
Minor Lane/Major Mvmt		NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)		-	-	323	627	986	-
HCM Lane V/C Ratio		-	-	0.522	0.13	0.055	-
HCM Control Delay (s)		-	-	27.7	11.6	8.9	-
HCM Lane LOS		-	-	D	B	A	-
HCM 95th %tile Q(veh)		-	-	2.9	0.4	0.2	-

HCM 6th TWSC  
19: W. Palmer Avenue & Internal Collector

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	93	105	178	101	58	52
Future Vol, veh/h	93	105	178	101	58	52
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	-	-	150	75	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	101	114	193	110	63	57





Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	303	0	0 509 193
Stage 1	-	-	- 193 -
Stage 2	-	-	- 316 -
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	1258	-	- 524 849
Stage 1	-	-	- 840 -
Stage 2	-	-	- 739 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1258	-	- 482 849
Mov Cap-2 Maneuver	-	-	- 482 -
Stage 1	-	-	- 773 -
Stage 2	-	-	- 739 -

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	11.7
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1258	-	-	-	482	849
HCM Lane V/C Ratio	0.08	-	-	-	0.131	0.067
HCM Control Delay (s)	8.1	-	-	-	13.6	9.5
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.4	0.2

HCM 6th TWSC  
20: W. Palmer Avenue & 1st Street

2042 Total  
PM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	108	201	111	69	58
Future Vol, veh/h	55	108	201	111	69	58
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	60	117	218	121	75	63

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	339	0	0 516 279
Stage 1	-	-	- - 279 -
Stage 2	-	-	- - 237 -
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	1220	-	- - 519 760
Stage 1	-	-	- - 768 -
Stage 2	-	-	- - 802 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1220	-	- - 494 760
Mov Cap-2 Maneuver	-	-	- - 494 -
Stage 1	-	-	- - 730 -
Stage 2	-	-	- - 802 -

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1220	-	-	-	588
HCM Lane V/C Ratio	0.049	-	-	-	0.235
HCM Control Delay (s)	8.1	-	-	-	13
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9








HCM 6th TWSC  
21: Adams Street & W. Palmer Avenue

2042 Total  
PM Peak

Intersection

Int Delay, s/veh 5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	179	210	175	175	96
Future Vol, veh/h	39	179	210	175	175	96
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	-	75	-	-	-
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	42	195	228	190	190	104













Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	888	242	294
Stage 1	242	-	-
Stage 2	646	-	-
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	314	797	1268
Stage 1	798	-	-
Stage 2	522	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	257	797	1268
Mov Cap-2 Maneuver	257	-	-
Stage 1	654	-	-
Stage 2	522	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	4.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1268	-	579	-	-
HCM Lane V/C Ratio	0.18	-	0.409	-	-
HCM Control Delay (s)	8.5	-	15.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.7	-	2	-	-








HCM 6th TWSC  
22: Penrith Road & E. Colfax Avenue

2042 Total  
PM Peak

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	371	410	270	80	370	50	160	121	50	25	139	258
Future Vol, veh/h	371	410	270	80	370	50	160	121	50	25	139	258
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	200	-	200	200	-	200	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	403	446	293	87	402	54	174	132	54	27	151	280
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	456	0	0	739	0	0	2071	1882	446	2068	2121	402
Stage 1	-	-	-	-	-	-	1252	1252	-	576	576	-
Stage 2	-	-	-	-	-	-	819	630	-	1492	1545	-
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	1105	-	-	867	-	-	~ 40	~ 71	612	40	~ 50	648
Stage 1	-	-	-	-	-	-	211	244	-	503	502	-
Stage 2	-	-	-	-	-	-	369	475	-	154	176	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1105	-	-	867	-	-	~ 41	612	-	~ 29	648	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 41	-	-	~ 29	-	-
Stage 1	-	-	-	-	-	-	~ 134	155	-	319	452	-
Stage 2	-	-	-	-	-	-	~ 125	428	-	~ 14	~ 112	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.6			1.5								
HCM LOS							-			-		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	-	56	1105	-	-	867	-	-	-	-	76	
HCM Lane V/C Ratio	-	3.319	0.365	-	-	0.1	-	-	-	-	5.678	
HCM Control Delay (s)	-	\$ 1198	10.1	-	-	9.6	-	-	-	-	\$ 2213.4	
HCM Lane LOS	-	F	B	-	-	A	-	-	-	-	F	
HCM 95th %tile Q(veh)	-	19.8	1.7	-	-	0.3	-	-	-	-	47.8	
Notes												
-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

HCM 6th TWSC  
24: Adams Street & E. Colfax Avenue

2042 Total  
PM Peak

Intersection												
Int Delay, s/veh	41.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	150	20	10	140	65	10	210	10	75	179	100
Future Vol, veh/h	110	150	20	10	140	65	10	210	10	75	179	100
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	285	-	-	200	-	-	-	-	-	-	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	163	22	11	152	71	11	228	11	82	195	109
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	223	0	0	185	0	0	776	659	174	744	635	188
Stage 1	-	-	-	-	-	-	414	414	-	210	210	-
Stage 2	-	-	-	-	-	-	362	245	-	534	425	-
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	1346	-	-	1390	-	-	315	384	869	331	396	854
Stage 1	-	-	-	-	-	-	616	593	-	792	728	-
Stage 2	-	-	-	-	-	-	657	703	-	530	586	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1346	-	-	1390	-	-	146	347	869	144	358	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	347	-	144	358	-
Stage 1	-	-	-	-	-	-	561	540	-	722	722	-
Stage 2	-	-	-	-	-	-	416	697	-	275	534	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.1			0.4			41.2			97.7		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	336	1346	-	-	1390	-	-	249	854			
HCM Lane V/C Ratio	0.744	0.089	-	-	0.008	-	-	1.109	0.127			
HCM Control Delay (s)	41.2	7.9	-	-	7.6	-	-	132.3	9.8			
HCM Lane LOS	E	A	-	-	A	-	-	F	A			
HCM 95th %tile Q(veh)	5.7	0.3	-	-	0	-	-	12	0.4			

# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 1 of 9

Add title of ODP in this title block. Is it  
MUNDELL FARMS AT BENNETT?  
Make sure title block is consistent on  
all sheets.

## LEGAL DESCRIPTION

THE NE1/4 SECTION 28, TOWNSHIP 3, RANGE 63,

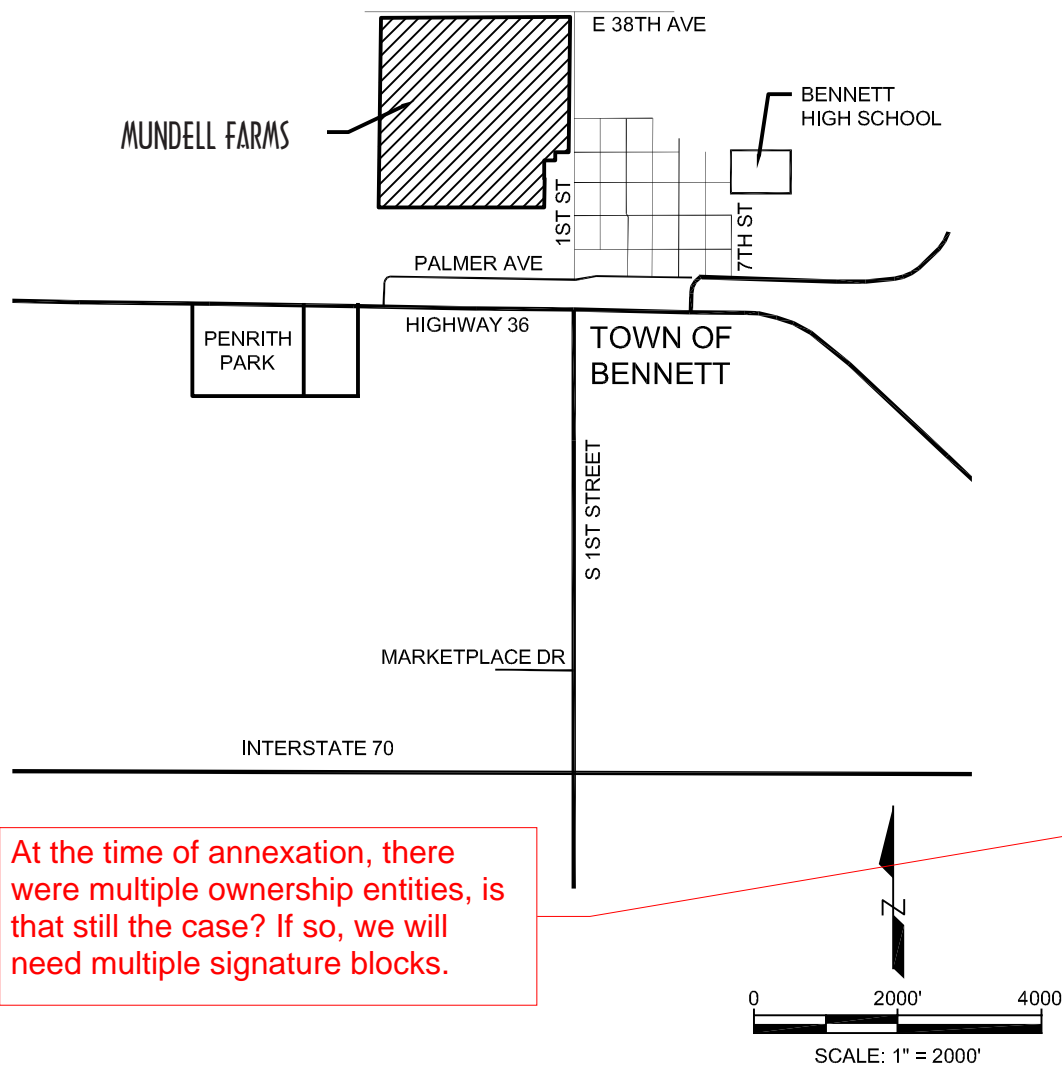
EXCEPT THREE ACRES IN THE SE1/4 OF THE NE1/4 OF SAID  
SECTION 28 DESCRIBED AS:  
BEGINNING AT THE SOUTHEAST CORNER OF THE NE1/4;  
THENCE NORTH 396'; THENCE WEST 330'; THENCE SOUTH  
396'; THENCE EAST 330' TO THE POINT OF BEGINNING.

AND EXCEPT A PARCEL OF LAND SITUATED IN THE NE1/4 OF  
SAID SECTION 28 DESCRIBED AS:  
BEGINNING AT A POINT 396.0' N00°01'E OF THE SE CORNER  
OF THE NE1/4 OF SAID SECTION 28; THENCE N00°01'E A  
DISTANCE OF 365.0'; THENCE N89°59'W A DISTANCE OF  
187.0'; THENCE S00°01'W A DISTANCE OF 113.0'; THENCE  
N89°59'W A DISTANCE OF 151.5 FEET; THENCE S00°01'W A  
DISTANCE OF 257.0'; THENCE N89°10'13"E A DISTANCE OF  
338.5', MORE OR LESS, TO POINT OF BEGINNING.

ABOVE PARCEL OF LAND INCLUDES 153.62 ACRES MORE OR  
LESS.



delete : "this \_\_\_\_ day" replace with:  
"on \_\_\_\_\_, 20\_\_\_\_."



At the time of annexation, there  
were multiple ownership entities, is  
that still the case? If so, we will  
need multiple signature blocks.

## Land Use Summary Chart

Land Use Type	Gross Acreage	% of Total
Open Space and Trail Corridors	16.8	10.9%
Parks & Recreation Areas	6.3	4.1%
Development Areas (All Residential)	117.4	76.4%
Major Roadways	13.1	8.5%
Total Map Acreage	153.6	100.0%
Maximum # of Dwelling Units	900	
Residential Density	5.9	

DUs/Ac.

## APPROVALS

Approved by the Town Board of Trustees of the Town of Bennett this \_\_\_\_ day of \_\_\_\_\_,  
20\_\_ by Ordinance No. \_\_\_\_\_.

Mayor \_\_\_\_\_

ATTEST: Town Clerk \_\_\_\_\_

By signing this ODP, the owner acknowledges and accepts all of the requirements and intent set forth  
herein.

OWNER \_\_\_\_\_

STATE OF COLORADO )

COUNTY OF \_\_\_\_\_ )

The above and foregoing signature of \_\_\_\_\_ as \_\_\_\_\_ of

\_\_\_\_\_, 20\_\_.

Witness my hand and official seal.

My commission expires on: \_\_\_\_\_

(SEAL)

Notary Public

Approved by the Planning and Zoning Commission of the Town of Bennett, Colorado this  
day of \_\_\_\_\_, \_\_\_\_\_; by Resolution  
No. \_\_\_\_\_.

Chair \_\_\_\_\_

ATTEST: Town Clerk \_\_\_\_\_

Delete this signature  
block.

## SHEET INDEX

Sheet No.	Sheet Name
1	Cover
2	Introduction/Development Concept
3	Introduction/Development Concept
4	ODP Zoning Map
5	Illustrative Concept
6	Development Standards
7	Development Standards
8	Community Patterns & Lot Types
9	Lot Types

## APPLICANT

MGV 36 NORTH LAND INVESTMENTS, LLC  
PO Box - 4701  
Greenwood Village, CO 80155  
(303) 507-6651

## PLANNER/LANDSCAPE ARCHITECT

  
**pcs group inc.**  
200 Kalamath Street, Denver, CO 80223  
tel: 303.531.4905  
www.pcsgroupco.com

## CIVIL ENGINEER

  
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Englewood, CO 80120  
303.925.0544

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# OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

1 of 9

COVER



# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
SHEET 2 of 9

## DEVELOPMENT CONCEPT AND INTENT

*Good Living Grows*

## NATURALLY HERE

The idea for living at MUNDELL farms is pure and natural: Surround homes with a central park, additional pocket parks, and a perimeter trail. The parks and open space energize the residents and the perimeter trail provides an active social amenity for the community. The homes will be diverse, for all generations and lifestyles. It is anticipated that MUNDELL farms will start with both traditional detached and attached homes. A community goal is to have every home within 300 feet of a park or trail that connects to the 1-mile perimeter trail network.

## PLAN AMENDMENTS

The size of any Planning Area may increase or decrease by an administrative amendment for no more than 10% as determined by the Town's Zoning Administrator after final determination of: internal street alignments, arterial street alignments, park and open space and buffer zone areas. The initial boundary of any Planning Area will be established with the final plat that is prepared for that area. Amendments to planning areas shall be subject to the Town of Bennett Municipal Code, as amended.

## TOWN OF BENNETT MUNICIPAL CODE STANDARDS AND DESIGN GUIDELINES

The Town standards, as amended, apply for landscaping, lighting and parking unless modified by this document. In addition, design guidelines adopted by the Town of Bennett shall apply to this development in conjunction with design statements included in this document.

## RESIDENTIAL NEIGHBORHOOD USES

THE COMMUNITY contains four primarily residential neighborhoods organized around the central neighborhood park, pocket parks, or adjacent roadways. Each neighborhood will allow for a range of residential uses, from single-family attached, small lot and larger lot single-family detached homes. In general it is anticipated that densities will be less along the north and western border of the property. This range of housing types is proposed to ensure economic success for the project, and to attract a range of home buyers. While the actual mix of home types and lot sizes within individual neighborhoods may vary based on market conditions and economic factors at the time of development, a maximum number of units and density within each neighborhood will be maintained.

Given the conceptual nature of the plan, some minor variations in the boundaries, acreages and densities of individual neighborhoods will be allowed, but will not exceed a variation of 20% for any area as described in this ODP. In addition the overall gross project density of 5.9 du/ac and a total residential build out of 900 homes will not be exceeded.

## PARKS AND OPEN SPACE SYSTEM

THE PROPOSED Parks and Open Space for MUNDELL farms will exceed the minimum 10% requirement for the Town of Bennett as required for a PD District. As depicted the Parks and Open Space system is approximately 15% of the total property, the areas are anticipated for active play and recreation opportunities, trail corridors, perimeter open space buffers, community entryways and natural open space areas designed to serve the future residents of the Town of Bennett.

The plan anticipates a centrally located park that is connected to the communities trail corridors. Pedestrian walkways and trail connections within individual parcels will link the neighborhood amenities such as the 4 additional centrally located pocket parks.

## ENVIRONMENTAL STATEMENT

THE PROPERTY has no identified floodplain. We do not believe there are any wetlands, wildlife migration routes, or any sites of historic, archaeological, or paleontological significance.

## SITE ACCESS AND CIRCULATION

THE COMMUNITY includes several entry locations, a primary entry is anticipated from E-38th Ave which will create a strong community identity for the community. The primary entry road will terminate at the Neighborhood Park. The entryways and roadways will incorporate a consistent streetscape character, including streetscape landscaping, sidewalks, fencing and signage to produce a positive impression upon entering the community, as well as enhancing the comfortable neighborhood environment for the larger community.

Revise this statement to say: School land dedication or cash-in-lieu requirements will be determined at the time of subdivision plat.

## SCHOOLS

ANY SCHOOL REQUIREMENT will be satisfied with cash-in-lieu.

## FIRE PROTECTION SERVICES

FIRE PROTECTION SERVICES for MUNDELL farms will be provided by the DENNETT-WALKINS FIRE Rescue. The property is located approximately 1.5 miles west of Station 91. Station 91 is staffed 24 hours a day, and is the primary response station for the fire district. In addition the property is located approximately 4.0 miles from Station 92. The property is within the required 5-mile service area of both fire stations.

Remove all but the first sentence of this paragraph.

## WATER & SEWER SERVICE

The MUNDELL Farms property is currently annexed into the Town of Bennett Zoning approval for the ODP Zoning. MUNDELL Farms is proposing to use the existing Town of Bennett water and sewer infrastructure to serve the development. At this time, we suspect the main waterlines to be extended north of the site and the sewer to be connected to the treatment plant located off the northeast of the site, on the east side of 1st Street. We have computed preliminary main line sizes to get an understanding of the scope that will be required. Further modeling is necessary to determine

Remove all of this language. Simply state water and sanitary sewer service will be provided by the Town of Bennett.

line sizes and exact locations to serve the development. At this time, we expect a 15" main sewer will be necessary to serve the development at the downstream end, with a minimum of 8" mains at the lots. Water mains will be primarily 8" with loops of 12" and 15" serving the 8". It may be necessary for the Town to provide additional storage for domestic water. Once the models are produced and further design is considered the required infrastructure can be determined.

## STORM DRAINAGE

PROPOSED IMPROVEMENTS for MUNDELL farms will require the design and construction of storm drainage facilities to reduce site run-off and the impact to historic proportions. Drainage facilities will be built to the Town of Bennett standards, a preliminary drainage study has been completed as a part of this ODP.

The project will incorporate several concepts in the design of drainage facilities for the site, including:

1. Measures to reduce erosion effects of concentrated flows from developed storm water runoff to adjacent agricultural fields (particularly the western drainage basins);
2. Evaluation of detention facilities for multiple use, such as parks and open space, recreation facilities, trail corridors, and storm water storage for irrigation of common/public open space areas;
3. Detention and erosion control requirements for phased construction; and
4. Storm water quality enhancement in accordance with the best management practices, particularly in the neighborhood commercial areas.

Note that because of the severely limited existing access and deficient local street network, we need to work out the phasing.

## GENERAL DEVELOPMENT PHASING

DEVELOPMENT is generally anticipated to proceed from the north end of the property. Access will be from E-38th Ave. Development of the interior road network will provide access to individual residential parcels as this network is extended through the property, and the centrally located Neighborhood Park will be in the first phase of the community. Public facilities/services, infrastructure, utilities, and amenities will be constructed to serve the residential neighborhoods in a reasonable and efficient manner as those areas are developed. The total project build-out time frame will be determined by market conditions.

Remove this photo. It doesn't add anything to the zoning document and will not record effectively.



PLANNING  
LANDSCAPE ARCHITECTURE



pcs group inc.

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www.pcsgroupco.com

CIVIL ENGINEERING



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CO 80120  
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APPLICANT

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(303) 507-6651

OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

2 of 9

INTRODUCTION





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MUNDELL FARMS  
TOWN OF BENNETT  
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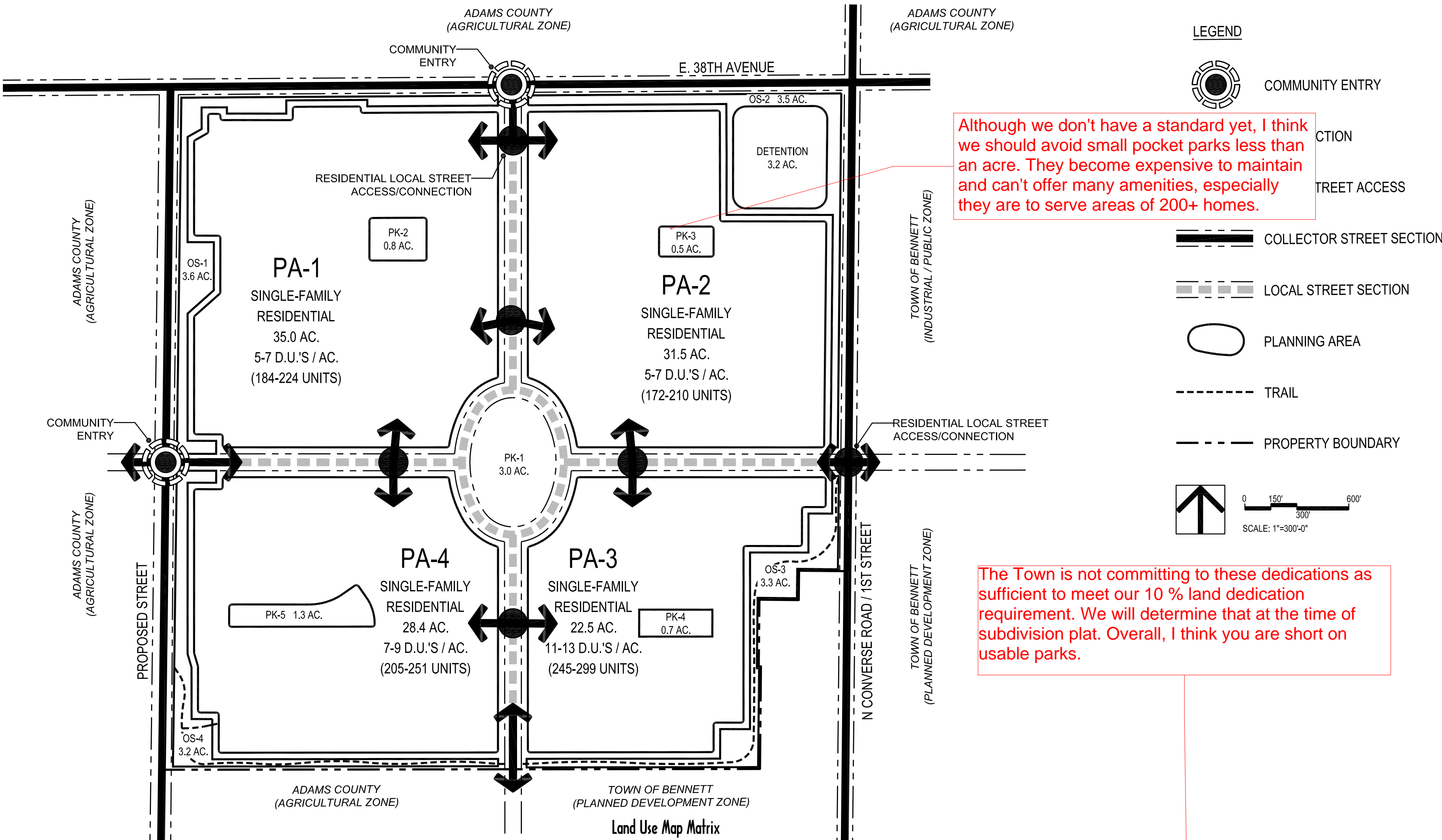
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ODP ZONING MAP

OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 3 of 9

OUTLINE DEVELOPMENT PLAN / MAP



NOTES:

- The projected mix of single family attached/detached homes, lot sizes and densities will depend on market conditions and economic factors at the time of development, but will not exceed 900 homes.
- See Lot standards and Development standards for more specific lot and building parameters for proposed residential uses and lot types.
- Open Space and Trail Corridor area includes perimeter and internal open space and buffers, trail connections, drainage corridors, detention areas and community entries.
- Access locations shown on this plan are conceptual and are subject to change. Final access locations and allowed turn movements determined with later development applications such as Final Development Plan or Final Plat.
- Local street alignments shown herein as subject to change based on future development plans for each planning area.

Land Use Map Matrix

A. Land Use Item	B. Planning Area Map Number	C. Gross Land Area in Acres	D. Percentage of Total Land Area	E. Land Use Formula (DU/AC)	F. Proposed Maximum Density (In DUs)	G. Phasing, Details and Comments
1. OPEN SPACE AND TRAIL CORRIDORS	OS-1	3.6	2.3%			Dedicated Open Space
	OS-2	6.7	4.4%			Dedicated Open Space - includes detention area
	OS-3	3.3	2.1%			Dedicated Open Space
	OS-4	3.2	2.1%			Dedicated Open Space
2. PARK & RECREATION AREAS	PK-1	3.0	2.0%			Anticipated Neighborhood Park & Primary Amenity
	PK-2	0.8	0.5%			Anticipated Pocket Park
	PK-3	0.5	0.3%			Anticipated Pocket Park
	PK-4	0.7	0.5%			Anticipated Pocket Park
	PK-5	1.3	0.8%			Anticipated Pocket Park
3. DEVELOPMENT AREAS	PA-1	35.0	22.8%	5 - 7 DU/AC	184 - 224	Primarily Single Family Residential - Attached allowed
	PA-2	31.5	20.5%	5 - 7 DU/AC	172 - 210	Primarily Single Family Residential - Attached allowed
	PA-3	22.5	14.6%	11 - 13 DU/AC	245 - 299	Primarily Single Family Attached Residential - Detached allowed
	PA-4	28.4	18.5%	7 - 9 DU/AC	205 - 251	Mix of Single Family Detached and Attached
4. MAJOR ROADWAYS		13.1	8.5%			
5. Total Map Acreage (Total figures above)		153.6	100.0%	5.9	900	
6. Applicant's Acreage Listed in Application		153.6				



# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 4 of 9

Please remove the colors from the version that will be eventually recorded. The colors will not record well.

ILLUSTRATIVE CONCEPT PLAN - NOT TO SCALE



There don't appear to be any off-street trail connections in this illustrative plan, other than an exterior trail along the south and east edges of the community. This should be reconsidered and a commitment made in the ODP.

## ROOM to GROW

At MUNDELL farms, the entire cycle of life - from raising food to raising families - evolved in one healthy place. The first fresh, green community including its own orchard in the park! MUNDELL farms is rooted in the most up to date neighborhood and environmental thinking. Yet, it is down to earth and friendly with parks, paths, open space and easy access to amenities that make life easier, healthier, sustainable and comfortable.

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## OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

4 of 9

ILLUSTRATIVE CONCEPT



# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
SHEET 5 of 9

## DEVELOPMENT STANDARDS INTRODUCTION

The following Development Standards have been prepared to ensure a responsible site planning process which will help minimize potential land use conflicts, provide visual interest and diversity of homes, as well as enhance the small town, country character and open feeling of the Community. The standards also provide the flexibility necessary to support a range of single family-residential housing types and lot sizes, depending on market conditions at the time of development.

The Development Standards have been established for each major land use type within the Community. Projects permitted within each area and land use type shall be constructed in accordance with these Development Standards and permitted uses. These standards are considered preliminary guidelines which may require more specific information and detail at the time of Final Development Plan Review. The architectural character and intent for special/innovative residential solutions will also need to be established at Final Plan as determined by the Town. This may include prototypical site plans, and architectural character sketches and elevations.

Development Standards with respect to parking (including commercial off-street parking), sign control and landscape requirements shall be controlled by the provisions of the Town's Zoning Code and Subdivision Regulations.

## ARCHITECTURAL STANDARDS

Each neighborhood shall contain architectural diversity, high quality and attention to design detail in accordance with a set of design guidelines and standards to be created for the project at the time of final plat. The following general standards shall apply to all residential neighborhoods and become the basis for more specific architectural guidelines.

1. Varied architectural styles shall be encouraged within each neighborhood. (Architectural building forms and elevations should be varied but compatible along the streetscape, simple forms are preferred over complex forms)
2. Where floor plans are offered on a repeating basis, alternate elevations shall be developed. Identical floor plans with similar exterior elevations shall not be located adjacent to, or immediately across from one another.
3. A variety of design elements and details shall contribute to the overall character of a home's elevation and its appearance from the street, including the use of front porches and covered entries, bay and box windows, and the handling of windows and door openings.
4. Careful scrutiny shall be given to the massing, proportions, and the overall scale of each design. A home's mass will be "broken up" to reduce its apparent scale, provide visual interest and depth, and achieve a more articulated building form. Massing of individual homes should be simple and reflect the architectural style of the home. This requires the careful application of elevation styles to appropriate floorplans. For example, the strong two-story vertical massing of colonial style homes is most compatible with a simple rectilinear two-story stacked floorplan while the asymmetrical two-story massing or single story massing of a craftsman lends itself better to second floor recessed or single story plan. Builders are encouraged to develop floor plans that are responsive to both architectural style objectives as well as energy efficient building objectives. These two objectives can be satisfied by creating simple floor plan forms which minimize jogs and avoid unnecessary complicated massing solutions.
5. Large, flat, unbroken building planes on the front and rear elevations shall be prohibited. Side elevations without windows shall be discouraged.
6. Size, shapes, proportions, and trim of doors and windows shall be consistent with the architectural style of the home.
7. Garage-dominated homes and streetscenes shall be avoided through various design techniques, including providing varied garage orientations, locations and setbacks, as well as recessing garages into the main plane of front facades and providing design elements to help them blend with front architecture.
8. Maximum single family residential buildings heights will be limited to 35 feet.

## SINGLE-FAMILY RESIDENTIAL INTENT

To provide for a variety of residential development of single-family homes on a mix of single-family lot types, including the potential for attached homes. Special residential housing types and lot configurations, including but not limited to, rear-load homes with alley access, will be allowed if consistent with the intent, standards, and residential character of this section.

### Permitted Uses (by Right)

1. Single-family attached and detached dwelling units
2. Attached or detached private garages (with front and rear-loaded access, including alleys.)
3. Community information centers and kiosks
4. Accessory structures and uses (see below)
5. Public and private open space and recreational facilities
6. HOA facilities and trails
7. Signage (including project identification signs and monuments)-subject to the sign permit requirements in the Bennett Municipal Code.
8. Utilities and appurtenant facilities
9. Roads and parking
10. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
11. Drainage and detention facilities
12. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Conditional Uses

- (Conditional uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Child care centers
  2. Public and quasi-public facilities
  3. Institutional facilities
  4. Special community buildings/facilities and events
  5. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Temporary Uses

- (Temporary uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Show home complexes and/or residential sales offices
  2. Temporary construction yards and structures
  3. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

## OPEN SPACE AREAS INTENT

To provide active and passive open space uses, including potential recreational facilities, to serve the residents of MUNDELL farms.

### Permitted Uses (by Right)

1. Active public and private recreational uses, including but not limited to ballfields, playgrounds, swimming pools, and court games.
2. Passive public and private recreational uses, including but not limited to picnic grounds, native, naturalized or landscaped fields, and visual buffer open space.
3. Public Recreation Buildings
4. Community Information/Sales Centers.
5. Picnic Pavilions and Shelters.
6. Public and quasi-public facilities.
7. Hiking and biking trails.
8. Accessory structures and uses.

The size of your parks don't seem to be able to accommodate much of this, if any.

9. Temporary construction yards and structures.
10. Signage, (including project identification signs and monuments) - subject to the sign permit requirements in the Bennet Municipal Code.
11. Utilities and appurtenant facilities.
12. Roads and parking.
13. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
14. Drainage and detention facilities
15. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Conditional Uses

- (Conditional uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Temporary Uses

- (Temporary uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Special community events
  2. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Open Space Development Standards

Projects permitted in Open Space Areas shall be constructed in accordance with the following Development Standards.

1. Minimum Building Setbacks:
  - Adjacent to other land use planning areas = 30 feet
  - Adjacent to public roadway = 40 feet
2. Minimum building separation = 20 feet (or as required by applicable fire codes)
3. Maximum building height = 35 feet (2 stories)
4. Minimum off-street parking - shall be controlled by the provisions of the Bennett Municipal Code.
5. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
6. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Detention Areas and Drainage Channels

The landscape for detention areas and drainage channels will be designed in a manner that will reinforce the character of MUNDELL farms and the high plains prairie, as well as provide the greatest benefit to the community. All detention areas and related conveyance facilities shall strive for a natural vs. an "engineered" look. The designs shall strive to create a landscape concept for drainage channels and detention areas that will be aesthetically pleasing as well as environmentally responsible in terms of water use. It is considered beneficial to allow for passive recreational activities near detention areas.

1. Detention facilities, manmade drainage channels other than those through residential front or side yards, and disturbed drainage channels, shall be planted with drought tolerant native grasses and plant materials. Front and side yard residential drainages shall be planted to match the front or side yard of the residence. Natural drainage channels containing existing vegetation and non-irrigated native grasses are exempt. Detention areas or drainage channels shall be designed to blend with adjacent areas.
2. Natural drainage corridors containing existing native grasses and established vegetation may be supplemented with native trees, shrubs and ornamental grasses that could enhance wildlife habitat and the pedestrian environment. Areas of disturbance within the natural drainage corridors shall be re-vegetated with native plant materials.
3. Consideration should be given to locating pedestrian focal points along drainages including overlooks, and seating areas.

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LANDSCAPE ARCHITECTURE



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CIVIL ENGINEERING



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APPLICANT

MGV 36 NORTH LAND INVESTMENTS, LLC  
PO Box - 4701  
Greenwood Village, CO 80155  
(303) 507-6651

OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
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DEVELOPMENT STANDARDS

# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
SHEET 6 of 9

4. Plant materials should be used to strengthen the edge of drainage ways.
5. Landscape adjacent to drainage ways should be naturalistic and include riparian vegetation.

## ACCESSORY STRUCTURES AND USES INTENT

To provide Development Standards applicable to all land use areas within MUNDELL farms (exclusive of Open Space areas). Accessory Structures or Uses shall refer to detached, subordinate buildings or structures, the use of which is customarily incidental to that of the principal building or to the main use of the land and which is located on the same lot with the main building or use.

### Permitted Uses (by Right)

1. Private parking garages (attached or detached from single-family homes)
2. Service structures (utility/storage, garden sheds and greenhouses)
3. Patio/privacy enclosures and walls
4. Patio shade structures and gazebos
5. Secondary living units including but not limited to living space, home offices, or recreation uses, within a detached garage or other detached building/structure.
6. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Accessory Structures Development Standards

1. Permitted accessory uses shall conform to the setbacks outlined in the Residential Development Standard Matrix.
2. Maximum building height = 28 feet (or 2 stories)
3. Maximum number of accessory structures = 1 per lot as a use by right, any additional structure would need to be submitted to the Town for review and approval.
4. Detached parking garages shall be architecturally compatible with the main building or house, including similar design styles, details, materials, and color.
5. Service structures, such as garden sheds, utility storage and greenhouses, are only permitted in the Single Family Detached lot types if attached to the main structure and successfully integrated into the residential architecture. Such structures may be detached in, if compatible with the architecture of the main building.
6. Patio shade structures and gazebos should be compatible with the architectural styles of their related homes.
7. Patio/privacy enclosures and walls should be architecturally compatible and reflect details and materials consistent with the residential buildings they serve.
8. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

## RESIDENTIAL STREET DESIGN CONCEPT AND STANDARDS

Residential streets contribute significantly to neighborhood quality. They offer a place to walk, to meet neighbors, and of course, to park. Street network will include a hierarchy of streets that reflect the different residential densities and traffic conditions within the Community. The proposed street system is designed to provide a tree-lined streetscape, characteristic of traditional neighborhoods. The intent is to utilize the standard street sections and standards from the Town of Bennett's standards.

PLANNING  
LANDSCAPE ARCHITECTURE



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OUTLINE DEVELOPMENT PLAN  
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TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
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DEVELOPMENT STANDARDS



# OUTLINE DEVELOPMENT PLAN

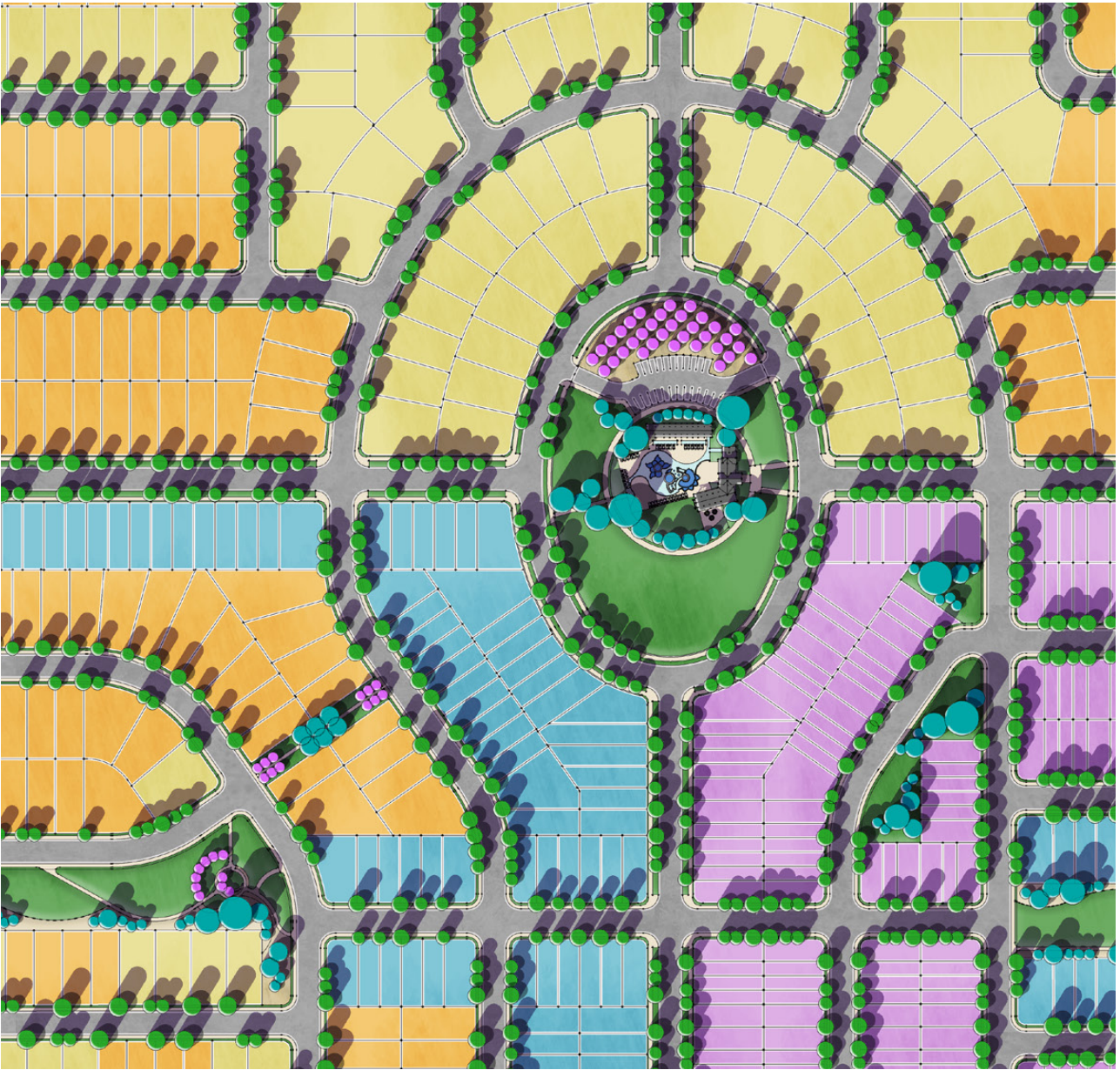
TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
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## Community Patterns Overview

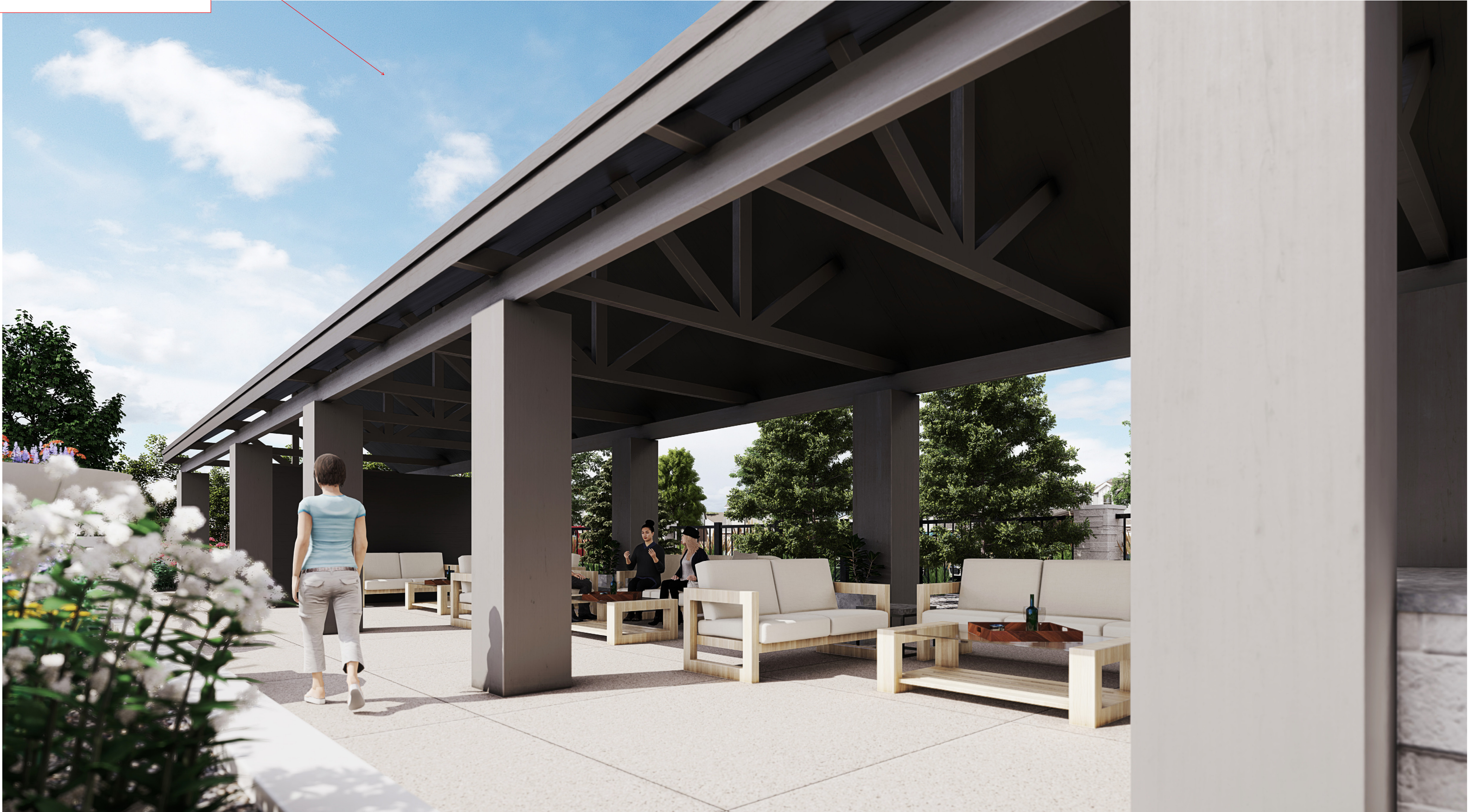
THE COMMUNITY PATTERNS SECTION contains specific information for placing houses and buildings within the future development parcels, as well as information related to the density and character of specific lot types. These guidelines were developed as part of the master planning process, and are meant to ensure that the community develops with the diversity and character anticipated in the overall vision for the community.

The central Neighborhood Park organized the entire community, play in the splash pad with your neighbors! Enjoy time with friends by the outdoor fireplace. Throw a BBQ, play in the great lawn, pick apples from the orchard. Schedule a get-together in the outdoor pavilion. At the Park, MUNDELL farms residents and their guests can truly indulge in a full range of recreational amenities.

THE NEIGHBORHOODS at MUNDELL farms are loosely defined by a pocket park giving identity to the residents in that particular area. Great neighborhoods are walkable, drivable, and bike-able. To be socially connected, the neighborhoods include areas to linger, sit and talk with neighbors and provide both passive and active recreation. Neighborhoods are composed of a variety of blocks knitted together by roads, walks, trails, paths and open spaces that connect residents from their homes to these public spaces.



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OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
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DATE: MAY 2022  
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COMMUNITY PATTERNS & LOT TYPES

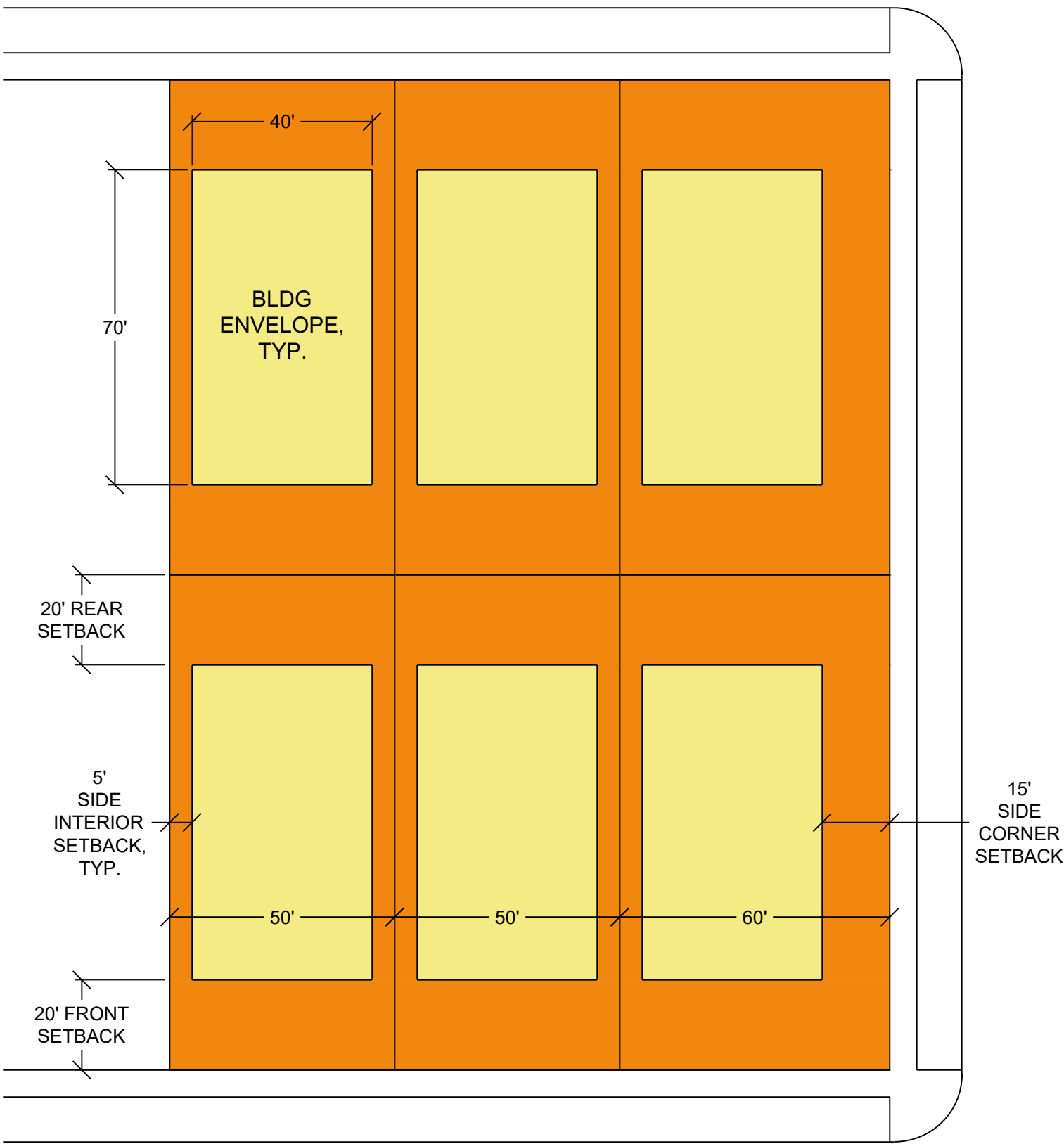


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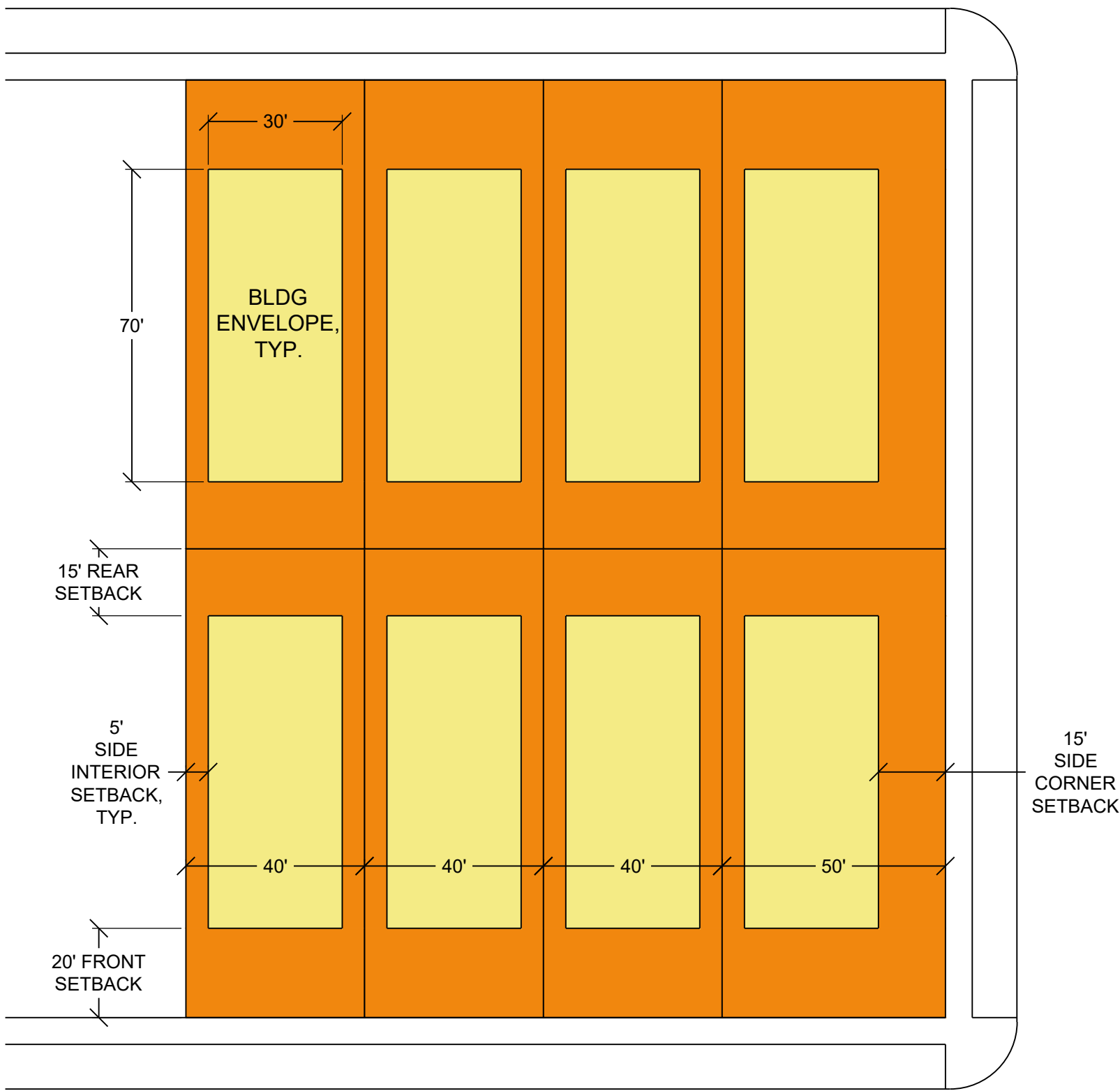
# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
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## 50x110 - GENERAL CONDITIONS



## 40x105 - GENERAL CONDITIONS



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## OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
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DETACHED LOTS

### LOT TYPES

MUNDELL farms will offer at least three different lot types, ranging from attached townhomes and duplexes to single family detached lots. These lot types are not intended to be all inclusive, but are intended to depict the variety and quality anticipated for the community. The lot types depicted in this document include Townhomes, Duplexes, and various sizes of Single Family Detached front loaded lots. Additional products may be used in the project.

### SINGLE FAMILY DETACHED FRONT LOADED - GENERAL CONDITIONS

#### LOT SIZE

The lots range from 40 feet wide by 105 feet deep to 50 feet wide by 110 feet deep. Corner lots are range from a minimum of 50-60 feet wide. These lots are front-loaded.

#### SETBACKS

Setbacks shall be unoccupied and unobstructed by any structure or portion of a structure from 30 inches

above grade upward; provided, however, that fences, walls, trellises, poles, posts, ornaments, furniture and other customary yard accessories may be permitted in any setback subject to height limitations and requirements limiting obstruction of visibility.

#### PROJECTIONS INTO REQUIRED SETBACKS, GENERAL

The following structures may project into required front, side or rear setbacks:

- Paved patios or terraces may project into any required setback, provided that no structures placed on them shall violate other easement requirements.
- Unroofed landings, decks and stairs may project into required setbacks, provided that the floor shall not extend higher than 30 inches above the finished grade level and the projection is at least 5 feet from the lot line.
- Unroofed exterior balconies may project into a required side or rear setback provided these projections are at least 5 feet from the side lot line and 10 feet from the rear lot line.
- Cornices, eaves, canopies, window wells, chimneys, bay windows, ornamental features,

and other similar architectural features may project not more than 3 feet into any required setback.

- Roofs over porches, stairways, landings, terraces, or other exterior approaches to pedestrian doorways may project up to 6 feet into a front setback. The covered porch or entrance area projecting into the front setback shall remain exterior to the building and enclosed by no more than a railing. The projection shall be at least 5 feet from the property line.

#### FRONT YARD SETBACK

Minimum 20-foot setback from the front property line to the house.

#### SIDE YARD SETBACK

Minimum 5-foot setbacks from the side property line.

#### SIDE STREET SETBACK

A minimum 15-foot setback from the side street property line to the house.

#### REAR YARD SETBACK

All structures shall be set back a minimum of 20 feet from the rear property line.

#### ENCROACHMENTS

Porches, bay windows and window wells may not encroach into both the Front Yard and Side Yard Setback Zones.

#### GARAGE REQUIREMENTS

A minimum of two parking spaces per home is required. A diversity of garage styles is required. Diversity shall be achieved by providing a minimum of 2 of the garage variation choices listed below. To meet the diversity requirement each garage variation chosen shall each be used on at least 25 percent of the single family homes within the development. The 2 variations chosen will be a minimum of 50 percent of the development; the remaining 50 percent may be any of the choices listed below.

- Side-loaded garages;
- Garages recessed a minimum of 4 feet behind the front facade of the living space within the house;

- Garages that protrude no less than 2 feet or no more than 5 feet in front of the dwelling unit portion of the structure; and
- Garages recessed a minimum of 2 feet beneath a second floor bay.

#### FENCING RECOMMENDATIONS

Front yard fences are a permitted upgrade and shall not exceed 4 feet in height. No fencing may be installed within sight distance easements. Rear and side yard fences are required for privacy.

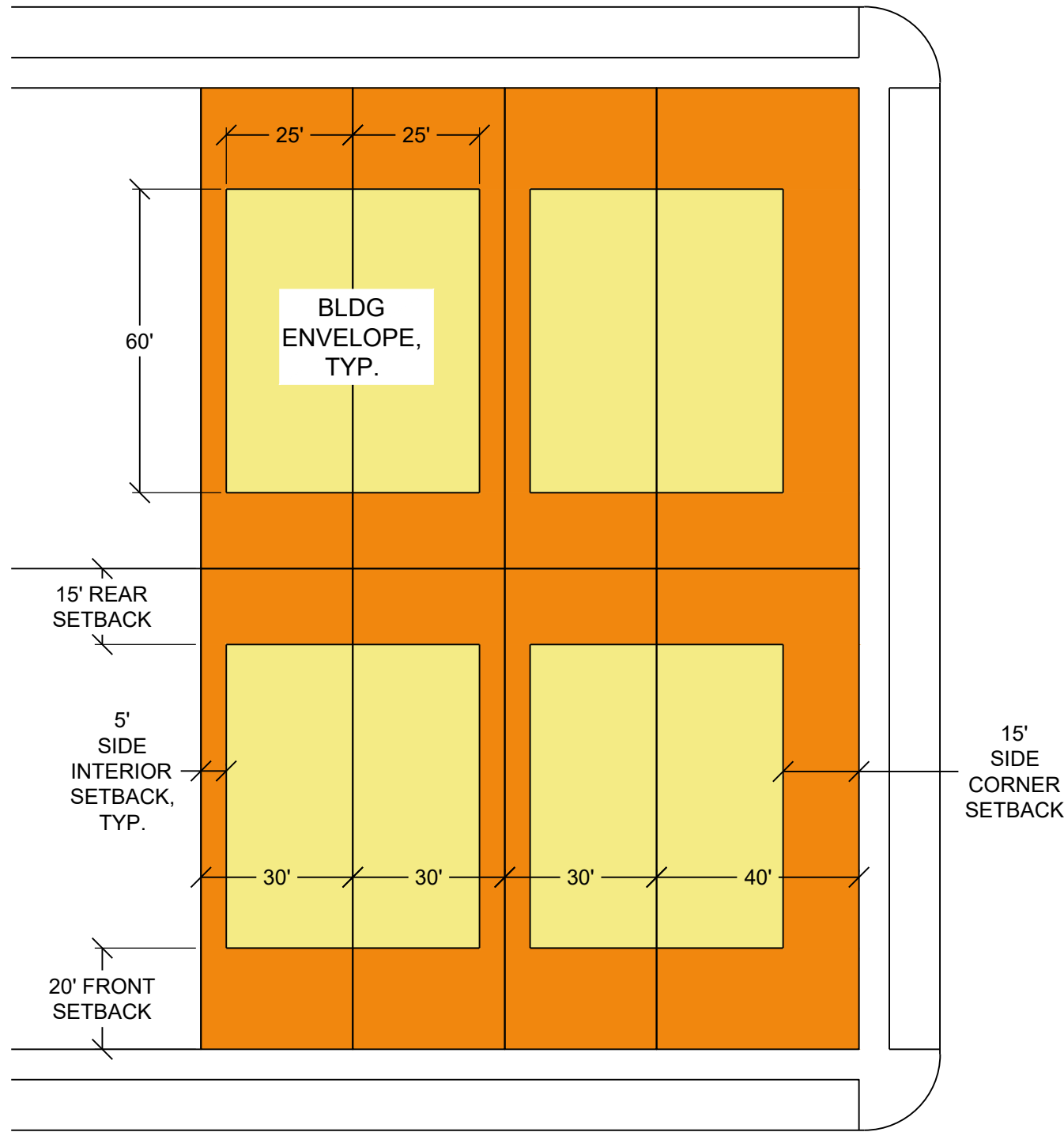
#### YARD REQUIREMENT

A minimum functional yard area of 15 feet by 20 feet is required.

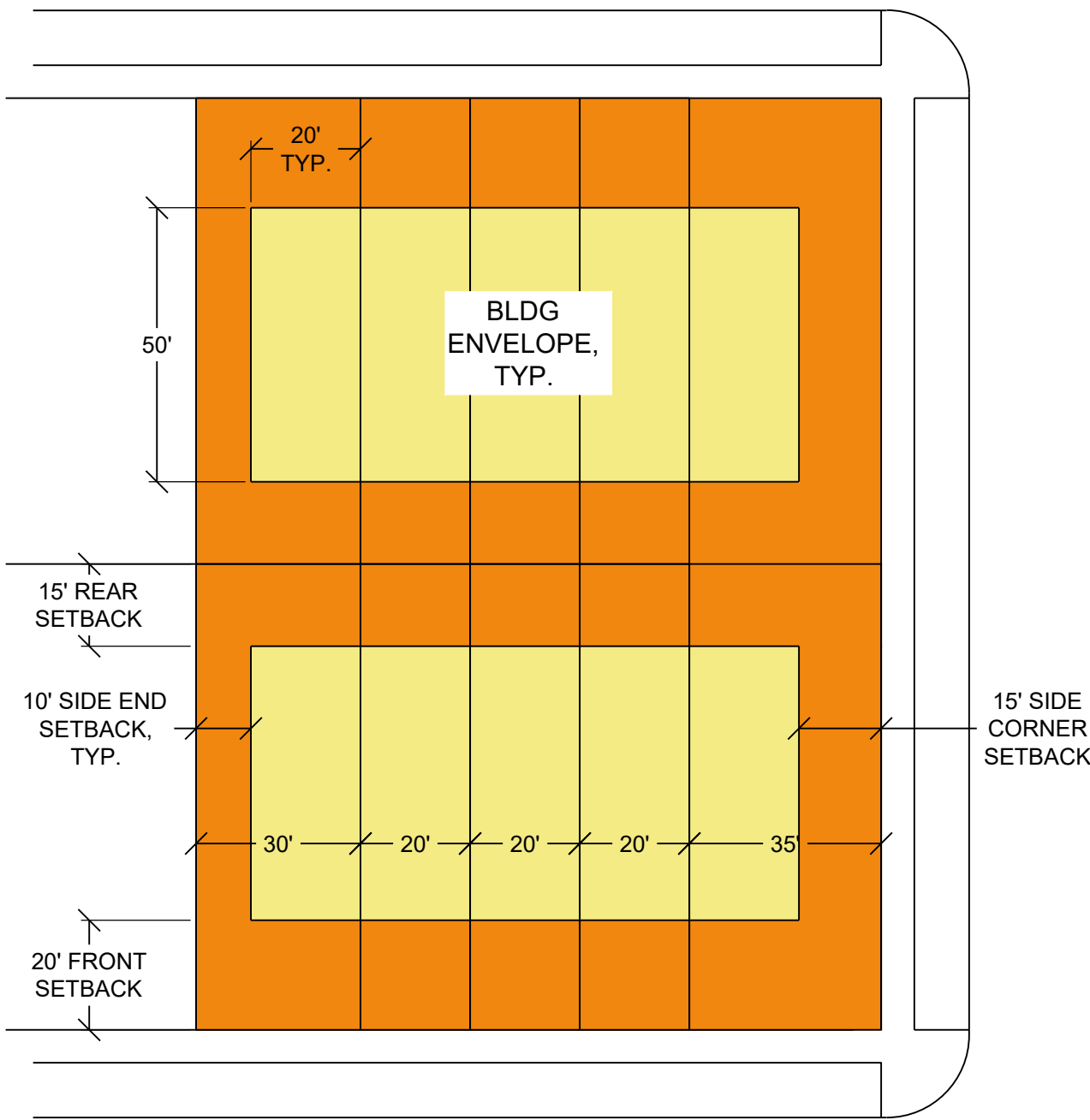
# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
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## DUPLEX - GENERAL CONDITIONS



## TOWNHOMES - GENERAL CONDITIONS



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### APPLICANT

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## OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
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ATTACHED LOTS

### SINGLE FAMILY ATTACHED FRONT LOADED - GENERAL CONDITIONS

#### LOT SIZE

The lots range from 20 feet wide by 85 feet deep for Townhome Lots to 30 feet wide by 95 feet deep for Duplex Lots. These lots are front-loaded.

#### SETBACKS

Setbacks shall be unoccupied and unobstructed by any structure or portion of a structure from 30 inches above grade upward; provided, however, that fences, walls, trellises, poles, posts, ornaments, furniture and other customary yard accessories may be permitted in any setback subject to height limitations and requirements limiting obstruction of visibility.

#### PROJECTIONS INTO REQUIRED SETBACKS, GENERAL

The following structures may project into required front, side or rear setbacks:

- Paved patios or terraces may project into any required setback, provided that no structures placed on them shall violate other easement requirements.
- Unroofed landings, decks and stairs may project into required setbacks, provided that the floor shall not extend higher than 30 inches above the finished grade level and the projection is at least 5 feet from the lot line.

- Unroofed exterior balconies may project into a required side or rear setback provided these projections are at least 5 feet from the side lot line and 10 feet from the rear lot line.
- Cornices, eaves, canopies, window wells, chimneys, bay windows, ornamental features, and other similar architectural features may project not more than 3 feet into any required setback.
- Roofs over porches, stairways, landings, terraces, or other exterior approaches to pedestrian doorways may project up to 6 feet into a front setback. The covered porch or entrance area projecting into the front setback shall remain exterior to the building and enclosed by no more than a railing. The projection shall be at least 5 feet from the property line.

#### FRONT YARD SETBACK

Minimum 20-foot setback from the front property line to the house.

#### SIDE YARD SETBACK

Minimum 5-foot setbacks from the side property line.

#### SIDE STREET SETBACK

A minimum 15-foot setback from the side street property line to the house.

#### REAR YARD SETBACK

All structures shall be set back a minimum of 20 feet from the rear property line.

#### ENCROACHMENTS

Porches, bay windows and window wells may not encroach into both the Front Yard and Side Yard Street Setback Zones.

#### GARAGE REQUIREMENTS

A minimum of two parking spaces per home is required. Townhomes are permitted to have a single garage space, and one space in front of the garage.

#### TOWNHOME SPECIFIC GUIDELINES

- No more than 6 townhome dwelling units may be attached in any single row or building cluster.
- Within each town home row or cluster, individual dwelling units shall be differentiated, or may express a purposely uniform design. When dwelling units are to be differentiated, they shall be differentiated through 2 or more of the following methods:
  - Use of distinct color variation between individual dwelling units;
  - Use of distinct variations in materials between individual dwelling units;
  - Use of distinct variations in architectural style or features, such as a porch or similar feature,

between individual dwelling units;

- Use of distinct variations in roof form,
- A variation in the plane of the front facade to provide a minimum 3 foot variation between individual dwelling units.

When uniformity (sameness or pattern repetition) in design is proposed, this shall be expressed through repetition of 2 or more of the following methods,

- Use of materials both in type and location;
- Size, style, and patterning of windows;
- Size and detailing of front porches;
- Roof dormers, roof form, and roof pitch.

#### DUPLEX SPECIFIC GUIDELINES

A continuous row of identical homes along a block shall be prohibited. Individual structures shall be differentiated through 2 or more of the following methods:

- Use of distinct color variation and materials between individual structures;
- Use of distinct variations in roof form, or
- Use of distinct variations in architectural features, such as porches, roof form, windows, or similar feature, between individual structures.

Models with identical facades shall not be placed adjacent to or across the street from 1 another.

#### FENCING RECOMMENDATIONS

Front yard fences are a permitted upgrade and shall not exceed 4 feet in height. No fencing may be installed within sight distance easements. Rear and side yard fences are required for privacy.

#### YARD REQUIREMENT

A minimum functional yard area of 15 feet by 20 feet is required.



## Engineering Review Memo

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To: Stephen Hebert, AICP, Bennett Planning & Economic Development Manager  
From: Dan Giroux, PE, Engineering Consultant to the Town  
Date: Thursday, July 21, 2022  
Case: Mundell Farms / Bennett North ODP / Town Land Use Case 22.02  
Subject: Engineering Review

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Per the request of the Town of Bennett, Terramax, Inc. has reviewed the application materials for the proposed Mundell Farms Outline Development Plan (ODP). 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 Mundell Farms ODP application and submittal information:

### **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 development, either on the property itself, or on adjacent properties, depending on future Town well spacing, for production and efficiency, as well as other areas and properties potentially served.
  - Current Town water campus area sizing requirements are four (4) acres in size, and as close to square as feasible.
  - The Town Water Supply Specialist, Gina Burke with Jehn Water, will determine what water supply components will be required for this development, on-site and/or off-site, including any potential land dedication areas indicated.

### **Water Distribution System**

- I'm generally in agreement with 2NCivil's findings and conclusions with regard to the potable water distribution system required.
- The Utility Study does indicate high fire protection plus max domestic demand flows.
- This will indicate additional water distribution system network analysis by AQUA Engineering for current and future water system conditions, including additional water tank storage to the east on the Town's NoMCom property, and/or potentially to the south or west of Mundell Farms.
  - Current Town booster pump capacities can also be incorporated into the analysis.
  - These will affect water main sizing and large-main spacing.
  - The AQUA modeling study cannot be undertaken until there is a conceptual water distribution network layout for the property.
- The property is adjacent to existing Town water distribution mains to the immediate northeast, at Converse Road-First Street, and southeast, at West Lincoln Avenue.
  - Both adjacent water distribution mains are within the Town of Bennett "north zone", lower pressure zone, so both can be connected.

- Connections to both mains is desired for greatest independent redundancy of Town water delivery to potential development on the property.
- Other First Street connections may be desirable and allowable for early phases of the Mundell Farms development.
- The Mundell Farms development will be required to provide non-potable water distribution system for public and common green space areas throughout the development.
- The developer will be required to extend both the potable and non-potable systems to key property limit points, including south and west, to provide for future system extensions to adjacent properties.
- The Mundell Farms development would support major regional Town water system expansion via Water 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 water system expansion and upgrades.

### **Sanitary Sewer System / Wastewater Treatment**

- I'm generally in agreement with 2NCivil's findings and conclusions with regard to the sanitary sewer collection system required.
- I suspect the property would be best served by multiple south-to-north mains, discharging to the prospective, proposed Bennett "Western Bypass" sanitary sewer running from west-to-east along the south side of East 38<sup>th</sup> Avenue.
  - These south-to-north 'corridors' are interrupted by the current proposed ODP lot layout, so some degree of 'jogs', Tracts, easements and other alignment accommodations appear to be required.
- The development team should make allowances for the Western Bypass sanitary sewer interceptor in the Mundell Farms, as it is planned to be a 30-inch diameter pipe in concept, with commensurately large manhole structures, and at maximum depths of up to 30 feet.
  - This is expected to be placed in right-of-way, Tract or easement areas along the south side of E 38<sup>th</sup> Avenue, which will have a substantial right-of-way dedication required in its own right.
- The developer will be required to extend the sanitary sewer collection system to key property limit points, including south and west, to provide for future system extension to adjacent properties.
- Development of Mundell Farms with the proposed ODP and densities will require expansion of the Town's Water Reclamation Facility at East 38<sup>th</sup> Avenue.
  - The Town is currently conducting detailed 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 Mundell 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**

- Pedestrian and vehicular connections to the Bennett School District campus to the east are most directly served via Lincoln Avenue or Roosevelt Avenue.
- Truman Avenue is problematic as it is currently a half-street, with no immediate plans nor resources for widening.



- The Truman sidewalk system is dated, and consequently is not ADA compliant.
- Street and sidewalk connections are currently not planned between Truman Avenue and E 38<sup>th</sup> Avenue to the north.
- As noted, the required E 38<sup>th</sup> Avenue right-of-way dedication will be significant, as an Arterial, along with provisions for the Western Bypass sanitary sewer interceptor, and the major CORE Electric primary power corridor amongst other utility infrastructure.
- Similarly, Converse Road/First Street will require significant right-of-way dedication as either an Arterial or Major Collector, in part dependent on street connection opportunities and proposals to the south and west.
  - Road connection accesses to First Street may also be limited dependent upon final classification and use of First Street, determined in part by this development and the west and south connections and traffic burden.

### **Stormwater Management**

- I am generally in agreement with 2NCivil's findings and conclusions with regard to the stormwater management system required.
- My own review of area topography indicates the tributary drainage basin extends at least to the UPRR tracks, and possibly to the Colfax Avenue northside ditch, or some limit between.
  - Currently it is shown delineated to Palmer Avenue only. Please re-evaluate. Lack of existing road culvert crossings does not remove an area from being tributary upstream.
  - This off-site increase would be for pass-through routing, conveyance, outlet and spillway sizing. It may not affect pond sizing, depending on final outlet and overflow design.
- The tributary basin should also be taken to the centerlines of Converse/First Street and E 38<sup>th</sup> Avenue, respectively, and should account for future build-out paving of these major collector or arterial roads.
- Please review and confirm the rainfall depths used for modeling and flows. The one-hour 100-year rainfall depth for Bennett is 2.71 inches, and the one-hour 10-year rainfall depth is 1.68 inches.
- I am concerned with a conceptual (by my own computations) 15 acre-feet of stormwater management storage required, that the 3.4 acre pond area proposed will require more depth than gravity outfall may support.
  - Although not required for this ODP, I'd recommend the development team evaluate feasibility and indications for grading, earthwork, and outfall conveyance.
- The property incorporates a local area drainageway from the south, generally draining off-site properties, and this property, north to East 38<sup>th</sup> Avenue, and beyond.
  - This may require treatment for intake and routing through the property.
- The peak outflows are significant, and speak to the basin area involved. If the existing downstream outfall and conveyance system is insufficient, additional off-site, downstream rights-of-way, easements, and improvements may be required to a stable, recognized outfall point or conveyance.
- Stormwater management for the property and potential development on the property will be challenging, due to the existing low-lying flat areas on-site, discharging into subtle or even unrecognized/unrecognizable, slow-draining stormwater outfalls to the north.
- It is anticipated that these stormwater challenges can be addressed for the development on the property proposed via this OGP.

Steve, this concludes my engineering review of the application materials for the proposed Mundell Farms ODP by the applicant. Please let me know if you have any questions, or require additional information pertaining to the submitted information, or my review.



## Engineering Review Memo

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To: Stephen Hebert, Town Planner  
Chad Bunger, Community & Economic Development Director  
From: Dan Giroux, PE, Engineering Consultant to the Town  
Date: Monday, November 7, 2022  
Case: Mundell Farms / Bennett North ODP / Town Land Use Case 22.02  
Subject: Civil Engineering Review / 2<sup>nd</sup> Submittal

---

Per the request of the Town of Bennett, Terramax, Inc. has reviewed the application materials for the proposed Mundell Farms Outline Development Plan (ODP) 2<sup>nd</sup> submittal. This review does not relieve the applicant from meeting the Town's requirement that the development comply with all Town Codes and Standards. All prior comments are still in effect until Town concurrence regarding applicant responses.

I have the following comments to offer on the Mundell Farms ODP application and submittal information:

### **General**

- The applicant did not submit new information regarding utilities and stormwater, nor responses or acknowledgement of the prior review comments.
- Many of the prior review comments were advisory, and were reviewed with John Vitella, with Gary Walters and Eric McDaniel of EMK Consultants, via Zoom conference.
- As a result, I can offer the following comments for clarifications or follow-up.

### **Water Supply**

- I have spoken with the Town's Water Supply Specialist, Gina Burke, and confirmed that the property development will require the support of groundwater well and water storage tank development, via a Town water campus area.
- As a reminder, current Town water campus area sizing requirements are four (4) acres in size, and as close to square as feasible.

### **Water Distribution System**

- No conceptual or preliminary water supply master plan layout has been provided, for potable or non-potable systems, I assume due to developer and/or homebuilder desire for flexibility to respond to the market.
- For a development of this size, the master plan layout can affect phasing plans for subdivision progression through the property, and will likely be required with a first subdivision proposal.

### **Sanitary Sewer System / Wastewater Treatment**

- The same overall property master plan layout comments, similar to the comments for the water distribution system, hold true for sanitary sewer collection.

- Subdivisions of the Mundell property would be subject to a Wastewater Capacity Reservation Fee through their respective Subdivision Agreements with the Town.
- The Wastewater Capacity Reservation Fee would be a cash payment percentage of the Town Wastewater Impact Fee (WWIF), due at an agreed time, currently conceived to be prior to installation of Subdivision utilities.
- The Wastewater Capacity Reservation Fee would later be credited against the Town WWIF collected at building permit.

**Access**

- No new comments, all prior comments remain in effect.

**Stormwater Management**

- The same overall property master plan layout comments, similar to the comments for the water & sanitary sewer systems, hold true for the stormwater management system.
- Some stormwater technical comments previously provided, regarding rainfall depths and tributary basin areas, affect system sizing, including the stormwater management pond(s), and therefore could affect property planning, layout and land use areas.

Steve & Chad, this concludes my engineering review of the 2<sup>nd</sup> submittal application materials for the proposed Mundell Farms ODP by the applicant. Please let me know if you have any questions, or require additional information pertaining to the submitted information, or my review.

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Subject Bennett North (Mundell) Zoning ODP Submittal Package

Attention Steve Hebert, AICP, Bennett Planning & Economic Development Manager  
Sara Aragon, Community Development Manager

From Mike Heugh, PE  
Town Traffic Engineer

Date July 13, 2022

Copies to Dan Giroux, PE, Town Engineer

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### Mundell Farm TIS, (dated May 27, 2022) – Town Traffic Comments

Comments below are previous comments (with slight revisions) from the zoning traffic memorandum received in Feb 2022 and don't appear to be addressed with the May 2022 submittal.

1. This TIS does not meet Town standards for ODP submittals, which calls for analysis. Given the roughly 7,500 estimated trips, this development falls into the town's "V" access category, which requires analysis of opening day, plus 5 years, and plus 20 years. Intersections analyzed are to be site accesses, intersections within ½ mile of site accesses, and signalized intersections within 1 mile of the site accesses. It would be best to have a scoping meeting on this prior to analysis given the presumed future roadway network, potential impacts to existing roadways/intersections, and the proximity to numerous intersections.
2. Please change the portions of or references to N. Converse Rd that are south of 38<sup>th</sup> Ave. to 1<sup>st</sup> Street.
3. Figure 4 shows short-term and long-term, but only 1 set of numbers is shown. Please update.
4. Please provide justification for 35% of traffic traveling on Colfax Ave. It seems high.

### Mundell Preliminary ODP Plan Set (May 2022)

1. ODP submittal requirements state proposed locations of all major streets, including street names and right-of-way widths, and any proposed new or expanded interchange improvements should be included in the plans. For traffic, the main concern is access spacing to external roadways (based on future planned classifications) and ROW for the internal roadways. Please provide this information.
2. Sheets 3 and 4 don't match in terms of local street access on both 1<sup>st</sup> Street and the Proposed Street on the west edge of the development. Please revise.
3. There's a collector roadway continuing to the south of the property. Where does this go? And how does it fit with parcel to the south?

4. It's not clear what the "Primary Entry" will provide users once the property develops in the southern half, but it's unrealistic that vehicles will drive past the entire development to use the Primary Entry and whatever it may provide. It's noted that there are plenty of other accesses surrounding the property and that access through the Primary Entry only is required.

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---

Subject Bennett North (Mundell) Zoning ODP Submittal Package

Attention Chad Burger, Town Community & Economic Development Director  
Steve Hebert, AICP, Bennett Planning & Economic Development Manager

From Mike Heugh, PE  
Town Traffic Engineer

Date October 27, 2022

Copies to Dan Giroux, PE, Town Engineer

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### Mundell Farm TIS, (dated September 26, 2022) – Town Traffic Comments

1. Page 2, please update the description of 1<sup>st</sup> Street (SH 79). As a reader/reviewer this description, while not totally incorrect, reads different than existing conditions indicate. The description should indicate that it's located approximately 1 mile east of the site. The state highway is not named 1<sup>st</sup> Street north of Colfax. It's either Palmer (east-west portion) or Kiowa-Bennett Road (SH 79) (north-south portion). While realignment is expected, realignment doesn't affect most of SH 79 from Old Victory to 38<sup>th</sup> Ave.
2. Page 2, please update the description of 1<sup>st</sup> Street (Local Street). The description should indicate that 1<sup>st</sup> Street transitions to a gravel/dirt road with speed limit 35 mph north of Truman Ave, this section of roadway is directly adjacent to the site on the east, and is stop controlled at E. 38<sup>th</sup> Ave. South of Truman Ave contains numerous driveways and varying ROW.
3. Page 2, please update the description of Palmer Ave to indicate an at-grade railroad crossing with active controls near the Palmer/Colfax intersection.
4. Page 2, please update the description of Colfax to indicate the speed limit drops to 45 mph and then to 35 mph east of the Colfax/1<sup>st</sup> Street (SH 79) intersection.
5. Page 3, Int #5, please include text stating that SH 79 was analyzed assuming 2 NB through lanes as a background condition. (I acknowledge this is stated as a recommendation on Figure 10b, but was included in 2030 background analysis. **Is this a planned improvement or true recommendation? I think having 2 NB lanes should be noted in the text regardless.**)
6. Can you respond to how the existing counts from previous TIA's were used to generate existing volumes for this report, generally speaking? A few things that caught my eye leading to this question were the volumes in this report don't match the previous reports that were attached (not that they should) and Penrith Park TIA shows Palmer/Colfax volumes but not Penrith/Colfax volumes but Figure 3a indicates Brunner and Penrith TIA's were used at int. #22 & #23.

7. Why wasn't Colfax Ave and SH-79 intersection analyzed since site generated traffic is moving through it?
8. How to incorporate additional bennett ranch volumes, KCP volumes, volumes from Penrith (Muegge Farms), aux lanes to 38<sup>th</sup>/79. Show NBLT lane @ 38<sup>th</sup> in 2025? Other changes at this intersection?
9. Pages 2 and 3 of LOS Table 1 show last column as 2030. Please revise to 2042.
10. Page 7, Int #18: qualify that the LOS E in 2042 is a result of the development. Also, "2042" is transposed in last sentence. Please revise.
11. Page 8, Int #22: qualify that the LOS E & F occur by 2030 and as a result of the development for select movements.
12. Page 8, Int #24: qualify that the LOS E & F occur by 2025 and as a result of the development for select movements.
13. Page 9, Projected LOS: can you use the names of intersections 18, 22, & 24 to help the reader?
14. Page 9, having figures that detail lane geometry recommendations is useful. However, additional text is needed in the conclusions/recommendations section, stating what needs to be completed to achieve stated LOS, i.e. additional roads (& classifications??), widened roads, new signals, relocated RR crossings, etc. Differentiate needs based on background or total, i.e. an additional turn lane was needed in 20XX because.... Is it appropriate to distinguish who is paying for the improvements at this point?
15. Page 9, please reword bullet #6. These aren't the only improvements that should be recommended.
16. Figure 7, please provide justification for 45/40% of traffic traveling on Colfax Ave. It seems high.
17. Estimated ADT on 1<sup>st</sup> at Roosevelt is 650 veh in 2025 background, with 1345 veh site generated in phase 1, for a total of 1995 veh/day. This is a which is a 300% increase in traffic and exceeds the ADT threshold for "local" roadways. (Numbers are similar for 2030 & 2042. 2025 is worst case.)
18. Figure 10b, please update recommendation #4 to 378 feet + 222-foot transition taper to coincide with the concept design from Bennett Ranch.
19. Figure 10b, most proposed intersections have 150' storage but a few have 200'+. How were these few aux lanes sized?
20. Figure 11b, what is generating the improvements at Int #10 in 2042 that aren't present in 2030?



# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 1 of 9

## LEGAL DESCRIPTION

THE NE1/4 SECTION 28, TOWNSHIP 3, RANGE 63,

EXCEPT THREE ACRES IN THE SE1/4 OF THE NE1/4 OF SAID SECTION 28 DESCRIBED AS:  
BEGINNING AT THE SOUTHEAST CORNER OF THE NE1/4;  
THENCE NORTH 396'; THENCE WEST 330'; THENCE SOUTH 396'; THENCE EAST 330' TO THE POINT OF BEGINNING.

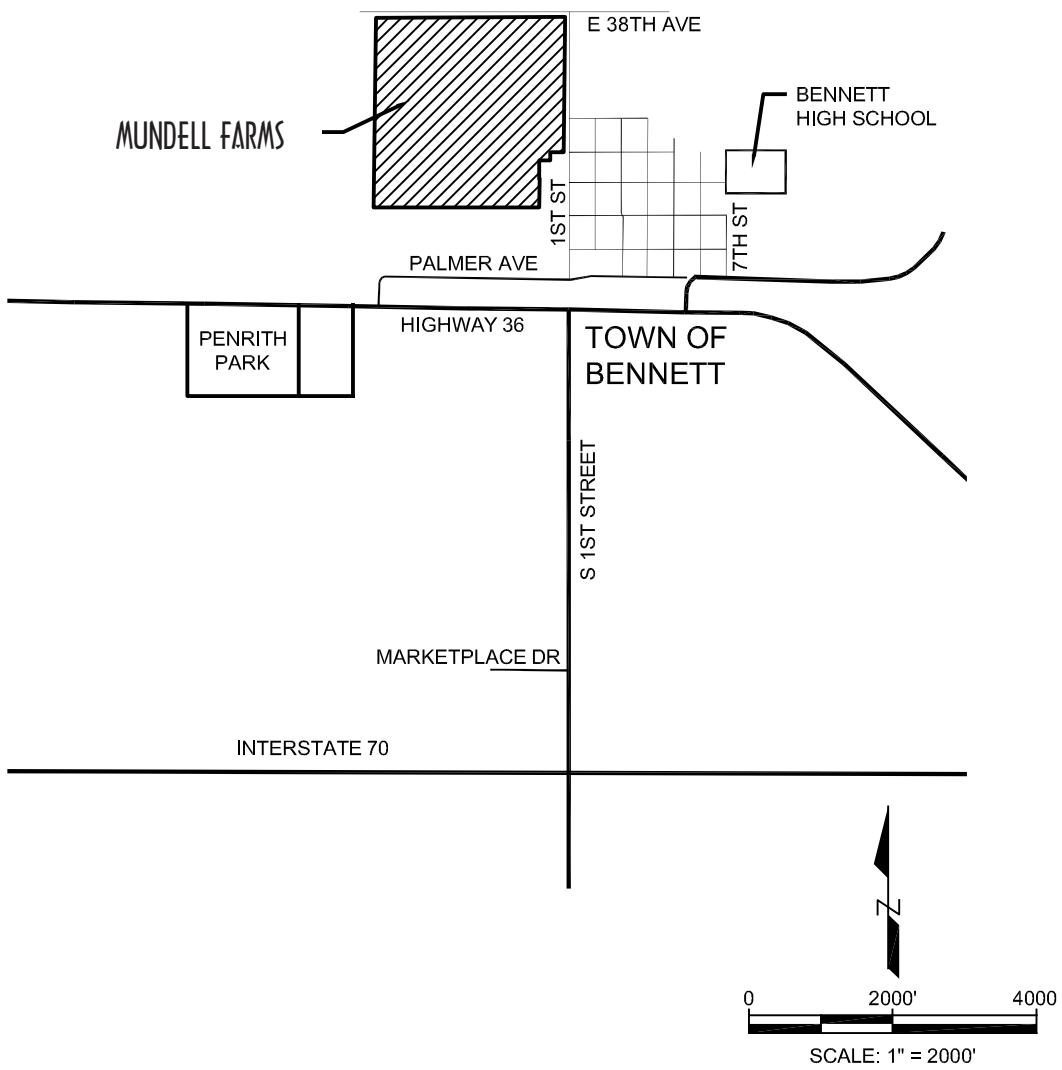
AND EXCEPT A PARCEL OF LAND SITUATED IN THE NE1/4 OF SAID SECTION 28 DESCRIBED AS:  
BEGINNING AT A POINT 396.0' N00°01'E OF THE SE CORNER OF THE NE1/4 OF SAID SECTION 28; THENCE N00°01'E A DISTANCE OF 365.0'; THENCE N89°59'W A DISTANCE OF 187.0'; THENCE S00°01'W A DISTANCE OF 113.0'; THENCE N89°59'W A DISTANCE OF 151.5 FEET; THENCE S00°01'W A DISTANCE OF 257.0'; THENCE N89°10'13"E A DISTANCE OF 338.5', MORE OR LESS, TO POINT OF BEGINNING.

ABOVE PARCEL OF LAND INCLUDES 153.62 ACRES MORE OR LESS.



## SHEET INDEX

Sheet No.	Sheet Name
1	Cover
2	Introduction/Development Concept
3	Introduction/Development Concept
4	ODP Zoning Map
5	Illustrative Concept
6	Development Standards
7	Development Standards
8	Community Patterns & Lot Types
9	Lot Types



## Land Use Summary Chart

Land Use Type	Gross Acreage	% of Total
Open Space and Trail Corridors	16.8	10.9%
Parks & Recreation Areas	6.3	4.1%
Development Areas (All Residential)	117.4	76.4%
Major Roadways	13.1	8.5%
Total Map Acreage	153.6	100.0%
Maximum # of Dwelling Units	900	
Residential Density	5.9	

## APPROVALS

Approved by the Town Board of Trustees of the Town of Bennett this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by Ordinance No. \_\_\_\_\_.

Mayor \_\_\_\_\_ ATTEST: Town Clerk \_\_\_\_\_

By signing this ODP, the owner acknowledges and accepts all of the requirements and intent set forth herein.

OWNER \_\_\_\_\_

STATE OF COLORADO )  
COUNTY OF \_\_\_\_\_ )SS

The above and foregoing signature of \_\_\_\_\_ as \_\_\_\_\_ of \_\_\_\_\_, was subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Witness my hand and official seal.  
My commission expires on: \_\_\_\_\_

(SEAL) \_\_\_\_\_  
Notary Public

Approved by the Planning and Zoning Commission of the Town of Bennett, Colorado this day of \_\_\_\_\_, \_\_\_\_\_; by Resolution No. \_\_\_\_\_.

Chair \_\_\_\_\_ ATTEST: Town Clerk \_\_\_\_\_

## APPLICANT

MGV 36 NORTH LAND INVESTMENTS, LLC  
PO Box - 4701  
Greenwood Village, CO 80155  
(303) 507-6651

## PLANNER/LANDSCAPE ARCHITECT

  
**pcs group inc.**  
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OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
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1 of 9

COVER



# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
SHEET 2 of 9

## DEVELOPMENT CONCEPT AND INTENT

### *Good Living Grows* NATURALLY HERE

The idea for living at MUNDELL farms is pure and natural: Surround homes with a central park, additional pocket parks, and a perimeter trail. The parks and open space energize the residents and the perimeter trail provides an active social amenity for the community. The homes will be diverse, for all generations and lifestyles. It is anticipated that MUNDELL farms will start with both traditional detached and attached homes. A community goal is to have every home within 300 feet of a park or trail that connects to the 1-mile perimeter trail network.

## PLAN AMENDMENTS

The size of any Planning Area may increase or decrease by an administrative amendment for no more than 10% as determined by the Town's Zoning Administrator after final determination of: internal street alignments, arterial street alignments, park and open space and buffer zone areas. The initial boundary of any Planning Area will be established with the final plat that is prepared for that area. Amendments to planning areas shall be subject to the Town of Bennett Municipal Code, as amended.

## TOWN OF BENNETT MUNICIPAL CODE STANDARDS AND DESIGN GUIDELINES

The Town standards, as amended, apply for landscaping, lighting and parking unless modified by this document. In addition, design guidelines adopted by the Town of Bennett shall apply to this development in conjunction with design statements included in this document.

## RESIDENTIAL NEIGHBORHOOD USES

THE COMMUNITY contains four primarily residential neighborhoods organized around the central neighborhood park, pocket parks, or adjacent roadways. Each neighborhood will allow for a range of residential uses, from single-family attached, small lot and larger lot single-family detached homes. In general it is anticipated that densities will be less along the north and western border of the property. This range of housing types is proposed to ensure economic success for the project, and to attract a range of home buyers. While the actual mix of home types and lot sizes within individual neighborhoods may vary based on market conditions and economic factors at the time of development, a maximum number of units and density within each neighborhood will be maintained.

Given the conceptual nature of the plan, some minor variations in the boundaries, acreages and densities of individual neighborhoods will be allowed, but will not exceed a variation of 20% for any area as described in this ODP. In addition the overall gross project density of 5.9 du/ac and a total residential build out of 900 homes will not be exceeded.

## PARKS AND OPEN SPACE SYSTEM

THE PROPOSED Parks and Open Space for MUNDELL farms will exceed the minimum 10% requirement for the Town of Bennett as required for a PD District. As depicted the Parks and Open Space system is approximately 15% of the total property, the areas are anticipated for active play and recreation opportunities, trail corridors, perimeter open space buffers, community entryways and natural open space areas designed to serve the future residents of the Town of Bennett.

The plan anticipates a centrally located neighborhood park, that is connected to the communities trail corridors. Pedestrian walkways and trail connections within individual parcels will link the neighborhood amenities such as the 4 additional centrally located pocket parks.

## ENVIRONMENTAL STATEMENT

THE PROPERTY has no identified floodplain. We do not believe there are any wetlands, wildlife migration routes, or any sites of historic, archaeological, or paleontological significance.

## SITE ACCESS AND CIRCULATION

THE COMMUNITY includes several entry locations, a primary entry is anticipated from E-38th Ave which will create a strong community identity for the community. The primary entry road will terminate at the Neighborhood Park. The entryways and roadways will incorporate a consistent streetscape character, including streetscape landscaping, sidewalks, fencing and signage to produce a positive impression upon entering the community, as well as enhancing the comfortable neighborhood environment for the larger community.

## SCHOOLS

ANY SCHOOL REQUIREMENT will be satisfied with cash-in-lieu.

## FIRE PROTECTION SERVICES

FIRE PROTECTION SERVICES for MUNDELL farms will be provided by the Bennett -Watkins Fire Rescue. The property is located approximately 1.5 miles west of Station 91. Station 91 is staffed 24 hours a day, and is the primary response station for the fire district. In addition the property is located approximately 4.0 miles from Station 92. The property is within the required 5-mile service area of both fire stations.

## WATER & SEWER SERVICE

The MUNDELL Farms property is currently annexed into the Town of Bennett and is seeking Zoning approval for the ODP Zoning. MUNDELL Farms is proposing to connect into and extend the existing Town of Bennett water and sewer infrastructure to serve the site. At this time, we suspect the main waterlines to be extended north along 1st Street into the site and the sewer to be connected to the treatment plant located off the northeast of the site, on the east side of 1st Street. We have computed preliminary main line sizes to get an understanding of the scope that will be required. Further modeling is necessary to determine

line sizes and exact locations to serve the development. At this time, we expect a 15" main sewer will be necessary to serve the development at the downstream end, with a minimum of 8" mains at the lots. Water mains will be primarily 8" with loops of 12" and 15" serving the 8". It may be necessary for the Town to provide additional storage for domestic water. Once the models are produced and further design is considered the required infrastructure can be determined.

## STORM DRAINAGE

PROPOSED IMPROVEMENTS for MUNDELL farms will require the design and construction of storm drainage facilities to reduce site run-off and the impact to historic proportions. Drainage facilities will be built to the Town of Bennett standards, a preliminary drainage study has been completed as a part of this ODP.

The project will incorporate several concepts in the design of drainage facilities for the site, including:

1. Measures to reduce erosion effects of concentrated flows from developed storm water runoff to adjacent agricultural fields (particularly the western drainage basins);
2. Evaluation of detention facilities for multiple use, such as parks and open space, recreation facilities, trail corridors, and storm water storage for irrigation of common/public open space areas;
3. Detention and erosion control requirements for phased construction; and
4. Storm water quality enhancement in accordance with the best management practices, particularly in the neighborhood commercial areas.

## GENERAL DEVELOPMENT PHASING

DEVELOPMENT is generally anticipated to proceed from the north to the south. Initial site access will be from E-38th Ave. Development of the interior road network will provide access to individual residential parcels as this network is extended through the property, and the centrally located Neighborhood Park will be in the first phase of the community. Public facilities/services, infrastructure, utilities, and amenities will be constructed to serve the residential neighborhoods in a reasonable and efficient manner as those areas are developed. The total project build-out time frame will be determined by market conditions.



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OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
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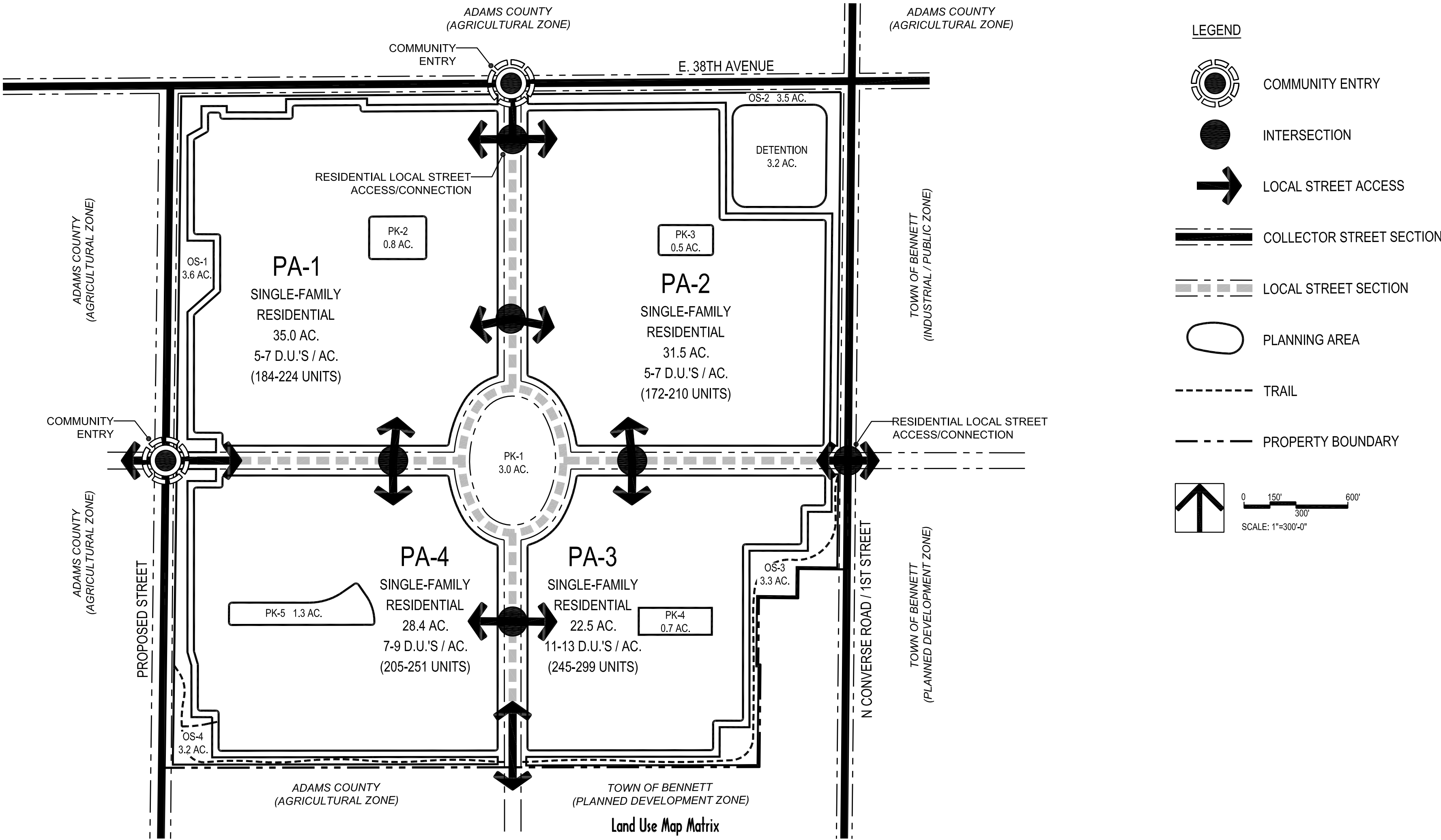
INTRODUCTION



OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 3 of 9

OUTLINE DEVELOPMENT PLAN MAP



NOTES:

- The projected mix of single family attached/detached homes, lot sizes and densities will depend on market conditions and economic factors at the time of development, but will not exceed 900 homes.
- See Lot standards and Development standards for more specific lot and building parameters for proposed residential uses and lot types.
- Open Space and Trail Corridor area includes perimeter and internal open space and buffers, trail connections, drainage corridors, detention areas and community entries.
- Access locations shown on this plan are conceptual and are subject to change. Final access locations and allowed turn movements determined with later development applications such as Final Development Plan or Final Plat.
- Local street alignments shown herein as subject to change based on future development plans for each planning area.

Land Use Map Matrix

A. Land Use Item	B. Planning Area Map Number	C. Gross Land Area in Acres	D. Percentage of Total Land Area	E. Land Use Formula (DU/AC)	F. Proposed Maximum Density (In DUs)	G. Phasing, Details and Comments
1. OPEN SPACE AND TRAIL CORRIDORS	OS-1	3.6	2.3%			Dedicated Open Space
	OS-2	6.7	4.4%			Dedicated Open Space - includes detention area
	OS-3	3.3	2.1%			Dedicated Open Space
	OS-4	3.2	2.1%			Dedicated Open Space
2. PARK & RECREATION AREAS	PK-1	3.0	2.0%			Anticipated Neighborhood Park & Primary Amenity
	PK-2	0.8	0.5%			Anticipated Pocket Park
	PK-3	0.5	0.3%			Anticipated Pocket Park
	PK-4	0.7	0.5%			Anticipated Pocket Park
	PK-5	1.3	0.8%			Anticipated Pocket Park
3. DEVELOPMENT AREAS	PA-1	35.0	22.8%	5 - 7 DU/AC	184 - 224	Primarily Single Family Residential - Attached allowed
	PA-2	31.5	20.5%	5 - 7 DU/AC	172 - 210	Primarily Single Family Residential - Attached allowed
	PA-3	22.5	14.6%	11 - 13 DU/AC	245 - 299	Primarily Single Family Attached Residential - Detached allowed
	PA-4	28.4	18.5%	7 - 9 DU/AC	205 - 251	Mix of Single Family Detached and Attached
4. MAJOR ROADWAYS		13.1	8.5%			
5. Total Map Acreage (Total figures above)		153.6	100.0%	5.9	900	
6. Applicant's Acreage Listed in Application		153.6				

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OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
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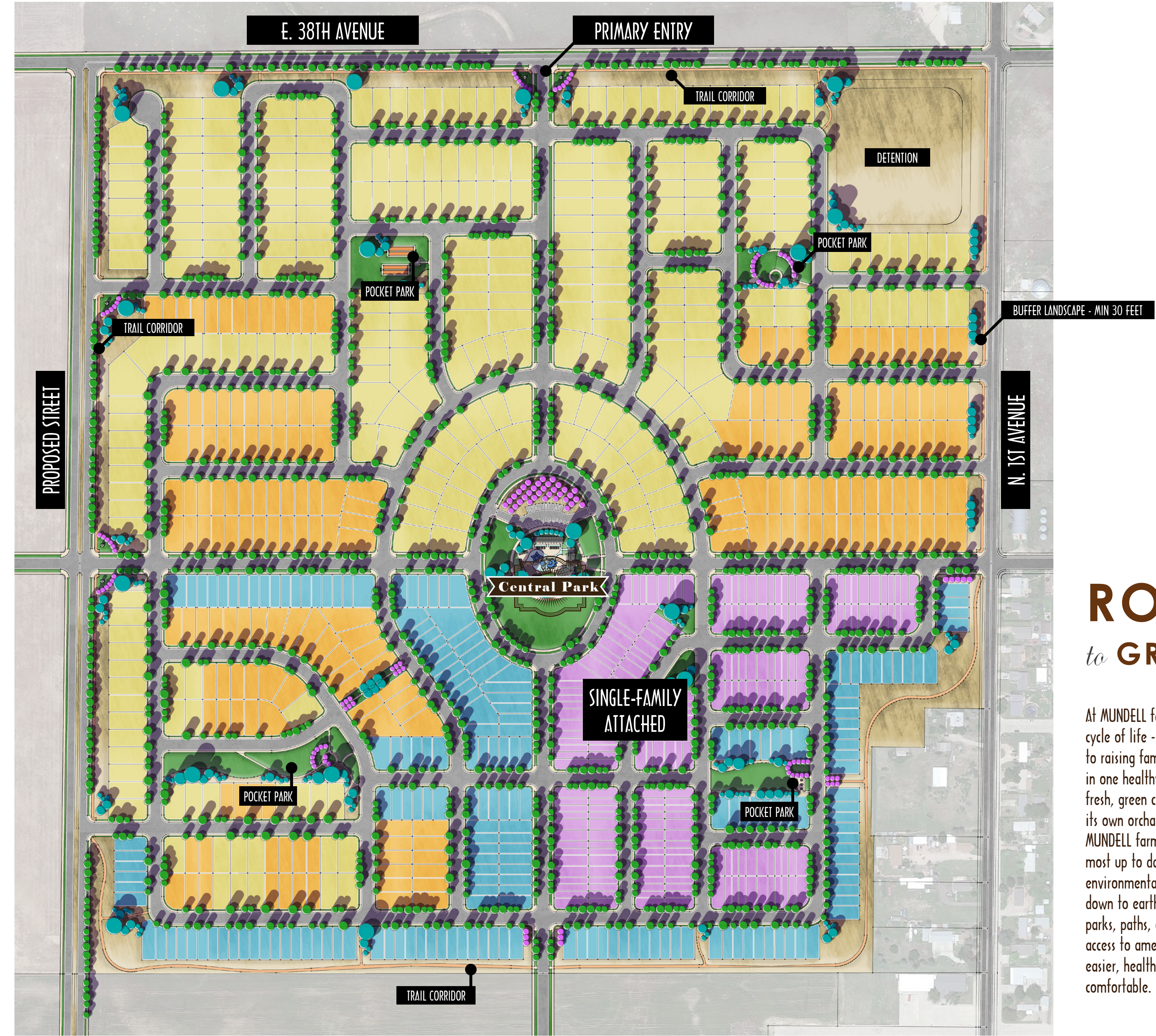
ODP ZONING MAP



# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 4 of 9

ILLUSTRATIVE CONCEPT PLAN - NOT TO SCALE



## ROOM to GROW

At MUNDELL farms, the entire cycle of life - from raising food to raising families - evolved in one healthy place. The first fresh, green community including its own orchard in the park! MUNDELL farms is rooted in the most up to date neighborhood and environmental thinking. Yet, it is down to earth and friendly with parks, paths, open space and easy access to amenities that make life easier, healthier, sustainable and comfortable.

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## OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
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ILLUSTRATIVE CONCEPT



# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
SHEET 5 of 9

## DEVELOPMENT STANDARDS INTRODUCTION

The following Development Standards have been prepared to ensure a responsible site planning process which will help minimize potential land use conflicts, provide visual interest and diversity of homes, as well as enhance the small town, country character and open feeling of the Community. The standards also provide the flexibility necessary to support a range of single family-residential housing types and lot sizes, depending on market conditions at the time of development.

The Development Standards have been established for each major land use type within the Community. Projects permitted within each area and land use type shall be constructed in accordance with these Development Standards and permitted uses. These standards are considered preliminary guidelines which may require more specific information and detail at the time of Final Development Plan Review. The architectural character and intent for special/innovative residential solutions will also need to be established at Final Plan as determined by the Town. This may include prototypical site plans, and architectural character sketches and elevations.

Development Standards with respect to parking (including commercial off-street parking), sign control and landscape requirements shall be controlled by the provisions of the Town's Zoning Code and Subdivision Regulations.

## ARCHITECTURAL STANDARDS

Each neighborhood shall contain architectural diversity, high quality and attention to design detail in accordance with a set of design guidelines and standards to be created for the project at the time of final plat. The following general standards shall apply to all residential neighborhoods and become the basis for more specific architectural guidelines.

1. Varied architectural styles shall be encouraged within each neighborhood. (Architectural building forms and elevations should be varied but compatible along the streetscape, simple forms are preferred over complex forms)
2. Where floor plans are offered on a repeating basis, alternate elevations shall be developed. Identical floor plans with similar exterior elevations shall not be located adjacent to, or immediately across from one another.
3. A variety of design elements and details shall contribute to the overall character of a home's elevation and its appearance from the street, including the use of front porches and covered entries, bay and box windows, and the handling of windows and door openings.
4. Careful scrutiny shall be given to the massing, proportions, and the overall scale of each design. A home's mass will be "broken up" to reduce its apparent scale, provide visual interest and depth, and achieve a more articulated building form. Massing of individual homes should be simple and reflect the architectural style of the home. This requires the careful application of elevation styles to appropriate floorplans. For example, the strong two-story vertical massing of colonial style homes is most compatible with a simple rectilinear two-story stacked floorplan while the asymmetrical two-story massing or single story massing of a craftsman lends itself better to second floor recessed or single story plan. Builders are encouraged to develop floor plans that are responsive to both architectural style objectives as well as energy efficient building objectives. These two objectives can be satisfied by creating simple floor plan forms which minimize jogs and avoid unnecessary complicated massing solutions.
5. Large, flat, unbroken building planes on the front and rear elevations shall be prohibited. Side elevations without windows shall be discouraged.
6. Size, shapes, proportions, and trim of doors and windows shall be consistent with the architectural style of the home.
7. Garage-dominated homes and streetscenes shall be avoided through various design techniques, including providing varied garage orientations, locations and setbacks, as well as recessing garages into the main plane of front facades and providing design elements to help them blend with front architecture.
8. Maximum single family residential buildings heights will be limited to 35 feet.

## SINGLE-FAMILY RESIDENTIAL INTENT

To provide for a variety of residential development of single-family homes on a mix of single-family lot types, including the potential for attached homes. Special residential housing types and lot configurations, including but not limited to, rear-load homes with alley access, will be allowed if consistent with the intent, standards, and residential character of this section.

### Permitted Uses (by Right)

1. Single-family attached and detached dwelling units
2. Attached or detached private garages (with front and rear-loaded access, including alleys.)
3. Community information centers and kiosks
4. Accessory structures and uses (see below)
5. Public and private open space and recreational facilities
6. HOA facilities and trails
7. Signage (including project identification signs and monuments)-subject to the sign permit requirements in the Bennett Municipal Code.
8. Utilities and appurtenant facilities
9. Roads and parking
10. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
11. Drainage and detention facilities
12. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Conditional Uses

- (Conditional uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Child care centers
  2. Public and quasi-public facilities
  3. Institutional facilities
  4. Special community buildings/facilities and events
  5. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Temporary Uses

- (Temporary uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Show home complexes and/or residential sales offices
  2. Temporary construction yards and structures
  3. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

## OPEN SPACE AREAS INTENT

To provide active and passive open space uses, including potential recreational facilities, to serve the residents of MUNDELL farms.

### Permitted Uses (by Right)

1. Active public and private recreational uses, including but not limited to ballfields, playgrounds, swimming pools, and court games.
2. Passive public and private recreational uses, including but not limited to picnic grounds, native, naturalized or landscaped fields, and visual buffer open space.
3. Public Recreation Buildings.
4. Community Information/Sales Centers.
5. Picnic Pavilions and Shelters.
6. Public and quasi-public facilities.
7. Hiking and biking trails.
8. Accessory structures and uses.

9. Temporary construction yards and structures.
10. Signage, (including project identification signs and monuments) - subject to the sign permit requirements in the Bennet Municipal Code.
11. Utilities and appurtenant facilities.
12. Roads and parking.
13. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
14. Drainage and detention facilities
15. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Conditional Uses

- (Conditional uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Temporary Uses

- (Temporary uses will be reviewed and processed in accordance with the Bennett Municipal Code)
1. Special community events
  2. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Open Space Development Standards

Projects permitted in Open Space Areas shall be constructed in accordance with the following Development Standards.

1. Minimum Building Setbacks:  
Adjacent to other land use planning areas = 30 feet  
Adjacent to public roadway = 40 feet
2. Minimum building separation = 20 feet (or as required by applicable fire codes)
3. Maximum building height = 35 feet (2 stories)
4. Minimum off-street parking - shall be controlled by the provisions of the Bennett Municipal Code.
5. Consideration may be given to shared parking where appropriate in accordance with the Bennett Municipal Code requirements for parking regulations.
6. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Detention Areas and Drainage Channels

The landscape for detention areas and drainage channels will be designed in a manner that will reinforce the character of MUNDELL farms and the high plains prairie, as well as provide the greatest benefit to the community. All detention areas and related conveyance facilities shall strive for a natural vs. an "engineered" look. The designs shall strive to create a landscape concept for drainage channels and detention areas that will be aesthetically pleasing as well as environmentally responsible in terms of water use. It is considered beneficial to allow for passive recreational activities near detention areas.

1. Detention facilities, manmade drainage channels other than those through residential front or side yards, and disturbed drainage channels, shall be planted with drought tolerant native grasses and plant materials. Front and side yard residential drainages shall be planted to match the front or side yard of the residence. Natural drainage channels containing existing vegetation and non-irrigated native grasses are exempt. Detention areas or drainage channels shall be designed to blend with adjacent areas.
2. Natural drainage corridors containing existing native grasses and established vegetation may be supplemented with native trees, shrubs and ornamental grasses that could enhance wildlife habitat and the pedestrian environment. Areas of disturbance within the natural drainage corridors shall be re-vegetated with native plant materials.
3. Consideration should be given to locating pedestrian focal points along drainages including overlooks, and seating areas.

PLANNING  
LANDSCAPE ARCHITECTURE



200 Kalamath Street, Denver, CO -  
80223  
tel: 303.531.4905  
www.pcsgroupco.com

CIVIL ENGINEERING



6 Inverness Ct. E., Ste 125, Englewood,  
CO 80120  
303.925.0544

### APPLICANT

MGV 36 NORTH LAND INVESTMENTS, LLC  
PO Box - 4701  
Greenwood Village, CO 80155  
(303) 507-6651

OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

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DEVELOPMENT STANDARDS

# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
SHEET 6 of 9

- 4. Plant materials should be used to strengthen the edge of drainage ways.
- 5. Landscape adjacent to drainage ways should be naturalistic and include riparian vegetation.

## ACCESSORY STRUCTURES AND USES INTENT

To provide Development Standards applicable to all land use areas within MUNDELL farms (exclusive of Open Space areas). Accessory Structures or Uses shall refer to detached, subordinate buildings or structures, the use of which is customarily incidental to that of the principal building or to the main use of the land and which is located on the same lot with the main building or use.

### Permitted Uses (by Right)

- 1. Private parking garages (attached or detached from single-family homes)
- 2. Service structures (utility/storage, garden sheds and greenhouses)
- 3. Patio/privacy enclosures and walls
- 4. Patio shade structures and gazebos
- 5. Secondary living units including but not limited to living space, home offices, or recreation uses, within a detached garage or other detached building/structure.
- 6. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

### Accessory Structures Development Standards

- 1. Permitted accessory uses shall conform to the setbacks outlined in the Residential Development Standard Matrix.
- 2. Maximum building height = 28 feet (or 2 stories)
- 3. Maximum number of accessory structures = 1 per lot as a use by right, any additional structure would need to be submitted to the Town for review and approval.
- 4. Detached parking garages shall be architecturally compatible with the main building or house, including similar design styles, details, materials, and color.
- 5. Service structures, such as garden sheds, utility storage and greenhouses, are only permitted in the Single Family Detached lot types if attached to the main structure and successfully integrated into the residential architecture. Such structures may be detached in, if compatible with the architecture of the main building.
- 6. Patio shade structures and gazebos should be compatible with the architectural styles of their related homes.
- 7. Patio/privacy enclosures and walls should be architecturally compatible and reflect details and materials consistent with the residential buildings they serve.
- 8. Any other uses consistent with the intent of this section and similar in character to uses permitted in this district as determined by the Zoning Administrator.

## RESIDENTIAL STREET DESIGN CONCEPT AND STANDARDS

Residential streets contribute significantly to neighborhood quality. They offer a place to walk, to meet neighbors, and of course, to park. Street network will include a hierarchy of streets that reflect the different residential densities and traffic conditions within the Community. The proposed street system is designed to provide a tree-lined streetscape, characteristic of traditional neighborhoods. The intent is to utilize the standard street sections and standards from the Town of Bennett's standards.

PLANNING  
LANDSCAPE ARCHITECTURE



pcs group inc.

200 Kalamath Street, Denver, CO -  
80223  
tel: 303.531.4905  
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CIVIL ENGINEERING



6 Inverness Ct. E., Ste 125, Englewood,  
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OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

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DEVELOPMENT STANDARDS



# OUTLINE DEVELOPMENT PLAN

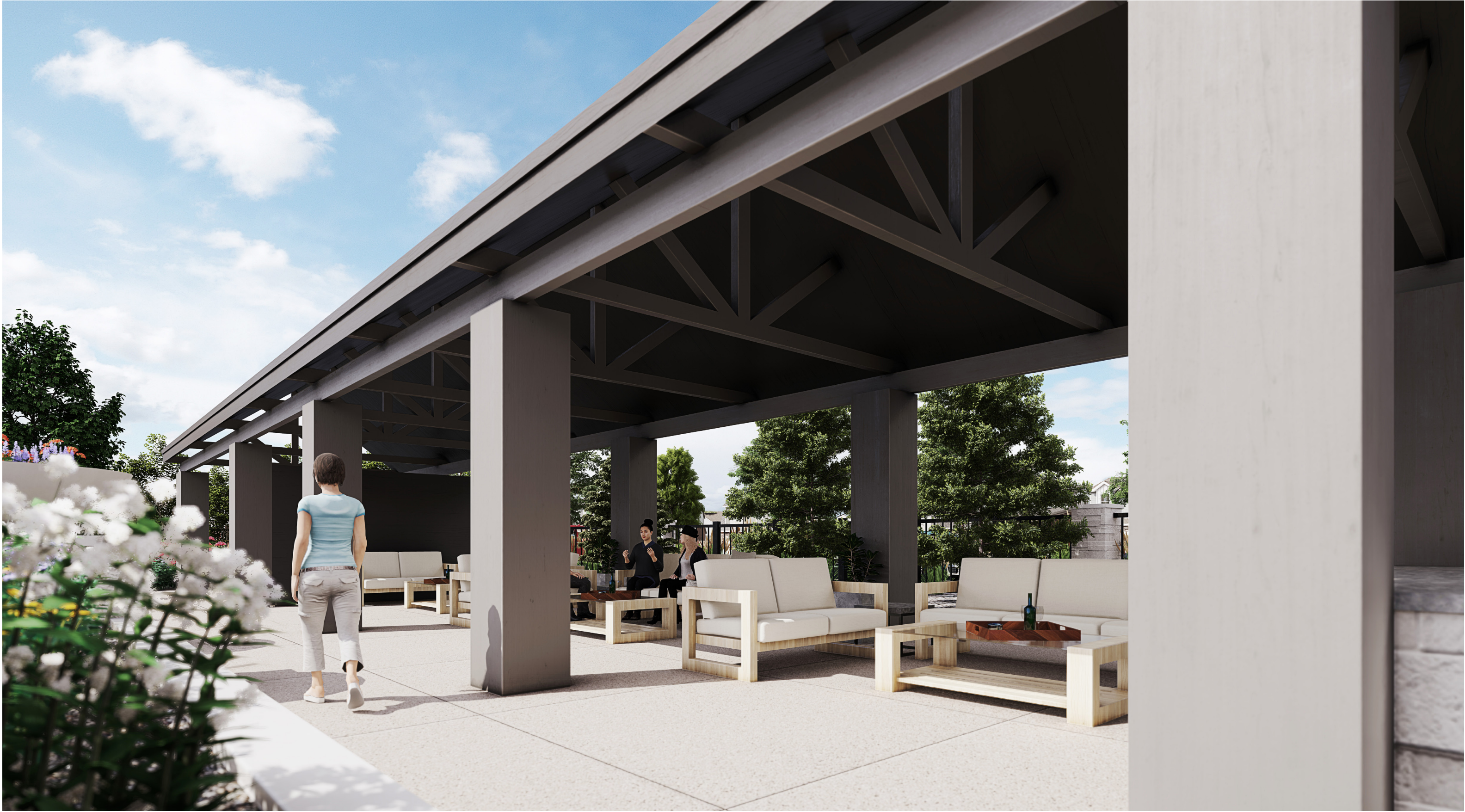
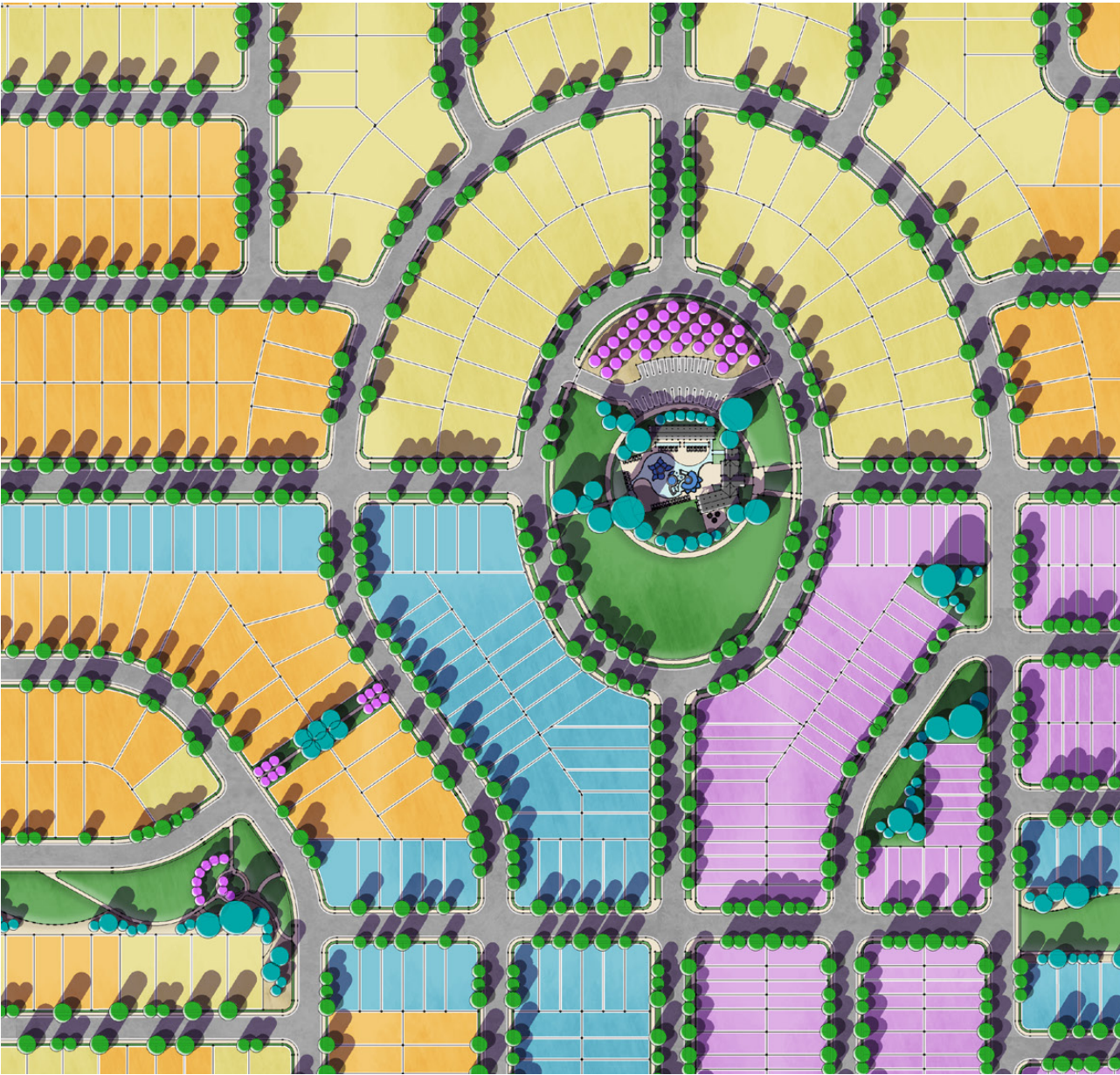
TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 7 of 9

## Community Patterns Overview

THE COMMUNITY PATTERNS SECTION contains specific information for placing houses and buildings within the future development parcels, as well as information related to the density and character of specific lot types. These guidelines were developed as part of the master planning process, and are meant to ensure that the community develops with the diversity and character anticipated in the overall vision for the community.

The central Neighborhood Park organized the entire community, play in the splash pad with your neighbors! Enjoy time with friends by the outdoor fireplace. Throw a BBQ, play in the great lawn, pick apples from the orchard. Schedule a get-together in the outdoor pavilion. At the Park, MUNDELL farms residents and their guests can truly indulge in a full range of recreational amenities.

THE NEIGHBORHOODS at MUNDELL farms are loosely defined by a pocket park giving identity to the residents in that particular area. Great neighborhoods are walkable, drivable, and bike-able. To be socially connected, the neighborhoods include areas to linger, sit and talk with neighbors and provide both passive and active recreation. Neighborhoods are composed of a variety of blocks knitted together by roads, walks, trails, paths and open spaces that connect residents from their homes to these public spaces.



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MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

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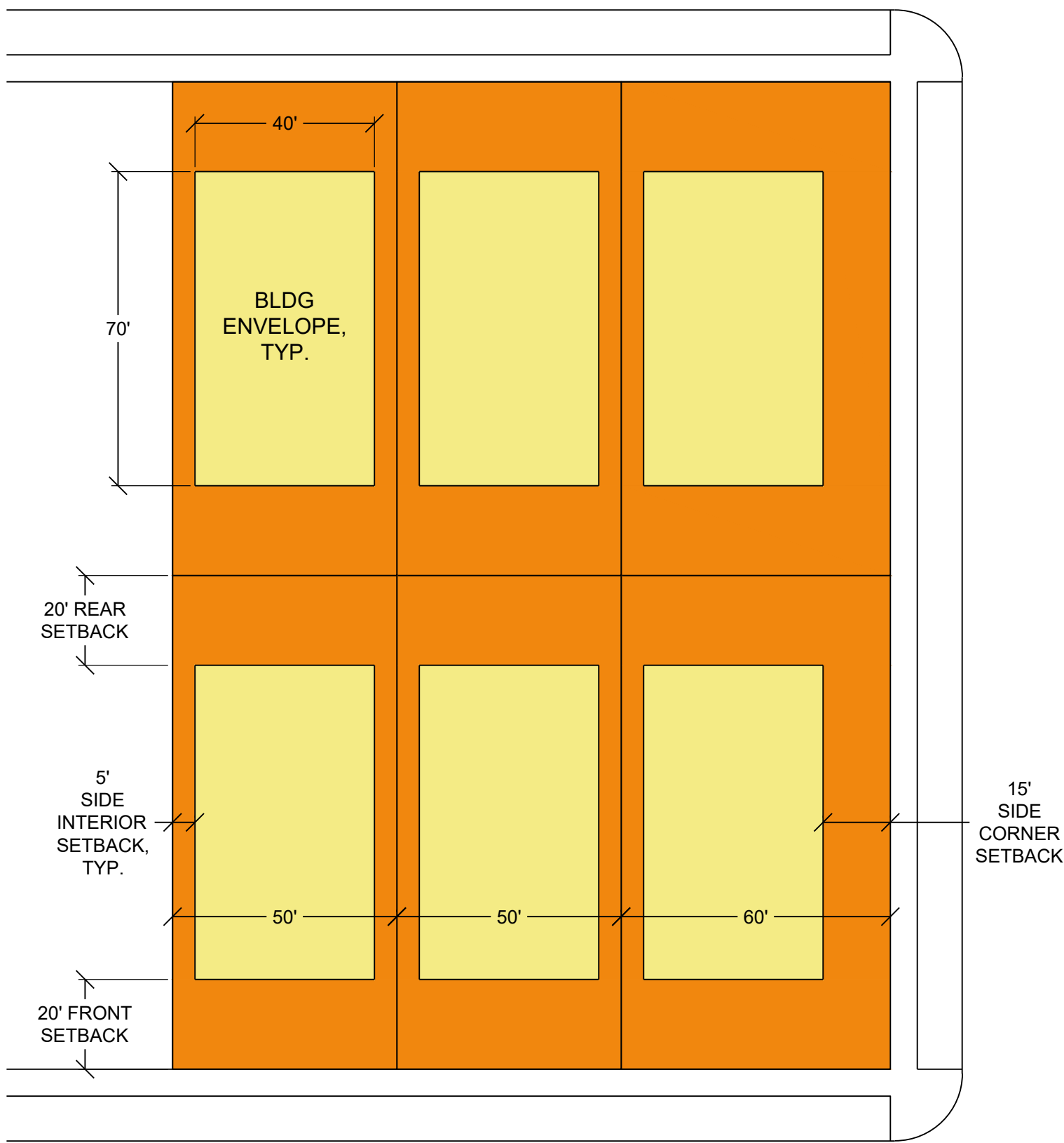
COMMUNITY PATTERNS & LOT TYPES



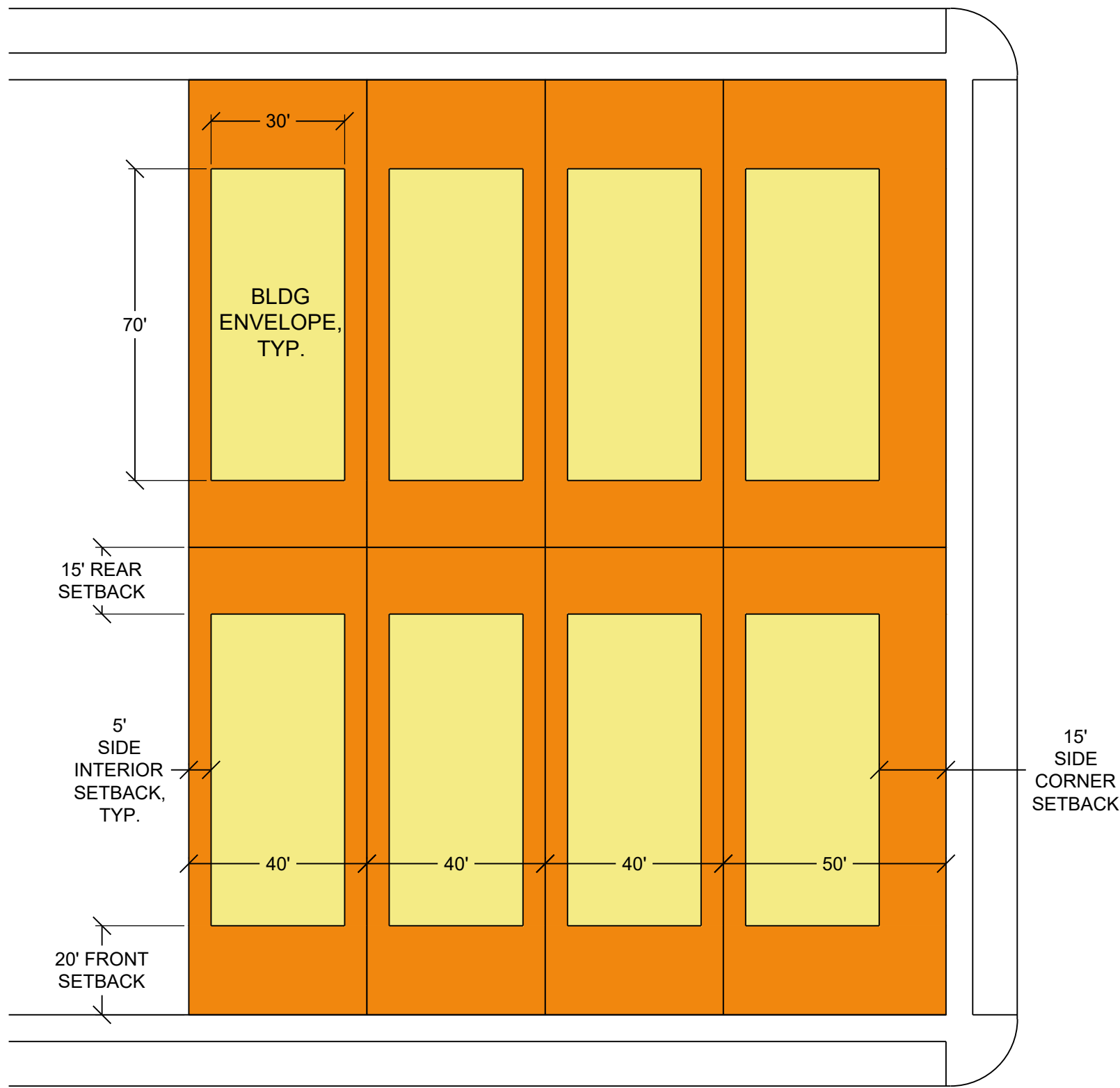
# OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS, STATE OF COLORADO  
SHEET 8 of 9

## 50x110 - GENERAL CONDITIONS



## 40x105 - GENERAL CONDITIONS



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## OUTLINE DEVELOPMENT PLAN

MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

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DETACHED LOTS

### LOT TYPES

MUNDELL farms will offer at least three different lot types, ranging from attached townhomes and duplexes to single family detached lots. These lot types are not intended to be all inclusive, but are intended to depict the variety and quality anticipated for the community. The lot types depicted in this document include Townhomes, Duplexes, and various sizes of Single Family Detached front loaded lots. Additional products may be used in the project.

### SINGLE FAMILY DETACHED FRONT LOADED - GENERAL CONDITIONS

#### LOT SIZE

The lots range from 40 feet wide by 105 feet deep to 50 feet wide by 110 feet deep. Corner lots are range from a minimum of 50-60 feet wide. These lots are front-loaded.

#### SETBACKS

Setbacks shall be unoccupied and unobstructed by any structure or portion of a structure from 30 inches

above grade upward; provided, however, that fences, walls, trellises, poles, posts, ornaments, furniture and other customary yard accessories may be permitted in any setback subject to height limitations and requirements limiting obstruction of visibility.

### PROJECTIONS INTO REQUIRED SETBACKS, GENERAL

- The following structures may project into required front, side or rear setbacks:
- Paved patios or any required setback structures placed on them shall violate other easement requirements.
  - Unroofed landings, decks and stairs may project into required setbacks, provided that the floor shall not extend higher than 30 inches above the finished grade level and the projection is at least 5 feet from the lot line.
  - Unroofed exterior balconies may project into a required side or rear setback provided these projections are at least 5 feet from the side lot line and 10 feet from the rear lot line.
  - Cornices, eaves, canopies, window wells, chimneys, bay windows, ornamental features,

and other similar architectural features may project into setbacks.

- ADD: STAIRS, DECKS, AND RETAINING WALLS
- Roofs over porches, stairways, landings, terraces, or other exterior approaches to pedestrian doorways may project up to 6 feet into a front setback. The covered porch or entrance area projecting into the front setback shall remain exterior to the building and enclosed by no more than a railing. The projection shall be at least 5 feet from the property line.

#### FRONT YARD SETBACK

Minimum 20-foot setback from the front property line to the house.

#### SIDE YARD SETBACK

Minimum 5-foot setbacks from the side property line.

#### SIDE STREET SETBACK

A minimum 15-foot setback from the side street property line to the house.

#### REAR YARD SETBACK

All structures shall be set back a minimum of 20 feet from the rear property line.

#### ENCROACHMENTS

Porches, bay windows and window wells may not encroach into both the Front Yard and Side Yard Setback Zones.

#### GARAGE REQUIREMENTS

A minimum of two parking spaces per home is required. A diversity of garage styles is required. Diversity shall be achieved by providing a minimum of 2 of the garage variation choices listed below. To meet the diversity requirement each garage variation chosen shall each be used on at least 25 percent of the single family homes within the development. The 2 variations chosen will be a minimum of 50 percent of the development; the remaining 50 percent may be any of the choices listed below.

- Side-loaded garages;
- Garages recessed a minimum of 4 feet behind the front facade of the living space within the house;

- Garages that protrude no less than 2 feet or no more than 5 feet in front of the dwelling unit portion of the structure; and
- Garages recessed a minimum of 2 feet beneath a second floor bay.

#### FENCING RECOMMENDATIONS

Front yard fences are a permitted upgrade and shall not exceed 4 feet in height. No fencing may be installed within sight distance easements. Rear and side yard fences are required for privacy.

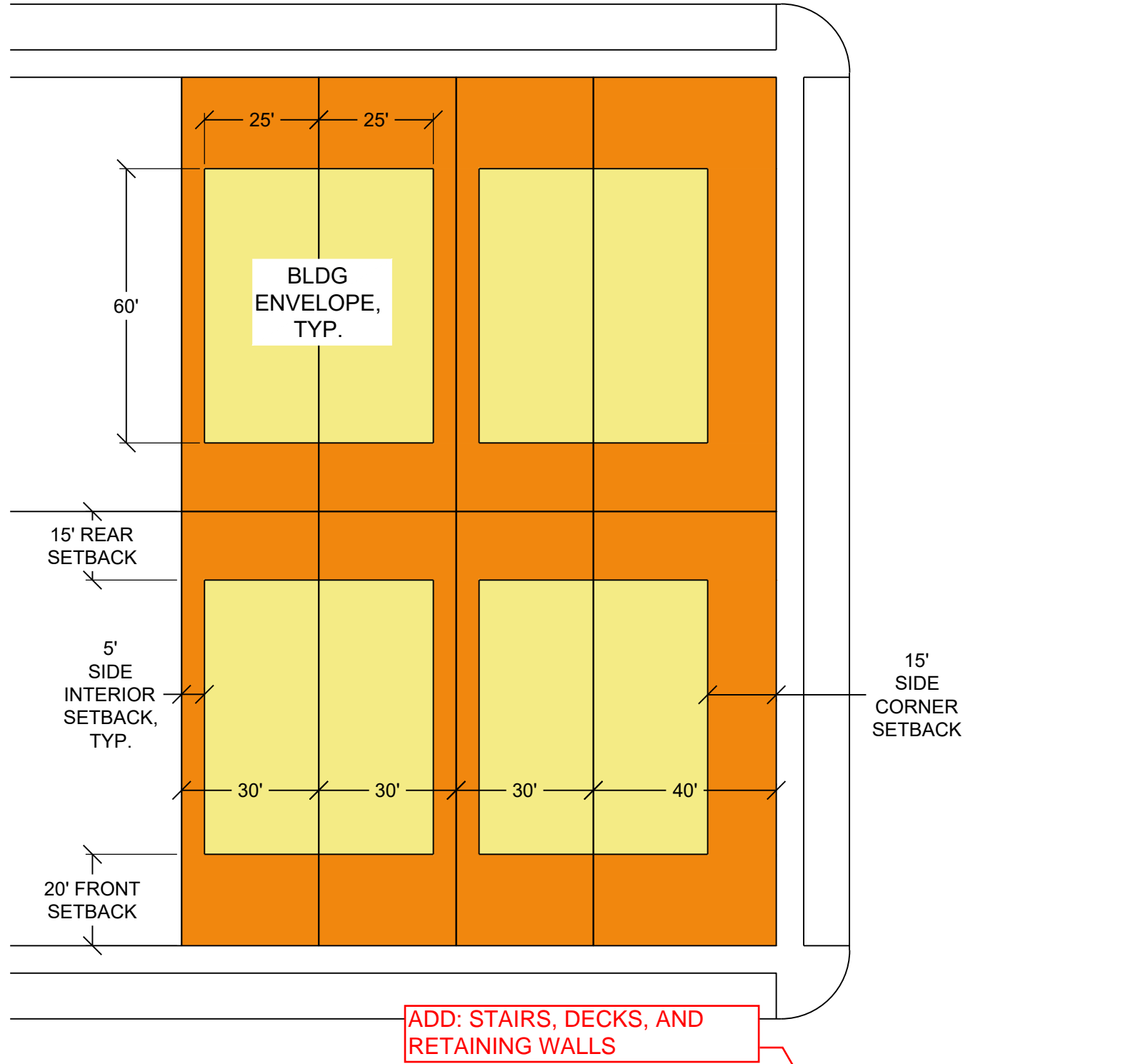
#### YARD REQUIREMENT

A minimum functional yard area of 15 feet by 20 feet is required.

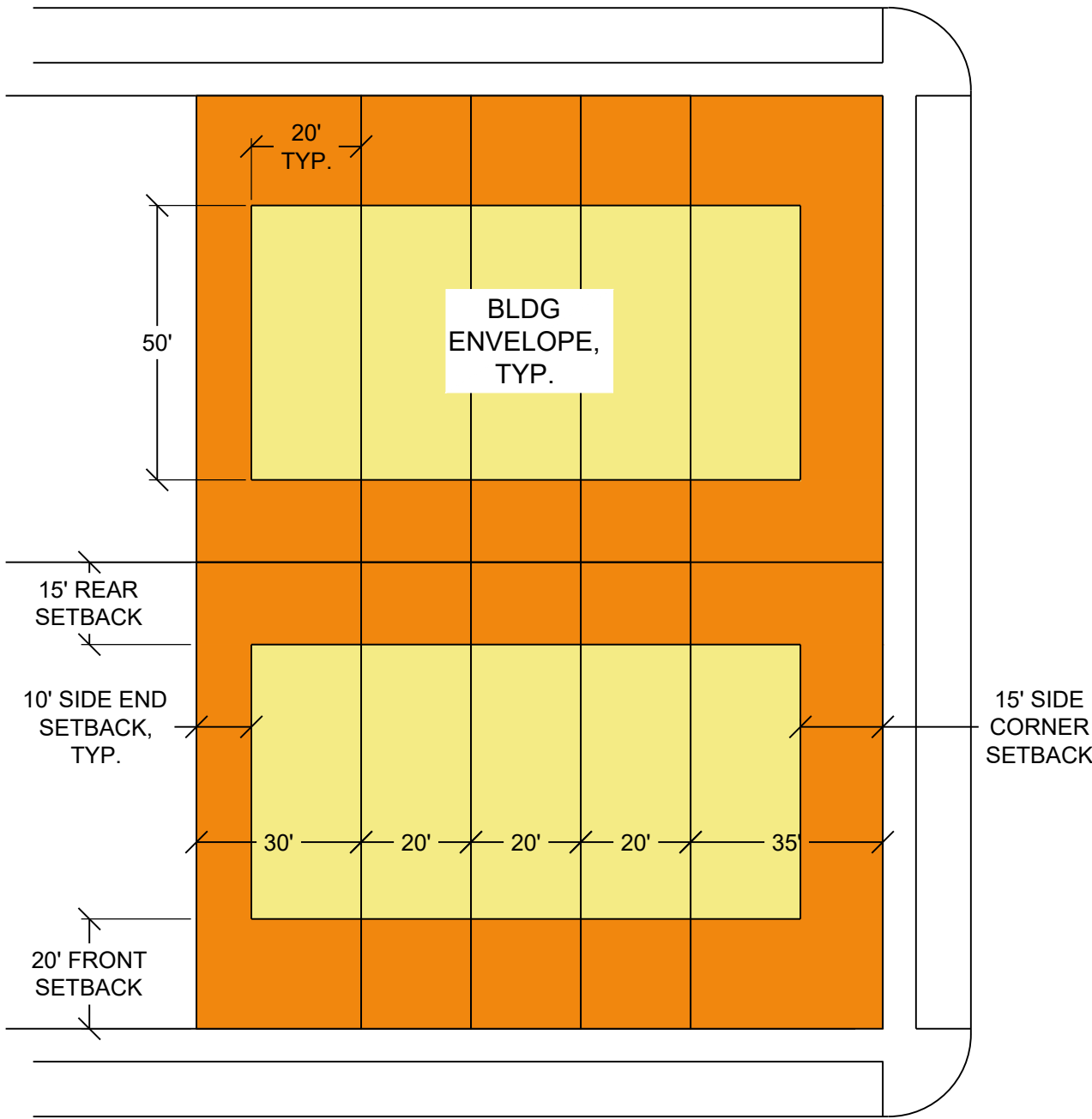
OUTLINE DEVELOPMENT PLAN

TOWN OF BENNETT  
COUNTY OF ADAMS , STATE OF COLORADO  
SHEET 9 of 9

DUPLEX - GENERAL CONDITIONS



TOWNHOMES - GENERAL CONDITIONS



SINGLE FAMILY ATTACHED FRONT LOADED - GENERAL CONDITIONS

LOT SIZE  
The lots range from 20 feet wide by 85 feet deep for Townhome lots and 20 feet wide by 95 feet deep for Duplex Lots.

SETBACKS  
Setbacks shall be unoccupied and unobstructed by any structure or portion of a structure from 30 inches above grade upward; provided, however, that fences, walls, trellises, poles, posts, ornaments, furniture and other customary yard accessories may be permitted in any setback subject to height limitations and requirements limiting obstruction of visibility.

PROJECTIONS INTO REQUIRED SETBACKS, GENERAL  
The following structures may project into required front, side or rear setbacks:

- i. Paved patios or terraces may project into any required setback, provided that no structures placed on them shall violate other easement requirements.
- ii. Unroofed landings, decks and stairs may project into required setbacks, provided that the floor shall not extend higher than 30 inches above the finished grade level and the projection is at least 5 feet from the lot line.

- iii. Unroofed exterior balconies may project into a required side or rear setback provided these projections are at least 5 feet from the side lot line and 10 feet from the rear lot line.
- iv. Cornices, eaves, canopies, window wells, chimneys, bay windows, ornamental features, and other similar architectural features may project not more than 3 feet into any required setback.
- v. Roofs over porches, stairways, landings, terraces, or other exterior approaches to pedestrian doorways may project up to 6 feet into a front setback. The covered porch or entrance area projecting into the front setback shall remain exterior to the building and enclosed by no more than a railing. The projection shall be at least 5 feet from the property line.

FRONT YARD SETBACK  
Minimum 20-foot setback from the front property line to the house.

SIDE YARD SETBACK  
Minimum 5-foot setbacks from the side property line.

SIDE STREET SETBACK  
A minimum 15-foot setback from the side street property line to the house.

REAR YARD SETBACK  
All structures shall be set back a minimum of 20 feet from the rear property line.

ENCROACHMENTS  
Porches, bay windows and window wells may not encroach into both the Front Yard and Side Yard Setback Zones.

GARAGE REQUIREMENTS  
A minimum of two parking spaces per home is required. Townhomes are permitted to have a single garage space, and one space in front of the garage.

TOWNHOME SPECIFIC GUIDELINES  
1. No more than 6 townhome dwelling units may be attached in any single row or building cluster.

- 2. Within each town home row or cluster, individual dwelling units shall be differentiated, or may express a purposely uniform design. When dwelling units are to be differentiated, they shall be differentiated through 2 or more of the following methods:
  - i. Use of distinct color variation between individual dwelling units;
  - ii. Use of distinct variations in materials between individual dwelling units;
  - iii. Use of distinct variations in architectural style or features, such as a porch or similar feature,

- between individual dwelling units;
  - iv. Use of distinct variations in roof form,
  - v. A variation in the plane of the front facade to provide a minimum 3 foot variation between individual dwelling units.
- When uniformity (sameness or pattern repetition) in design is proposed, this shall be expressed through repetition of 2 or more of the following methods,
- i. Use of materials both in type and location;
  - ii. Size, style, and patterning of windows;
  - iii. Size and detailing of front porches;
  - iv. Roof dormers, roof form, and roof pitch.

DUPLEX SPECIFIC GUIDELINES  
A continuous row of identical homes along a block shall be prohibited. Individual structures shall be differentiated through 2 or more of the following methods:

- i. Use of distinct color variation and materials between individual structures;
- ii. Use of distinct variations in roof form, or
- iii. Use of distinct variations in architectural features, such as porches, roof form, windows, or similar feature, between individual structures.

Models with identical facades shall not be placed adjacent to or across the street from 1 another.

FENCING RECOMMENDATIONS  
Front yard fences are a permitted upgrade and shall not exceed 4 feet in height. No fencing may be installed within sight distance easements. Rear and side yard fences are required for privacy.

YARD REQUIREMENT  
A minimum functional yard area of 15 feet by 20 feet is required.

PLANNING  
LANDSCAPE ARCHITECTURE

pcs group inc.  
200 Kalamath Street, Denver, CO - 80223  
tel: 303.531.4905  
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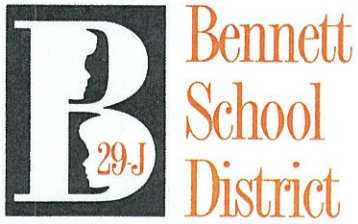
6 Inverness Ct. E., Ste 125, Englewood, CO 80120  
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APPLICANT  
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OUTLINE DEVELOPMENT PLAN  
MUNDELL FARMS  
TOWN OF BENNETT  
COUNTY OF ADAMS, COLORADO

DATE: MAY 2022  
REVISED:  
REVISED:  
REVISED:

9 of 9  
ATTACHED LOTS



**DISTRICT OFFICES**

615 Seventh Street • Bennett, Colorado 80102 8015

(303) 644-3234 • (303) 571-1104 • FAX (303) 644-4121

**Bennett North (Mundell) – Case Number 22.02**

**July 12, 2022**

This letter is being written to address impact of the 900 homes on 154 acres located on the southwest corner of E 38<sup>th</sup> Ave and 1<sup>st</sup> St/Converse Rd. Bennett School District has policy in place that address the expectations for land dedications, cash-in-lieu, and land use impact statements.

We are asking for \$1,871,181.00. Please see attached calculations.

Sincerely,

**Mrs. Robin Purdy  
Superintendent of Schools**

**Mr. Keith Yaich  
Chief Financial Officer**

**B29J - Student Yield, Land Dedication and Fee-In-Lieu Calculators - 12/5/21**

Student Yield Calculator			Elementary		Middle		High		Total	
Housing Unit Type	Density	Dwelling Units	Generation Rate	Students	Generation Rate	Students	Generation Rate	Students	Generation Rate	Students
Single Family Detached	1 - 7.99	900	0.29	###	0.15	135	0.16	###	0.6	<b>540</b>
Single Family Attached (Condo, Townhome, Plex)	8 - 14.99	0	0.14	0	0.06	0	0.08	0	0.28	<b>0</b>
Multifamily (Apartments)	15+	0	0.07	0	0.03	0	0.04	0	0.14	<b>0</b>
<b>Totals</b>		<b>900</b>								<b>540</b>

Acreage Calculator	Units	Acreage Multiplier	Acreage Owed		Fee Multiplier	Fee Owed
Single Family Detached Units (SFD)	900	0.0162	14.58		\$2,079.09	\$ 1,871,181.00
Single Family Attached Units (SFA)	0	0.0075	0		\$964.84	\$ -
Multifamily Units (MF)	0	0.0038	0		\$482.42	\$ -
<b>Totals</b>			<b>14.58</b>	<b>Or</b>		<b>\$ 1,871,181.00</b>





Planning Town Of Bennett &lt;planning@bennett.co.us&gt;

**RE: Bennett North (Mundell) Zoning ODP**

1 message

**Karl Smalley** <KSmalley@adcogov.org>  
To: Town of Bennett Planning <planning@bennett.co.us>

Tue, Jun 21, 2022 at 9:40 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:** Tuesday, June 21, 2022 10:58 AM  
**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: Keith Yaich <keithy@bsd29j.com>; Bennett School District 29J: ATTN: Jennifer West <jenniferw@bsd29j.com>; Robin Price <rprice@bennett.co.us>; Rick Martinez <rmartinez@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>; 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:** Bennett North (Mundell) Zoning ODP

Please be cautious: This email was sent from outside Adams County

Hello,

Below is a Dropbox link to the Bennett North (Mundell) Zoning ODP application. We appreciate your review and comments. Please send your comments back via this email address or by mail to Town Hall by July 12, 2022.

<https://www.dropbox.com/scl/fo/my0byrbuprenhgqh2rsak/h?dl=0&rlkey=3em3prbc4nic2duxzxk4m6frm>

If you have any questions, please email or call Steve Hebert at [shebert@bennett.co.us](mailto:shebert@bennett.co.us) or the phone number below.





***Planning Department***

207 Muegge Way | Bennett CO, 80102  
(303)644-3249 | [planning@bennett.co.us](mailto:planning@bennett.co.us)  
[townofbennett.colorado.gov](http://townofbennett.colorado.gov)

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**RE: Bennett North (Mundell) Zoning ODP - 2nd Submittal**

1 message

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**DevelopmentSubmittals** <DevelopmentSubmittals@adcogov.org>  
To: "planning@bennett.co.us" <planning@bennett.co.us>

Thu, Oct 6, 2022 at 4:01 PM

Good Afternoon,

Adams County Development Services has no further comment on this request.

Thank you,

**Ella Gleason (she/her)**Planner I, *Community & Economic Development*

ADAMS COUNTY, COLORADO

4430 South Adams County Parkway, 1st Floor, Suite W2000A

Brighton, CO 80601

O: 720.523.6923 | [EGleason@adcogov.org](mailto:EGleason@adcogov.org) | [www.adcogov.org](http://www.adcogov.org)

*Adams County operating hours: Tuesday through Friday, 7 a.m. to 5:30 p.m. (Closed on Mondays)*

*I work remotely on Mondays and Fridays. If you leave a voicemail on either of those days, I will respond the following Tuesday.*

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**From:** Town of Bennett Planning <[planning@bennett.co.us](mailto:planning@bennett.co.us)>**Sent:** Thursday, October 6, 2022 3:32 PM**To:** Layla Bajelan <[LBajelan@adcogov.org](mailto:LBajelan@adcogov.org)>; Karl Smalley <[KSmalley@adcogov.org](mailto:KSmalley@adcogov.org)>; United States Postal Service <[sarah.e.zawatzki@usps.gov](mailto:sarah.e.zawatzki@usps.gov)>; Bennett School District 29J ATTN: Robin Purdy <[robinp@bsd29j.com](mailto:robinp@bsd29j.com)>; Bennett School District 29J: ATTN: Keith Yaich <[keithy@bsd29j.com](mailto:keithy@bsd29j.com)>; Robin Price <[rprice@bennett.co.us](mailto:rprice@bennett.co.us)>; Rick Martinez <[rmartinez@bennett.co.us](mailto:rmartinez@bennett.co.us)>; Daymon Johnson <[djohnson@bennett.co.us](mailto:djohnson@bennett.co.us)>; Bennett Rec District <[director@bennettrec.org](mailto:director@bennettrec.org)>; Victoria Flamini <[VictoriaFlamini@bennettfirerescue.org](mailto:VictoriaFlamini@bennettfirerescue.org)>; Bennett Watkins Fire Rescue <[calebconnor@bennettfirerescue.org](mailto:calebconnor@bennettfirerescue.org)>; Colorado Natural Gas/Eastern Utility ATTN Gabriel Vanderstraten <[GVanderstraten@summitutilitiesinc.com](mailto:GVanderstraten@summitutilitiesinc.com)>; Colorado Natural Gas/Eastern Utility ATTN Justin Gutierrez <[JGutierrez@summitutilitiesinc.com](mailto:JGutierrez@summitutilitiesinc.com)>; Eastern Slope Rural Telephone <[patw@esrta.com](mailto:patw@esrta.com)>; I-70 Regional Economic Advancement Partnership <[lxc.strategies@gmail.com](mailto:lxc.strategies@gmail.com)>; Brooks Kaufman <[BKaufman@core.coop](mailto:BKaufman@core.coop)>; Jehn Water Consultants Inc <[gburke@jehnwater.com](mailto:gburke@jehnwater.com)>; Melinda Culley <[melinda@kellypc.com](mailto:melinda@kellypc.com)>; Daniel Giroux <[dangiroux@terramax.us](mailto:dangiroux@terramax.us)>; Chad Bunger <[cbunger@bennett.co.us](mailto:cbunger@bennett.co.us)>; Steve Hebert <[shebert@bennett.co.us](mailto:shebert@bennett.co.us)>; Heugh, Michael <[Michael.Heugh@jacobs.com](mailto:Michael.Heugh@jacobs.com)>**Subject:** Bennett North (Mundell) Zoning ODP - 2nd Submittal

Please be cautious: This email was sent from outside Adams County

Hello,

Below is a Dropbox link to the Bennett North (Mundell) Zoning ODP - 2nd Submittal. We appreciate your review and comments. Please send your comments back via this email address or by mail to Town Hall by October 27, 2022.

<https://www.dropbox.com/scl/fo/uhbgjaspvhbwx5xxsiaj/h?dl=0&rlkey=1tbtrk61w7m4g644097d5xzrb>

If you have any questions, please email or call Steve Hebert at [shebert@bennett.co.us](mailto:shebert@bennett.co.us) or the phone number below.



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9K

TOWN OF BENNETT PLANNING AND ZONING COMMISSION

RESOLUTION NO. 2022-18

A RESOLUTION RECOMMENDING APPROVAL OF ZONING FOR PROPERTY ANNEXED TO THE TOWN OF BENNETT KNOWN AS THE BENNETT NORTH ANNEXATION AND RECOMMENDING APPROVAL OF AN OUTLINE DEVELOPMENT PLAN FOR MUNDELL FARMS

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 North Annexation; and

WHEREAS, the landowner of the property requested a PD - Planned Development District zoning classification and has submitted the Mundell Farms 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 PD - Planned Development District for the property annexed to the Town and known as the Bennett North Annexation to the Town of Bennett.

**Section 2.** The Planning and Zoning Commission hereby recommends approval of the proposed Mundell Farms Outline Development Plan, subject to the following conditions:

- a. Before recording the Outline Development Plan, the applicant shall make minor modifications as directed by Town Staff, the Town Attorney and the Town Engineer.
- b. The following language shall be added to the Outline Development Plan:
  - a. Updated comprehensive traffic impact studies (TIS) will be required at the time of each subdivision plat. Future studies must include, but not be limited to: an identification of vehicle trip generation, existing and proposed conditions, capacity analysis, onsite and offsite impacts and improvements to mitigate the impacts. The design, financing and timing

of construction of internal and external street connections will be addressed in subsequent subdivision agreement(s) at the time of the platting process. A future subdivision agreement or agreements will determine how many new homes, if any, can be built and occupied in each phase of development consistent with the timing of required offsite improvements. All traffic impact studies shall be subject to Town approval.

PASSED AND ADOPTED this 21st DAY OF NOVEMBER 2022.

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Chairperson

ATTEST:

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Secretary



### **Suggested Motion**

I move to approve Resolution No. 2022-18 - A Resolution Recommending Approval of Zoning for Property Annexed to the Town of Bennett Known as the Bennett North Annexation and Recommending Approval of an Outline Development Plan for Mundell Farms