5.3 Staff Report (For Possible Action - Recommendation to City Council): Case No. **LDC24-00044 (Riverside SPD)** – A request has been made for a zoning map amendment from Multi-Family – 30 units per acre (MF-30) to Specific Plan District (SPD). The ±1.39 acre site is located west of the terminus of Riverside Drive north of the Truckee River. The site has a Master Plan land use designation of Suburban Mixed Use (SMU). **[Ward]**

PLANNING COMMISSION
STAFF REPORT

Date: **May 1, 2024**

To: **Reno City Planning Commission**

Subject: **Staff Report (For Possible Action - Recommendation to City Council): Case No. LDC24-00044 (Riverside SPD) – A request has been made for a zoning map amendment from Multi-Family – 30 units per acre (MF-30) to Specific Plan District (SPD). The ±1.39 acre site is located west of the terminus of Riverside Drive north of the Truckee River. The site has a Master Plan land use designation of Suburban Mixed Use (SMU).**

From: **Grace Mackedon, Senior Management Analyst**

Ward #:	**1**
Case No.:	LDC24-00044 (Riverside SPD)
Applicant:	Riverside Development, LLC
APN:	010-590-01; 010-590-02; 010-591-01; 010-591-02; 010-592-01, 02, 03, 04, 05, & 06; 010-593-01, 02, 03, 04, 05, & 06; 010-594-01, 02, 03, 04, 05, & 06; 010-595-01, 02, 03, 04, 05, & 06; 010-601-01, 02, 03, 04, 05, & 06; 010-602-01, 02, 03, & 04; 010-603-01, 02, 03, & 04 and 010-604-01
Request:	**Zoning Map Amendment:** From Multi-Family – 30 units per acre (MF-30) to Specific Plan District (SPD).
Location:	See Case Maps **(Exhibit A)**
Proposed Motion:	Based upon compliance with the applicable findings, I move to recommend that City Council approve the zoning map amendment, subject to **Condition 1**.

Recommended Condition of Approval

SPD Amendment

1. Approval of the SPD Handbook is subject to any modifications made by the Planning Commission and City Council at their respective public hearings. All revisions shall be

incorporated into the SPD Handbook and submitted in electronic and hardcopy formats prior to City Council adoption of the ordinance.

Summary: The ±1.39 acre subject site is located north of the Truckee River west of the terminus of Riverside Drive. This is a request for a zoning map amendment from Multi-Family – 30 units per acre (MF-30) to Specific Plan District (SPD). The requested amendment is displayed graphically on the provided zoning comparison display maps **(Exhibit A)**. The proposed Riverside SPD would allow for up to 180 multi-family units up to 65 feet in height. Key issues analyzed in this request include: 1) compatibility of the proposed zoning with the surrounding zoning and land uses; 2) available services and infrastructure; and 3) conformance with the Master Plan. The proposed SPD zoning and associated design standards are appropriate and compatible with the surrounding land uses and zoning. Staff recommends approval of this request, subject to the condition listed in the staff report.

Background: In 2005, a residential condominium project (LDC05-00293) was approved on the subject site, allowing for a 165-foot tall 40-unit luxury condominium complex. This project was never constructed, and the site has remained undeveloped. The previous project approval is now expired.

Currently, the site is owned by the City of Reno. City acquisition of the site was obtained through the Washoe County Treasurer due to delinquent property taxes. In 2022, the City issued a Request for Proposals (RFP) to identify a party(s) that would develop a project that fits with the surrounding neighborhood and meets the City's strategic goals. The City ultimately entered into a Purchase and Sale Agreement with BUILT Investments, LLC on June 7, 2023.

Analysis:

Land Use Compatibility: The project site is well suited for an SPD due to its location near the river and its unique history. The property is surrounded to the north, west, and east with multi-family residential development. The proposed project is compatible with the surrounding multi-family developments and provides additional density near the downtown area of the city which is encouraged by the Master Plan and other City goals. Additionally, the proposed project is within a quarter mile of an established transit stop which will encourage walkability and multi-modal transit.

Overall Development Plan & Development Standards: The proposed SPD will establish allowed density and standards for future development. The applicant is proposing to utilize Multi-Family – 30 units per acre (MF-30) as base a zone for the SPD. This means that any standard not addressed by the handbook **(Exhibit B)** will defer to MF-30 standards in Reno Municipal Code (RMC). The proposed handbook includes design standards that allow for a 123-unit project while maintaining flexibility for design modifications, future market trends, and changes in unit mix for up to 180

units. Parking is proposed to meet RMC requirements for the MF-30 zoning district. A total of 109 parking spaces are proposed, which exceeds the required parking by 35 spaces. Since the site is within ¼ mile of the Mixed-Use Downtown (MD) district, the parking requirement is 0.6 spaces per unit.

The handbook varies from the typical development standards found in RMC with further regulations of uses, development standards, landscaping, etc. The varied standards are summarized below:

- The project would not be subject to the shading ordinance which prohibits structures over 45 feet in height from casting a shadow on other residentially zoned properties. For this project, a shadowing pattern has already been established by the existing 11-story condominium development to the west. **Exhibit C** demonstrates the conceptual elevations and the potential shadowing.
- Building height is anticipated to be 55 feet. To allow for flexibility, it is proposed to allow building height to be increased to a maximum of 65 feet. Height may be increased through a site plan review.
- The proposed project is currently designed to meet the 20% landscaping requirement. However, there is a proposed floodwall that the City of Reno anticipates will bisect the site. The final configuration and location are still unknown. Due to this future site change, it is proposed that the minimum required landscaping be 10% which is consistent with higher density zoning districts.

With the proposed regulation of uses and development standards, the handbook is consistent and compatible with the surrounding development.

Conformance with the Master Plan: The subject site has a Master Plan land use designation of Suburban Mixed-Use (SMU), is within the Central Neighborhoods, and adjacent to the Truckee River Greenway Corridor per the Structure Plan Framework of the Reno Master Plan. The proposed SPD is supportive of the following Master Plan policies.

Policy 1.1D: Public/Private Partnerships
Policy 2.1A: Growth Tiers
Policy 2.2B: Underutilized Properties
Policy 3.1B: Housing Options
Policy 4.3B: Infill and Redevelopment
N-CN.7: Building Bulk/Mass/Height

Traffic, Access, and Circulation: A traffic impact analysis was included in the application materials **(Exhibit D).** The project is anticipated to generate 802 daily weekday trips with 67 a.m.

peak hour trips and 70 p.m. peak hour trips. The proposed project is not anticipated to have a significant impact on the surrounding street network.

Primary access is from Riverside Drive on the south end of the site which is demonstrated on the provided site plan **(Exhibit E).** From this access, vehicles will enter the proposed ground level parking garage.

Public Services: All necessary utilities to serve the development are in close proximity and can be readily extended to serve the subject site.

Flood Plain Management: The site abuts the Truckee River. The Truckee River Flood Management Authority (TRFMA) is currently working to establish a floodway through this reach of the Truckee River. The proposed development will need to be elevated 1 foot above the base flood elevation.

There is a planned floodwall through this portion of the Truckee River, including improvements on the project site. Since the exact location and scope of the floodwall is unknown at this point, a relocatable easement for the improvements is proposed. Improvements by TRFMA and City of Reno will be coordinated during final design.

The applicant will be required to submit and have approved a no-rise flood study, a no-rise certification, and FEMA Conditional Letter of Map Revision based on fill (CLOMR-F) prior to the approval of a building permit. FEMA documentation will be coordinated through Development Services Engineering, with review and approval of Utility Services Floodplain Management Staff. The applicant will also be required to submit and have approved a Letter of Map Revision based on fill (LOMR-F) prior to the Certificate of Occupancy. FEMA documentation is to be coordinated through Development Services Engineering, with correspondence, review, and approval of Utility Services Floodplain Management staff.

Public and Stakeholder Engagement: This project was reviewed by various City divisions and partner agencies and comments were incorporated into the project analysis **(Exhibit F)**. A courtesy notice was sent to surrounding property owners upon initial submittal of the request. Staff received two public comments in opposition to the project with concerns regarding traffic, parking, and density **(Exhibit G)**. The applicant attempted to attend the Ward 1 Neighborhood Advisory Board (NAB) meeting on April 8, 2024, but it was canceled due to a lack of quorum.

Findings:

General Review Criteria: The decision-making body shall review all development applications for compliance with the applicable general review criteria stated below.

1) Consistency with the Reno Master Plan. The proposed development shall be consistent with the Reno Master Plan. The decision-making authority:
    a. Shall weigh competing plan goals, policies, and strategies; and
    b. May approve and application that provides a public benefit even if the development is contrary to some of the foals, policies, or strategies in the Reno Master Plan.
2) Compliance with Title 18. The proposed development shall comply with all applicable standards in this Title, unless the standard is lawfully modified or varied. Compliance with these standards is applied at the level of detail required for the subject submittal.
3) Mitigates Traffic Impacts. The project mitigates traffic impacts based on applicable standards of the City of Reno and the Regional Transportation Commission.
4) Provides Safe Environment. The project provides a safe environment for pedestrians and people on bicycles.
5) Rational Phasing Plan. If the application involves phases, each phase of the proposed development contains all of the required streets, utilities, landscaping, open space, and other improvements that are required to serve or otherwise accompany the completed phases of the project, and shall not depend on subsequent phases for those improvements.

Rezoning (Zoning Map Amendment): All applications for zoning map amendments shall meet the approval criteria in Section 18.08.304(e), *Approved Criteria Applicable to all Applications*, and the following findings:

(1) The amendment, together with changed components of the Title, promotes, or does not conflict with, the provisions of NRS Section 278.250(2); and

(2) The amendment is in substantial conformance the Master Plan.

Rezoning to Specific Plan District (SPD): All applications for zoning map amendments to SPD shall meet the approval criteria in Section 18.08.304(e), *Approval Criteria Applicable to all Applications*, and the following findings:

(1) The amendment, together with changed components of the Title, promotes, or does not conflict with, the provisions of NRS Section 278.250(2);
(2) The amendment is in substantial conformance with the Master Plan;
(3) The SPD Handbook is consistent with the purpose of the SPD District (Section 18.02.506); and
(4) The SPD Handbook addresses a unique situation, provides substantial benefit to the City, or incorporates innovative design, layout, or configuration resulting in quality over what could have been accomplished through strict application of a base zoning district.

Attachments:

Exhibit A. - Case Maps
Exhibit B. – SPD Handbook

Exhibit C. – Elevations
Exhibit D. – Traffic Study

Exhibit E – Site Plan

Exhibit F – Agency Comments

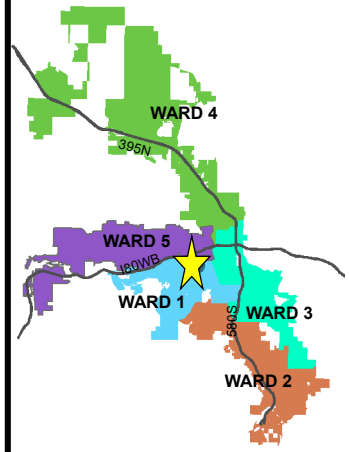
Exhibit G – Public Comment

AREA MAP

LDC24-00044

(Riverside SPD)

Subject Site ►



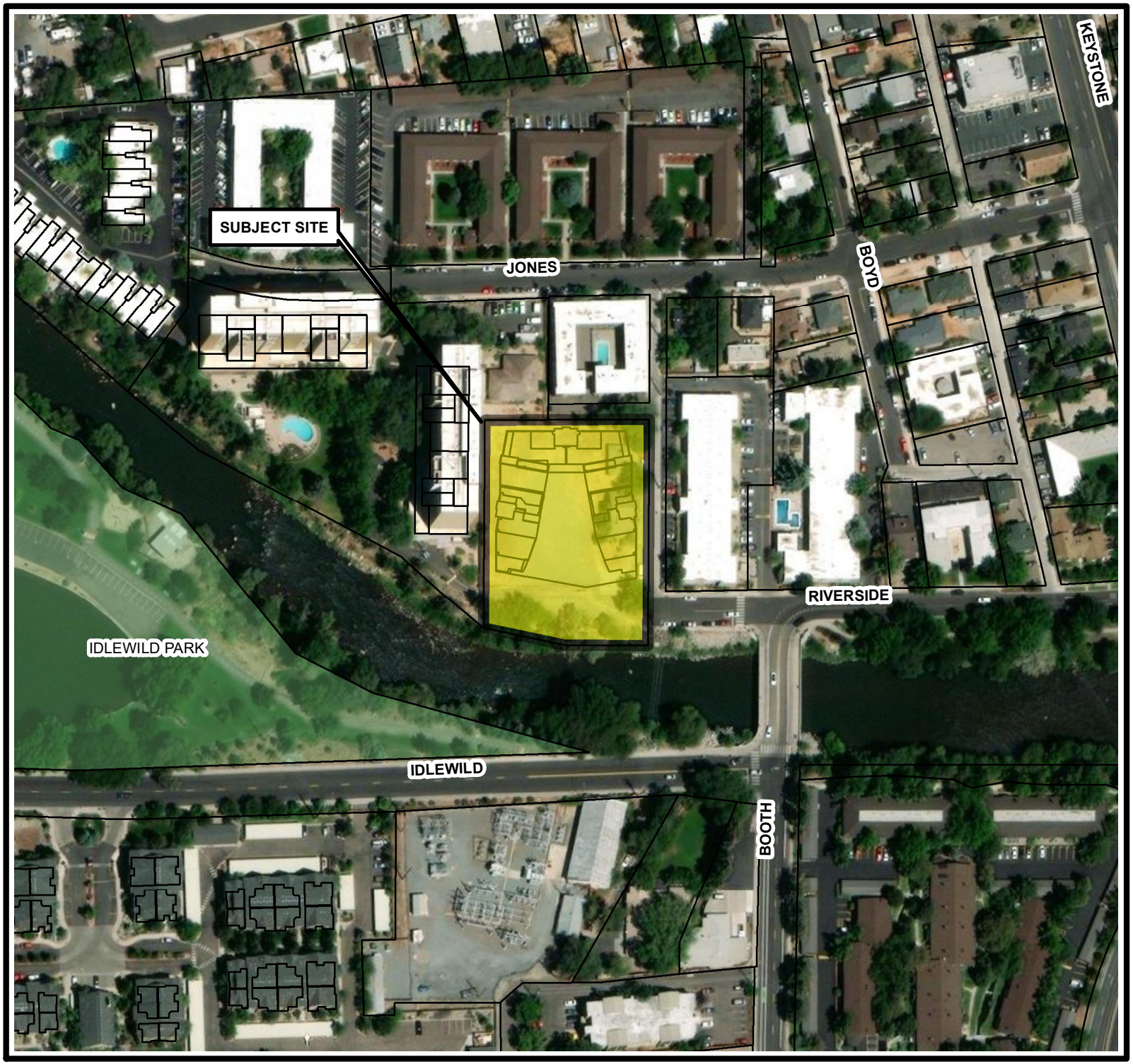
WARD 1

Development Services Department

The information heron is approximate and is intended for display purposes only.

Date: March 2024

Scale: 1 inch = 400 feet

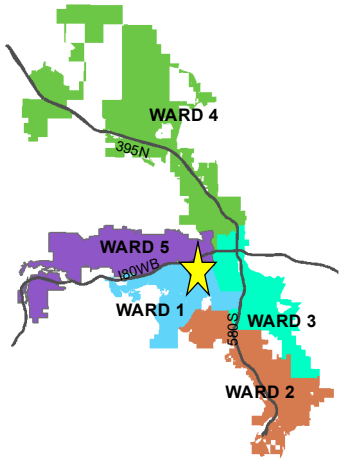


VICINITY MAP

LDC24-00044

(Riverside SPD)

Subject Site ►



WARD 1

Development Services Department

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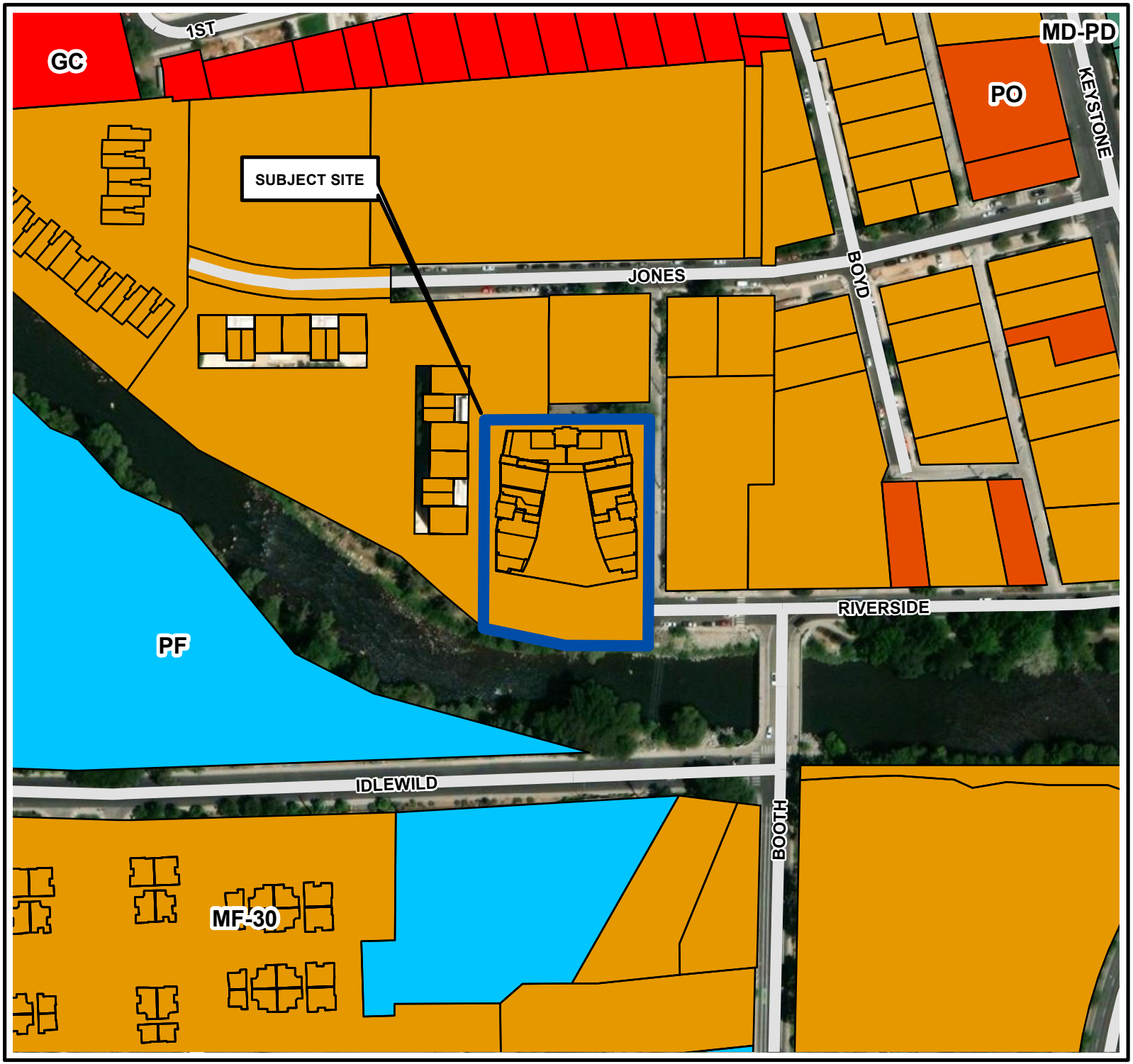
Scale: 1 inch = 175 feet



ZONING MAP

LDC24-00044

(Riverside SPD)

ZONING = MF-30

Subject Site ▶

Zoning Designations

- MF-30
- GC
- PO
- MD-PD
- PF

Development Services Department

The information heron is approximate and is intended for display purposes only.

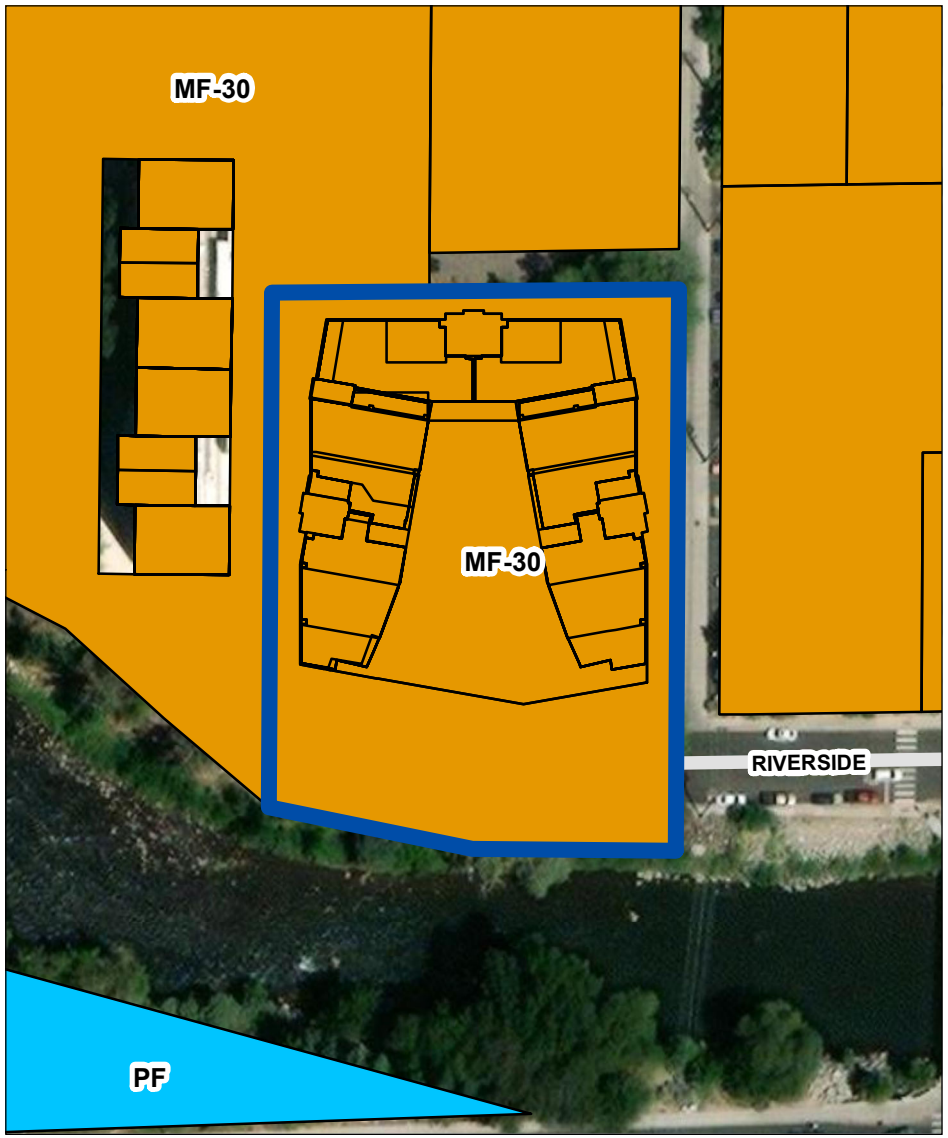
DATE: March 2024
SCALE: 1 inch = 175 feet

ZONING MAP

LDC24-00044 (Riverside SPD)

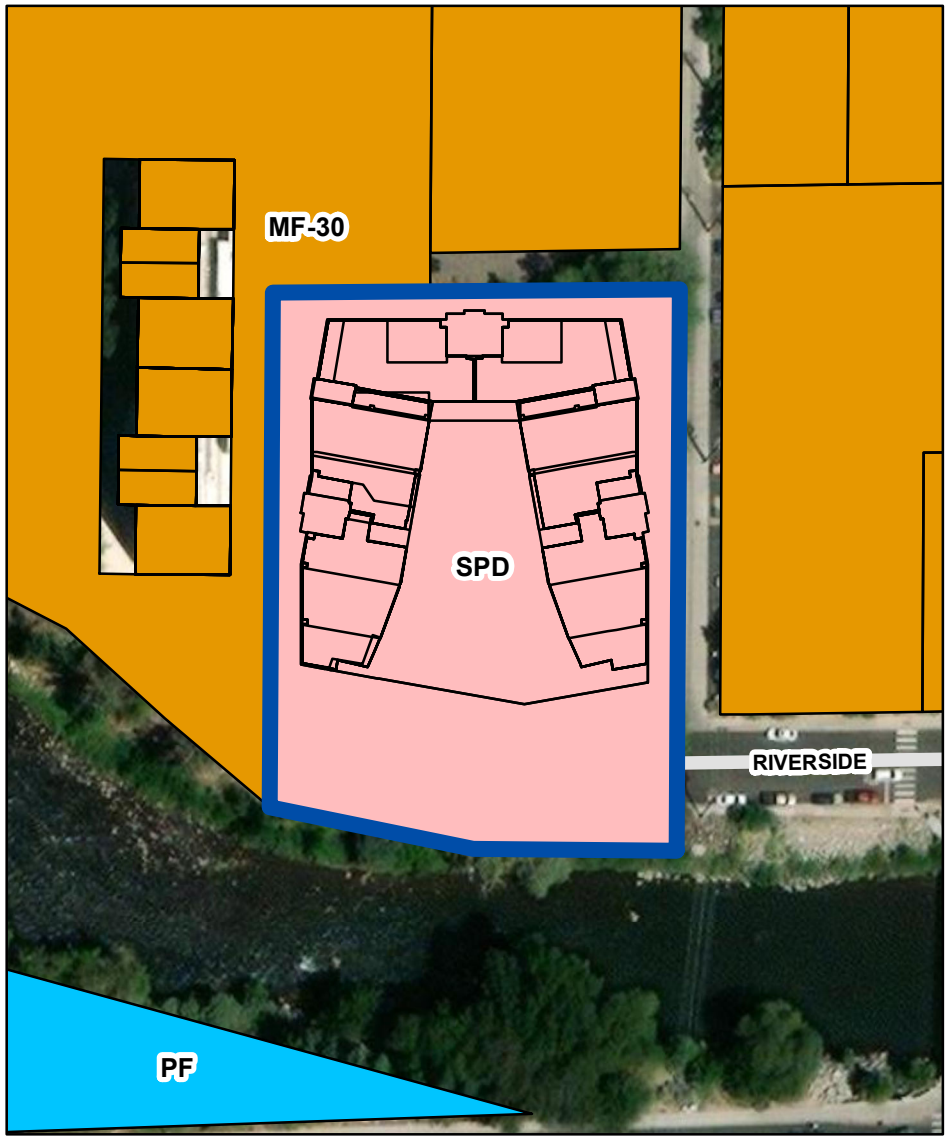
Existing Zoning: MF-30

Subject Site ►



Proposed Zoning: SPD

Subject Site ►



Zoning Designations

MF-30 SPD PF

Date: March 2024 Scale: 1 inch = 100 feet

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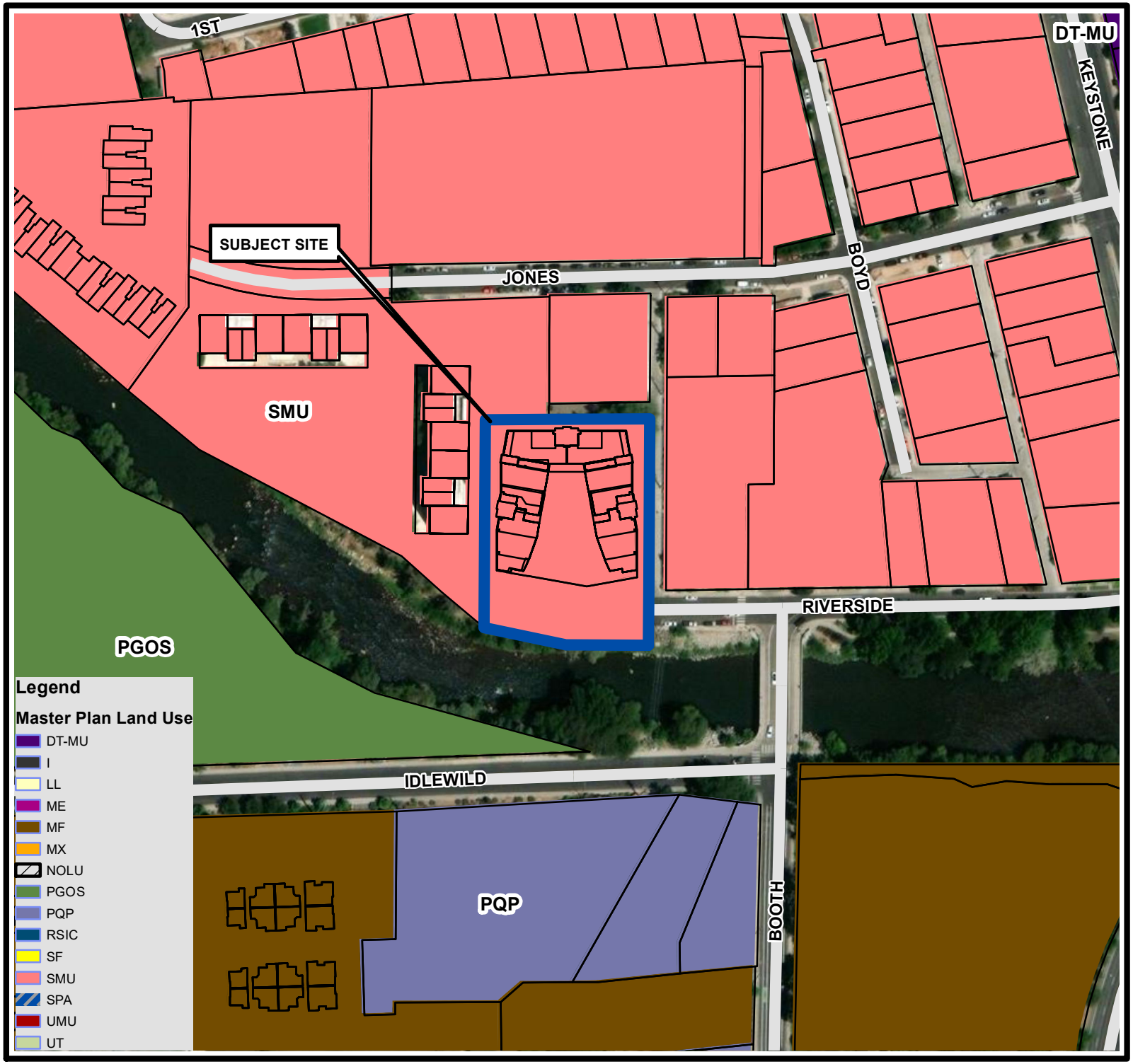
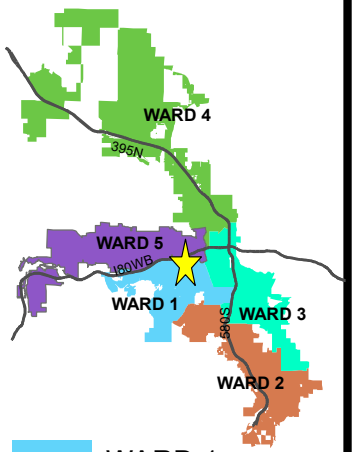


MASTER PLAN MAP

LDC24-00044

(Riverside SPD)

Subject Site ▶



WARD 1

Development Services Department

The information heron is approximate and is intended for display purposes only.

Date: March 2024

Scale: 1 inch = 175 feet

RIVERSIDE DEVELOPMENT SPECIFIC PLAN DISTRICT HANDBOOK

Adopted: _____

Riverside Development
Specific Plan District Development Standards Handbook

Notice is given that the Specific Plan District Development Standards Handbook was approved by the Reno City Council on _____, 2024. A copy of the certified handbook is attached hereto and incorporated herein.

Dated this _____ day of _____, 2024.

_____ (name)

_____ (signature)

STATE OF NEVADA)
)SS
COUNTY OF WASHOE)

On this _____ day of _____, 2024, _____ personally appeared before me, a Notary Public, known to me or proved to me on the basis of satisfactory evidence to be the person who executed this instrument.

_____ (seal)
Notary Public

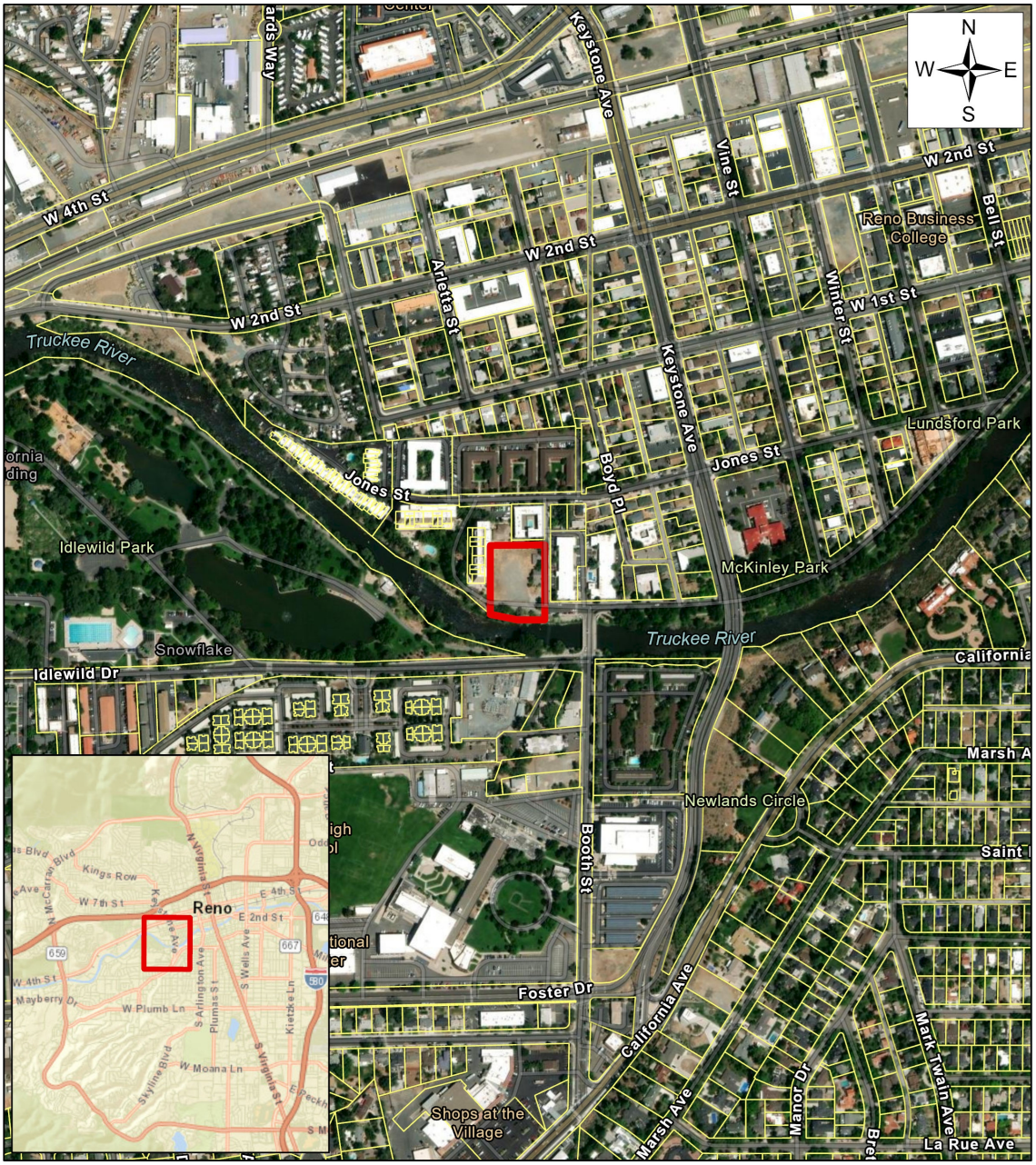
TABLE OF CONTENTS

LIST OF FIGURES

PROJECT LOCATION

The subject property is +/- 1.39 acres and is located at western terminus of Riverside Drive, north of the Truckee River and west of Booth Street in Reno.

Figure 1: Project Location



STATEMENT AND PURPOSE OF PLAN

The purpose of this Specific Plan District (SPD) is to establish a plan area that provides appropriate design standards for the orderly development of the subject property providing for appropriate land use, compatibility with adjacent properties, mitigation of potential impacts, and compliance with Reno Municipal Code standards, as noted and modified, herein.

The proposed project is a 123-unit multi-family residential development with a mix of studio, 1- and 2-bedroom units, a variety of amenities and associated off-street parking in a ground-level parking garage. However, to provide for flexibility and an alternate unit mix, the SPD allows for up to 180 units. This conceptual project was presented to the City of Reno when it was decided to enter into a Purchase and Sale Agreement (PSA) at the June 7, 2023, City Council meeting.

The project has been designed to meet the City's goals related to attainable housing, increased housing density, placemaking and quality of life, sustainability, and attractive and vibrant Truckee River Corridor; it will increase the supply of attainable housing with increased density, encourage development in an area with existing services and infrastructure, provide for housing in this neighborhood with extensive services in a one-mile radius, encourage community/placemaking with enhanced amenities, and promote an attractive and vibrant Truckee River.

Project amenities are proposed to include:

- Fitness Center
- Clubhouse
- Leasing Center
- Covered Parking
- Courtyard (with resident amenities)
- Upper Floor Patios (with resident amenities)
- Bike Storage
- River Frontage Amenities (including paths to the river and a riparian landscape area with pedestrian amenities)

DESIGN STANDARDS

The SPD recognizes the need to properly manage and reasonably control development of the subject property to create a project that meets the City's goals for the site while being compatible and complementary to the existing neighborhood. The SPD includes modified design standards that allow for an increased number of units and increased building height and number of stories above the standards set forth by the previous underlying MF-30 zoning designation.

Standards Not Addressed

Any development standards not specifically addressed in this handbook, shall be subject to the requirements set forth in Reno Municipal Code (RMC). Where this document is silent on a standard, the applicable section of the RMC as amended associated with the Multi-Family Residential (MF-30) zoning district or appliable general design standards shall apply.

Allowed Uses

All primary and accessory uses permitted by right or conditionally permitted in the underlying MF-30 zone will be permitted uses.

A conditional use permit shall not be required for development over 100 units.

Site and Building Standards

The proposed development will be designed in conformance with the requirements for site and building standards set forth in the RMC. The proposed development is not subject to RMC 18.04.101(c) as amended regarding the Shading of Parks and Residences.

Figure 2: Riverside Development SPD Design Standards

	Riverside Development SPD
General Standards	
Base units, maximum	Up to 180 du [1]
Lot size, minimum	3,000 sq. ft.
Lot width, minimum	50 ft. (no minimum lot width for zero-lot line development)
Setbacks, Minimum	
Front	10 ft.
Side	5 ft.
Side (for a project with two or more units-side yard adjacent to SF zoned property)	10 ft.
Side (zero-lot-line development)	10 ft. on one side and 0 ft. on the other
Rear	10 ft.
Street-Facing Garage	20 ft. measured from sidewalk or planned sidewalk to face of garage
Building Separation	10 ft. between principal buildings
Height Maximum	
Height	[2]
Stories	[3]
Other	
Shading of Parks and Residences	Not subject to RMC 18.04.101(c) Shading of Parks and Residences
Landscaping, minimum	10%
Off Street Parking	0.6 spaces per unit To be provided at 60% of the Level 1 parking district minimum requirement per RMC 18.04.705(a)(1)(b)(2); project is within ¼ mile (950 ft.) of the MD district.

Notes:
[1] Site Plan Review required for any project in excess of 180 du
[2] Site Plan Review required for buildings in excess of 65 ft.
[3] Site Plan Review required for buildings in excess of 5 stories

Figure 3: Conceptual Site Plan

Figure 4: Existing Conditions

(see full size sheet for details)

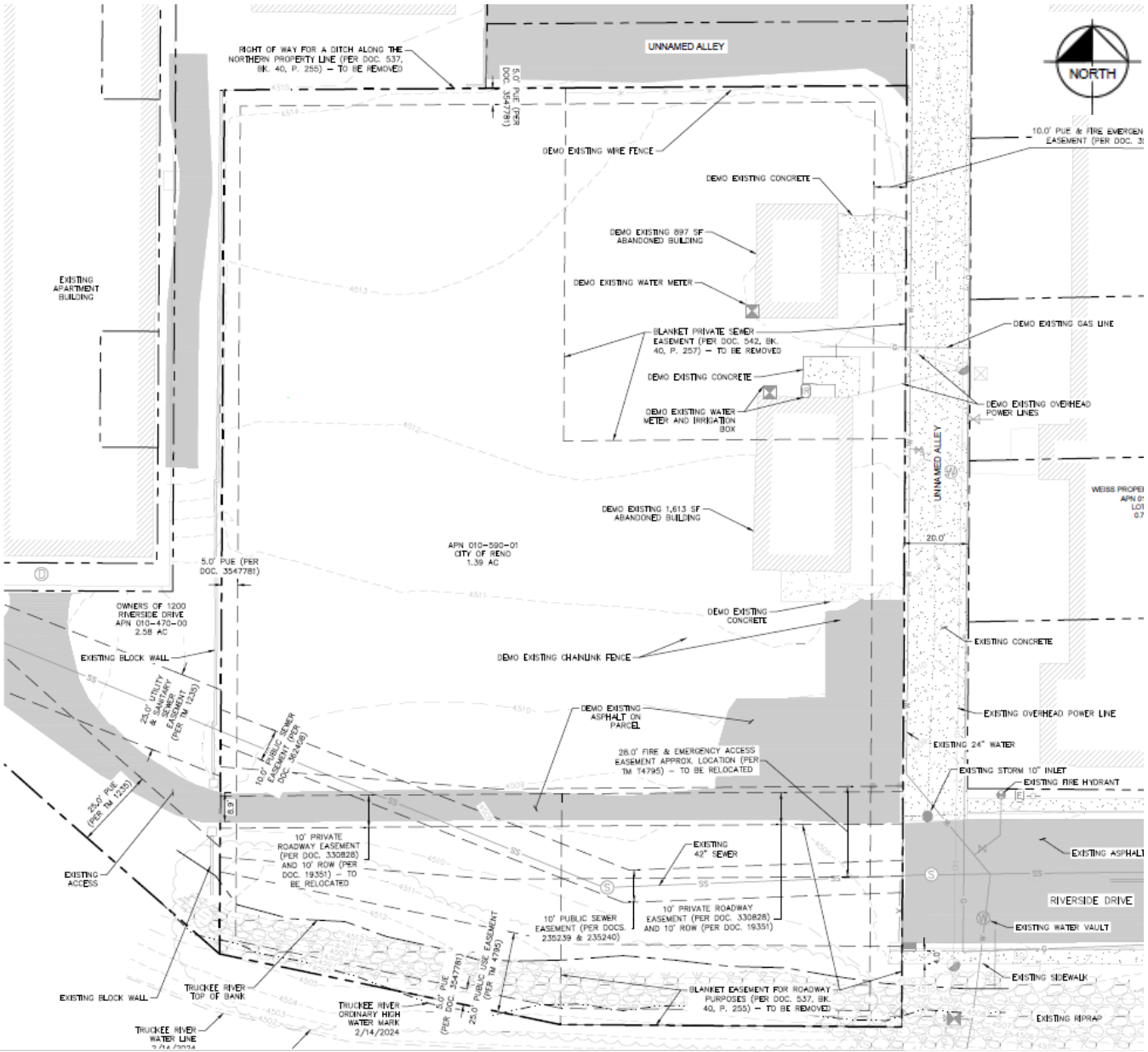


Figure 5: Preliminary Site Plan

(see full size sheet for details)

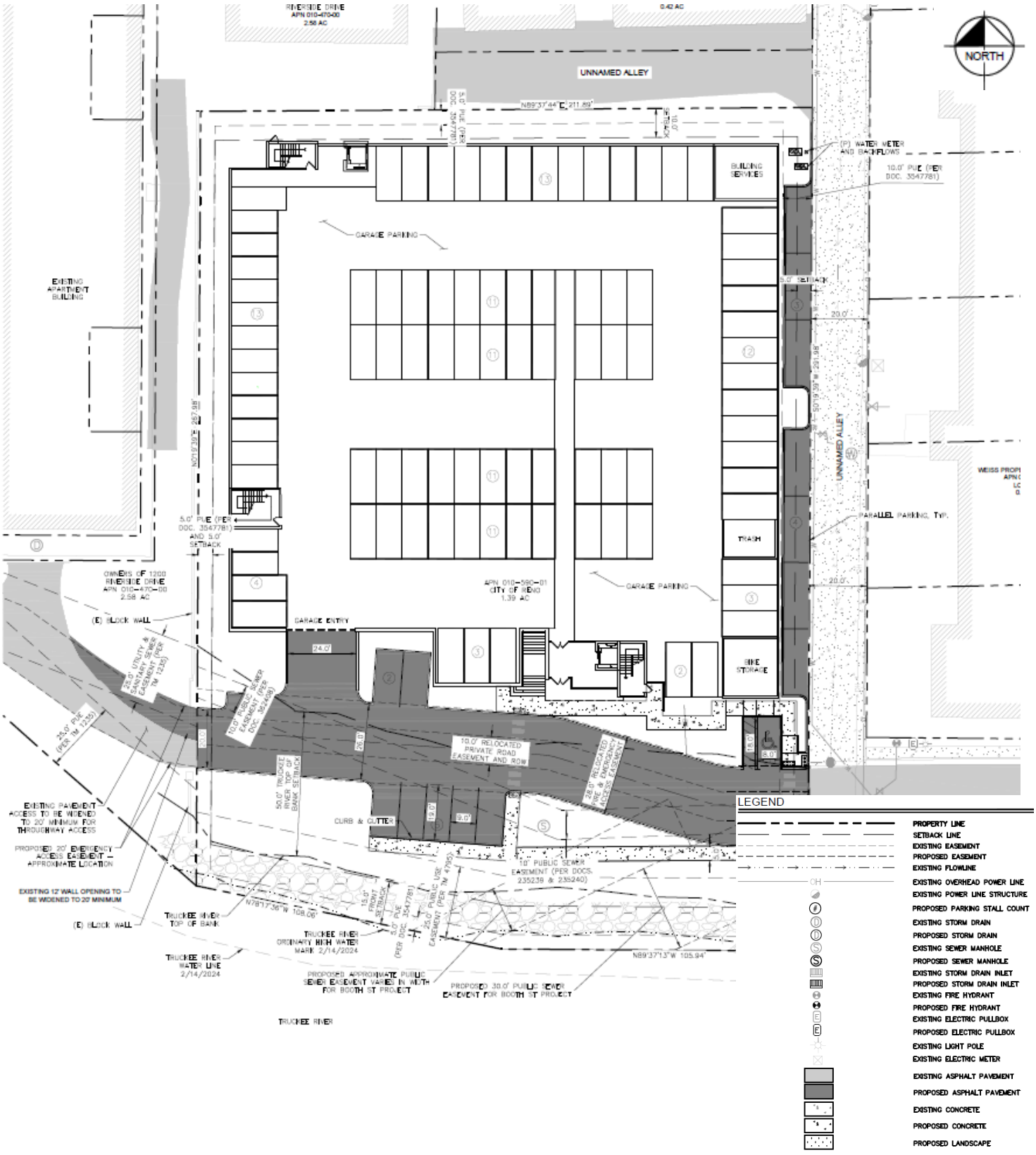


Figure 6: Preliminary Utility Plan

(see full size sheet for details)

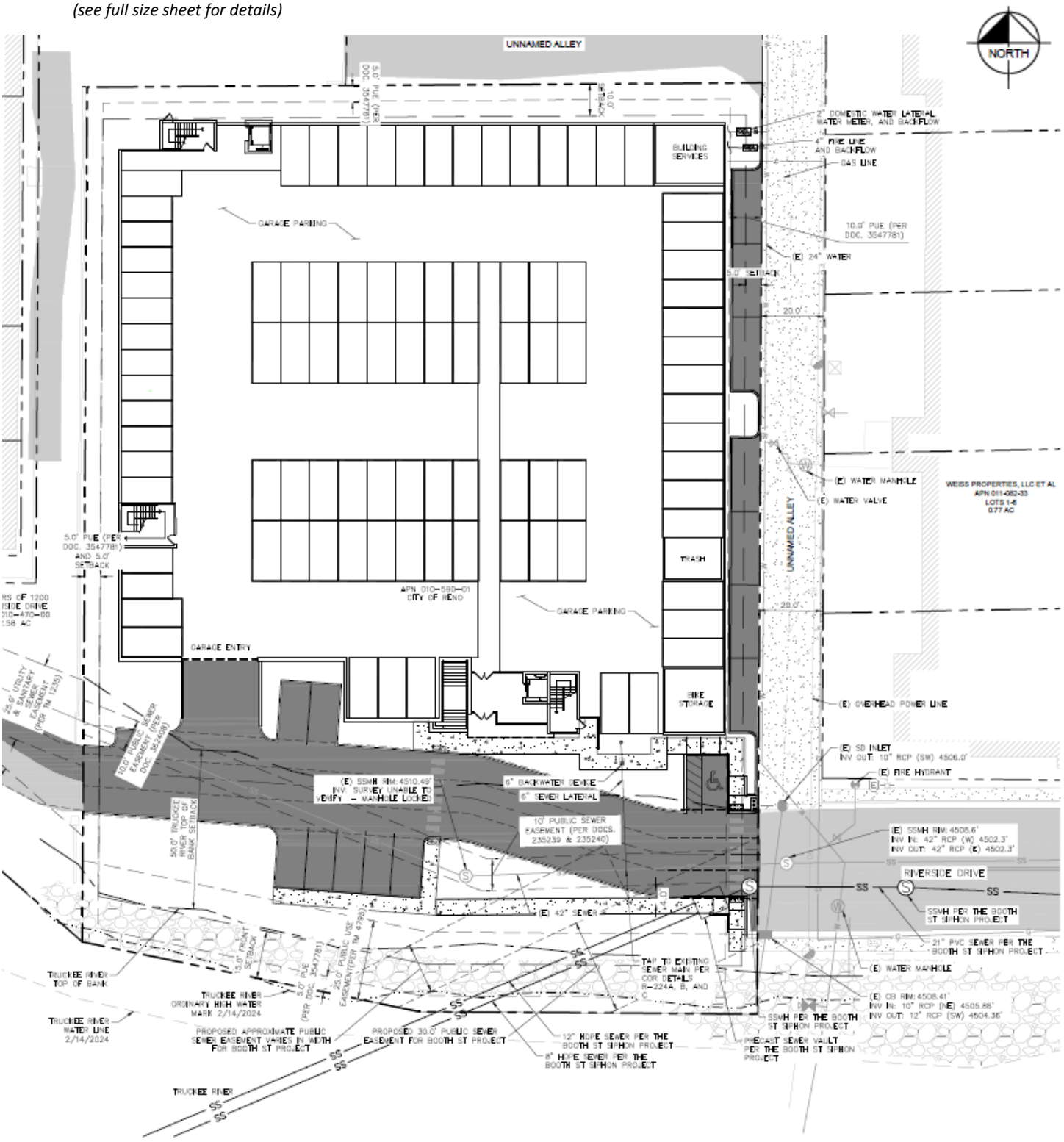
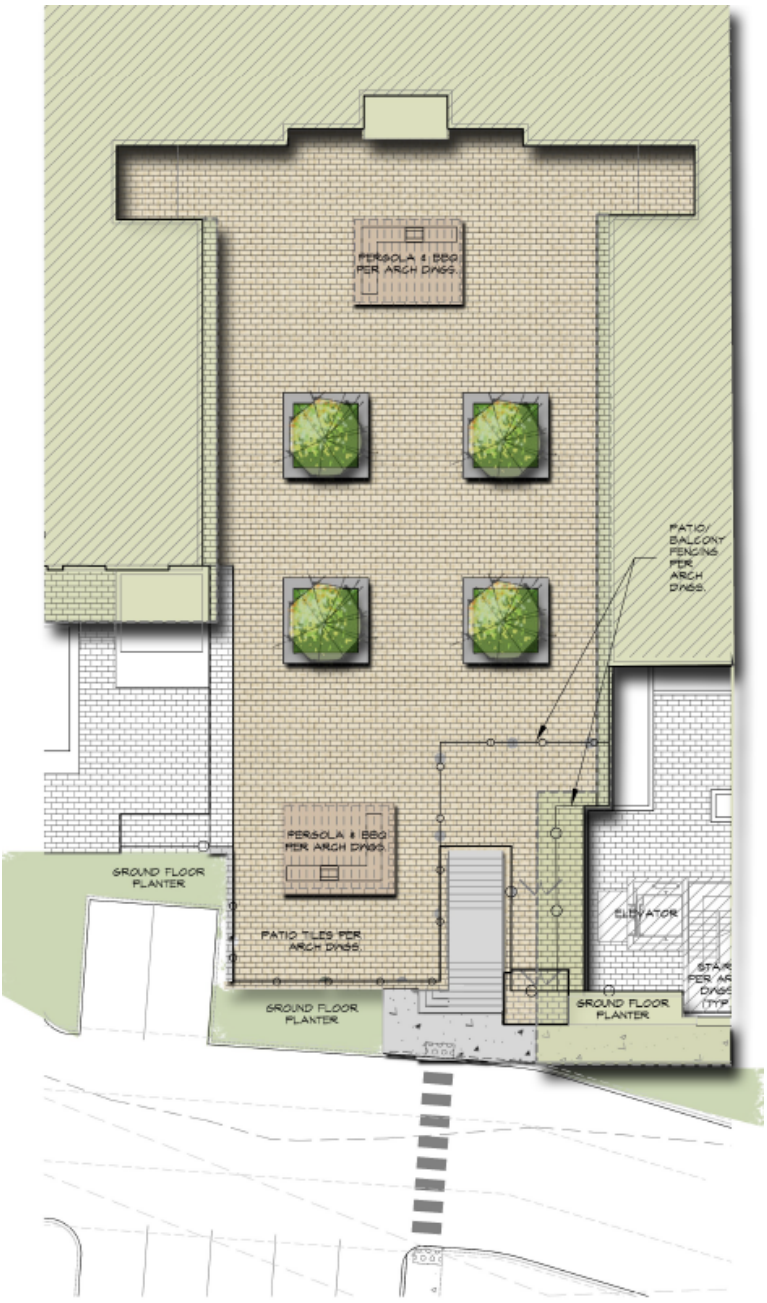
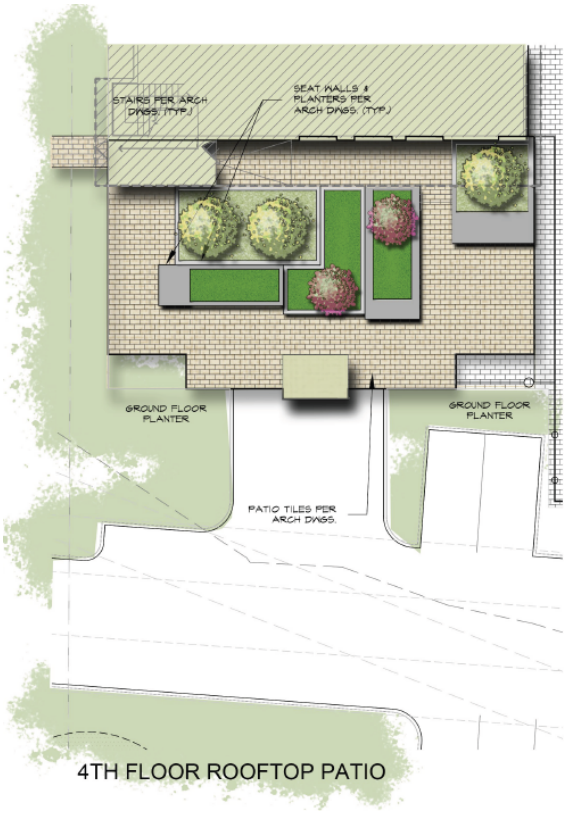


Figure 7: Preliminary Landscape Plan

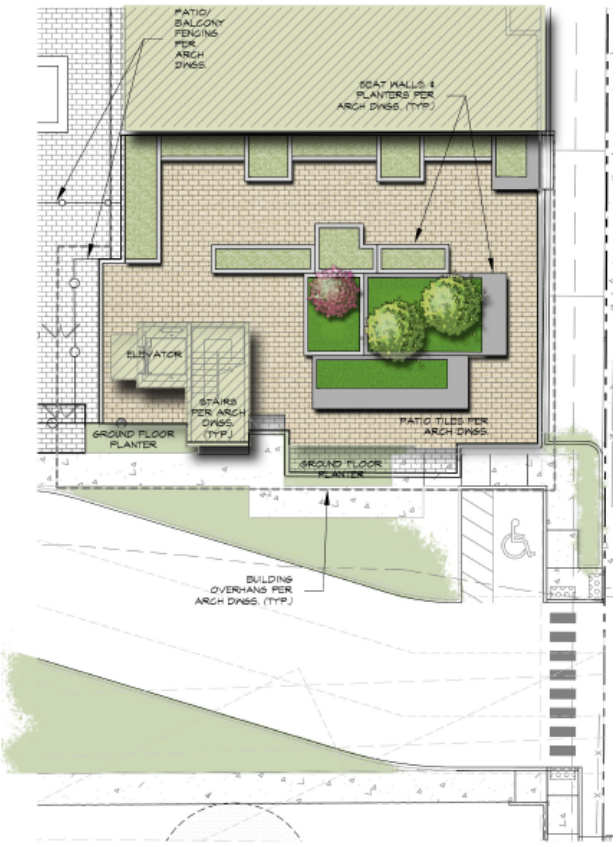
Figure 7: Preliminary Landscape Plan, cont.



2ND FLOOR COURTYARD



4TH FLOOR ROOFTOP PATIO



5TH FLOOR ROOFTOP PATIO

Traffic

A Traffic Impact Study was prepared for the project. The study analyzes trip generation and impacts for a 180 unit project, although the project as proposed is 123 units. The project is expected to generate 802 daily weekday trips with 67 AM Peak Hour trips, and 70 PM Peak Hour trips. The project is not anticipated to have a significant impact to the key study intersections and the surrounding street network.

The traffic study includes the following conclusions/recommendations:

- The developer is recommended to install an R1-1 "STOP" sign with appropriate pavement markings for the egressing access drive on to Riverside Drive.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the current Manual on Uniform Traffic Control Devices (MUTCD), as applicable.
- The project is not anticipated to have significant impacts to the key study intersections and the surrounding street network.
- Projects of a greater size could be pursued at this location by restricting project traffic from egressing onto Jones Street.

MODIFICATIONS

The Administrator shall have the ability to grant minor deviations as outlined in RMC 18.08.804(b)(2), as amended. Minor deviations shall be subject to written approval from the master developer. Deviations of 10% or more shall conform to the processes of RMC Chapter 18.08 Article 8 "Flexibility and Relief."

DEVELOPMENT SCHEDULE

It is anticipated that the project will be completed in one phase. Build out of the project will be in accordance with the Purchase and Sale Agreement (PSA) with the City of Reno as amended. In the event significant progress cannot be shown towards commencing vertical construction within 5 years of close, Riverside Development, LLC will offer the land back to the City of Reno at the cost of original price + closing costs + development costs incurred + compounding interest equal to the CPI (per the PSA).

Figure 9: Conceptual Elevations, cont.

RIVERSIDE DRIVE APARTMENTS

RENO, NEVADA

APNS: 010-590-01 AND 02, 010-591-01 AND 02, 010-592-01 TO 06, 010-593-01 TO 06, 010-594-01 TO 06, 010-595-01 TO 06, 010-601-01 TO 06, 010-602-01 TO 04, 010-603-01-04 AND 010-604-01

Prepared for:
BUILT

Kimley»Horn

TRAFFIC IMPACT STUDY

FOR

RIVERSIDE DRIVE APARTMENTS

Prepared for:
BUILT
3600 Mayberry Drive
Reno, Nevada 89509

Prepared by:
Kimley-Horn and Associates, Inc.
7900 Rancharrah Parkway
Suite 100
Reno, Nevada 89511
(775) 787-7552

192434000

Kimley»Horn

EXECUTIVE SUMMARY

The purpose of this traffic study is to identify traffic generation characteristics of a proposed mid-rise multifamily housing development, identify potential traffic related impacts on the surrounding street network, and develop mitigation measures required for identified impacts.

The proposed Riverside Apartments is to be generally located on Riverside Drive approximately 250 feet west of Booth Street on 3.85 Acres within the following APNs in Reno, Nevada:

- 010-590-01 and 02
- 010-591-01 and 02
- 010-592-01 to 06
- 010-593-01 to 06
- 010-594-01 to 06
- 010-595-01 to 06
- 010-601-01 to 06
- 010-602-01 to 04
- 010-603-01-04
- 010-604-01

Upon completion, the buildout of the proposed development is anticipated to consist of a 180-unit apartment building.

Regional access to the project site is expected to be provided via Interstate 80 (I-80). Primary access to the project site is anticipated to be from Riverside Drive. Direct access to the project site is planned to be provided by one (1) full access drive located on Riverside Drive. As a part of this study the following three (5) key intersections were analyzed:

- Keystone Avenue and West 1st Street (#1)
- Keystone Avenue and Jones Street (#2)
- Jones Street and Project Access Alleyway (#3)
- Riverside Drive and Booth Street (#4)
- Booth Street and Idlewild Drive (#5)

The scope from the City of Reno is provided in **Appendix A**. The study area intersections and project access drive are shown in **Figure E-1**. Full buildout of the development is expected to generate approximately 802 daily weekday trips, with 67 of these trips occurring during the morning peak hour and 70 trips occurring during the evening peak hour.

The proposed multifamily development traffic is anticipated to generate traffic volumes resulting in the following recommendations:

- The developer is recommended to install an R1-1 “STOP” sign with appropriate pavement markings for the egressing access drive on to Riverside Drive.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the current Manual on Uniform Traffic Control Devices (MUTCD), as applicable.
- The project is not anticipated to have significant impacts to the key study intersections and the surrounding street network.
- Projects of a greater size could be pursued at this location by restricting project traffic from egressing onto Jones Street.

SOURCE: NEARMAP US, INC.

STUDY INTERSECTIONS

1. KEYSTONE AVENUE AND WEST FIRST STREET
2. KEYSTONE AVENUE AND JONES STREET
3. JONES STREET AND PROJECT ACCESS ALLEYWAY
4. RIVERSIDE DRIVE AND BOOTH STREET
5. BOOTH STREET AND IDLEWILD DRIVE

NORTH
NTS

LEGEND:

(1)	Study Area Key Intersection
(A)	Project Access Drive

RIVERSIDE DRIVE APARTMENTS
STUDY AREA INTERSECTIONS AND PROJECT ACCESS DRIVES

FIGURE E-1

Kimley»Horn

Date: December 19, 2023 – 11:02am / User: Alex.Tang
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Kimley»Horn

TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

1. INTRODUCTION

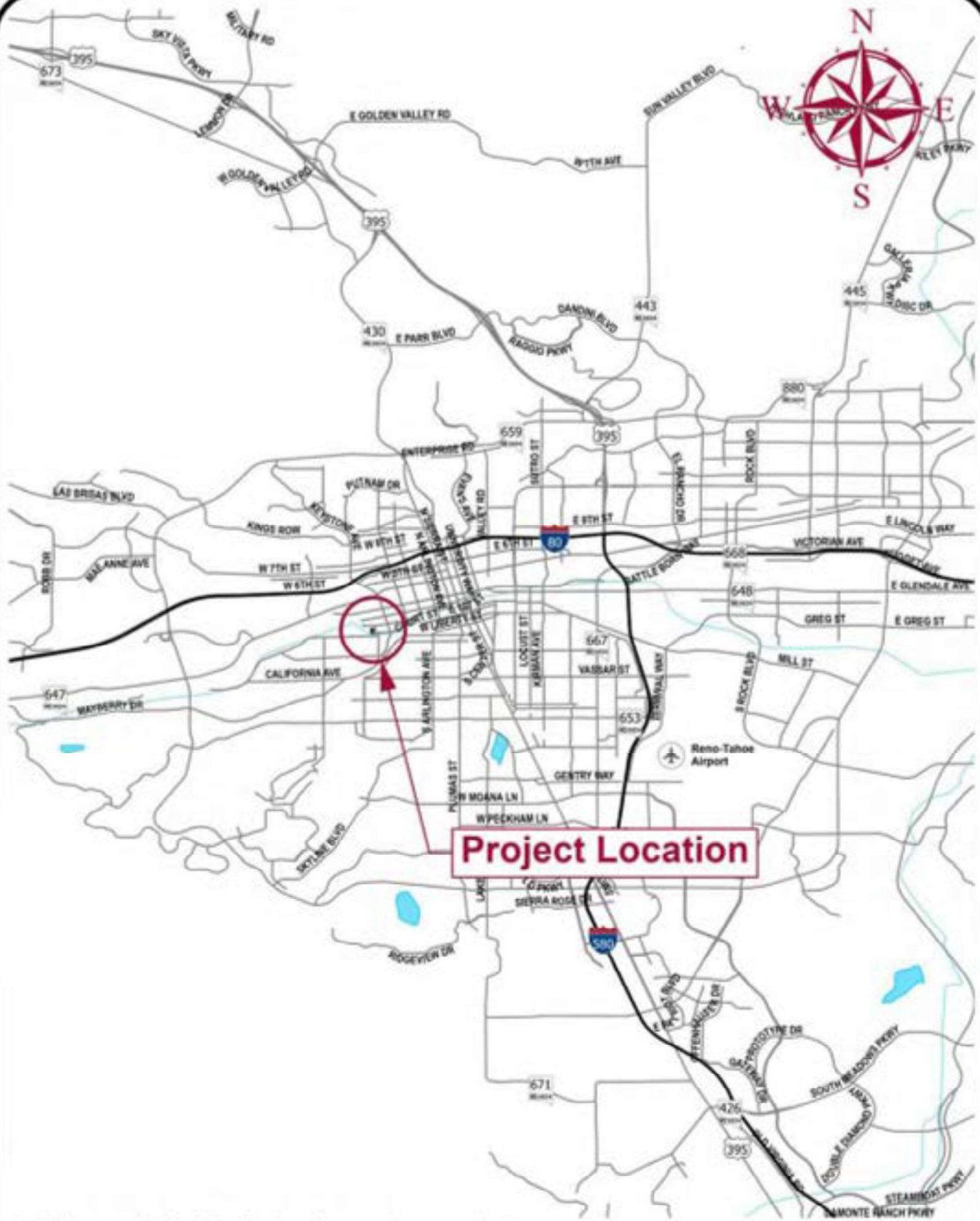
Kimley-Horn and Associates, Inc. has been retained by BUILT. to prepare a traffic impact study for a five-story apartment building. The purpose of this traffic impact study is to identify traffic generation characteristics of the proposed development, identify potential traffic related impacts on the local street system, and develop mitigation measures required for the identified impacts.

The proposed Riverside Apartments is to be generally located on Riverside Drive approximately 250 feet west of Booth Street on 3.85 Acres within the following APNs in Reno, Nevada:

- 01059001 and 02
- 01059101 and 02
- 01059201 to 06
- 01059301 to 06
- 01059401 to 06
- 01059501 to 06
- 01060101 to 06
- 01060201 to 04
- 0106030104
- 01060401

Upon completion, the buildout of the proposed development is anticipated to consist of a 180-unit apartment building. The location of the project site with respect to the City of Reno is shown on **Figure 1** and a site plan is provided in **Appendix B**.

Regional access to the project site is expected to be provided via Interstate 80 (I-80). Primary access to the project site is anticipated to be from Riverside Drive. Direct access to the project site is planned to be provided by one (1) full access drive located on Riverside Drive.



Riverside Drive Apartments
Vicinity Map

Figure 1

Kimley»Horn

2. EXISTING CONDITIONS

This section of the report details existing conditions near the project site.

2.1. Study Area Intersections

As a part of this study the following three (5) key intersections were analyzed:

- Keystone Avenue and West 1st Street (#1)
- Keystone Avenue and Jones Street (#2)
- Jones Street and Project Access Alleyway (#3)
- Riverside Drive and Booth Street (#4)
- Booth Street and Idlewild Drive (#5)

2.2. Existing Land Uses

The location for the proposed apartment is currently undeveloped. The area surrounding the project site is composed primarily of residential and public facility land uses. The location of the project site and study area intersections are shown on **Figure 2**.

2.3. Existing Lane Configurations and Control

Regional access to the project site is expected to be provided via Interstate 80 (I-80). Primary access to the project site is anticipated to be from Riverside Drive. Direct access to the project site is planned to be provided by one (1) full access drive located on Riverside Drive. Existing lane configuration and intersection control at the time of this study are illustrated in **Figure 2**.

2.4. Existing Turning Movements

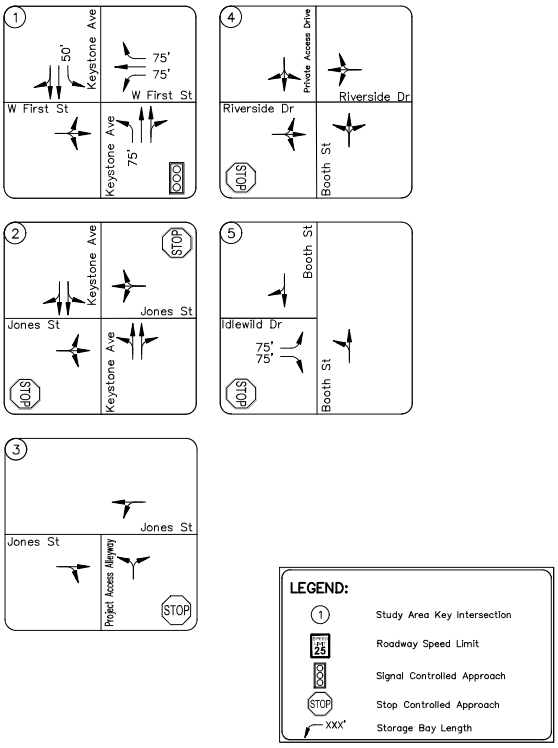
AM and PM peak hour turning movement data was field counted on November 15, 2023, as summarized in **Table 1**, for the study area intersections identified in **Section 2.1**. Count data sheets are provided in **Appendix C**.

Table 1 – Peak Hour Turning Movement Count Dates

Intersection	Count Date
Keystone Avenue and West 1st Street (#1)	Wednesday, November 15, 2023
Keystone Avenue and Jones Street (#2)	Wednesday, November 15, 2023
Jones Street and Project Access Alleyway (#3)	Wednesday, November 15, 2023
Riverside Drive and Booth Street (#4)	Wednesday, November 15, 2023
Booth Street and Idlewild Drive (#5)	Wednesday, November 15, 2023

Figure 3 illustrates the 2023 existing peak hour traffic volumes.

SOURCE: NEARMAP US, INC.



RIVERSIDE DRIVE APARTMENTS
2023 EXISTING LANE CONFIGURATION AND CONTROL

FIGURE 2

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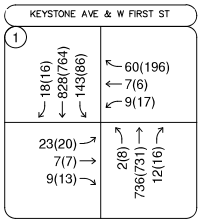
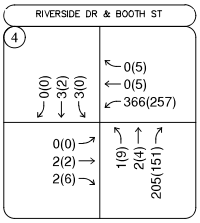
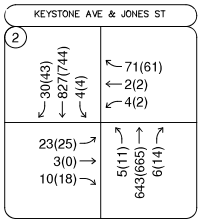
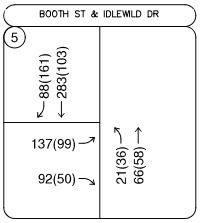
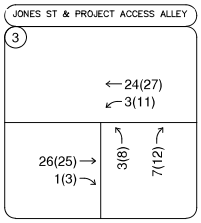
SOURCE: NEARMAP US, INC.

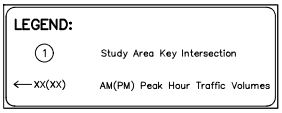












RIVERSIDE DRIVE APARTMENTS
2023 EXISTING PEAK HOUR TRAFFIC VOLUMES

FIGURE 3

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3. FUTURE CONDITIONS

This section of the report details the conditions that are expected in the future at the time the proposed project is anticipated to be completed.

3.1. Background Lane Configuration and Control

Regional access to the project site is expected to be provided via Interstate 80 (I-80). Primary access to the project site is anticipated to be from Riverside Drive. Direct access to the project site is planned to be provided by one (1) full access drive located on Riverside Drive. Speed limits, lane configuration, and intersection control in 2025 illustrated in **Figure 4** are anticipated to remain the same as 2023 existing lane configuration and intersection control illustrated in **Figure 2**.

3.2. Buildout Background Traffic

To accurately determine the impact of project traffic, it is necessary to establish future baseline traffic volumes along roadways in the vicinity of the proposed development site.

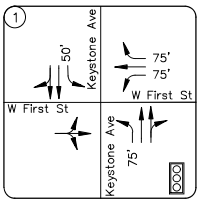
Forecasted traffic volumes for 2020 and 2050 were obtained using the Regional Transportation Commission (RTC) – Washoe Travel Demand Model (TDM) 2050 Model Output. Traffic volumes were obtained for 2020 and 2050 at the approaches of each study area intersection to determine an annual growth rate for each approach. The annual growth rates were used to grow 2023 existing turning movement counts for the 2020 background year. The growth rate factors are summarized in **Table 2**. The 2020 background peak hour traffic volumes at the key intersections are illustrated in **Figure 5**.

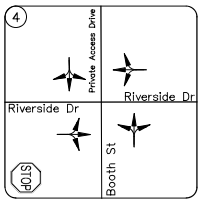
Table 2 – 2050 Growth Rate Summary

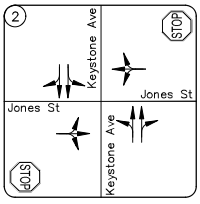
Intersection Location	Approach	2020 Volumes (Vehicles)	2050 Volumes (Vehicles)	Annual Growth Rate
Keystone Avenue and West 1st Street (#1)	Northbound	8,220	9,610	0.52%
	Southbound	11,127	13,550	0.66%
	Eastbound	5,571	4,462	-0.74%*
	Westbound	4,232	4,433	0.15%
Keystone Avenue and Jones Street (#2)	Northbound	8,220	9,610	0.52%
	Southbound	8,220	9,610	0.52%
Jones Street and Project Access Alleyway (#3)	Northbound	-	-	-
	Eastbound	-	-	-
	Westbound	-	-	-
Riverside Drive and Booth Street (#4)	Northbound	4,770	5,296	0.35%
	Westbound	4,712	5,246	0.36%
Idlewild Drive and Booth Steet (#5)	Northbound	0	4	-
	Southbound	4,770	5,296	0.35%
	Eastbound	4,770	5,291	0.35%

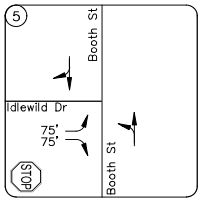
Source: RTC Travel Demand Model 2050 Model Output
**A growth rate of 0% was used for a conservative analysis.*

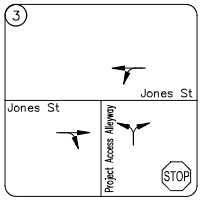
SOURCE: NEARMAP US, INC.

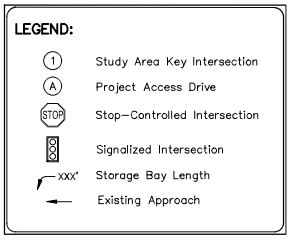












RIVERSIDE DRIVE APARTMENTS
2025 BACKGROUND LANE CONFIGURATION AND CONTROL

FIGURE 4

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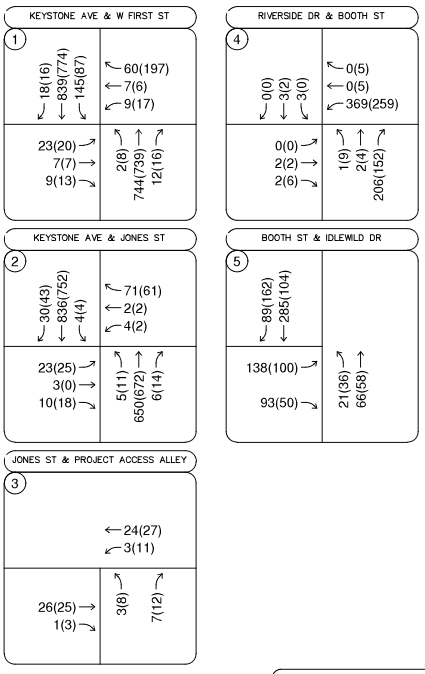

LEGEND:

(1) Study Area Key Intersection

←XX(XX) AM(PM) Peak Hour Traffic Volumes

RIVERSIDE DRIVE APARTMENTS
2025 BACKGROUND PEAK HOUR TRAFFIC VOLUMES

FIGURE 5

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3.3. Project Trip Generation

For purposes of estimating the number of new trips that are anticipated to be generated by the proposed residential development, the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition (ITE Land Use Code 221 – Multifamily Housing Mid-Rise, Not Close to Rail Transit) was used. The ITE Trip Generation Manual informational report is a standard reference used by jurisdictions throughout the country and is based on actual trip generation studies performed at numerous locations in areas of various populations.

The project is expected to consist of 180 dwelling units. **Table 3** summarizes the estimated project trips. The proposed development is anticipated to generate 802 daily weekday trips, with 67 of these trips occurring during the morning peak hour and 70 trips occurring during the evening peak hour. Calculations are provided in **Appendix D**.

Table 3 – Trip Generation

ITE Code	Description	Size	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
221	Multifamily Housing (Mid-Rise, Not Close to Rail Transit)	180 Dwelling Units	15	52	67	43	27	70	802

Source: ITE Trip Generation Manual, 11th Edition

3.4. Project Trip Distribution

The study area street network characteristics, including the existing traffic patterns, expected street network, and access to regional facilities (I-80) were used to determine the distribution of site generated traffic. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site in the same or different direction. **Figure 6** shows the trip distribution at the study area intersections and the project access drive.

3.5. Traffic Assignment

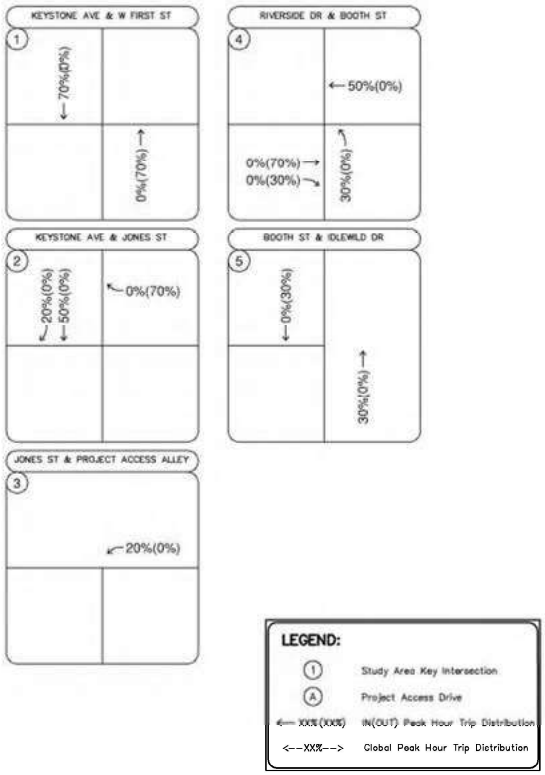
Project traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 3**. Project traffic assignment is shown in **Figure 7** for the development.

The entering and exiting trips at the project access drive are rounded to the nearest whole number when assigned. Therefore, the number of trips assigned to the project driveway may differ slightly from the total trip generation.

3.6. Buildout Traffic Volumes

The project generated traffic volumes shown in **Figure 7** were added to the 2025 background traffic volumes illustrated in **Figure 5** to represent estimated traffic conditions for full project development in 2025. The 2025 background plus project peak hour traffic volumes for the study area intersections and the project access drive are illustrated in **Figure 8**.

SOURCE: NEARMAP US, INC.



RIVERSIDE DRIVE APARTMENTS
PROJECT TRIP DISTRIBUTION

FIGURE 6

Kimley»Horn

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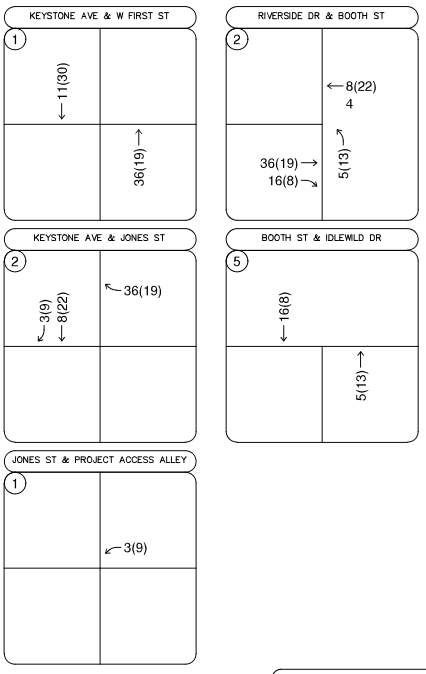

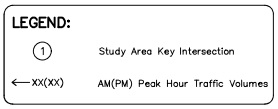

RIVERSIDE DRIVE APARTMENTS
PROJECT TRIP ASSIGNMENT

FIGURE 7

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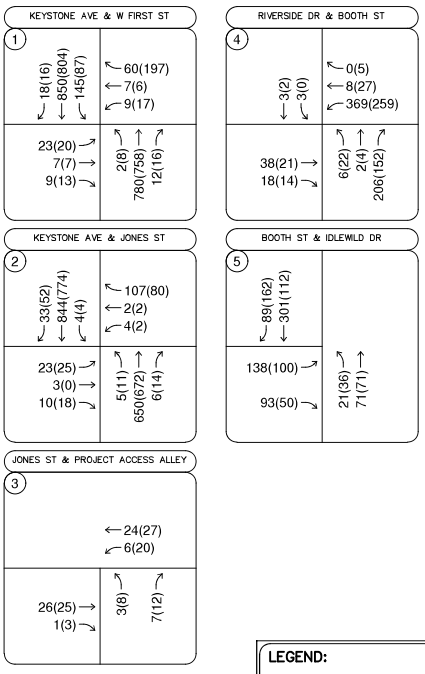

LEGEND:

(1)	Study Area Key Intersection
(A)	Project Access Drive
←XX(XX)	AM(PM) Peak Hour Traffic Volumes

RIVERSIDE DRIVE APARTMENTS
2025 BACKGROUND PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 8

Kimley»Horn

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4. TRAFFIC IMPACT ANALYSIS

Traffic analyses for 2023 existing, 2025 background, and 2025 background plus project scenarios were conducted at the identified key intersections to determine possible existing and/or future deficiencies in the street network.

4.1. Analysis Methodology

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections presented in the Transportation Research Board's "Highway Capacity Manual" 6th Edition (HCM 6). Under the unsignalized analysis, the level of service (LOS) for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for a signalized or four-way stop controlled intersection is defined for the intersection as a whole. **Table 4** shows the definition of LOS for intersections.

Table 4 – Level of Service Definitions

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

Definitions provided from the Highway Capacity Manual, 6th Edition, Transportation Research Board.

Synchro 11 was used to analyze the study area intersections and driveways for LOS. Synchro is an interactive computer program that enables planners and engineers to forecast the traffic impacts of new developments; conduct area-wide traffic forecasting studies; test different mitigation measures and compare different traffic scenarios. Synchro 11 utilizes HCM 6 methodology to analyze intersection delay and LOS.

4.2. Key Intersection Operational Analysis

Calculations for the LOS at the key intersections are provided in **Appendix E**. The 2023 existing analysis is based on the lane geometry and intersection control shown in **Figure 2.** The 2025 background and 2025 background plus project analyses are based on the lane geometry and intersection control shown in **Figure 4**. It should be noted that the signalized intersection (Intersection #1) was analyzed using optimized cycle lengths and splits. The results of the Key Intersection LOS Analysis for existing and horizon year conditions are summarized in **Table 5**.

Table 5 – Key Intersection Peak Hour LOS Analysis

Intersection	2023 Existing		2025 Background		2025 Background Plus Project	
	AM	PM	AM	PM	AM	PM
	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)
Keystone Avenue and West 1st Street (#1)						
Signalized	27.3 (C)	30.1 (C)	27.5 (C)	30.1 (C)	28.2 (C)	30.5 (C)
Keystone Avenue and Jones Street (#2)						
Two-Way Stop Control						
Northbound Left	0 (A)	9.8 (A)	10.8 (B)	9.8 (A)	0 (A)	0 (A)
Southbound Left	9.5 (A)	9.3 (A)	9.5 (A)	9.3 (A)	9.5 (A)	9.3 (A)
Eastbound Left/Through/Right	**78.3 (F)**	**36.3 (E)**	**82.6 (F)**	**37.1 (E)**	**94.7 (F)**	**40.2 (E)**
Westbound Left/Through/Right	16.6 (C)	13.9 (B)	16.9 (C)	14.0 (B)	16.9 (C)	13.9 (B)
Jones Street and Project Access Alleyway (#3)						
Two-Way Stop Control						
Northbound Left/Right	8.7 (A)	8.8 (A)	8.7 (A)	8.8 (A)	8.7 (A)	8.9 (A)
Westbound Left	7.3 (A)	7.3 (A)	7.3 (A)	7.3 (A)	7.3 (A)	7.3 (A)
Riverside Drive and Booth Street (#4)						
Two-Way Stop Control						
Eastbound Left/Through/Right	8.6 (A)	8.4 (A)	8.6 (A)	8.4 (A)	8.9 (A)	8.5 (A)
Westbound Left	8.4 (A)	7.7 (A)	8.4 (A)	7.7 (A)	8.4 (A)	7.7 (A)
Booth Street and Idlewild Drive (#5)						
Two-Way Stop Control						
Northbound Left	8.9 (A)	8.0 (A)	8.4 (A)	8.4 (A)	9.0 (A)	8.0 (A)
Eastbound Left/Through/Right	20.8 (C)	11.7 (B)	21.0 (C)	11.7 (B)	22.3 (C)	11.9 (B)

The key intersections are expected to operate at acceptable LOS under 2023 existing, 2025 background, 2025 background plus project scenarios with the exception of the eastbound approach at Intersection #2. It should be noted that the eastbound approach is a minor approach at an unsignalized intersection which often experiences higher delays during peak periods.

4.3. Left Turn Storage Bay Analysis

Left turn storage bay analysis was conducted for signalized turning movements anticipated to be impacted by the addition of project traffic at the study area intersections as well as the intersection of the project access drive. The left turn storage bay calculations include AM and PM peak volumes. The analysis was conducted using the Synchro 11 software and HCM 6 methodology to obtain 95th percentile queues and are summarized in **Table 6** and provided with the LOS calculations in **Appendix E**.

Table 6 – Left Turn Storage Bay Analysis

Intersection	Storage Provided (ft)	2023 Existing Queue (ft)		2025 Background Queue (ft)		2025 Background Plus Project Queue (ft)	
		AM	PM	AM	PM	AM	PM
Keystone Avenue and West 1st Street (#1)							
Signalized							
Northbound Left	75’	3’	10’	3’	10’	3’	10’
Southbound Left	75’	**215’**	**113’**	**218’**	**113’**	**218’**	**115’**
Westbound Left	75’	10’	18’	10’	18’	10’	18’

The existing storage bays have adequate length to serve all analyzed scenarios during both the AM and PM peak hours with the exception of the southbound left turn movement. It should be noted that no project traffic is anticipated at the southbound left turn movement at Keystone Avenue and West 1st Street (#1).

5. CRASH DATA SUMMARY

Crash data was requested for the five (5) existing key intersection from the NDOT Safety Engineering Division for the most recent five-year period (January 1, 2016 – December 31, 2020). The crash data for the study intersections is summarized in **Table 7**. A detailed summary is included in **Appendix F**. The intersection crashes include those crashes on both the major and minor streets of the key intersections during the four-year analysis period.

Table 7 – Crash Data Summary

Intersection Name	Total Crashes	Property Damage Only	Injury	Fatal
Keystone Avenue and West 1st Street (#1)	8	3 (38%)	5 (63%)	0 (0%)
Keystone Avenue and Jones Street (#2)	14	10 (71%)	4 (29%)	0 (0%)
Jones Street and Project Alleyway (#3)	0	0 (0%)	0 (0%)	0 (0%)
Riverside Drive and Booth Street (#4)	6	2 (33%)	4 (67%)	0 (0%)
Idlewild Drive and Booth Street (#5)	7	4 (57%)	3 (43%)	0 (0%)
Total	**35**	**19 (54%)**	**16 (46%)**	**0 (0%)**

A total of 35 crashes were recorded at the five (5) intersections in the most recent four-year period. Those 35 crashes resulted in 16 injury crashes (46%) and 19 property damage only crashes (54%). There no fatal crashes reported across the five (5) study intersections.

6. CONCLUSIONS/RECOMMENDATIONS

The proposed development traffic is anticipated to generate traffic volumes resulting in the following recommendations:

- The developer is recommended to install an R1-1 “STOP” sign with appropriate pavement markings for the egressing access drive on to Riverside Drive.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the current Manual on Uniform Traffic Control Devices (MUTCD), as applicable.
- The project is not anticipated to have significant impacts to the key study intersections and the surrounding street network.
- Projects of a greater size could be pursued at this location by restricting project traffic from egressing onto Jones Street.

APPENDIX A

CITY OF RENO SCOPE

Tang, Alex

From: Todd Landry <LandryT@reno.gov>
Sent: Tuesday, November 14, 2023 11:16 AM
To: Giacomin, David
Cc: Tang, Alex; Waechter, Chris; Michael Mischel
Subject: RE: Traffic Study Scope Request

Hi David,

Per your email below and our phone conversation this morning, we are good with your revised scope of intersections to be studied.

Thanks,
Todd

From: Giacomin, David <david.giacomin@kimley-horn.com>
Sent: Tuesday, November 14, 2023 11:14 AM
To: Todd Landry <LandryT@reno.gov>
Cc: Tang, Alex <Alex.Tang@kimley-horn.com>; Waechter, Chris <Chris.Waechter@kimley-horn.com>; Michael Mischel <MischelM@reno.gov>
Subject: RE: Traffic Study Scope Request

Todd – following up on our call, please confirm that you concur with the following intersections for analysis in the TIS.

- Jones Street and Project Alley
- Jones Street and Keystone Avenue
- Riverside Drive and Booth Street
- Keystone Avenue and 1st Street
- Booth Street and Idlewild Drive

Thank you,

David J Giacomin, P.E., PTOE, RSP$_1$
Kimley-Horn | 7900 Rancharrah Parkway, Suite 100, Reno, NV 89511
Direct: 775 200 1981 | Mobile: 651 497 8220

From: Giacomin, David
Sent: Monday, November 13, 2023 3:25 PM
To: Michael Mischel <mischelm@reno.gov>
Cc: Tang, Alex <Alex.Tang@kimley-horn.com>; Waechter, Chris <Chris.Waechter@kimley-horn.com>
Subject: Traffic Study Scope Request

Mike,

We are working on a proposed multifamily housing (mid-rise) development located along Riverside Drive within APN 010-590-01 (and interior parcels). Full buildout of the development is anticipated to consist of 180 dwelling units. According to the ITE Trip Generation Manual, 11th Edition (ITE Land Use Code 221 – Multifamily Housing (Mid-Rise)) the proposed development is anticipated to generate 817 daily trips, 67 AM peak hour trips, and 70 PM peak hour trips.

Can you please confirm the following intersections to be studied (7-9 AM, 4-6 PM):

- Project Access Drive(s)
- Jones Street and Project Alley
- Jones Street and Boyd Place
- Jones Street and Keyston Avenue
- Riverside Drive and Booth Street

Please let me know if you concur.

Thank you,

David J Giacomin, P.E., PTOE, RSP$_1$
Kimley-Horn | 7900 Rancharrah Parkway, Suite 100, Reno, NV 89511
Direct: 775 200 1981 | Mobile: 651 497 8220

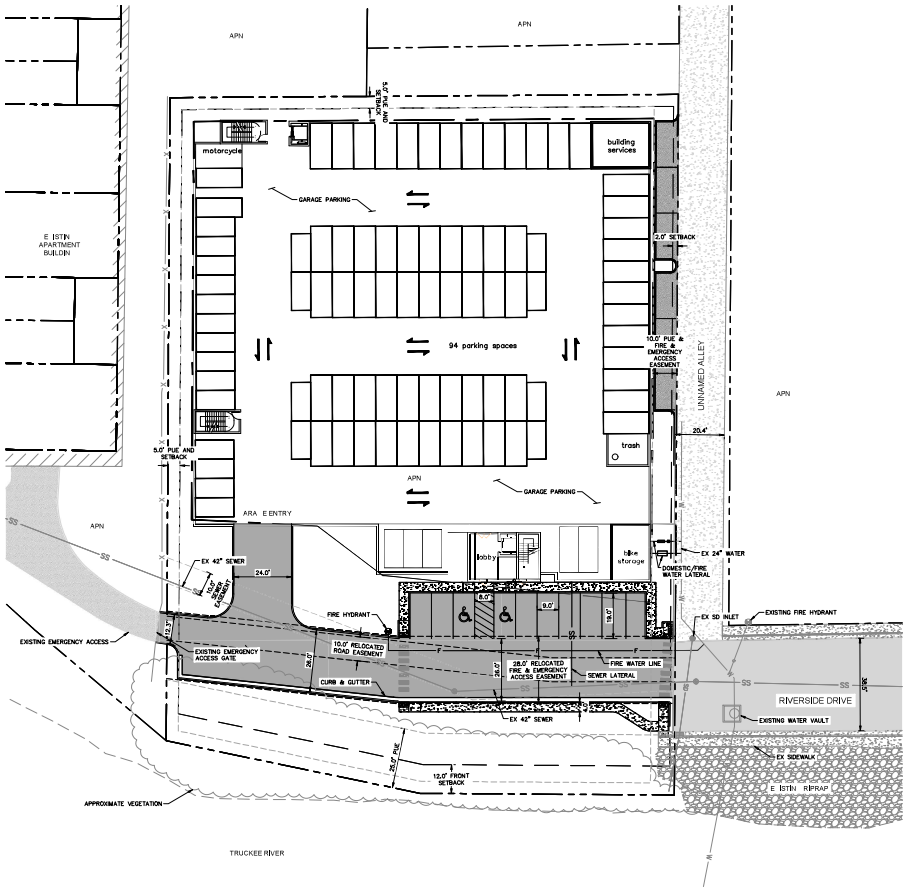
APPENDIX B

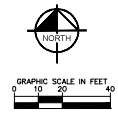
SITE PLAN

RIVERSIDE DRIVE

PRELIMINARY SITE PLAN E HIBIT

DECEMBER





NOTE THIS PLAN IS CONCEPTUAL IN NATURE AND HAS BEEN PRODUCED WITHOUT THE BENEFIT OF A SURVEY

Kimley»Horn

R P
S
R N

DW NAME K REN CIVIL RIVERSIDE DRIVE APARTMENTS CAD E HIBITS SITE PLAN RIVERSIDE DRIVE SITE PLAN DW
LAST SAVED AM

APPENDIX C

COUNT DATA

Keystone Avenue and 1st Street - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134208, Location: 39.523347, -119.825321

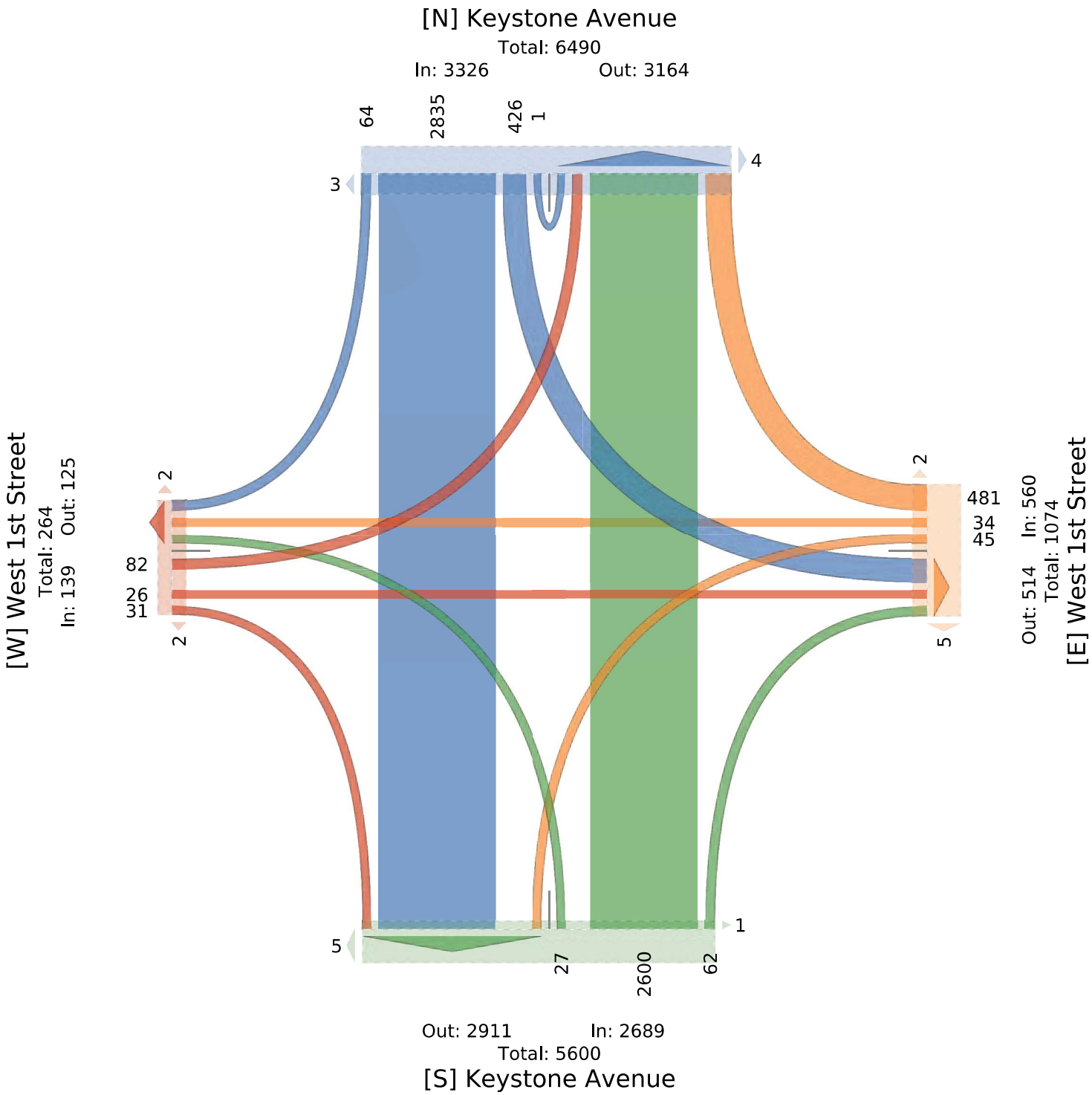
Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Keystone Avenue						Keystone Avenue						West 1st Street						West 1st Street						
Direction	Northbound						Southbound						Eastbound						Westbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-15 7:00AM	8	728	3	0	**739**	1	15	854	120	0	**989**	1	7	6	21	0	**34**	1	68	8	9	0	**85**	2	**1847**
8:00AM	23	493	4	0	**520**	1	13	563	138	0	**714**	0	6	9	18	0	**33**	0	78	6	9	0	**93**	1	**1360**
9:00AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**1**
4:00PM	14	655	15	0	**684**	2	21	712	98	0	**831**	6	13	7	25	0	**45**	2	166	9	11	0	**186**	3	**1746**
5:00PM	17	724	5	0	**746**	2	15	706	69	1	**791**	0	5	4	18	0	**27**	1	169	11	16	0	**196**	1	**1760**
Total	62	2600	27	0	**2689**	6	64	2835	426	1	**3326**	7	31	26	82	0	**139**	4	481	34	45	0	**560**	7	**6714**
% Approach	2.3%	96.7%	1.0%	0%	**-**	-	1.9%	85.2%	12.8%	0%	**-**	-	22.3%	18.7%	59.0%	0%	**-**	-	85.9%	6.1%	8.0%	0%	**-**	-	**-**
% Total	0.9%	38.7%	0.4%	0%	**40.1%**	-	1.0%	42.2%	6.3%	0%	**49.5%**	-	0.5%	0.4%	1.2%	0%	**2.1%**	-	7.2%	0.5%	0.7%	0%	**8.3%**	-	**-**
Lights	60	2562	27	0	**2649**	-	63	2791	422	1	**3277**	-	30	24	81	0	**135**	-	470	31	41	0	**542**	-	6603
% Lights	96.8%	98.5%	100%	0%	**98.5%**	-	98.4%	98.4%	99.1%	100%	**98.5%**	-	96.8%	92.3%	98.8%	0%	**97.1%**	-	97.7%	91.2%	91.1%	0%	**96.8%**	-	98.3%
Articulated Trucks	0	3	0	0	**3**	-	0	3	1	0	**4**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	8
% Articulated Trucks	0%	0.1%	0%	0%	**0.1%**	-	0%	0.1%	0.2%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	2.2%	0%	**0.2%**	-	0.1%
Buses and Single-Unit Trucks	2	35	0	0	**37**	-	1	41	3	0	**45**	-	0	0	1	0	**1**	-	10	1	3	0	**14**	-	97
% Buses and Single-Unit Trucks	3.2%	1.3%	0%	0%	**1.4%**	-	1.6%	1.4%	0.7%	0%	**1.4%**	-	0%	0%	1.2%	0%	**0.7%**	-	2.1%	2.9%	6.7%	0%	**2.5%**	-	1.4%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	2	0	0	**3**	-	1	2	0	0	**3**	-	6
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	3.2%	7.7%	0%	0%	**2.2%**	-	0.2%	5.9%	0%	0%	**0.5%**	-	0.1%
Pedestrians	-	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	7	
% Pedestrians	-	-	-	-	-	83.3%	-	-	-	-	-	85.7%	-	-	-	-	-	75.0%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	16.7%	-	-	-	-	-	14.3%	-	-	-	-	-	25.0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and 1st Street - TMC
Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134208, Location: 39.523347, -119.825321

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US



Keystone Avenue and 1st Street - TMC

Wed Nov 15, 2023
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134208, Location: 39.523347, -119.825321

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

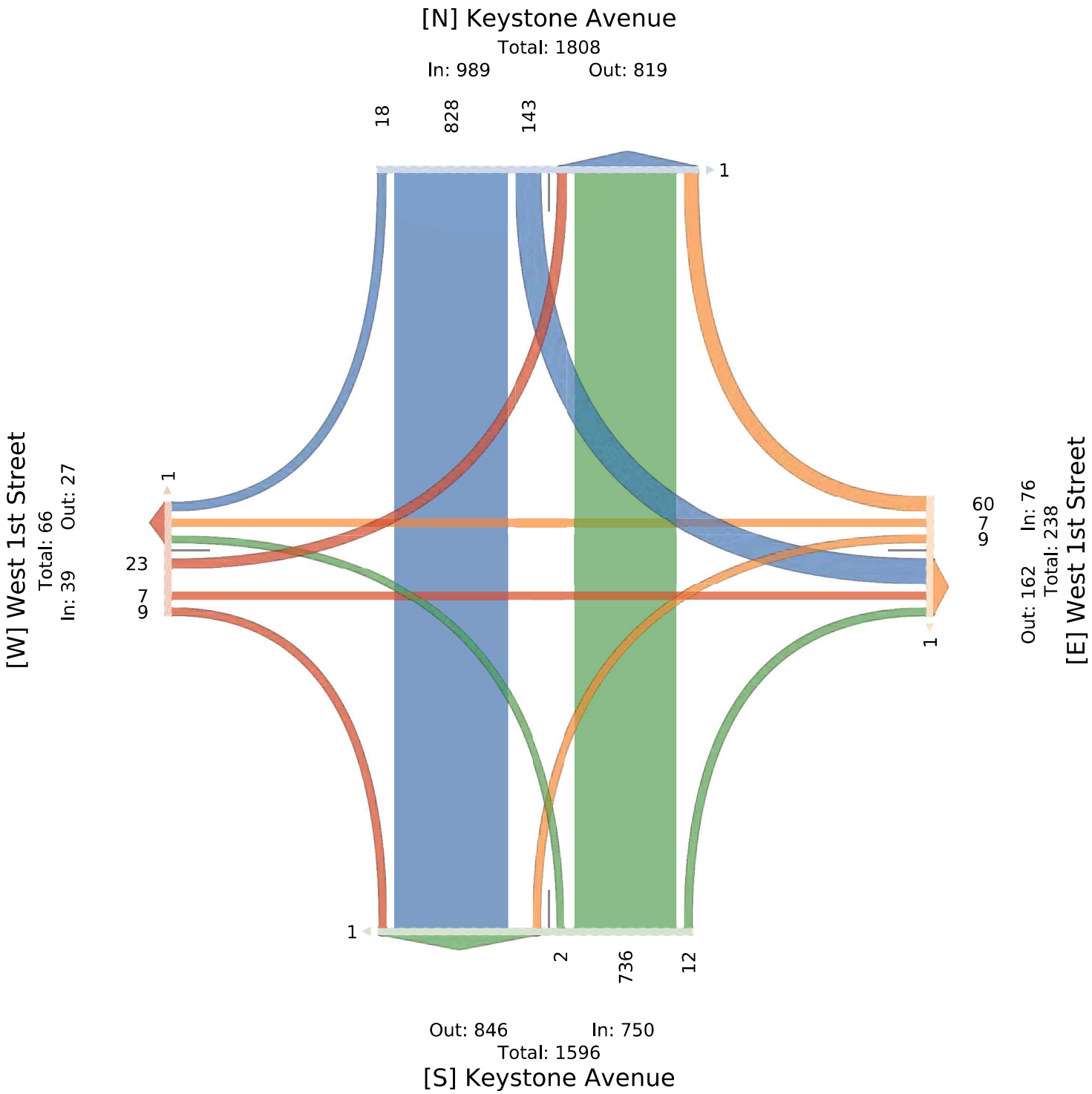
Leg	Keystone Avenue						Keystone Avenue						West 1st Street						West 1st Street						
Direction	Northbound						Southbound						Eastbound						Westbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-15 7:15AM	1	173	0	0	**174**	0	6	265	23	0	**294**	1	2	2	7	0	**11**	1	16	2	2	0	**20**	0	**499**
7:30AM	2	256	2	0	**260**	1	2	241	32	0	**275**	0	4	1	5	0	**10**	0	10	3	2	0	**15**	1	**560**
7:45AM	2	174	0	0	**176**	0	5	203	53	0	**261**	0	1	3	5	0	**9**	0	18	1	2	0	**21**	0	**467**
8:00AM	7	133	0	0	**140**	0	5	119	35	0	**159**	0	2	1	6	0	**9**	0	16	1	3	0	**20**	0	**328**
Total	12	736	2	0	**750**	1	18	828	143	0	**989**	1	9	7	23	0	**39**	1	60	7	9	0	**76**	1	**1854**
% Approach	1.6%	98.1%	0.3%	0%	**-**	-	1.8%	83.7%	14.5%	0%	**-**	-	23.1%	17.9%	59.0%	0%	**-**	-	78.9%	9.2%	11.8%	0%	**-**	-	**-**
% Total	0.6%	39.7%	0.1%	0%	**40.5%**	-	1.0%	44.7%	7.7%	0%	**53.3%**	-	0.5%	0.4%	1.2%	0%	**2.1%**	-	3.2%	0.4%	0.5%	0%	**4.1%**	-	**-**
PHF	0.429	0.719	0.250		**- 0.721**	-	0.750	0.781	0.675		**- 0.841**	-	0.563	0.500	0.821		**- 0.950**	-	0.833	0.583	0.750		**- 0.905**	-	0.827
Lights	12	719	2	0	**733**	-	18	817	140	0	**975**	-	9	6	22	0	**37**	-	60	7	9	0	**76**	-	1821
% Lights	100%	97.7%	100%	0%	**97.7%**	-	100%	98.7%	97.9%	0%	**98.6%**	-	100%	85.7%	95.7%	0%	**94.9%**	-	100%	100%	100%	0%	**100%**	-	98.2%
Articulated Trucks	0	2	0	0	**2**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	3
% Articulated Trucks	0%	0.3%	0%	0%	**0.3%**	-	0%	0%	0.7%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.2%
Buses and Single-Unit Trucks	0	15	0	0	**15**	-	0	11	2	0	**13**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	29
% Buses and Single-Unit Trucks	0%	2.0%	0%	0%	**2.0%**	-	0%	1.3%	1.4%	0%	**1.3%**	-	0%	0%	4.3%	0%	**2.6%**	-	0%	0%	0%	0%	**0%**	-	1.6%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	14.3%	0%	0%	**2.6%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and 1st Street - TMC

Wed Nov 15, 2023
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134208, Location: 39.523347, -119.825321

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US



Keystone Avenue and 1st Street - TMC

Wed Nov 15, 2023
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134208, Location: 39.523347, -119.825321

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Keystone Avenue						Keystone Avenue						West 1st Street						West 1st Street						
Direction	Northbound						Southbound						Eastbound						Westbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-15 4:30PM	1	154	5	0	**160**	0	5	176	22	0	**203**	2	4	2	3	0	**9**	1	36	2	1	0	**39**	2	**411**
4:45PM	4	165	0	0	**169**	0	1	188	28	0	**217**	3	4	3	8	0	**15**	1	53	2	3	0	**58**	1	**459**
5:00PM	4	211	0	0	**215**	1	3	217	22	1	**243**	0	3	0	6	0	**9**	0	55	1	8	0	**64**	0	**531**
5:15PM	7	201	3	0	**211**	1	7	183	13	0	**203**	0	2	2	3	0	**7**	1	52	1	5	0	**58**	0	**479**
Total	16	731	8	0	**755**	2	16	764	85	1	**866**	5	13	7	20	0	**40**	3	196	6	17	0	**219**	3	**1880**
% Approach	2.1%	96.8%	1.1%	0%	**-**	-	1.8%	88.2%	9.8%	0.1%	**-**	-	32.5%	17.5%	50.0%	0%	**-**	-	89.5%	2.7%	7.8%	0%	**-**	-	**-**
% Total	0.9%	38.9%	0.4%	0%	**40.2%**	-	0.9%	40.6%	4.5%	0.1%	**46.1%**	-	0.7%	0.4%	1.1%	0%	**2.1%**	-	10.4%	0.3%	0.9%	0%	**11.6%**	-	**-**
PHF	0.571	0.866	0.400		**-** **0.878**	-	0.571	0.880	0.759	0.250	**0.891**	-	0.750	0.583	0.625		**-** **0.696**	-	0.891	0.750	0.531		**-** **0.855**	-	0.885
Lights	16	726	8	0	**750**	-	15	755	85	1	**856**	-	12	7	20	0	**39**	-	194	6	16	0	**216**	-	1861
% Lights	100%	99.3%	100%	0%	**99.3%**	-	93.8%	98.8%	100%	100%	**98.8%**	-	92.3%	100%	100%	0%	**97.5%**	-	99.0%	100%	94.1%	0%	**98.6%**	-	99.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	5	0	0	**5**	-	1	9	0	0	**10**	-	0	0	0	0	**0**	-	2	0	1	0	**3**	-	18
% Buses and Single-Unit Trucks	0%	0.7%	0%	0%	**0.7%**	-	6.3%	1.2%	0%	0%	**1.2%**	-	0%	0%	0%	0%	**0%**	-	1.0%	0%	5.9%	0%	**1.4%**	-	1.0%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	0	0	0	0	**0**	-	1
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	7.7%	0%	0%	0%	**2.5%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	2	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	50.0%	-	-	-	-	-	100%	-	-	-	-	-	66.7%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	50.0%	-	-	-	-	-	0%	-	-	-	-	-	33.3%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and 1st Street - TMC
Wed Nov 15, 2023
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134208, Location: 39.523347, -119.825321

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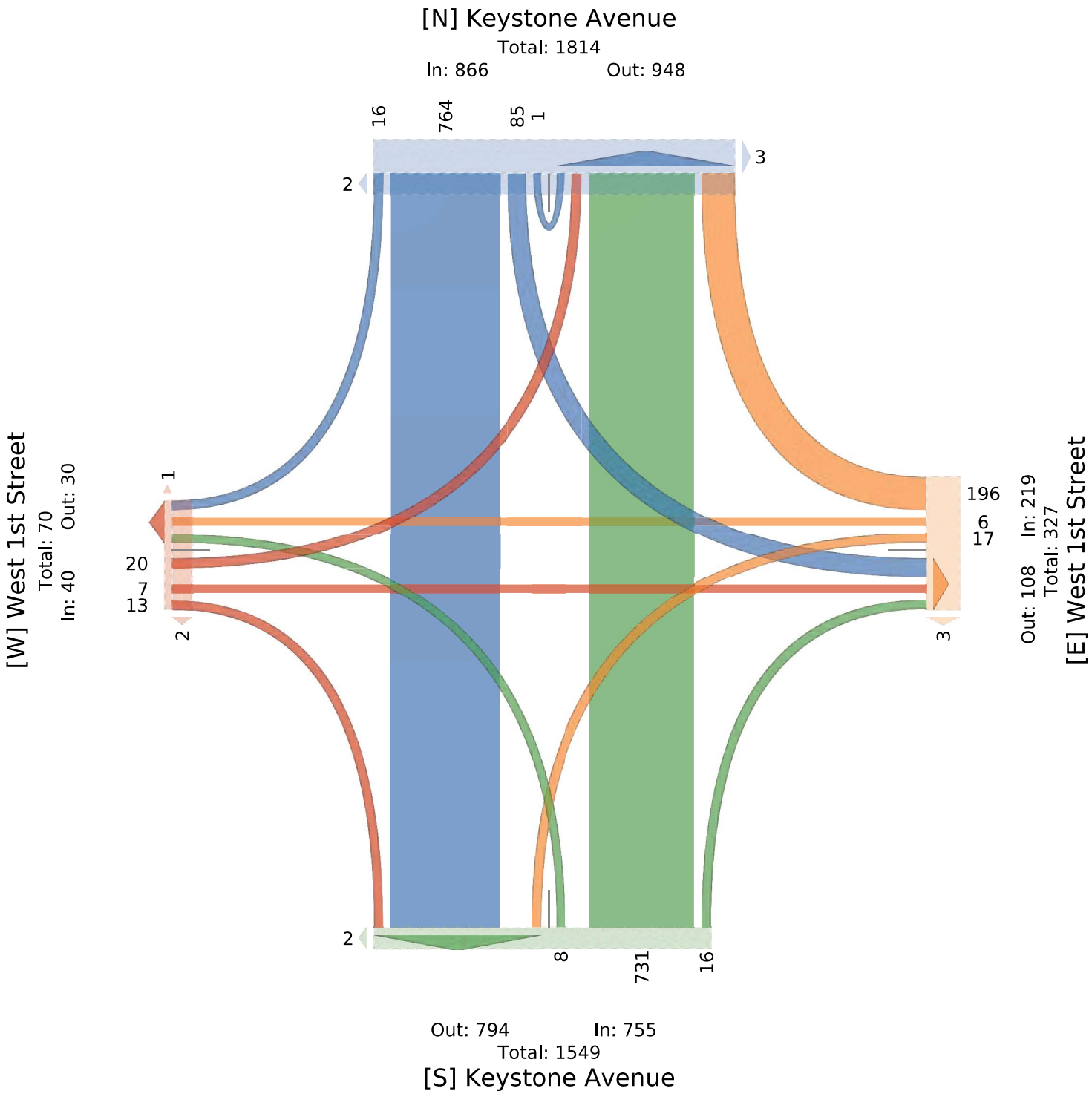


Keystone Avenue and Jones Street - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Keystone Avenue							Keystone Avenue							Jones Street						
Direction	Northbound							Southbound							Eastbound						
Time	R	T	L	HL	U	**App**	Ped*	R	BR	T	L	U	**App**	Ped*	HR	R	T	L	U	**App**	Ped*
2023-11-15 7:00AM	6	643	5	0	0	**654**	0	30	271	556	4	0	**861**	0	2	8	3	23	0	**36**	6
8:00AM	13	442	4	1	0	**460**	0	24	99	433	6	0	**562**	0	1	9	2	22	0	**34**	4
9:00AM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0
4:00PM	15	603	14	0	0	**632**	0	40	137	567	5	0	**749**	0	3	19	1	19	0	**42**	2
5:00PM	12	644	8	0	2	**666**	0	40	116	558	6	0	**720**	1	5	5	1	21	0	**32**	4
6:00PM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0
Total	46	2332	31	1	2	**2412**	0	134	623	2114	21	0	**2892**	1	11	41	7	85	0	**144**	16
% Approach	1.9%	96.7%	1.3%	0%	0.1%	**-**	-	4.6%	21.5%	73.1%	0.7%	0%	**-**	-	7.6%	28.5%	4.9%	59.0%	0%	**-**	-
% Total	0.8%	40.8%	0.5%	0%	0%	**42.2%**	-	2.3%	10.9%	37.0%	0.4%	0%	**50.6%**	-	0.2%	0.7%	0.1%	1.5%	0%	**2.5%**	-
Lights	45	2295	31	1	2	**2374**	-	132	616	2089	20	0	**2857**	-	10	41	7	85	0	**143**	-
% Lights	97.8%	98.4%	100%	100%	100%	**98.4%**	-	98.5%	98.9%	98.8%	95.2%	0%	**98.8%**	-	90.9%	100%	100%	100%	0%	**99.3%**	-
Articulated Trucks	0	1	0	0	0	**1**	-	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	1	34	0	0	0	**35**	-	2	5	25	1	0	**33**	-	1	0	0	0	0	**1**	-
% Buses and Single-Unit Trucks	2.2%	1.5%	0%	0%	0%	**1.5%**	-	1.5%	0.8%	1.2%	4.8%	0%	**1.1%**	-	9.1%	0%	0%	0%	0%	**0.7%**	-
Bicycles on Road	0	2	0	0	0	**2**	-	0	2	0	0	0	**2**	-	0	0	0	0	0	**0**	-
% Bicycles on Road	0%	0.1%	0%	0%	0%	**0.1%**	-	0%	0.3%	0%	0%	0%	**0.1%**	-	0%	0%	0%	0%	0%	**0%**	-
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	16
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and Jones Street - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

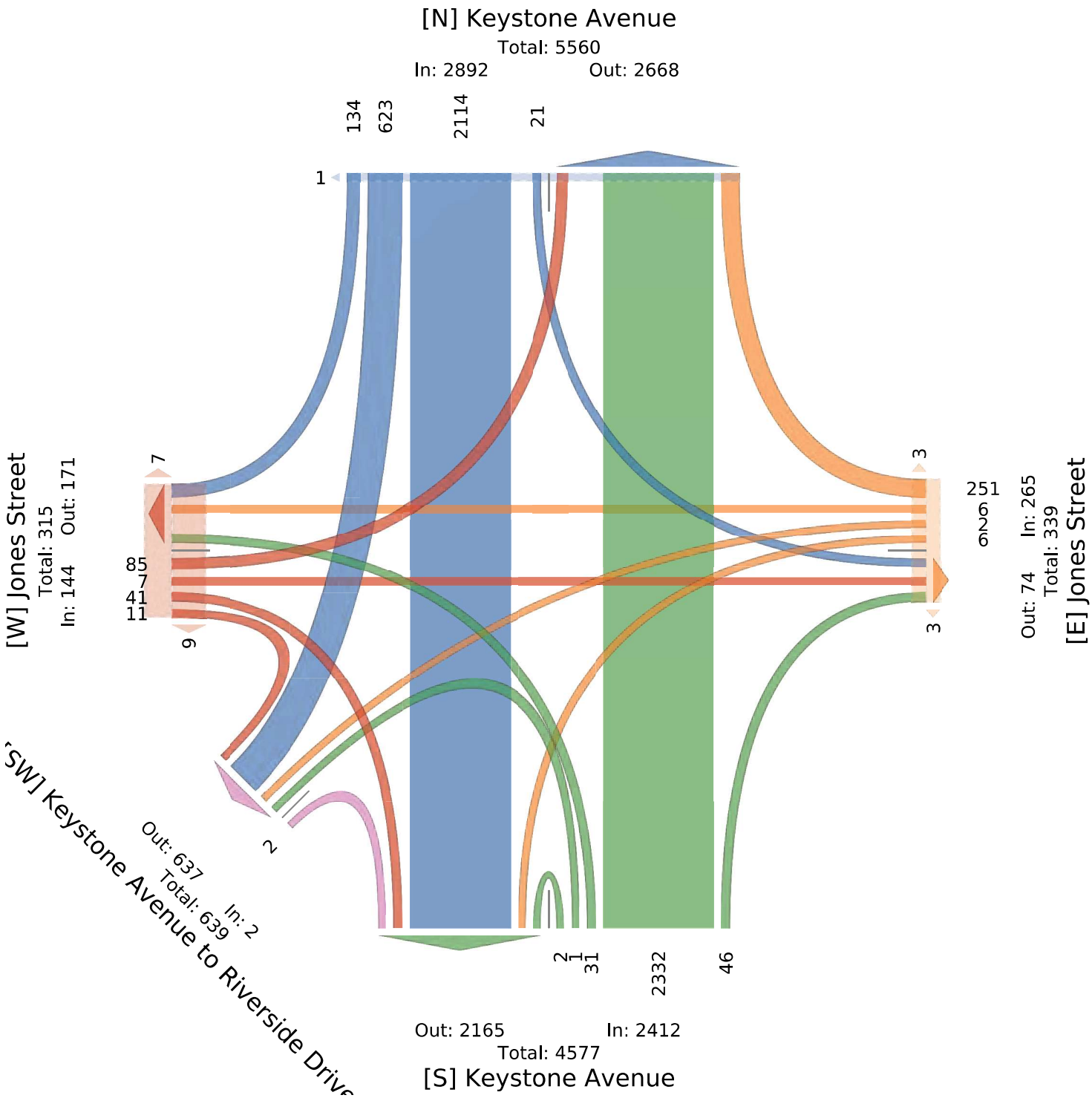
Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Jones Street							Keystone Avenue to Riverside Drive							
Direction	Westbound							Northeastbound							
Time	R	T	BL	L	U	**App**	Ped*	HR	BR	BL	HL	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	71	2	0	4	0	**77**	1	0	0	0	0	0	**0**	0	**1628**
8:00AM	58	2	1	1	0	**62**	0	0	0	0	0	0	**0**	0	**1118**
9:00AM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	**0**
4:00PM	60	0	0	0	0	**60**	3	2	0	0	0	0	**2**	0	**1485**
5:00PM	62	2	1	1	0	**66**	2	0	0	0	0	0	**0**	0	**1484**
6:00PM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	**0**
Total	251	6	2	6	0	**265**	6	2	0	0	0	0	**2**	0	**5715**
% Approach	94.7%	2.3%	0.8%	2.3%	0%	**-**	-	100%	0%	0%	0%	0%	**-**	-	**-**
% Total	4.4%	0.1%	0%	0.1%	0%	**4.6%**	-	0%	0%	0%	0%	0%	**0%**	-	**-**
Lights	245	6	2	6	0	**259**	-	2	0	0	0	0	**2**	-	5635
% Lights	97.6%	100%	100%	100%	0%	**97.7%**	-	100%	0%	0%	0%	0%	**100%**	-	98.6%
Articulated Trucks	1	0	0	0	0	**1**	-	0	0	0	0	0	**0**	-	2
% Articulated Trucks	0.4%	0%	0%	0%	0%	**0.4%**	-	0%	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	5	0	0	0	0	**5**	-	0	0	0	0	0	**0**	-	74
% Buses and Single-Unit Trucks	2.0%	0%	0%	0%	0%	**1.9%**	-	0%	0%	0%	0%	0%	**0%**	-	1.3%
Bicycles on Road	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	4
% Bicycles on Road	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-	0.1%
Pedestrians	-	-	-	-	-	-	6	-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and Jones Street - TMC
Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US



Keystone Avenue and Jones Street - TMC

Wed Nov 15, 2023
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Keystone Avenue							Keystone Avenue							Jones Street						
Direction	Northbound							Southbound							Eastbound						
Time	R	T	L	HL	U	App	Ped*	R	BR	T	L	U	App	Ped*	HR	R	T	L	U	App	Ped*
2023-11-15 7:00AM	0	113	1	0	0	**114**	0	5	39	98	1	0	**143**	0	0	5	2	4	0	**11**	2
7:15AM	0	157	2	0	0	**159**	0	7	110	153	1	0	**271**	0	0	0	0	2	0	**2**	2
7:30AM	4	222	0	0	0	**226**	0	7	89	148	2	0	**246**	0	0	2	1	8	0	**11**	1
7:45AM	2	151	2	0	0	**155**	0	11	33	157	0	0	**201**	0	2	1	0	9	0	**12**	1
Total	6	643	5	0	0	**654**	0	30	271	556	4	0	**861**	0	2	8	3	23	0	**36**	6
% Approach	0.9%	98.3%	0.8%	0%	0%	**-**	-	3.5%	31.5%	64.6%	0.5%	0%	**-**	-	5.6%	22.2%	8.3%	63.9%	0%	**-**	-
% Total	0.4%	39.5%	0.3%	0%	0%	**40.2%**	-	1.8%	16.6%	34.2%	0.2%	0%	**52.9%**	-	0.1%	0.5%	0.2%	1.4%	0%	**2.2%**	-
PHF	0.375	0.724	0.625	-	-	**0.723**	-	0.682	0.616	0.885	0.500	-	**0.794**	-	0.250	0.400	0.375	0.639	-	**0.750**	-
Lights	5	631	5	0	0	**641**	-	30	270	549	4	0	**853**	-	2	8	3	23	0	**36**	-
% Lights	83.3%	98.1%	100%	0%	0%	**98.0%**	-	100%	99.6%	98.7%	100%	0%	**99.1%**	-	100%	100%	100%	100%	0%	**100%**	-
Articulated Trucks	0	1	0	0	0	**1**	-	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0.2%	0%	0%	0%	**0.2%**	-	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	1	11	0	0	0	**12**	-	0	1	7	0	0	**8**	-	0	0	0	0	0	**0**	-
% Buses and Single-Unit Trucks	16.7%	1.7%	0%	0%	0%	**1.8%**	-	0%	0.4%	1.3%	0%	0%	**0.9%**	-	0%	0%	0%	0%	0%	**0%**	-
Bicycles on Road	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Bicycles on Road	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	6
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and Jones Street - TMC

Wed Nov 15, 2023
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

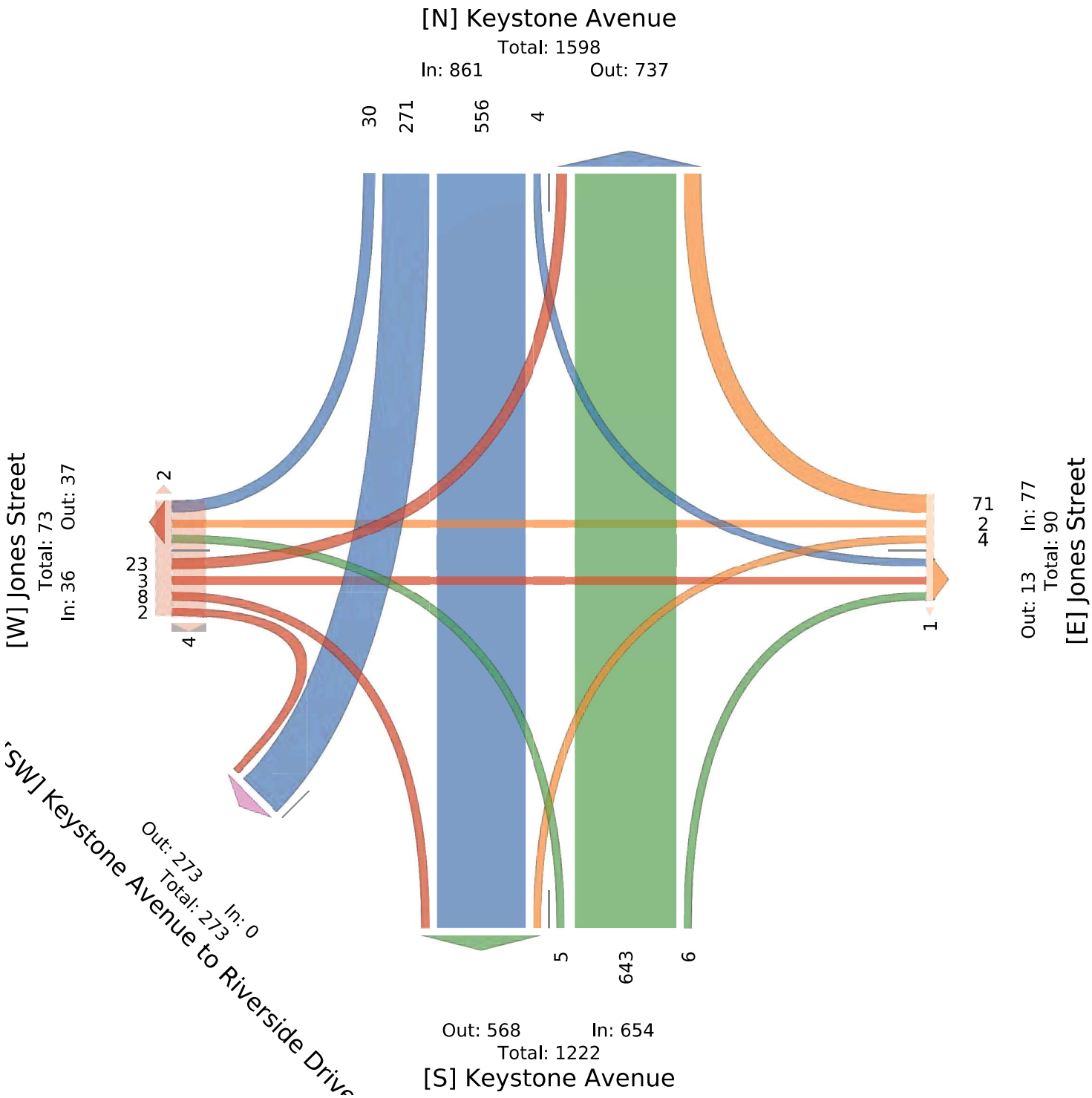
Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Jones Street							Keystone Avenue to Riverside Drive							
Direction	Westbound							Northeastbound							
Time	R	T	BL	L	U	**App**	Ped*	HR	BR	BL	HL	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	14	0	0	2	0	**16**	1	0	0	0	0	0	**0**	0	**284**
7:15AM	22	0	0	0	0	**22**	0	0	0	0	0	0	**0**	0	**454**
7:30AM	23	0	0	2	0	**25**	0	0	0	0	0	0	**0**	0	**508**
7:45AM	12	2	0	0	0	**14**	0	0	0	0	0	0	**0**	0	**382**
Total	71	2	0	4	0	**77**	1	0	0	0	0	0	**0**	0	**1628**
% Approach	92.2%	2.6%	0%	5.2%	0%	**-**	-	0%	0%	0%	0%	0%	**-**	-	**-**
% Total	4.4%	0.1%	0%	0.2%	0%	**4.7%**	-	0%	0%	0%	0%	0%	**0%**	-	**-**
PHF	0.772	0.250	-	0.500	-	**0.770**	-	-	-	-	-	-	**-**	-	0.801
Lights	71	2	0	4	0	**77**	-	0	0	0	0	0	**0**	-	1607
% Lights	100%	100%	0%	100%	0%	**100%**	-	0%	0%	0%	0%	0%	**-**	-	98.7%
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**-**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	20
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**-**	-	1.2%
Bicycles on Road	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**-**	-	0%
Pedestrians	-	-	-	-	-	-	1	-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and Jones Street - TMC
Wed Nov 15, 2023
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US



Keystone Avenue and Jones Street - TMC

Wed Nov 15, 2023
PM Peak (4:30 PM - 5:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Keystone Avenue							Keystone Avenue							Jones Street						
Direction	Northbound							Southbound							Eastbound						
Time	R	T	L	HL	U	App	Ped*	R	BR	T	L	U	App	Ped*	HR	R	T	L	U	App	Ped*
2023-11-15 4:30PM	4	142	4	0	0	**150**	0	13	36	132	1	0	**182**	0	1	4	0	9	0	**14**	1
4:45PM	2	159	3	0	0	**164**	0	8	36	153	0	0	**197**	0	1	6	0	6	0	**13**	0
5:00PM	2	181	3	0	0	**186**	0	8	37	178	2	0	**225**	0	2	2	0	5	0	**9**	1
5:15PM	6	183	1	0	1	**191**	0	14	30	142	1	0	**187**	1	1	1	0	5	0	**7**	2
Total	14	665	11	0	1	**691**	0	43	139	605	4	0	**791**	1	5	13	0	25	0	**43**	4
% Approach	2.0%	96.2%	1.6%	0%	0.1%	**-**	-	5.4%	17.6%	76.5%	0.5%	0%	**-**	-	11.6%	30.2%	0%	58.1%	0%	**-**	-
% Total	0.9%	41.8%	0.7%	0%	0.1%	**43.5%**	-	2.7%	8.7%	38.1%	0.3%	0%	**49.7%**	-	0.3%	0.8%	0%	1.6%	0%	**2.7%**	-
PHF	0.583	0.908	0.688	-	0.250	**0.904**	-	0.768	0.926	0.850	0.500	-	**0.877**	-	0.625	0.542	-	0.694	-	**0.768**	-
Lights	14	661	11	0	1	**687**	-	42	135	599	4	0	**780**	-	5	13	0	25	0	**43**	-
% Lights	100%	99.4%	100%	0%	100%	**99.4%**	-	97.7%	97.1%	99.0%	100%	0%	**98.6%**	-	100%	100%	0%	100%	0%	**100%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	4	0	0	0	**4**	-	1	2	6	0	0	**9**	-	0	0	0	0	0	**0**	-
% Buses and Single-Unit Trucks	0%	0.6%	0%	0%	0%	**0.6%**	-	2.3%	1.4%	1.0%	0%	0%	**1.1%**	-	0%	0%	0%	0%	0%	**0%**	-
Bicycles on Road	0	0	0	0	0	**0**	-	0	2	0	0	0	**2**	-	0	0	0	0	0	**0**	-
% Bicycles on Road	0%	0%	0%	0%	0%	**0%**	-	0%	1.4%	0%	0%	0%	**0.3%**	-	0%	0%	0%	0%	0%	**0%**	-
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	4
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and Jones Street - TMC

Wed Nov 15, 2023
PM Peak (4:30 PM - 5:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg Direction	Jones Street Westbound							Keystone Avenue to Riverside Drive Northeastbound							
Time	R	T	BL	L	U	**App**	Ped*	HR	BR	BL	HL	U	**App**	Ped*	**Int**
2023-11-15 4:30PM	10	0	0	0	0	**10**	1	0	0	0	0	0	**0**	0	**356**
4:45PM	13	0	0	0	0	**13**	0	0	0	0	0	0	**0**	0	**387**
5:00PM	18	0	1	1	0	**20**	0	0	0	0	0	0	**0**	0	**440**
5:15PM	20	2	0	0	0	**22**	2	0	0	0	0	0	**0**	0	**407**
Total	61	2	1	1	0	**65**	3	0	0	0	0	0	**0**	0	**1590**
% Approach	93.8%	3.1%	1.5%	1.5%	0%	**-**	-	0%	0%	0%	0%	0%	**-**	-	**-**
% Total	3.8%	0.1%	0.1%	0.1%	0%	**4.1%**	-	0%	0%	0%	0%	0%	**0%**	-	**-**
PHF	0.763	0.250	0.250	0.250	**-**	**0.739**	-	**-**	**-**	**-**	**-**	**-**	**-**	-	0.902
Lights	61	2	1	1	0	**65**	-	0	0	0	0	0	**0**	-	1575
% Lights	100%	100%	100%	100%	0%	**100%**	-	0%	0%	0%	0%	0%	**-**	-	99.1%
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**-**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	13
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**-**	-	0.8%
Bicycles on Road	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	2
% Bicycles on Road	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**-**	-	0.1%
Pedestrians	-	-	-	-	-	-	3	-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Keystone Avenue and Jones Street - TMC
Wed Nov 15, 2023
PM Peak (4:30 PM - 5:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134210, Location: 39.522019, -119.824884

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
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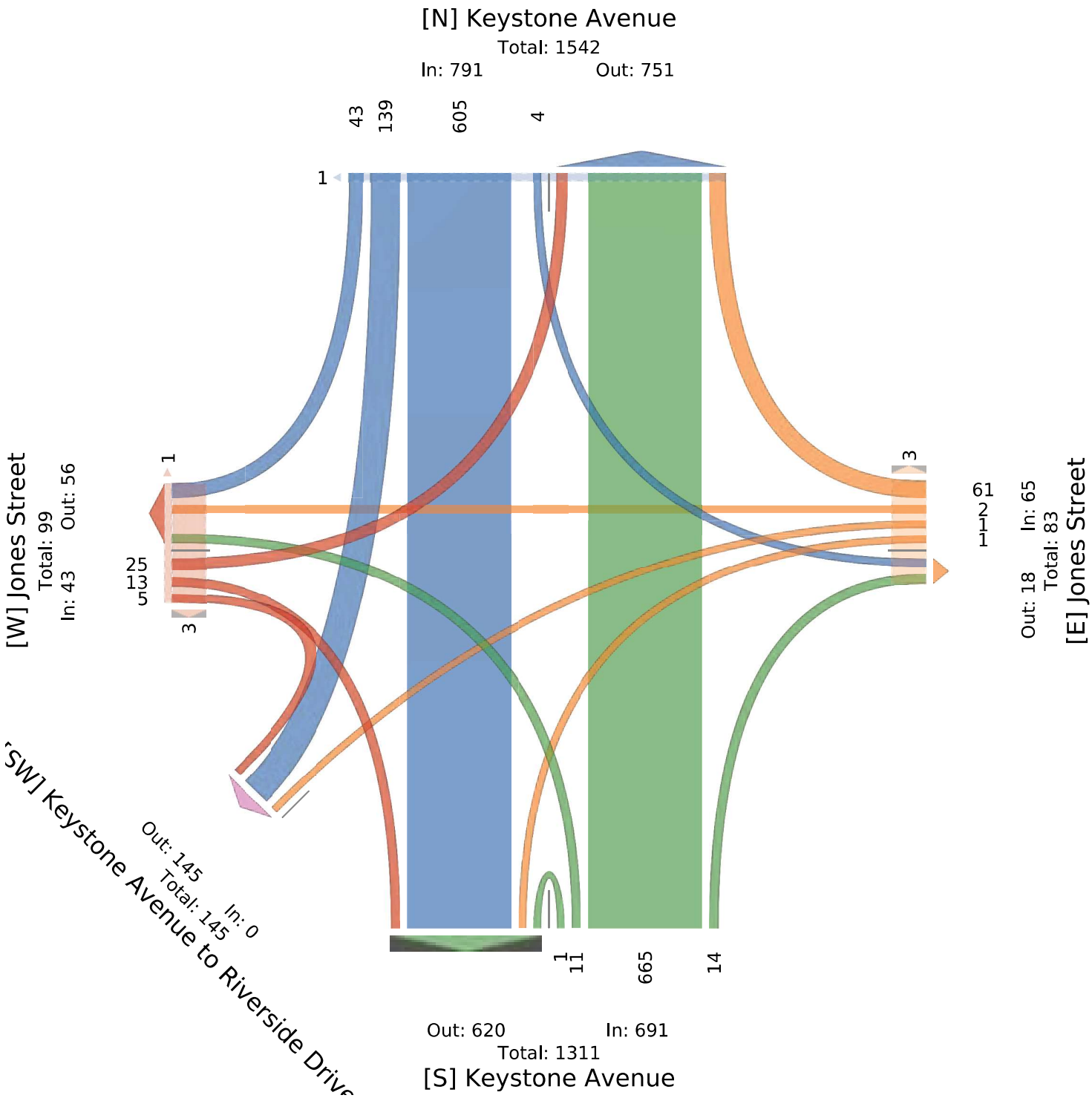


Jones Street and Project Alleyway - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134213, Location: 39.521716, -119.827039

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

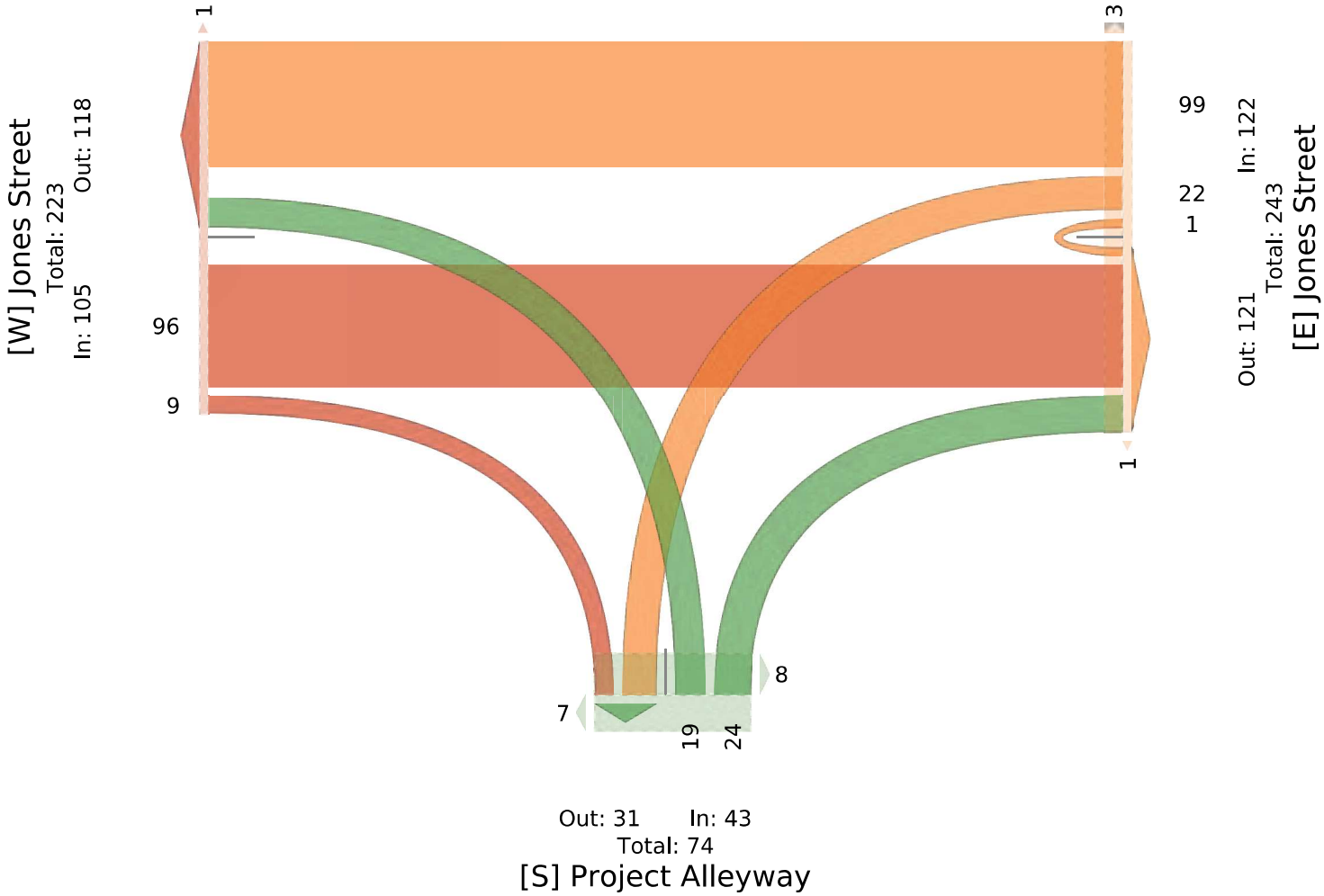
Leg	Project Alleyway					Jones Street					Jones Street					
Direction	Northbound					Eastbound					Westbound					
Time	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	T	L	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	7	3	0	**10**	2	1	26	0	**27**	0	24	3	0	**27**	2	**64**
8:00AM	3	1	0	**4**	3	2	26	0	**28**	1	20	1	0	**21**	2	**53**
9:00AM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
4:00PM	5	10	0	**15**	8	4	20	0	**24**	0	34	9	0	**43**	0	**82**
5:00PM	9	5	0	**14**	2	2	24	0	**26**	0	21	9	1	**31**	0	**71**
6:00PM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
Total	24	19	0	**43**	15	9	96	0	**105**	1	99	22	1	**122**	4	**270**
% Approach	55.8%	44.2%	0%	**-**	-	8.6%	91.4%	0%	**-**	-	81.1%	18.0%	0.8%	**-**	-	**-**
% Total	8.9%	7.0%	0%	**15.9%**	-	3.3%	35.6%	0%	**38.9%**	-	36.7%	8.1%	0.4%	**45.2%**	-	**-**
Lights	24	19	0	**43**	-	9	90	0	**99**	-	93	17	1	**111**	-	253
% Lights	100%	100%	0%	**100%**	-	100%	93.8%	0%	**94.3%**	-	93.9%	77.3%	100%	**91.0%**	-	93.7%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	**0**	-	0	4	0	**4**	-	6	3	0	**9**	-	13
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	4.2%	0%	**3.8%**	-	6.1%	13.6%	0%	**7.4%**	-	4.8%
Bicycles on Road	0	0	0	**0**	-	0	2	0	**2**	-	0	2	0	**2**	-	4
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	2.1%	0%	**1.9%**	-	0%	9.1%	0%	**1.6%**	-	1.5%
Pedestrians	-	-	-	-	15	-	-	-	-	1	-	-	-	-	4	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Jones Street and Project Alleyway - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134213, Location: 39.521716, -119.827039

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US



Jones Street and Project Alleyway - TMC

Wed Nov 15, 2023
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134213, Location: 39.521716, -119.827039

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

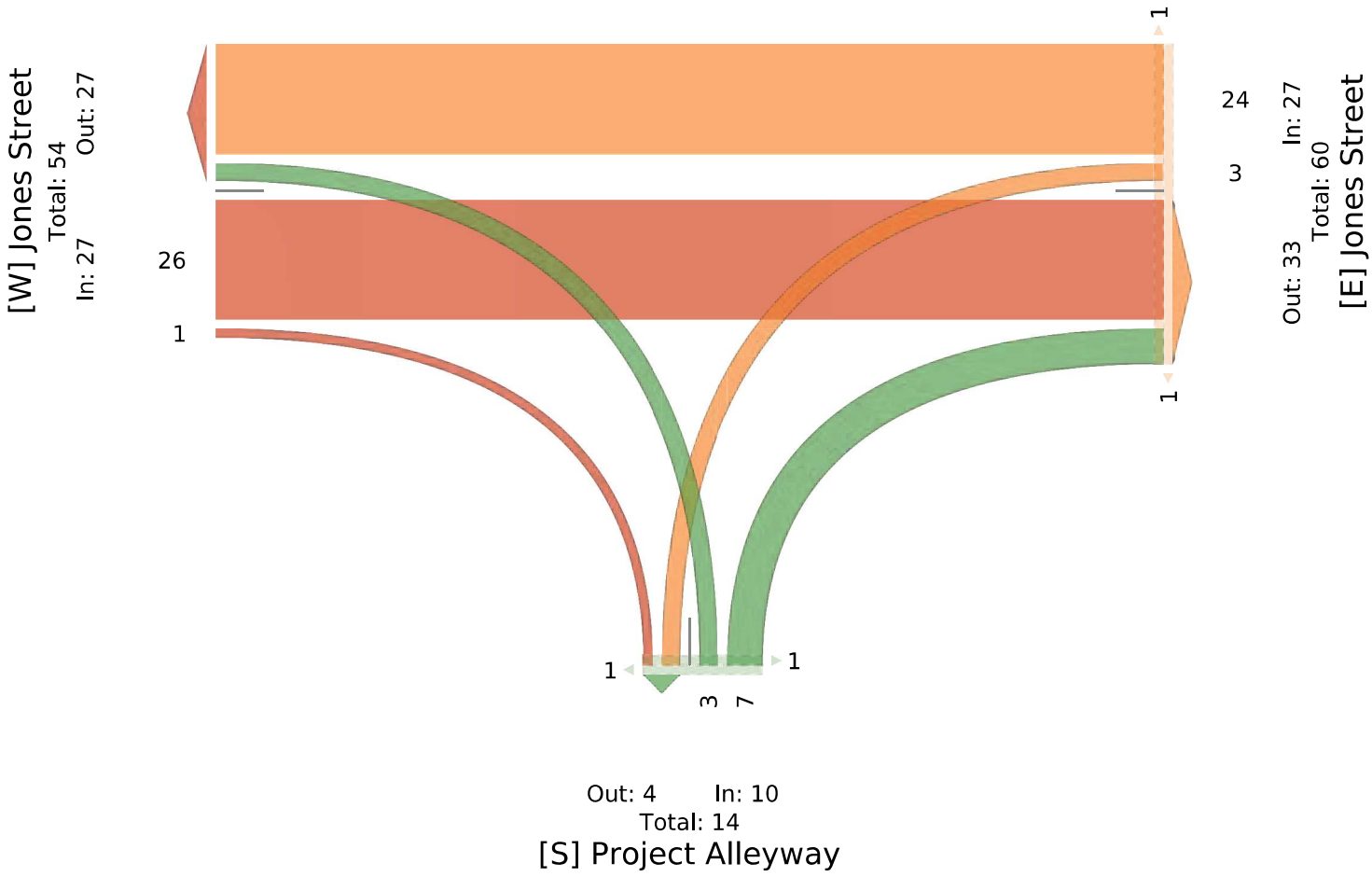
Leg Direction	Project Alleyway Northbound					Jones Street Eastbound					Jones Street Westbound					
Time	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	T	L	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	2	1	0	**3**	1	0	4	0	**4**	0	1	2	0	**3**	0	**10**
7:15AM	1	0	0	**1**	1	0	5	0	**5**	0	7	1	0	**8**	1	**14**
7:30AM	1	1	0	**2**	0	1	7	0	**8**	0	7	0	0	**7**	0	**17**
7:45AM	3	1	0	**4**	0	0	10	0	**10**	0	9	0	0	**9**	1	**23**
Total	7	3	0	**10**	2	1	26	0	**27**	0	24	3	0	**27**	2	**64**
% Approach	70.0%	30.0%	0%	**-**	-	3.7%	96.3%	0%	**-**	-	88.9%	11.1%	0%	**-**	-	**-**
% Total	10.9%	4.7%	0%	**15.6%**	-	1.6%	40.6%	0%	**42.2%**	-	37.5%	4.7%	0%	**42.2%**	-	**-**
PHF	0.583	0.750	**-**	**0.625**	-	0.250	0.650	**-**	**0.675**	-	0.667	0.375	**-**	**0.750**	-	0.696
Lights	7	3	0	**10**	-	1	26	0	**27**	-	24	3	0	**27**	-	64
% Lights	100%	100%	0%	**100%**	-	100%	100%	0%	**100%**	-	100%	100%	0%	**100%**	-	100%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Bicycles on Road	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	2	-	-	-	-	0	-	-	-	-	2	
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Jones Street and Project Alleyway - TMC

Wed Nov 15, 2023
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134213, Location: 39.521716, -119.827039

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US



Jones Street and Project Alleyway - TMC

Wed Nov 15, 2023
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134213, Location: 39.521716, -119.827039

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Project Alleyway					Jones Street					Jones Street					
Direction	Northbound					Eastbound					Westbound					
Time	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	T	L	U	**App**	Ped*	**Int**
2023-11-15 4:30PM	2	2	0	**4**	2	0	7	0	**7**	0	11	4	0	**15**	0	**26**
4:45PM	3	1	0	**4**	1	1	6	0	**7**	0	6	1	0	**7**	0	**18**
5:00PM	4	1	0	**5**	1	1	6	0	**7**	0	3	2	0	**5**	0	**17**
5:15PM	3	4	0	**7**	0	1	6	0	**7**	0	7	3	1	**11**	0	**25**
Total	12	8	0	**20**	4	3	25	0	**28**	0	27	10	1	**38**	0	**86**
% Approach	60.0%	40.0%	0%	**-**	-	10.7%	89.3%	0%	**-**	-	71.1%	26.3%	2.6%	**-**	-	**-**
% Total	14.0%	9.3%	0%	**23.3%**	-	3.5%	29.1%	0%	**32.6%**	-	31.4%	11.6%	1.2%	**44.2%**	-	**-**
PHF	0.750	0.500	**-**	**0.714**	-	0.750	0.893	**-**	**1.000**	-	0.614	0.563	0.250	**0.617**	-	0.817
Lights	12	8	0	**20**	-	3	24	0	**27**	-	27	7	1	**35**	-	82
% Lights	100%	100%	0%	**100%**	-	100%	96.0%	0%	**96.4%**	-	100%	70.0%	100%	**92.1%**	-	95.3%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	**0**	-	0	1	0	**1**	-	0	2	0	**2**	-	3
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	4.0%	0%	**3.6%**	-	0%	20.0%	0%	**5.3%**	-	3.5%
Bicycles on Road	0	0	0	**0**	-	0	0	0	**0**	-	0	1	0	**1**	-	1
% Bicycles on Road	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	10.0%	0%	**2.6%**	-	1.2%
Pedestrians	-	-	-	-	4	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Jones Street and Project Alleyway - TMC

Wed Nov 15, 2023
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134213, Location: 39.521716, -119.827039

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
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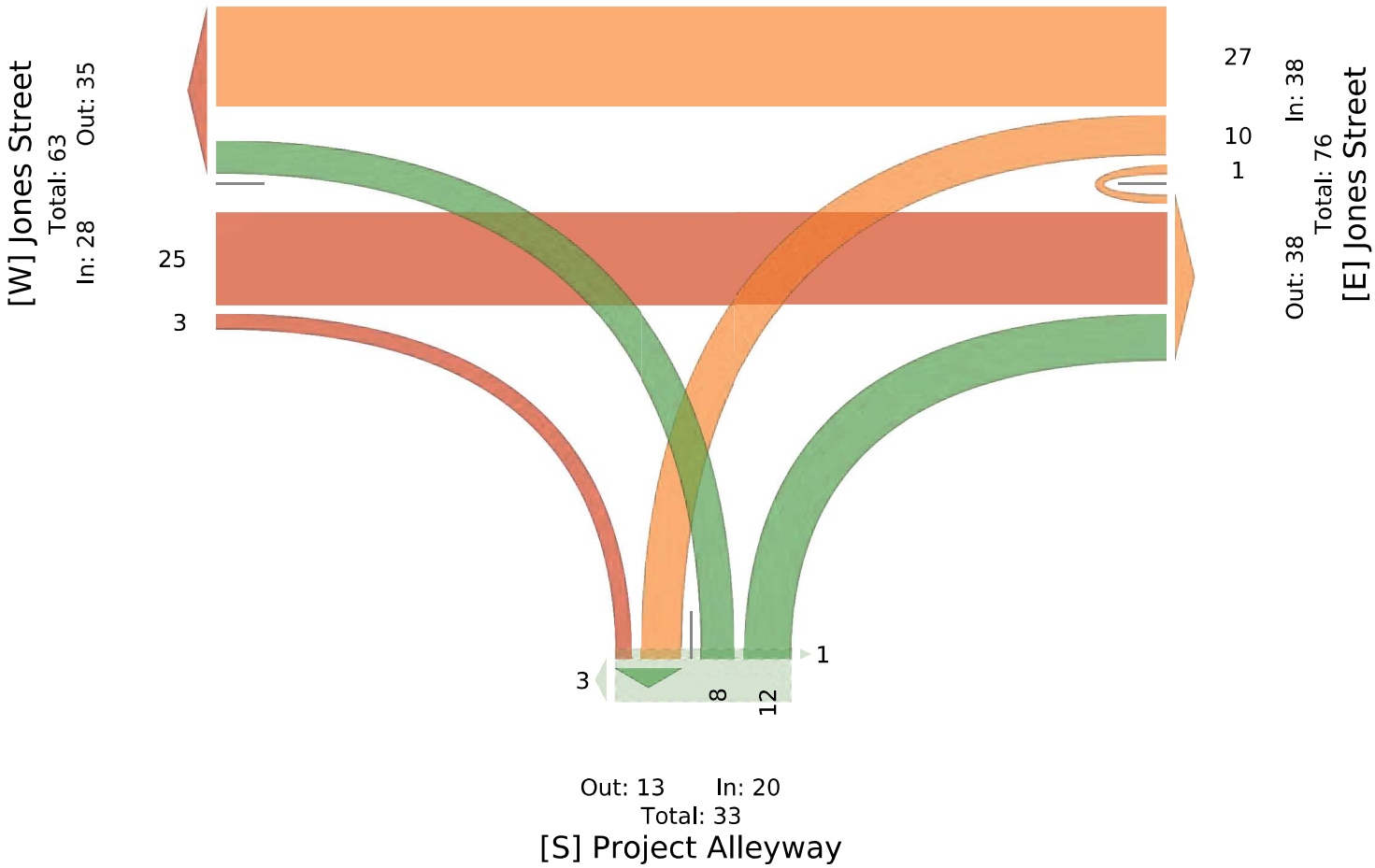

Riverside Drive and Booth Street - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134873, Location: 39.520539, -119.826407

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg / Direction	Booth Street Northbound						Private Access Drive Southbound						Riverside Drive Eastbound						Riverside Drive Westbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	205	2	1	0	**208**	15	0	3	3	0	**6**	16	2	2	0	0	**4**	27	0	0	366	0	**366**	0	**584**
8:00AM	125	2	3	2	**132**	3	0	4	1	0	**5**	5	5	1	0	0	**6**	5	6	1	151	0	**158**	1	**301**
9:00AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**0**
4:00PM	151	4	9	0	**164**	3	0	2	0	0	**2**	11	6	2	0	0	**8**	2	5	5	257	0	**267**	1	**441**
5:00PM	108	2	12	0	**122**	3	1	1	5	0	**7**	6	4	6	0	0	**10**	3	8	7	210	0	**225**	2	**364**
6:00PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	**0**
Total	589	10	25	2	**626**	24	1	10	9	0	**20**	38	17	11	0	0	**28**	37	19	13	984	0	**1016**	4	**1690**
% Approach	94.1%	1.6%	4.0%	0.3%	**-**	-	5.0%	50.0%	45.0%	0%	**-**	-	60.7%	39.3%	0%	0%	**-**	-	1.9%	1.3%	96.9%	0%	**-**	-	**-**
% Total	34.9%	0.6%	1.5%	0.1%	**37.0%**	-	0.1%	0.6%	0.5%	0%	**1.2%**	-	1.0%	0.7%	0%	0%	**1.7%**	-	1.1%	0.8%	58.2%	0%	**60.1%**	-	**-**
Lights	556	10	25	2	**593**	-	1	9	9	0	**19**	-	16	8	0	0	**24**	-	18	12	950	0	**980**	-	1616
% Lights	94.4%	100%	100%	100%	**94.7%**	-	100%	90.0%	100%	0%	**95.0%**	-	94.1%	72.7%	0%	0%	**85.7%**	-	94.7%	92.3%	96.5%	0%	**96.5%**	-	95.6%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0.1%	0%	**0.1%**	-	0.1%
Buses and Single-Unit Trucks	9	0	0	0	**9**	-	0	0	0	0	**0**	-	1	3	0	0	**4**	-	1	0	6	0	**7**	-	20
% Buses and Single-Unit Trucks	1.5%	0%	0%	0%	**1.4%**	-	0%	0%	0%	0%	**0%**	-	5.9%	27.3%	0%	0%	**14.3%**	-	5.3%	0%	0.6%	0%	**0.7%**	-	1.2%
Bicycles on Road	24	0	0	0	**24**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	1	27	0	**28**	-	53
% Bicycles on Road	4.1%	0%	0%	0%	**3.8%**	-	0%	10.0%	0%	0%	**5.0%**	-	0%	0%	0%	0%	**0%**	-	0%	7.7%	2.7%	0%	**2.8%**	-	3.1%
Pedestrians	-	-	-	-	-	24	-	-	-	-	-	37	-	-	-	-	-	37	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	97.4%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	2.6%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Riverside Drive and Booth Street - TMC
Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134873, Location: 39.520539, -119.826407

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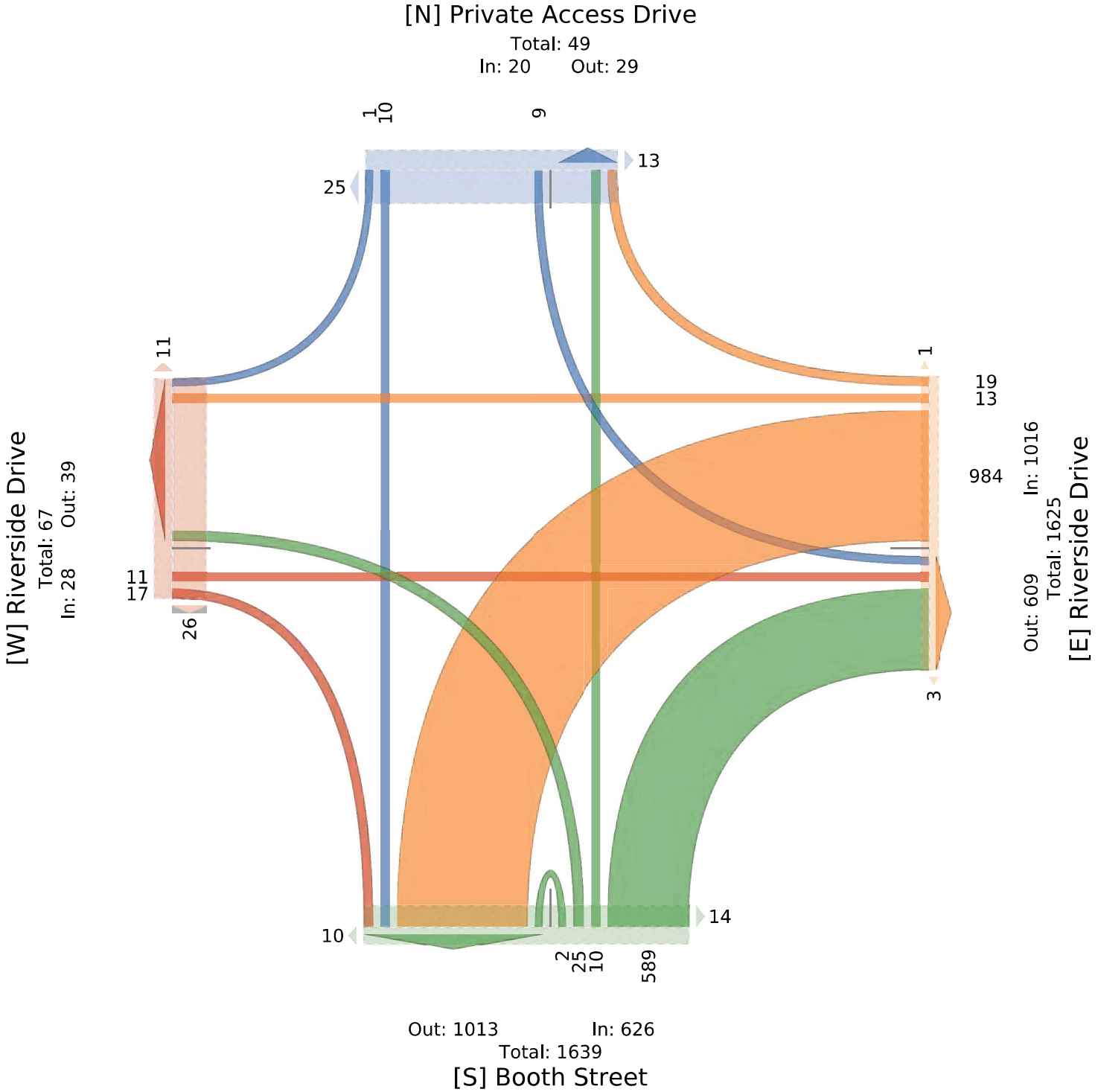

Riverside Drive and Booth Street - TMC

Wed Nov 15, 2023
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134873, Location: 39.520539, -119.826407

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg / Direction	Booth Street Northbound						Private Access Drive Southbound						Riverside Drive Eastbound						Riverside Drive Westbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	31	0	1	0	**32**	12	0	2	2	0	**4**	0	0	0	0	0	**0**	11	0	0	56	0	**56**	0	**92**
7:15AM	53	2	0	0	**55**	1	0	0	1	0	**1**	5	1	0	0	0	**1**	7	0	0	144	0	**144**	0	**201**
7:30AM	82	0	0	0	**82**	2	0	1	0	0	**1**	3	1	2	0	0	**3**	5	0	0	121	0	**121**	0	**207**
7:45AM	39	0	0	0	**39**	0	0	0	0	0	**0**	8	0	0	0	0	**0**	4	0	0	45	0	**45**	0	**84**
Total	205	2	1	0	**208**	15	0	3	3	0	**6**	16	2	2	0	0	**4**	27	0	0	366	0	**366**	0	**584**
% Approach	98.6%	1.0%	0.5%	0%	**-**	-	0%	50.0%	50.0%	0%	**-**	-	50.0%	50.0%	0%	0%	**-**	-	0%	0%	100%	0%	**-**	-	**-**
% Total	35.1%	0.3%	0.2%	0%	**35.6%**	-	0%	0.5%	0.5%	0%	**1.0%**	-	0.3%	0.3%	0%	0%	**0.7%**	-	0%	0%	62.7%	0%	**62.7%**	-	**-**
PHF	0.631	0.250	0.250	-	**0.641**	-	-	0.375	0.375	-	**0.375**	-	0.500	0.250	-	-	**0.333**	-	-	-	0.637	-	**0.637**	-	0.704
Lights	201	2	1	0	**204**	-	0	3	3	0	**6**	-	2	2	0	0	**4**	-	0	0	360	0	**360**	-	574
% Lights	98.0%	100%	100%	0%	**98.1%**	-	0%	100%	100%	0%	**100%**	-	100%	100%	0%	0%	**100%**	-	0%	0%	98.4%	0%	**98.4%**	-	98.3%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	0	0	0	**1**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	2	0	**2**	-	3
% Buses and Single-Unit Trucks	0.5%	0%	0%	0%	**0.5%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0.5%	0%	**0.5%**	-	0.5%
Bicycles on Road	3	0	0	0	**3**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	4	0	**4**	-	7
% Bicycles on Road	1.5%	0%	0%	0%	**1.4%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	1.1%	0%	**1.1%**	-	1.2%
Pedestrians	-	-	-	-	-	15	-	-	-	-	-	15	-	-	-	-	-	27	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	93.8%	-	-	-	-	-	100%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	6.3%	-	-	-	-	-	0%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Riverside Drive and Booth Street - TMC
Wed Nov 15, 2023
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134873, Location: 39.520539, -119.826407

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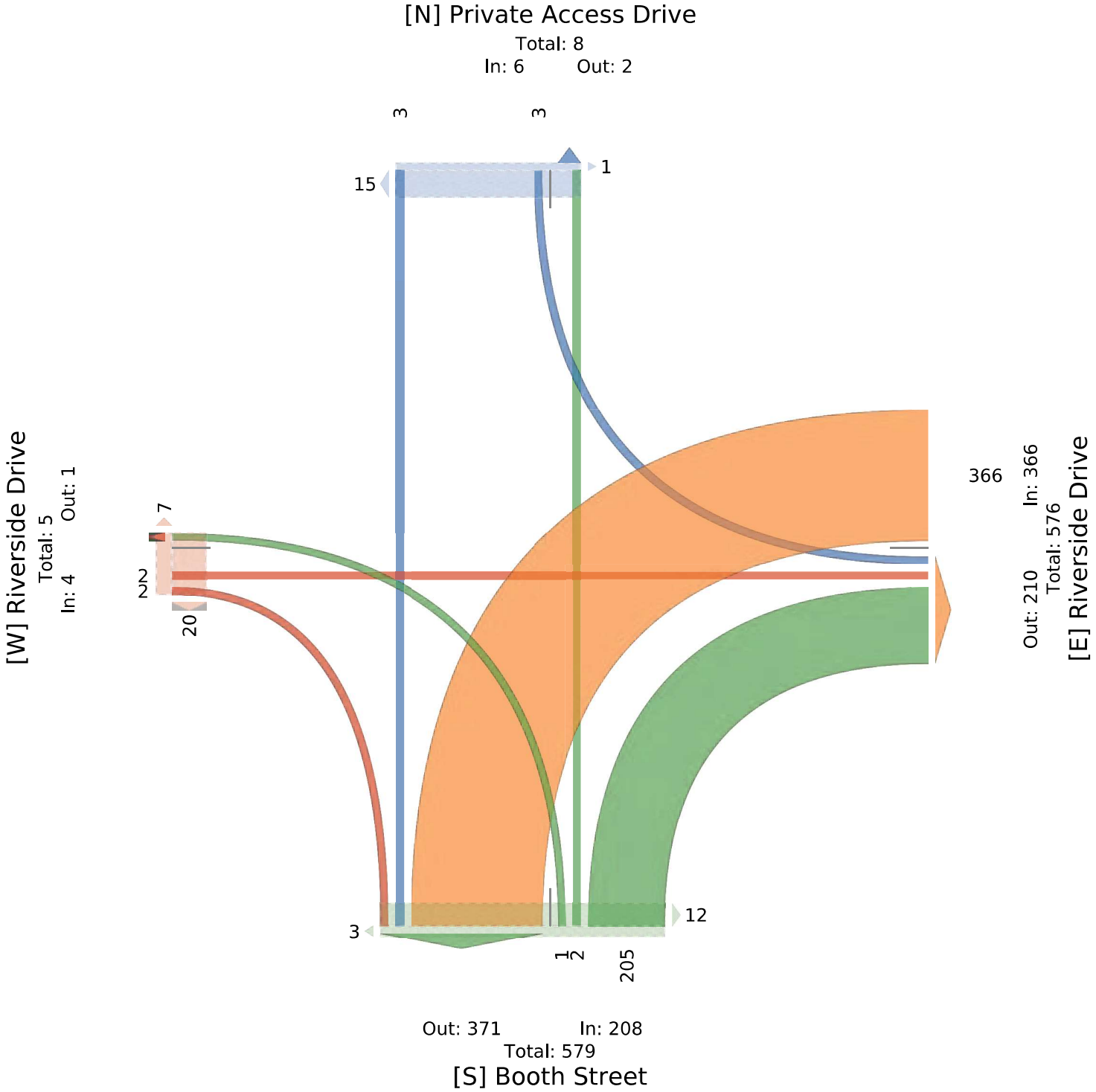

Riverside Drive and Booth Street - TMC

Wed Nov 15, 2023
PM Peak (4 PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134873, Location: 39.520539, -119.826407

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Leg	Booth Street						Private Access Drive						Riverside Drive						Riverside Drive						
Direction	Northbound						Southbound						Eastbound						Westbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-15 4:00PM	43	1	1	0	**45**	0	0	2	0	0	**2**	4	2	1	0	0	**3**	1	2	2	62	0	**66**	0	**116**
4:15PM	45	1	2	0	**48**	2	0	0	0	0	**0**	2	2	0	0	0	**2**	1	1	2	64	0	**67**	0	**117**
4:30PM	30	1	4	0	**35**	0	0	0	0	0	**0**	2	1	1	0	0	**2**	0	2	1	71	0	**74**	1	**111**
4:45PM	33	1	2	0	**36**	1	0	0	0	0	**0**	3	1	0	0	0	**1**	0	0	0	60	0	**60**	0	**97**
Total	151	4	9	0	**164**	3	0	2	0	0	**2**	11	6	2	0	0	**8**	2	5	5	257	0	**267**	1	**441**
% Approach	92.1%	2.4%	5.5%	0%	**-**	-	0%	100%	0%	0%	**-**	-	75.0%	25.0%	0%	0%	**-**	-	1.9%	1.9%	96.3%	0%	**-**	-	-
% Total	34.2%	0.9%	2.0%	0%	**37.2%**	-	0%	0.5%	0%	0%	**0.5%**	-	1.4%	0.5%	0%	0%	**1.8%**	-	1.1%	1.1%	58.3%	0%	**60.5%**	-	-
PHF	0.802	1.000	0.563	-	**0.821**	-	-	0.250	-	-	**0.250**	-	0.750	0.500	-	-	**0.667**	-	0.625	0.500	0.875	-	**0.870**	-	0.952
Lights	138	4	9	0	**151**	-	0	2	0	0	**2**	-	5	1	0	0	**6**	-	5	4	245	0	**254**	-	413
% Lights	91.4%	100%	100%	0%	**92.1%**	-	0%	100%	0%	0%	**100%**	-	83.3%	50.0%	0%	0%	**75.0%**	-	100%	80.0%	95.3%	0%	**95.1%**	-	93.7%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	1	0	0	**2**	-	0	0	0	0	**0**	-	2
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	16.7%	50.0%	0%	0%	**25.0%**	-	0%	0%	0%	0%	**0%**	-	0.5%
Bicycles on Road	13	0	0	0	**13**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	12	0	**13**	-	26
% Bicycles on Road	8.6%	0%	0%	0%	**7.9%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	20.0%	4.7%	0%	**4.9%**	-	5.9%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	11	-	-	-	-	-	2	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Riverside Drive and Booth Street - TMC
Wed Nov 15, 2023
PM Peak (4 PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134873, Location: 39.520539, -119.826407

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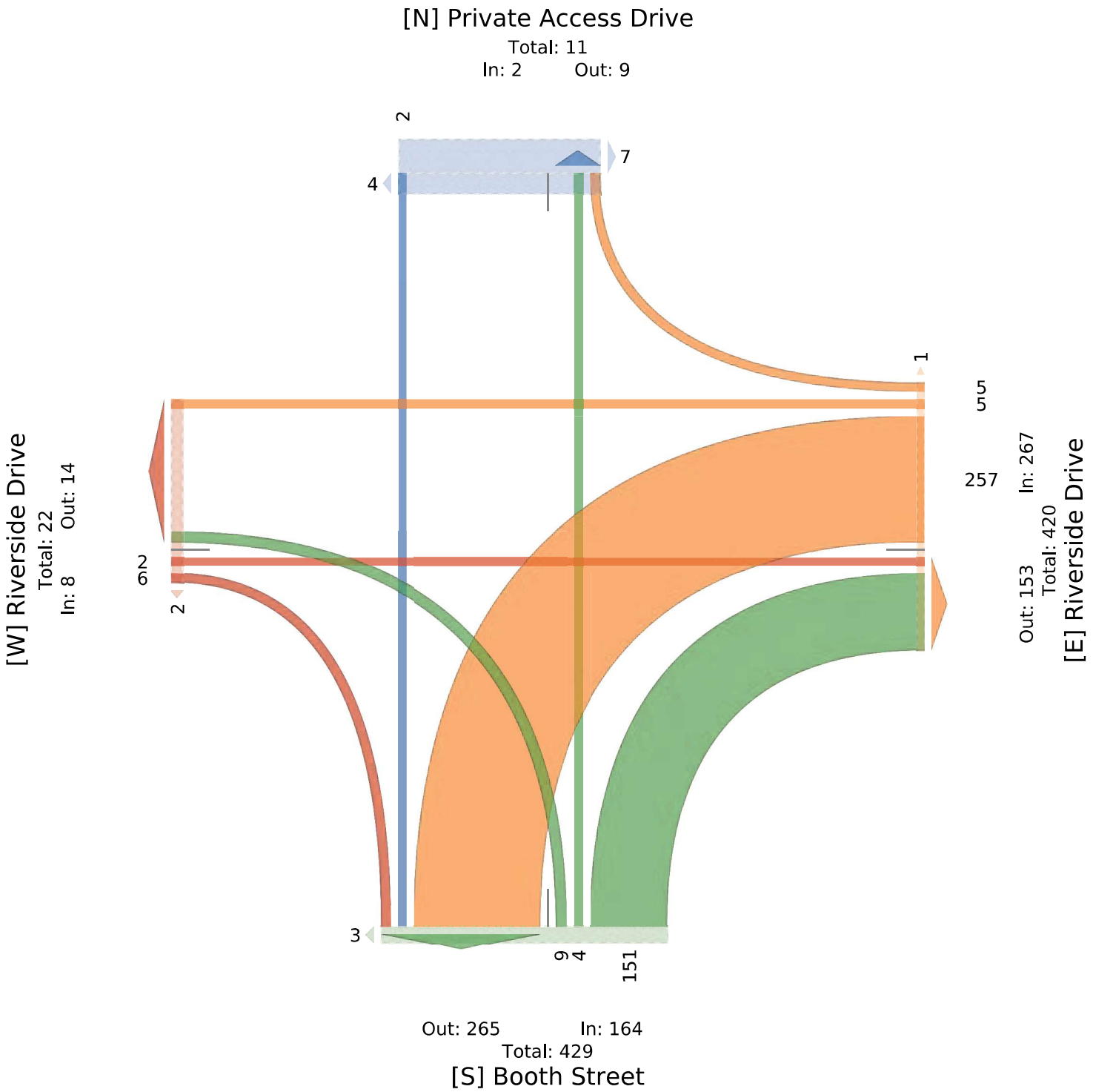

Idlewild Drive and Booth Street - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134216, Location: 39.519984, -119.826455

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100,
Saint Paul, MN, 55114, US

Leg	Booth Street					Booth Street					Idlewild Drive					
Direction	Northbound					Southbound					Eastbound					
Time	T	L	U	**App**	Ped*	R	T	U	**App**	Ped*	R	L	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	66	21	0	**87**	0	88	283	0	**371**	19	92	137	0	**229**	49	**687**
8:00AM	23	9	0	**32**	0	107	56	0	**163**	23	36	110	0	**146**	11	**341**
4:00PM	58	36	0	**94**	2	161	103	0	**264**	27	50	99	0	**149**	17	**507**
5:00PM	35	32	0	**67**	0	134	84	0	**218**	17	41	87	0	**128**	6	**413**
6:00PM	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**0**
Total	182	98	0	**280**	2	490	526	0	**1016**	86	219	433	0	**652**	83	**1948**
% Approach	65.0%	35.0%	0%	**-**	-	48.2%	51.8%	0%	**-**	-	33.6%	66.4%	0%	**-**	-	**-**
% Total	9.3%	5.0%	0%	**14.4%**	-	25.2%	27.0%	0%	**52.2%**	-	11.2%	22.2%	0%	**33.5%**	-	**-**
Lights	174	93	0	**267**	-	465	518	0	**983**	-	207	416	0	**623**	-	1873
% Lights	95.6%	94.9%	0%	**95.4%**	-	94.9%	98.5%	0%	**96.8%**	-	94.5%	96.1%	0%	**95.6%**	-	96.1%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	4	0	**4**	-	5	2	0	**7**	-	9	9	0	**18**	-	29
% Buses and Single-Unit Trucks	0%	4.1%	0%	**1.4%**	-	1.0%	0.4%	0%	**0.7%**	-	4.1%	2.1%	0%	**2.8%**	-	1.5%
Bicycles on Road	8	1	0	**9**	-	20	6	0	**26**	-	3	8	0	**11**	-	46
% Bicycles on Road	4.4%	1.0%	0%	**3.2%**	-	4.1%	1.1%	0%	**2.6%**	-	1.4%	1.8%	0%	**1.7%**	-	2.4%
Pedestrians	-	-	-	-	2	-	-	-	-	84	-	-	-	-	82	
% Pedestrians	-	-	-	-	100%	-	-	-	-	97.7%	-	-	-	-	98.8%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	2	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	2.3%	-	-	-	-	1.2%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Idlewild Drive and Booth Street - TMC

Wed Nov 15, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134216, Location: 39.519984, -119.826455

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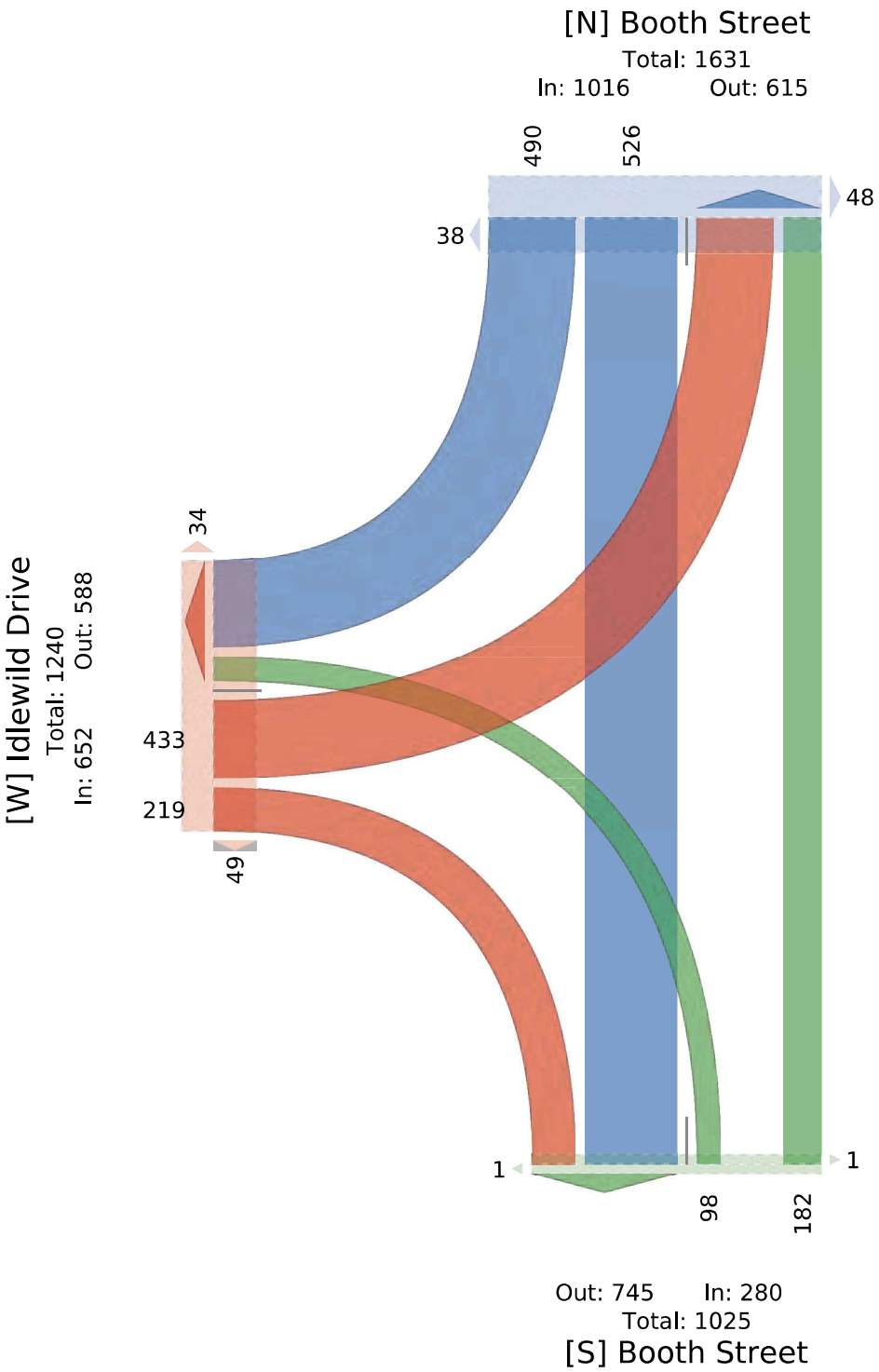

Idlewild Drive and Booth Street - TMC

Wed Nov 15, 2023
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134216, Location: 39.519984, -119.826455

Provided by: Kimley-Horn and Associates, Inc.
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Leg	Booth Street					Booth Street					Idlewild Drive					
Direction	Northbound					Southbound					Eastbound					
Time	T	L	U	**App**	Ped*	R	T	U	**App**	Ped*	R	L	U	**App**	Ped*	**Int**
2023-11-15 7:00AM	6	5	0	**11**	0	16	42	0	**58**	5	10	24	0	**34**	19	**103**
7:15AM	19	4	0	**23**	0	24	119	0	**143**	6	43	33	0	**76**	11	**242**
7:30AM	29	7	0	**36**	0	27	98	0	**125**	5	27	53	0	**80**	12	**241**
7:45AM	12	5	0	**17**	0	21	24	0	**45**	3	12	27	0	**39**	7	**101**
Total	66	21	0	**87**	0	88	283	0	**371**	19	92	137	0	**229**	49	**687**
% Approach	75.9%	24.1%	0%	**-**	-	23.7%	76.3%	0%	**-**	-	40.2%	59.8%	0%	**-**	-	-
% Total	9.6%	3.1%	0%	**12.7%**	-	12.8%	41.2%	0%	**54.0%**	-	13.4%	19.9%	0%	**33.3%**	-	-
PHF	0.593	0.750	-	**0.625**	-	0.778	0.595	-	**0.651**	-	0.535	0.642	-	**0.713**	-	0.708
Lights	64	19	0	**83**	-	83	283	0	**366**	-	89	133	0	**222**	-	671
% Lights	97.0%	90.5%	0%	**95.4%**	-	94.3%	100%	0%	**98.7%**	-	96.7%	97.1%	0%	**96.9%**	-	97.7%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	2	0	**2**	-	1	0	0	**1**	-	3	3	0	**6**	-	9
% Buses and Single-Unit Trucks	0%	9.5%	0%	**2.3%**	-	1.1%	0%	0%	**0.3%**	-	3.3%	2.2%	0%	**2.6%**	-	1.3%
Bicycles on Road	2	0	0	**2**	-	4	0	0	**4**	-	0	1	0	**1**	-	7
% Bicycles on Road	3.0%	0%	0%	**2.3%**	-	4.5%	0%	0%	**1.1%**	-	0%	0.7%	0%	**0.4%**	-	1.0%
Pedestrians	-	-	-	-	0	-	-	-	-	19	-	-	-	-	49	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Idlewild Drive and Booth Street - TMC
Wed Nov 15, 2023
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134216, Location: 39.519984, -119.826455

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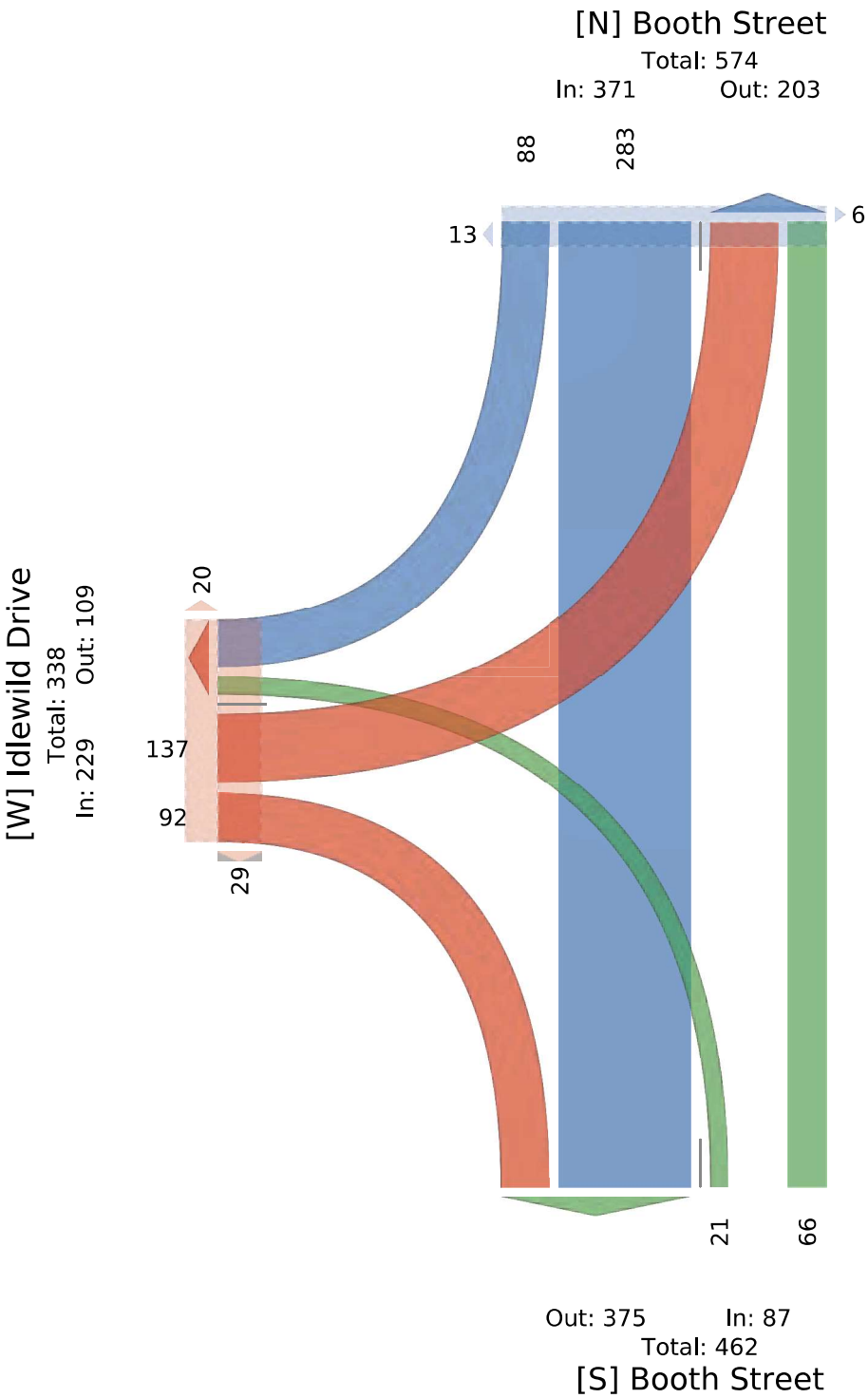

Idlewild Drive and Booth Street - TMC

Wed Nov 15, 2023
PM Peak (4 PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134216, Location: 39.519984, -119.826455

Provided by: Kimley-Horn and Associates, Inc.
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Leg	Booth Street					Booth Street					Idlewild Drive					
Direction	Northbound					Southbound					Eastbound					
Time	T	L	U	**App**	Ped*	R	T	U	**App**	Ped*	R	L	U	**App**	Ped*	**Int**
2023-11-15 4:00PM	15	11	0	**26**	0	42	24	0	**66**	6	12	23	0	**35**	3	**127**
4:15PM	15	10	0	**25**	1	36	31	0	**67**	13	5	33	0	**38**	9	**130**
4:30PM	12	8	0	**20**	0	44	28	0	**72**	4	17	24	0	**41**	2	**133**
4:45PM	16	7	0	**23**	1	39	20	0	**59**	4	16	19	0	**35**	3	**117**
Total	58	36	0	**94**	2	161	103	0	**264**	27	50	99	0	**149**	17	**507**
% Approach	61.7%	38.3%	0%	**-**	-	61.0%	39.0%	0%	**-**	-	33.6%	66.4%	0%	**-**	-	**-**
% Total	11.4%	7.1%	0%	**18.5%**	-	31.8%	20.3%	0%	**52.1%**	-	9.9%	19.5%	0%	**29.4%**	-	**-**
PHF	0.900	0.795	**-**	**0.890**	-	0.881	0.853	**-**	**0.894**	-	0.706	0.750	**-**	**0.878**	-	0.929
Lights	54	34	0	**88**	-	154	99	0	**253**	-	46	96	0	**142**	-	483
% Lights	93.1%	94.4%	0%	**93.6%**	-	95.7%	96.1%	0%	**95.8%**	-	92.0%	97.0%	0%	**95.3%**	-	95.3%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	1	0	**1**	-	1	0	0	**1**	-	2	0	0	**2**	-	4
% Buses and Single-Unit Trucks	0%	2.8%	0%	**1.1%**	-	0.6%	0%	0%	**0.4%**	-	4.0%	0%	0%	**1.3%**	-	0.8%
Bicycles on Road	4	1	0	**5**	-	6	4	0	**10**	-	2	3	0	**5**	-	20
% Bicycles on Road	6.9%	2.8%	0%	**5.3%**	-	3.7%	3.9%	0%	**3.8%**	-	4.0%	3.0%	0%	**3.4%**	-	3.9%
Pedestrians	-	-	-	-	2	-	-	-	-	25	-	-	-	-	16	
% Pedestrians	-	-	-	-	100%	-	-	-	-	92.6%	-	-	-	-	94.1%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	2	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	7.4%	-	-	-	-	5.9%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Idlewild Drive and Booth Street - TMC
Wed Nov 15, 2023
PM Peak (4 PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1134216, Location: 39.519984, -119.826455

Provided by: Kimley-Horn and Associates, Inc.
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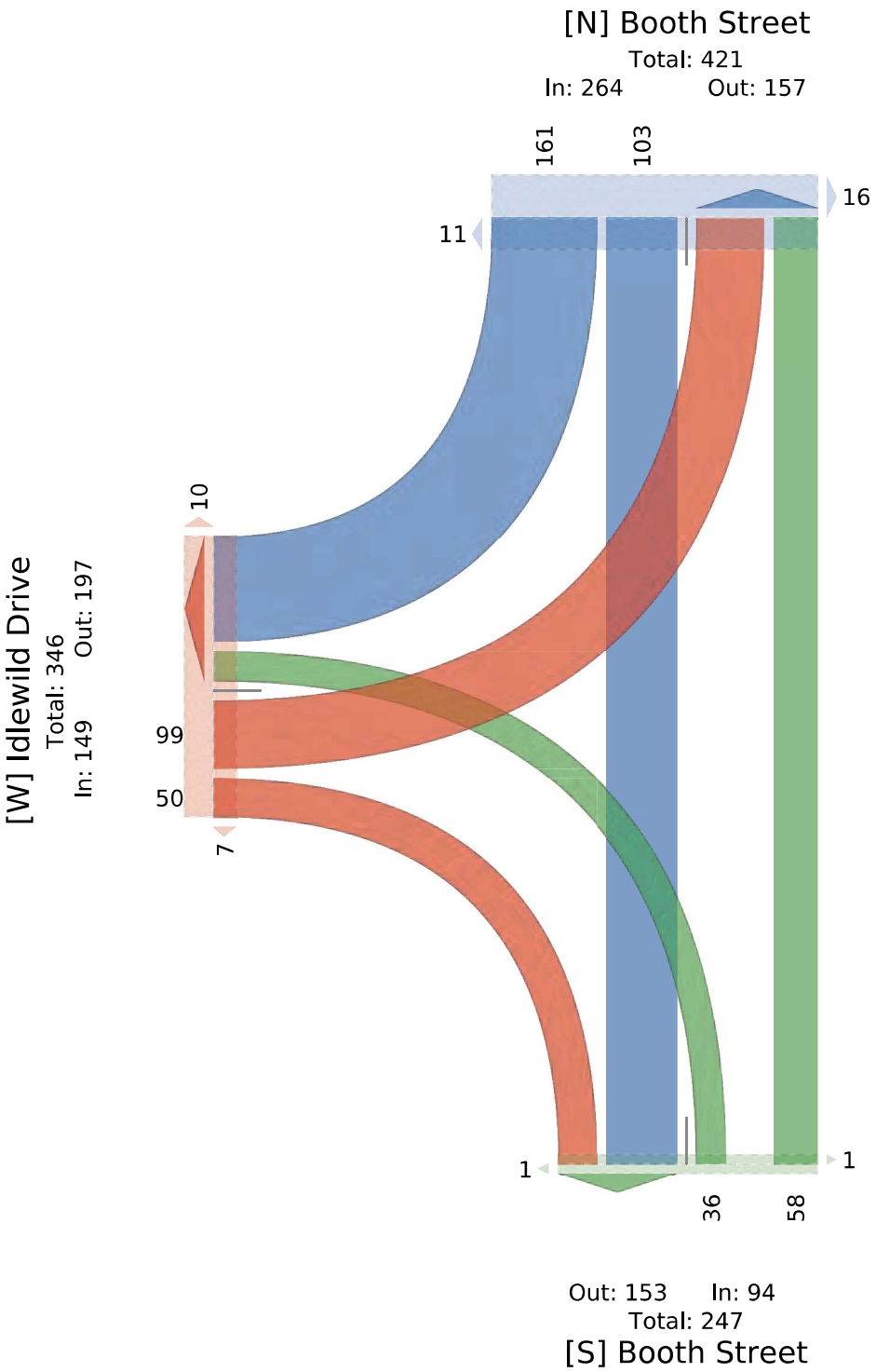


APPENDIX D

TRIP GENERATION CALCULATIONS

Project Riverside Drive Apartments

Trip generation for Multifamily Housing (Mid-Rise), Not Close to Rail Transit

Designed by	AKT	*Date*	January 11, 2024	*Job No.*	192437000
Checked by	DJG	*Date*	January 11, 2024	*Sheet No.*	1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation 11th Edition, Average Rate Equations

Land Use Code -	221 Multifamily Housing (Mid-Rise)
Land Use Sub Category	Not Close to Rail Transit
Setting/Location	General Urban/Suburban
Independent Variable -	Dwelling Unit(s)
Number of Units (X) -	180

T = Trip Ends

Peak Hour: Weekday, Adjacent Street Traffic **One Hour Between 7 and 9 AM**

Average Rate			Directional Distribution:	
T = (X) * 0.37	Trip Ends Per	Dwelling Unit(s)	23% Entering	77% Exiting
T = 67	Trip Ends		15 Entering	52 Exiting

Peak Hour: Weekday, Adjacent Street Traffic **One Hour Between 4 and 6 PM**

Average Rate			Directional Distribution:	
T = (X) * 0.39	Trip Ends Per	Dwelling Unit(s)	61% Entering	39% Exiting
T = 70	Trip Ends		43 Entering	27 Exiting

Daily Weekday

Average Rate			Directional Distribution:	
T = (X) * 4.45	Trip Ends Per	Dwelling Unit(s)	50% Entering	50% Exiting
T = 802	Trip Ends		401 Entering	401 Exiting

Non-Pass-By Trip Percentage

AM Peak	100%
PM Peak	100%

Non-Pass-By Trip Volumes

AM Peak	15 Entering	52 Exiting
PM Peak	43 Entering	27 Exiting

Note: Rounding may occur in calculations

APPENDIX E

KEY INTERSECTION PEAK HOUR LOS CALCULATIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	7	9	9	7	60	2	736	12	143	828	18
Future Volume (veh/h)	23	7	9	9	7	60	2	736	12	143	828	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	8	11	11	8	72	2	887	14	172	998	22
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	110	137	622	755	639	176	1453	23	478	2038	45
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.01	0.41	0.41	0.17	0.57	0.57
Sat Flow, veh/h	839	274	340	1393	1870	1584	1781	3580	57	1781	3555	78
Grp Volume(v), veh/h	47	0	0	11	8	72	2	440	461	172	499	521
Grp Sat Flow(s),veh/h/ln	1452	0	0	1393	1870	1584	1781	1777	1860	1781	1777	1856
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.3	3.8	0.1	26.4	26.4	0.0	22.5	22.5
Cycle Q Clear(g_c), s	2.4	0.0	0.0	0.5	0.3	3.8	0.1	26.4	26.4	0.0	22.5	22.5
Prop In Lane	0.60		0.23	1.00		1.00	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	629	0	0	622	755	639	176	721	755	478	1019	1064
V/C Ratio(X)	0.07	0.00	0.00	0.02	0.01	0.11	0.01	0.61	0.61	0.36	0.49	0.49
Avail Cap(c_a), veh/h	632	0	0	625	759	643	366	721	755	478	1019	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	24.2	24.1	25.1	27.6	31.7	31.7	37.2	17.1	17.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	3.8	3.7	0.5	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	0.0	0.4	0.3	2.7	0.1	17.8	18.5	8.6	14.7	15.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	0.0	24.2	24.1	25.2	27.7	35.5	35.3	37.6	18.8	18.7
LnGrp LOS	C	A	A	C	C	C	C	D	D	D	B	B
Approach Vol, veh/h		47			91			903			1192	
Approach Delay, s/veh		24.7			25.0			35.4			21.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.6	60.0		59.7	5.6	83.0		59.7				
Change Period (Y+Rc), s	* 5.2	* 5.2		* 5.2	4.5	* 5.2		* 5.2				
Max Green Setting (Gmax), s	* 11	* 55		* 55	15.5	* 50		* 55				
Max Q Clear Time (g_c+I1), s	2.0	28.4		4.4	2.1	24.5		5.8				
Green Ext Time (p_c), s	0.3	6.4		0.3	0.0	7.4		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	3	10	4	2	71	5	643	6	4	827	30
Future Vol, veh/h	23	3	10	4	2	71	5	643	6	4	827	30
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	1	1	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	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	4	13	5	3	89	6	804	8	5	1034	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1485	1894	542	1350	1909	407	1078	0	0	813	0	0
Stage 1	1069	1069	-	821	821	-	-	-	-	-	-	-
Stage 2	416	825	-	529	1088	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	10	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	10	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	86	69	485	109	68	593	-	-	-	810	-	-
Stage 1	236	296	-	335	140	-	-	-	-	-	-	-
Stage 2	585	385	-	501	75	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	70	67	482	100	67	592	-	-	-	809	-	-
Mov Cap-2 Maneuver	70	67	-	100	67	-	-	-	-	-	-	-
Stage 1	236	290	-	335	140	-	-	-	-	-	-	-
Stage 2	488	385	-	474	73	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	78.3	16.6		0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	91	406	809	-	-
HCM Lane V/C Ratio	-	-	-	0.495	0.237	0.006	-	-
HCM Control Delay (s)	-	-	-	78.3	16.6	9.5	-	-
HCM Lane LOS	-	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	-	-	-	2.1	0.9	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	1	3	24	3	7
Future Vol, veh/h	26	1	3	24	3	7
Conflicting Peds, #/hr	0	2	2	0	1	2
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	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	1	4	34	4	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	40	0	83	42
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	43	-
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	-	-	1570	-	919	1029
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1567	-	913	1025
Mov Cap-2 Maneuver	-	-	-	-	913	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	975	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	989	-	-	1567	-
HCM Lane V/C Ratio	0.014	-	-	0.003	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	2	366	0	0	1	2	205	3	3	0
Future Vol, veh/h	0	2	2	366	0	0	1	2	205	3	3	0
Conflicting Peds, #/hr	0	0	15	15	0	16	27	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	3	523	0	0	1	3	293	4	4	0

Major/Minor	Minor1			Major2					Major1		
Conflicting Flow All	-	1073	34	19	0	0			0	0	0
Stage 1	-	27	-	-	-	-			-	-	-
Stage 2	-	1046	-	-	-	-			-	-	-
Critical Hdwy	-	6.52	6.22	4.12	-	-			4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	5.52	-	-	-	-			-	-	-
Follow-up Hdwy	-	4.018	3.318	2.218	-	-			2.218	-	-
Pot Cap-1 Maneuver	0	220	1039	1597	-	0			-	-	-
Stage 1	0	873	-	-	-	0			-	-	-
Stage 2	0	305	-	-	-	0			-	-	-
Platoon blocked, %					-					-	-
Mov Cap-1 Maneuver	-	0	1010	1574	-	-			-	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-			-	-	-
Stage 1	-	0	-	-	-	-			-	-	-
Stage 2	-	0	-	-	-	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.6	8.4	
HCM LOS	A		

Minor Lane/Major Mvmt	EBLn1	WBL	WBT	SBL	SBT	SBR
Capacity (veh/h)	1010	1574	-	-	-	-
HCM Lane V/C Ratio	0.006	0.332	-	-	-	-
HCM Control Delay (s)	8.6	8.4	0	-	-	-
HCM Lane LOS	A	A	A	-	-	-
HCM 95th %tile Q(veh)	0	1.5	-	-	-	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	137	92	21	66	283	88
Future Vol, veh/h	137	92	21	66	283	88
Conflicting Peds, #/hr	19	0	49	0	0	49
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	193	130	30	93	399	124

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	682	510	572	0	-	0
Stage 1	510	-	-	-	-	-
Stage 2	172	-	-	-	-	-
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	415	563	1001	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	364	537	954	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	818	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	954	-	364	537	-	-
HCM Lane V/C Ratio	0.031	-	0.53	0.241	-	-
HCM Control Delay (s)	8.9	0	25.5	13.8	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	3	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	7	13	17	6	196	8	731	16	86	764	16
Future Volume (veh/h)	20	7	13	17	6	196	8	731	16	86	764	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	8	15	19	7	220	9	821	18	97	858	18
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	113	187	621	759	641	207	1311	29	487	1865	39
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.03	0.37	0.37	0.18	0.52	0.52
Sat Flow, veh/h	643	279	461	1384	1870	1579	1781	3555	78	1781	3559	75
Grp Volume(v), veh/h	45	0	0	19	7	220	9	410	429	97	428	448
Grp Sat Flow(s),veh/h/ln	1383	0	0	1384	1870	1579	1781	1777	1856	1781	1777	1857
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.3	13.0	0.4	25.6	25.6	0.0	20.4	20.4
Cycle Q Clear(g_c), s	2.1	0.0	0.0	0.9	0.3	13.0	0.4	25.6	25.6	0.0	20.4	20.4
Prop In Lane	0.49		0.33	1.00		1.00	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	601	0	0	621	759	641	207	655	685	487	931	973
V/C Ratio(X)	0.07	0.00	0.00	0.03	0.01	0.34	0.04	0.63	0.63	0.20	0.46	0.46
Avail Cap(c_a), veh/h	601	0	0	621	759	641	353	655	685	487	931	973
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	24.1	23.9	27.7	30.5	35.0	35.0	33.7	20.1	20.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.3	0.1	4.5	4.3	0.2	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.0	0.7	0.2	8.7	0.4	17.6	18.2	4.5	13.8	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	0.0	0.0	24.1	23.9	28.0	30.6	39.4	39.3	33.9	21.8	21.7
LnGrp LOS	C	A	A	C	C	C	C	D	D	C	C	C
Approach Vol, veh/h		45			246			848			973	
Approach Delay, s/veh		24.5			27.6			39.3			23.0	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.2	55.0		60.0	8.9	76.3		60.0				
Change Period (Y+Rc), s	* 5.2	* 5.2		* 5.2	4.5	* 5.2		* 5.2				
Max Green Setting (Gmax), s	* 16	* 50		* 55	15.5	* 50		* 55				
Max Q Clear Time (g_c+I1), s	2.0	27.6		4.1	2.4	22.4		15.0				
Green Ext Time (p_c), s	0.2	5.6		0.3	0.0	6.2		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		30.1
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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	25	0	18	2	2	61	11	665	14	4	744	43
Future Vol, veh/h	25	0	18	2	2	61	11	665	14	4	744	43
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	3	3	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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	0	20	2	2	68	12	739	16	4	827	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1259	1645	442	1196	1661	382	879	0	0	758	0	0
Stage 1	863	863	-	774	774	-	-	-	-	-	-	-
Stage 2	396	782	-	422	887	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	127	99	563	142	96	616	764	-	-	849	-	-
Stage 1	316	370	-	357	406	-	-	-	-	-	-	-
Stage 2	601	403	-	580	360	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	107	95	561	133	92	613	761	-	-	847	-	-
Mov Cap-2 Maneuver	107	95	-	133	92	-	-	-	-	-	-	-
Stage 1	306	365	-	346	394	-	-	-	-	-	-	-
Stage 2	517	391	-	554	355	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.3	13.9	0.3	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	761	-	-	162	477	847	-	-
HCM Lane V/C Ratio	0.016	-	-	0.295	0.151	0.005	-	-
HCM Control Delay (s)	9.8	0.1	-	36.3	13.9	9.3	-	-
HCM Lane LOS	A	A	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.5	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	3	11	27	8	12
Future Vol, veh/h	25	3	11	27	8	12
Conflicting Peds, #/hr	0	4	4	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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	4	13	33	10	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	95	36
Stage 1	-	-	-	-	36	-
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	-	-	1572	-	905	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	894	1033
Mov Cap-2 Maneuver	-	-	-	-	894	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	956	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	973	-	-	1566	-
HCM Lane V/C Ratio	0.025	-	-	0.009	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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	2	6	257	5	5	9	4	151	0	2	0
Future Vol, veh/h	0	2	6	257	5	5	9	4	151	0	2	0
Conflicting Peds, #/hr	0	0	3	3	0	11	2	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	6	271	5	5	9	4	159	0	2	0

Major/Minor	Minor1			Major2					Major1		
Conflicting Flow All	-	568	8	5	0	0			21	0	0
Stage 1	-	5	-	-	-	-			-	-	-
Stage 2	-	563	-	-	-	-			-	-	-
Critical Hdwy	-	6.52	6.22	4.12	-	-			4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	5.52	-	-	-	-			-	-	-
Follow-up Hdwy	-	4.018	3.318	2.218	-	-			2.218	-	-
Pot Cap-1 Maneuver	0	432	1074	1616	-	-			1595	-	-
Stage 1	0	892	-	-	-	-			-	-	-
Stage 2	0	509	-	-	-	-			-	-	-
Platoon blocked, %					-	-				-	-
Mov Cap-1 Maneuver	-	0	1068	1611	-	-			1595	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-			-	-	-
Stage 1	-	0	-	-	-	-			-	-	-
Stage 2	-	0	-	-	-	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.4	7.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	EBLn1	WBL	WBT	WBR	SBL	SBT	SBR
Capacity (veh/h)	1068	1611	-	-	1595	-	-
HCM Lane V/C Ratio	0.008	0.168	-	-	-	-	-
HCM Control Delay (s)	8.4	7.7	0	-	0	-	-
HCM Lane LOS	A	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0	0.6	-	-	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	99	50	36	58	103	161
Future Vol, veh/h	99	50	36	58	103	161
Conflicting Peds, #/hr	27	2	17	0	0	17
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	106	54	39	62	111	173

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	382	217	301	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	167	-	-	-	-	-
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	620	823	1260	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	580	808	1240	-	-	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	782	-	-	-	-	-
Stage 2	849	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	3.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1240	-	580	808	-	-
HCM Lane V/C Ratio	0.031	-	0.184	0.067	-	-
HCM Control Delay (s)	8	0	12.6	9.8	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	7	9	9	7	60	2	744	12	145	839	18
Future Volume (veh/h)	23	7	9	9	7	60	2	744	12	145	839	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	8	11	11	8	72	2	896	14	175	1011	22
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	110	137	622	755	639	173	1454	23	476	2040	44
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.01	0.41	0.41	0.17	0.57	0.57
Sat Flow, veh/h	839	274	340	1393	1870	1584	1781	3581	56	1781	3556	77
Grp Volume(v), veh/h	47	0	0	11	8	72	2	445	465	175	505	528
Grp Sat Flow(s),veh/h/ln	1452	0	0	1393	1870	1584	1781	1777	1860	1781	1777	1856
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.3	3.8	0.1	26.8	26.8	0.0	22.9	22.9
Cycle Q Clear(g_c), s	2.4	0.0	0.0	0.5	0.3	3.8	0.1	26.8	26.8	0.0	22.9	22.9
Prop In Lane	0.60		0.23	1.00		1.00	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	629	0	0	622	755	639	173	721	755	476	1019	1065
V/C Ratio(X)	0.07	0.00	0.00	0.02	0.01	0.11	0.01	0.62	0.62	0.37	0.50	0.50
Avail Cap(c_a), veh/h	632	0	0	625	759	643	363	721	755	476	1019	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	24.2	24.1	25.1	27.7	31.8	31.8	37.6	17.1	17.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	3.9	3.7	0.5	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	0.0	0.4	0.3	2.7	0.1	18.0	18.7	8.7	14.9	15.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	0.0	24.2	24.1	25.2	27.7	35.7	35.5	38.1	18.9	18.8
LnGrp LOS	C	A	A	C	C	C	C	D	D	D	B	B
Approach Vol, veh/h		47			91			912			1208	
Approach Delay, s/veh		24.7			25.0			35.6			21.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.6	60.0		59.7	5.6	83.0		59.7				
Change Period (Y+Rc), s	* 5.2	* 5.2		* 5.2	4.5	* 5.2		* 5.2				
Max Green Setting (Gmax), s	* 11	* 55		* 55	15.5	* 50		* 55				
Max Q Clear Time (g_c+I1), s	2.0	28.8		4.4	2.1	24.9		5.8				
Green Ext Time (p_c), s	0.3	6.5		0.3	0.0	7.5		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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	23	3	10	4	2	71	5	650	6	4	836	30
Future Vol, veh/h	23	3	10	4	2	71	5	650	6	4	836	30
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	1	1	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	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	4	13	5	3	89	6	813	8	5	1045	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1500	1914	548	1365	1929	412	1089	0	0	822	0	0
Stage 1	1080	1080	-	830	830	-	-	-	-	-	-	-
Stage 2	420	834	-	535	1099	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	84	67	480	106	66	589	636	-	-	803	-	-
Stage 1	233	293	-	331	383	-	-	-	-	-	-	-
Stage 2	581	381	-	497	287	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	64	477	96	63	588	632	-	-	802	-	-
Mov Cap-2 Maneuver	67	64	-	96	63	-	-	-	-	-	-	-
Stage 1	228	287	-	325	376	-	-	-	-	-	-	-
Stage 2	482	374	-	470	281	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	82.6	16.9	0.2	0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	632	-	-	88	397	802	-	-
HCM Lane V/C Ratio	0.01	-	-	0.511	0.242	0.006	-	-
HCM Control Delay (s)	10.8	0.1	-	82.6	16.9	9.5	-	-
HCM Lane LOS	B	A	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.2	0.9	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	1	3	24	3	7
Future Vol, veh/h	26	1	3	24	3	7
Conflicting Peds, #/hr	0	2	2	0	1	2
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	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	1	4	34	4	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	40	0	83	42
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	43	-
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	-	-	1570	-	919	1029
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1567	-	913	1025
Mov Cap-2 Maneuver	-	-	-	-	913	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	975	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	989	-	-	1567	-
HCM Lane V/C Ratio	0.014	-	-	0.003	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	2	369	0	0	1	2	206	3	3	0
Future Vol, veh/h	0	2	2	369	0	0	1	2	206	3	3	0
Conflicting Peds, #/hr	0	0	15	15	0	16	27	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	3	527	0	0	1	3	294	4	4	0

Major/Minor	Minor1			Major2					Major1		
Conflicting Flow All	-	1081	34	19	0	0			0	0	0
Stage 1	-	27	-	-	-	-			-	-	-
Stage 2	-	1054	-	-	-	-			-	-	-
Critical Hdwy	-	6.52	6.22	4.12	-	-			4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	5.52	-	-	-	-			-	-	-
Follow-up Hdwy	-	4.018	3.318	2.218	-	-			2.218	-	-
Pot Cap-1 Maneuver	0	218	1039	1597	-	0			-	-	-
Stage 1	0	873	-	-	-	0			-	-	-
Stage 2	0	303	-	-	-	0			-	-	-
Platoon blocked, %					-					-	-
Mov Cap-1 Maneuver	-	0	1010	1574	-	-			-	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-			-	-	-
Stage 1	-	0	-	-	-	-			-	-	-
Stage 2	-	0	-	-	-	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.6	8.4	
HCM LOS	A		

Minor Lane/Major Mvmt	EBLn1	WBL	WBT	SBL	SBT	SBR
Capacity (veh/h)	1010	1574	-	-	-	-
HCM Lane V/C Ratio	0.006	0.335	-	-	-	-
HCM Control Delay (s)	8.6	8.4	0	-	-	-
HCM Lane LOS	A	A	A	-	-	-
HCM 95th %tile Q(veh)	0	1.5	-	-	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	138	93	21	66	285	89
Future Vol, veh/h	138	93	21	66	285	89
Conflicting Peds, #/hr	19	0	49	0	0	49
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	194	131	30	93	401	125

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	685	513	575	0	-	0
Stage 1	513	-	-	-	-	-
Stage 2	172	-	-	-	-	-
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	414	561	998	-	-	-
Stage 1	601	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	363	535	951	-	-	-
Mov Cap-2 Maneuver	363	-	-	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	818	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	951	-	363	535	-	-
HCM Lane V/C Ratio	0.031	-	0.535	0.245	-	-
HCM Control Delay (s)	8.9	0	25.8	13.9	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	3	1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	7	13	17	6	197	8	739	16	87	774	16
Future Volume (veh/h)	20	7	13	17	6	197	8	739	16	87	774	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	8	15	19	7	221	9	830	18	98	870	18
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	113	187	621	759	641	205	1312	28	491	1879	39
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.03	0.37	0.37	0.19	0.53	0.53
Sat Flow, veh/h	643	279	461	1384	1870	1579	1781	3556	77	1781	3560	74
Grp Volume(v), veh/h	45	0	0	19	7	221	9	415	433	98	434	454
Grp Sat Flow(s),veh/h/ln	1382	0	0	1384	1870	1579	1781	1777	1856	1781	1777	1857
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.3	13.0	0.4	25.9	25.9	0.0	20.6	20.6
Cycle Q Clear(g_c), s	2.1	0.0	0.0	0.9	0.3	13.0	0.4	25.9	25.9	0.0	20.6	20.6
Prop In Lane	0.49		0.33	1.00		1.00	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	601	0	0	621	759	641	205	655	685	491	938	980
V/C Ratio(X)	0.07	0.00	0.00	0.03	0.01	0.34	0.04	0.63	0.63	0.20	0.46	0.46
Avail Cap(c_a), veh/h	601	0	0	621	759	641	351	655	685	491	938	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	24.1	23.9	27.7	30.6	35.1	35.1	33.7	19.9	19.9
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.3	0.1	4.6	4.4	0.2	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.0	0.7	0.2	8.7	0.4	17.8	18.4	4.5	13.8	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	0.0	0.0	24.1	23.9	28.0	30.7	39.7	39.5	33.9	21.5	21.5
LnGrp LOS	C	A	A	C	C	C	C	D	D	C	C	C
Approach Vol, veh/h		45			247			857			986	
Approach Delay, s/veh		24.5			27.6			39.5			22.7	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.7	55.0		60.0	8.9	76.8		60.0				
Change Period (Y+Rc), s	* 5.2	* 5.2		* 5.2	4.5	* 5.2		* 5.2				
Max Green Setting (Gmax), s	* 16	* 50		* 55	15.5	* 50		* 55				
Max Q Clear Time (g_c+I1), s	2.0	27.9		4.1	2.4	22.6		15.0				
Green Ext Time (p_c), s	0.2	5.6		0.3	0.0	6.3		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		30.1
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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	25	0	18	2	2	61	11	672	14	4	752	43
Future Vol, veh/h	25	0	18	2	2	61	11	672	14	4	752	43
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	3	3	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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	0	20	2	2	68	12	747	16	4	836	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1272	1662	446	1208	1678	386	888	0	0	766	0	0
Stage 1	872	872	-	782	782	-	-	-	-	-	-	-
Stage 2	400	790	-	426	896	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	125	96	560	139	94	612	758	-	-	843	-	-
Stage 1	312	366	-	353	403	-	-	-	-	-	-	-
Stage 2	597	400	-	577	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	105	92	558	130	90	609	755	-	-	841	-	-
Mov Cap-2 Maneuver	105	92	-	130	90	-	-	-	-	-	-	-
Stage 1	302	361	-	342	391	-	-	-	-	-	-	-
Stage 2	512	388	-	551	352	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.1	14	0.3	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	755	-	-	159	472	841	-	-
HCM Lane V/C Ratio	0.016	-	-	0.3	0.153	0.005	-	-
HCM Control Delay (s)	9.8	0.1	-	37.1	14	9.3	-	-
HCM Lane LOS	A	A	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.5	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	3	11	27	8	12
Future Vol, veh/h	25	3	11	27	8	12
Conflicting Peds, #/hr	0	4	4	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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	4	13	33	10	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	95	36
Stage 1	-	-	-	-	36	-
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	-	-	1572	-	905	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	894	1033
Mov Cap-2 Maneuver	-	-	-	-	894	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	956	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	973	-	-	1566	-
HCM Lane V/C Ratio	0.025	-	-	0.009	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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	2	6	259	5	5	9	4	152	0	2	0
Future Vol, veh/h	0	2	6	259	5	5	9	4	152	0	2	0
Conflicting Peds, #/hr	0	0	3	3	0	11	2	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	6	273	5	5	9	4	160	0	2	0

Major/Minor	Minor1			Major2					Major1		
Conflicting Flow All	-	572	8	5	0	0			21	0	0
Stage 1	-	5	-	-	-	-			-	-	-
Stage 2	-	567	-	-	-	-			-	-	-
Critical Hdwy	-	6.52	6.22	4.12	-	-			4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	5.52	-	-	-	-			-	-	-
Follow-up Hdwy	-	4.018	3.318	2.218	-	-			2.218	-	-
Pot Cap-1 Maneuver	0	430	1074	1616	-	-			1595	-	-
Stage 1	0	892	-	-	-	-			-	-	-
Stage 2	0	507	-	-	-	-			-	-	-
Platoon blocked, %					-	-				-	-
Mov Cap-1 Maneuver	-	0	1068	1611	-	-			1595	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-			-	-	-
Stage 1	-	0	-	-	-	-			-	-	-
Stage 2	-	0	-	-	-	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.4	7.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	EBLn1	WBL	WBT	WBR	SBL	SBT	SBR
Capacity (veh/h)	1068	1611	-	-	1595	-	-
HCM Lane V/C Ratio	0.008	0.169	-	-	-	-	-
HCM Control Delay (s)	8.4	7.7	0	-	0	-	-
HCM Lane LOS	A	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0	0.6	-	-	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	50	36	58	104	162
Future Vol, veh/h	100	50	36	58	104	162
Conflicting Peds, #/hr	27	2	17	0	0	17
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	54	39	62	112	174

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	383	218	303	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	167	-	-	-	-	-
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	620	822	1258	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	580	807	1238	-	-	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	849	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	3.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1238	-	580	807	-	-
HCM Lane V/C Ratio	0.031	-	0.185	0.067	-	-
HCM Control Delay (s)	8	0	12.6	9.8	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	7	9	9	7	60	2	780	12	145	850	18
Future Volume (veh/h)	23	7	9	9	7	60	2	780	12	145	850	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	8	11	11	8	72	2	940	14	175	1024	22
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	110	137	622	755	639	170	1455	22	463	2040	44
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.01	0.41	0.41	0.17	0.57	0.57
Sat Flow, veh/h	839	274	340	1393	1870	1584	1781	3584	53	1781	3557	76
Grp Volume(v), veh/h	47	0	0	11	8	72	2	466	488	175	512	534
Grp Sat Flow(s),veh/h/ln	1452	0	0	1393	1870	1584	1781	1777	1861	1781	1777	1857
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.3	3.8	0.1	28.5	28.5	0.0	23.3	23.3
Cycle Q Clear(g_c), s	2.4	0.0	0.0	0.5	0.3	3.8	0.1	28.5	28.5	0.0	23.3	23.3
Prop In Lane	0.60		0.23	1.00		1.00	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	629	0	0	622	755	639	170	721	755	463	1019	1065
V/C Ratio(X)	0.07	0.00	0.00	0.02	0.01	0.11	0.01	0.65	0.65	0.38	0.50	0.50
Avail Cap(c_a), veh/h	632	0	0	625	759	643	360	721	755	463	1019	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	24.2	24.1	25.1	27.8	32.3	32.3	39.1	17.2	17.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.1	0.0	4.4	4.2	0.5	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	0.0	0.4	0.3	2.7	0.1	19.1	19.8	8.7	15.1	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	0.0	24.2	24.1	25.2	27.8	36.7	36.5	39.6	19.0	18.9
LnGrp LOS	C	A	A	C	C	C	C	D	D	D	B	B
Approach Vol, veh/h		47			91			956			1221	
Approach Delay, s/veh		24.7			25.0			36.6			21.9	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.6	60.0		59.7	5.6	83.0		59.7				
Change Period (Y+Rc), s	* 5.2	* 5.2		* 5.2	4.5	* 5.2		* 5.2				
Max Green Setting (Gmax), s	* 11	* 55		* 55	15.5	* 50		* 55				
Max Q Clear Time (g_c+I1), s	2.0	30.5		4.4	2.1	25.3		5.8				
Green Ext Time (p_c), s	0.3	6.7		0.3	0.0	7.6		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		28.2
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	3	10	4	2	107	5	650	6	4	844	33
Future Vol, veh/h	23	3	10	4	2	107	5	650	6	4	844	33
Conflicting Peds, #/hr	0	0	0	0	0	0	6	0	1	1	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	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	4	13	5	3	134	6	813	8	5	1055	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1512	1926	554	1370	1942	412	1102	0	0	822	0	0
Stage 1	1092	1092	-	830	830	-	-	-	-	-	-	-
Stage 2	420	834	-	540	1112	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	10	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	10	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	83	66	476	105	64	589	-	-	-	803	-	-
Stage 1	229	289	-	331	137	-	-	-	-	-	-	-
Stage 2	581	381	-	494	71	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	61	64	473	96	63	588	-	-	-	802	-	-
Mov Cap-2 Maneuver	61	64	-	96	63	-	-	-	-	-	-	-
Stage 1	229	283	-	331	137	-	-	-	-	-	-	-
Stage 2	441	381	-	467	69	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	94.7	16.9		0
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	81	442	802	-	-
HCM Lane V/C Ratio	-	-	-	0.556	0.32	0.006	-	-
HCM Control Delay (s)	-	-	-	94.7	16.9	9.5	-	-
HCM Lane LOS	-	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	-	-	-	2.4	1.4	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	1	6	24	3	7
Future Vol, veh/h	26	1	6	24	3	7
Conflicting Peds, #/hr	0	2	2	0	1	2
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	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	1	9	34	4	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	40	0	93	42
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	53	-
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	-	-	1570	-	907	1029
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	970	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1567	-	899	1025
Mov Cap-2 Maneuver	-	-	-	-	899	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	984	-	-	1567	-
HCM Lane V/C Ratio	0.015	-	-	0.005	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	38	18	369	8	0	6	2	206	3	3	0
Future Vol, veh/h	0	38	18	369	8	0	6	2	206	3	3	0
Conflicting Peds, #/hr	0	0	15	15	0	16	27	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	54	26	527	11	0	9	3	294	4	4	0

Major/Minor	Minor1			Major2					Major1		
Conflicting Flow All	-	1092	34	19	0	0			11	0	0
Stage 1	-	27	-	-	-	-			-	-	-
Stage 2	-	1065	-	-	-	-			-	-	-
Critical Hdwy	-	6.52	6.22	4.12	-	-			4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	5.52	-	-	-	-			-	-	-
Follow-up Hdwy	-	4.018	3.318	2.218	-	-			2.218	-	-
Pot Cap-1 Maneuver	0	215	1039	1597	-	0			1608	-	-
Stage 1	0	873	-	-	-	0			-	-	-
Stage 2	0	299	-	-	-	0			-	-	-
Platoon blocked, %					-					-	-
Mov Cap-1 Maneuver	-	0	1010	1574	-	-			1608	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-			-	-	-
Stage 1	-	0	-	-	-	-			-	-	-
Stage 2	-	0	-	-	-	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.9	8.3	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	EBLn1	WBL	WBT	SBL	SBT	SBR
Capacity (veh/h)	1010	1574	-	1608	-	-
HCM Lane V/C Ratio	0.079	0.335	-	0.003	-	-
HCM Control Delay (s)	8.9	8.4	0	7.2	0	-
HCM Lane LOS	A	A	A	A	A	-
HCM 95th %tile Q(veh)	0.3	1.5	-	0	-	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	138	93	21	71	301	89
Future Vol, veh/h	138	93	21	71	301	89
Conflicting Peds, #/hr	19	0	49	0	0	49
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	194	131	30	100	424	125

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	715	536	598	0	-	0
Stage 1	536	-	-	-	-	-
Stage 2	179	-	-	-	-	-
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	397	545	979	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	348	520	933	-	-	-
Mov Cap-2 Maneuver	348	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.3	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	933	-	348	520	-	-
HCM Lane V/C Ratio	0.032	-	0.559	0.252	-	-
HCM Control Delay (s)	9	0	27.7	14.2	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	3.2	1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	7	13	17	6	197	8	758	16	87	804	16
Future Volume (veh/h)	20	7	13	17	6	197	8	758	16	87	804	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	8	15	19	7	221	9	852	18	98	903	18
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	113	187	621	759	641	197	1313	28	485	1881	37
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.03	0.37	0.37	0.19	0.53	0.53
Sat Flow, veh/h	643	279	461	1384	1870	1579	1781	3558	75	1781	3563	71
Grp Volume(v), veh/h	45	0	0	19	7	221	9	425	445	98	450	471
Grp Sat Flow(s),veh/h/ln	1382	0	0	1384	1870	1579	1781	1777	1856	1781	1777	1857
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.3	13.0	0.4	26.8	26.8	0.0	21.6	21.6
Cycle Q Clear(g_c), s	2.1	0.0	0.0	0.9	0.3	13.0	0.4	26.8	26.8	0.0	21.6	21.6
Prop In Lane	0.49		0.33	1.00		1.00	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	601	0	0	621	759	641	197	655	685	485	938	981
V/C Ratio(X)	0.07	0.00	0.00	0.03	0.01	0.34	0.05	0.65	0.65	0.20	0.48	0.48
Avail Cap(c_a), veh/h	601	0	0	621	759	641	343	655	685	485	938	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	24.1	23.9	27.7	30.8	35.3	35.4	34.5	20.1	20.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.3	0.1	4.9	4.7	0.2	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.0	0.7	0.2	8.7	0.4	18.3	19.0	4.6	14.4	14.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	0.0	0.0	24.1	23.9	28.0	30.9	40.3	40.1	34.7	21.9	21.8
LnGrp LOS	C	A	A	C	C	C	C	D	D	C	C	C
Approach Vol, veh/h		45			247			879			1019	
Approach Delay, s/veh		24.5			27.6			40.1			23.1	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.7	55.0		60.0	8.9	76.8		60.0				
Change Period (Y+Rc), s	* 5.2	* 5.2		* 5.2	4.5	* 5.2		* 5.2				
Max Green Setting (Gmax), s	* 16	* 50		* 55	15.5	* 50		* 55				
Max Q Clear Time (g_c+I1), s	2.0	28.8		4.1	2.4	23.6		15.0				
Green Ext Time (p_c), s	0.2	5.7		0.3	0.0	6.6		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		30.5	
HCM 6th LOS		C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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	25	0	18	2	2	80	11	672	14	4	774	52
Future Vol, veh/h	25	0	18	2	2	80	11	672	14	4	774	52
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	3	3	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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	0	20	2	2	89	12	747	16	4	860	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1301	1691	463	1220	1712	386	922	0	0	766	0	0
Stage 1	901	901	-	782	782	-	-	-	-	-	-	-
Stage 2	400	790	-	438	930	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	10	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	10	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	118	92	546	136	90	612	-	-	-	843	-	-
Stage 1	299	355	-	353	153	-	-	-	-	-	-	-
Stage 2	597	400	-	567	109	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	98	90	544	130	88	609	-	-	-	841	-	-
Mov Cap-2 Maneuver	98	90	-	130	88	-	-	-	-	-	-	-
Stage 1	299	350	-	353	153	-	-	-	-	-	-	-
Stage 2	502	399	-	541	107	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.2	13.9		0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	149	496	841	-	-
HCM Lane V/C Ratio	-	-	-	0.321	0.188	0.005	-	-
HCM Control Delay (s)	-	-	-	40.2	13.9	9.3	-	-
HCM Lane LOS	-	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	-	-	-	1.3	0.7	0	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	3	20	27	8	12
Future Vol, veh/h	25	3	20	27	8	12
Conflicting Peds, #/hr	0	4	4	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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	4	24	33	10	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	117	36
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	81	-
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	-	-	1572	-	879	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	942	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	861	1033
Mov Cap-2 Maneuver	-	-	-	-	861	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	927	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	957	-	-	1566	-
HCM Lane V/C Ratio	0.025	-	-	0.016	-
HCM Control Delay (s)	8.9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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	0	21	14	259	27	5	22	4	152	0	2	0
Future Vol, veh/h	0	21	14	259	27	5	22	4	152	0	2	0
Conflicting Peds, #/hr	0	0	3	3	0	11	2	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	22	15	273	28	5	23	4	160	0	2	0

Major/Minor	Minor1			Major2					Major1		
Conflicting Flow All	-	595	8	5	0	0			44	0	0
Stage 1	-	5	-	-	-	-			-	-	-
Stage 2	-	590	-	-	-	-			-	-	-
Critical Hdwy	-	6.52	6.22	4.12	-	-			4.12	-	-
Critical Hdwy Stg 1	-	5.52	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	5.52	-	-	-	-			-	-	-
Follow-up Hdwy	-	4.018	3.318	2.218	-	-			2.218	-	-
Pot Cap-1 Maneuver	0	417	1074	1616	-	-			1564	-	-
Stage 1	0	892	-	-	-	-			-	-	-
Stage 2	0	495	-	-	-	-			-	-	-
Platoon blocked, %					-	-				-	-
Mov Cap-1 Maneuver	-	0	1068	1611	-	-			1564	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-			-	-	-
Stage 1	-	0	-	-	-	-			-	-	-
Stage 2	-	0	-	-	-	-			-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	8.5	6.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	EBLn1	WBL	WBT	WBR	SBL	SBT	SBR
Capacity (veh/h)	1068	1611	-	-	1564	-	-
HCM Lane V/C Ratio	0.034	0.169	-	-	-	-	-
HCM Control Delay (s)	8.5	7.7	0	-	0	-	-
HCM Lane LOS	A	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0.6	-	-	0	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	50	36	71	112	162
Future Vol, veh/h	100	50	36	71	112	162
Conflicting Peds, #/hr	27	2	17	0	0	17
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	54	39	76	120	174

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	405	226	311	0	-	0
Stage 1	224	-	-	-	-	-
Stage 2	181	-	-	-	-	-
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	602	813	1249	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	563	798	1229	-	-	-
Mov Cap-2 Maneuver	563	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	2.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1229	-	563	798	-	-
HCM Lane V/C Ratio	0.031	-	0.191	0.067	-	-
HCM Control Delay (s)	8	0	12.9	9.8	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.2	-	-

APPENDIX F

CRASH DATA

1 - Keystone Ave/1st Street

Angle	2	25.0%
Backing	0	0.0%
Head-on	0	0.0%
Non-Collision	1	12.5%
Rear End	2	25.0%
Sideswipe: Overtaking or Meeting	3	37.5%
Unknown	0	0.0%
Total	8	100.0%

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir	V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracte	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
INJURY CRASH	4/5/2016, 9:41 AM	2,016	4:41:00 PM	KEYSTONE AVE	80	N	1ST ST	CLEAR	No Data	2	No Data	B	REAR-END	3	PICKUP	S	37	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	OTHER IMPROPER DRIVING	No Data	SLOW/STOPPED VEHICLE	PICKUP	S	77	1	STOPPED	APPARENTLY NORMA	No Data	No Data	No Data	SLOW/STOPPED VEHICLE	SLOW/STOPPE	No Data	DRY	DAYLIGHT	NONE	RPD	2371924
INJURY CRASH	5/17/2016, 2:50 AM	2,016	7:09:00 PM	KEYSTONE AVE	12	N	1ST ST	CLEAR	No Data	1	No Data	C	SIDESWIPE, M	2	HATCHBACK, 4 DOO	S	22	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	FAILURE TO KEEP IN PROPER LANE OR RUNNIN	No Data	SLOW/STOPPED VEHICLE	PICKUP	S	52	1	STOPPED	APPARENTLY NORMA	No Data	No Data	No Data	SLOW/STOPPED VEHICLE	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	2372267
INJURY CRASH	6/20/2016, 5:24 AM	2,016	6:34:00 PM	KEYSTONE AVE	No Data	AT INT	1ST ST	CLEAR	No Data	2	No Data	B	ANGLE	2	HATCHBACK, 4 DOO	S	32	No Data	TURNING LEFT	APPARENTLY NORMAL	No Data	MADE AN IMPROPER TURN	No Data	No Data	VAN	N	53	No Data	GOING STRAI	APPARENTLY NORMA	No Data	UNKNOWN	No Data	No Data	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	2369750
PROPERTY DAMAGE ONLY	2/6/2017, 12:45 PM	2,017	8:45:00 PM	1ST ST	No Data	AT INT	KEYSTONE AVE	CLEAR	No Data	No Data	PDO	No Data	ANGLE	2	BUS	S	No Data	No Data	TURNING LEFT	No Data	No Data	UNKNOWN	No Data	No Data	SEDAN, 4 DOOR	E	No Data	No Data	STOPPED	APPARENTLY NORMA	No Data	UNKNOWN	No Data	No Data	No Data	No Data	No Data	No Data	No Data	RPD	2368486
PROPERTY DAMAGE ONLY	9/15/2017, 9:34 AM	2,017	4:34:00 PM	KEYSTONE AVE	10	N	1ST ST	CLEAR	No Data	No Data	PDO	No Data	SIDESWIPE, M	2	HATCHBACK, 4 DOO	N	17	No Data	GOING STRAIGHT	HAD BEEN DRINKING	No Data	HIT AND RUN	No Data	SLOW/STOPPED VEHICLE	HARDTOP, 4 DOOR	S	48	No Data	STOPPED	APPARENTLY NORMA	No Data	No Data	No Data	No Data	No Data	No Data	DRY	DAYLIGHT	NONE	RPD	2400843
PROPERTY DAMAGE ONLY	1/6/2019, 2:05 AM	2,019	10:05:00 AM	W 1ST ST	40	E	KEYSTONE AVE	CLEAR	No Data	No Data	PDO	No Data	SIDESWIPE, M	2	SEDAN, 4 DOOR	No Data	No Data	1	GOING STRAIGHT	No Data	No Data	FAILURE TO KEEP IN PROPER LANE OR RUNNIN	MOTOR VEHIC	PARKED MOTOR VEHICLE	CARRY-ALL	W	No Data	1	PARKED	No Data	No Data	No Data	MOTOR VEH	PARKED MOTOR VEHICLE	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	3064301
INJURY CRASH	11/14/2019, 4:31 AM	2,019	12:31:00 PM	W 1ST ST	30	E	KEYSTONE AVE	CLOUDY	No Data	1	No Data	C	REAR-END	2	HATCHBACK, 4 DOO	E	52	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	FOLLOWED TOO CLOSELY	MOTOR VEHIC	SLOW/STOPPED VEHICLE	CARRY-ALL	E	58	1	STOPPED	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	SLOW/STOPPED VEHICLE	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	3030086
INJURY CRASH	4/3/2020, 9:02 AM	2,020	4:02:00 PM	1ST ST	No Data	AT INT	KEYSTONE AVE	CLEAR	No Data	1	No Data	B	NON-COLLISIC	1	SEDAN, 4 DOOR	S	35	No Data	TURNING LEFT	APPARENTLY NORMAL	No Data	FAILED TO YIELD RIGHT OF WAY	PEDESTRIAN	PEDESTRIAN	No Data	No	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	PEDESTRIAN	No Data	DRY	DAYLIGHT	NONE	RPD	3050194

2 - Keystone Ave/Jones St

Angle	3	21.4%
Backing	0	0.0%
Head-on	0	0.0%
Non-Collision	3	21.4%
Rear End	4	28.6%
Sideswipe: Overtaking or Meeting	3	21.4%
Unknown	1	7.1%
Total	14	100.0%

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir	V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracte	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
PROPERTY DAMAGE ONLY	1/29/2016, 5:24 AM	2,016	1:24:00 PM	KEYSTONE AVE	85	N	JONES ST	CLEAR	No Data	No Data	PDO	No Data	REAR-END	2	SEDAN, 4 DOOR	S	40	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	OTHER IMPROPER DRIVING	No Data	SLOW/STOPPED VEHICLE	PICKUP	S	47	1	STOPPED	APPARENTLY NORMA	No Data	No Data	No Data	No Data	SLOW/STOPPE	No Data	DRY	DAYLIGHT	NONE	RPD	2370530
INJURY CRASH	1/29/2016, 5:23 AM	2,016	1:23:00 PM	KEYSTONE AVE	75	N	JONES ST	CLEAR	No Data	1	No Data	C	REAR-END	2	PICKUP	S	47	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	OTHER IMPROPER DRIVING	No Data	SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	S	30	1	STOPPED	APPARENTLY NORMA	No Data	No Data	No Data	No Data	SLOW/STOPPE	No Data	DRY	DAYLIGHT	NONE	RPD	2370528
PROPERTY DAMAGE ONLY	4/23/2016, 9:50 AM	2,016	4:50:00 PM	KEYSTONE AVE	2640	S	5TH ST	UNKNOWN	No Data	No Data	PDO	No Data	SIDESWIPE, O	2	CARRY-ALL	N	No Data	1	NOT REPORTED	No Data	No Data	UNSAFE LANE CHANGE	No Data	No Data	CARRY-ALL	N	No Data	1	GOING STRAI	No Data	No Data	UNKNOWN	No Data	No Data	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	2369356
PROPERTY DAMAGE ONLY	9/12/2016, 9:00 AM	2,016	8:34:00 AM	KEYSTONE AVE	No Data	AT INT	JONES ST	CLEAR	No Data	No Data	PDO	No Data	SIDESWIPE, O	2	CARRY-ALL	N	21	2	CHANGING LANES	APPARENTLY NORMAL	No Data	UNSAFE LANE CHANGE	No Data	No Data	CARRY-ALL	N	70	2	GOING STRAI	APPARENTLY NORMA	No Data	No Data	No Data	No Data	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	2370445
PROPERTY DAMAGE ONLY	11/6/2016, 11:31 PM	2,016	7:31:00 AM	KEYSTONE AVE	100	S	JONES ST	CLEAR	No Data	No Data	PDO	No Data	REAR-END	3	CARRY-ALL	S	20	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	OTHER IMPROPER DRIVING	No Data	SLOW/STOPPED VEHICLE	CARRY-ALL	S	16	1	STOPPED	APPARENTLY NORMA	No Data	UNKNOWN	No Data	SLOW/STOPPED VEHICLE	SLOW/STOPPE	No Data	DRY	DAYLIGHT	NONE	RPD	2370987
PROPERTY DAMAGE ONLY	6/27/2017, 8:35 AM	2,017	3:35:00 PM	JONES ST	46	N	KEYSTONE AVE	UNKNOWN	No Data	No Data	PDO	No Data	UNKNOWN	2	SEDAN, 4 DOOR	No Data	No Data	No Data	UNKNOWN	No Data	No Data	HIT AND RUN	No Data	PARKED MOTOR VEHICLE	PICKUP	No	No Data	No Data	PARKED	No Data	No Data	No Data	No Data	No Data	No Data	No Data	DRY	UNKNOWN	UNKNOWN	RPD	2400312
PROPERTY DAMAGE ONLY	6/27/2017, 2:05 PM	2,017	9:05:00 PM	KEYSTONE AVE	No Data	AT INT	JONES ST	UNKNOWN	No Data	No Data	PDO	No Data	REAR-END	2	HATCHBACK, 4 DOO	S	44	No Data	GOING STRAIGHT	No Data	No Data	OTHER IMPROPER DRIVING	No Data	No Data	HATCHBACK, 4 DOO	S	No Data	No Data	STOPPED	No Data	No Data	No Data	No Data	SLOW/STOPPED VEHICLE	No Data	No Data	DRY	UNKNOWN	NONE	RPD	2403556
PROPERTY DAMAGE ONLY	10/5/2017, 8:59 AM	2,017	3:59:00 PM	KEYSTONE AVE	No Data	AT INT	JONES ST	CLEAR	No Data	No Data	PDO	No Data	NON-COLLISIO	1	SEDAN, 4 DOOR	S	18	No Data	TURNING LEFT	APPARENTLY NORMAL	No Data	No Data	No Data	RAN OFF ROAD RIGHT: OTH	No Data	No	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	DRY	DAYLIGHT	NONE	RPD	2400953
PROPERTY DAMAGE ONLY	11/27/2017, 6:29 PM	2,017	2:29:00 AM	KEYSTONE AVE	No Data	AT INT	JONES ST	CLEAR	No Data	No Data	PDO	No Data	NON-COLLISIO	1	SEDAN, 4 DOOR	W	No Data	No Data	GOING STRAIGHT	INATTENTION/DISTRACT	OTHER	FAILURE TO KEEP IN PROPER LANE OR RUNNIN	No Data	RAN OFF ROAD RIGHT: LIGH	No Data	No	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	RPD	2403979
PROPERTY DAMAGE ONLY	7/7/2018, 9:20 AM	2,018	4:20:00 PM	KEYSTONE AVE	No Data	AT INT	JONES ST	BLOWING SN	No Data	No Data	PDO	No Data	SIDESWIPE, O	2	PICKUP	No Data	No Data	1	GOING STRAIGHT	UNKNOWN	No Data	HIT AND RUN	MOTOR VEHIC	No Data	VAN	X	No Data	CL	PARKED	UNKNOWN	No Data	HIT AND RUN	MOTOR VEH	No Data	MOTOR VEHIC	No Data	UNKNOWN	DAYLIGHT	UNKNOWN	RPD	3090195
INJURY CRASH	11/28/2018, 2:53 PM	2,018	10:53:00 PM	KEYSTONE AVE	No Data	AT INT	JONES ST	CLEAR	No Data	2	No Data	C	ANGLE	2	SEDAN, 4 DOOR	No Data	29	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	DISREGARDED TRAFFIC SIGNS, SIGNALS, ROA	MOTOR VEHIC	No Data	SEDAN, 2 DOOR	N	57	2	GOING STRAI	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	No Data	MOTOR VEHIC	No Data	DRY	DARK - SPOT LIGHTI	NONE	RPD	3111820
PROPERTY DAMAGE ONLY	1/24/2019, 10:39 PM	2,019	6:39:00 AM	KEYSTONE AVE	No Data	AT INT	JONES ST	CLEAR	No Data	No Data	PDO	No Data	ANGLE	2	SEDAN, 4 DOOR	No Data	30	1	TURNING LEFT	APPARENTLY NORMAL	No Data	FAILED TO YIELD RIGHT OF WAY	MOTOR VEHIC	No Data	PICKUP	S	43	2	GOING STRAI	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	No Data	MOTOR VEHIC	No Data	DRY	DAWN	NONE	RPD	3068191
INJURY CRASH	5/13/2019, 10:47 AM	2,019	5:47:00 PM	JONES ST	No Data	AT INT	KEYSTONE AVE	CLOUDY	No Data	1	No Data	C	ANGLE	2	UTILITY	E	28	1	GOING STRAIGHT	OTHER IMPROPER DRIVI	No Data	FAILED TO YIELD RIGHT OF WAY	MOTOR VEHIC	No Data	HATCHBACK, 4 DOO	S	79	1	GOING STRAI	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	No Data	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	3012576
INJURY CRASH	11/12/2019, 10:24 AM	2,019	6:24:00 PM	KEYSTONE AVE	20	S	JONES ST	CLEAR	No Data	1	No Data	A	NON-COLLISIO	1	HATCHBACK, 4 DOO	S	64	1	GOING STRAIGHT	APPARENTLY NORMAL	No Data	No Data	PEDESTRIAN	PEDESTRIAN	No Data	No	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	MOTOR VEHIC	IMPROPER CR	DRY	DARK - SPOT LIGHTI	NONE	RPD	3030072

4 - Riverside Dr/Booth St

Angle	4	66.7%
Backing	0	0.0%
Head-on	0	0.0%
Non-Collision	1	16.7%
Rear End	1	16.7%
Sideswipe: Overtaking or Meeting	0	0.0%
Unknown	0	0.0%
Total	6	100.0%

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir	V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors
PROPERTY DAMAGE ONLY	1/5/2016, 5:26 PM	2,016	1:26:00 AM	RIVERSIDE DR	No Data	AT INT	BOOTH ST	CLEAR	No Data	No Data	PDO	No Data	NON-COLLISIO	1	No Data	S	No Data	No Data	GOING STRAIGHT	No Data
PROPERTY DAMAGE ONLY	5/3/2017, 7:51 AM	2,017	2:51:00 PM	RIVERSIDE DR	No Data	AT INT	BOOTH ST	CLEAR	No Data	No Data	PDO	No Data	REAR-END	2	HATCHBACK, 2 DOO	N	16	No Data	GOING STRAIGHT	APPARENTLY NORMAL
INJURY CRASH	11/14/2018, 9:40 PM	2,018	5:40:00 AM	BOOTH ST	No Data	AT INT	RIVERSIDE DR	CLEAR	No Data	1	No Data	C	ANGLE	1	SEDAN, 4 DOOR	No Data	26	1	GOING STRAIGHT	APPARENTLY NORMAL
INJURY CRASH	1/6/2019, 2:37 AM	2,019	10:37:00 AM	RIVERSIDE DR	No Data	AT INT	BOOTH ST	CLOUDY	No Data	1	No Data	C	ANGLE	2	HATCHBACK, 2 DOO	No Data	25	1	TURNING RIGHT	APPARENTLY NORMAL
INJURY CRASH	2/21/2019, 12:51 PM	2,019	8:51:00 PM	RIVERSIDE DR	25	E	BOOTH ST	FOG, SMOG,	No Data	2	No Data	C	ANGLE	3	HATCHBACK, 4 DOO	No Data	40	1	TURNING RIGHT	APPARENTLY NORMAL
INJURY CRASH	12/15/2020, 10:53 PM	2,020	6:53:00 AM	RIVERSIDE DR	50	E	BOOTH ST	CLEAR	No Data	1	No Data	C	ANGLE	2	SEDAN, 4 DOOR	W	25	1	GOING STRAIGHT	DRUG INVOLVEMENT

Crash Date	V1 Driver Distracte	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
1/5/2016, 5:26 PM	No Data	DRIVING TOO FAST FOR CONDITIONS	No Data	No Data	No Data	No	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	RPD	2371560
5/3/2017, 7:51 AM	No Data	No Data	No Data	SLOW/STOPPED VEHICLE	CARRY-ALL	N	68	No Data	STOPPED	APPARENTLY NORMA	No Data	No Data	No Data	SLOW/STOPPED VEHICLE	No Data	No Data	DRY	DAYLIGHT	NONE	RPD	2386126
11/14/2018, 9:40 PM	No Data	No Data	PEDAL CYCLE	PEDAL CYCLE	No Data	No	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	PEDESTRIAN	IMPROPER CR	DRY	DAYLIGHT	NONE	RPD	3110613
1/6/2019, 2:37 AM	No Data	DRIVING TOO FAST FOR CONDITIONS	MOTOR VEHIC	No Data	CARRY-ALL	W	38	1	GOING STRAIG	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	No Data	MOTOR VEHIC	No Data	ICE	DAYLIGHT	WET, ICY, SNOW, SLUSH	RPD	3064338
2/21/2019, 12:51 PM	No Data	OTHER IMPROPER DRIVING	MOTOR VEHIC	No Data	HATCHBACK, 4 DOO	W	52	1	GOING STRAIG	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	No Data	MOTOR VEHIC	No Data	ICE	DARK - CONTINUOU	WET, ICY, SNOW, SLUSH	RPD	3071587
12/15/2020, 10:53 PM	No Data	OPERATING VEHICLE IN ERRATIC, RECKLESS, C	PARKED MOTO	PARKED MOTOR VEHICLE	PICKUP	W	No Data	1	PARKED	No Data	No Data	No Data	MOTOR VEH	No Data	PARKED MOTO	No Data	DRY	DAYLIGHT	NONE	RPD	3144136

5 - Idlewild Dr/Booth St

Angle	5	71.4%
Backing	0	0.0%
Head-on	0	0.0%
Non-Collision	1	14.3%
Rear End	0	0.0%
Sideswipe: Overtaking or Meeting	1	14.3%
Unknown	0	0.0%
Total	7	100.0%

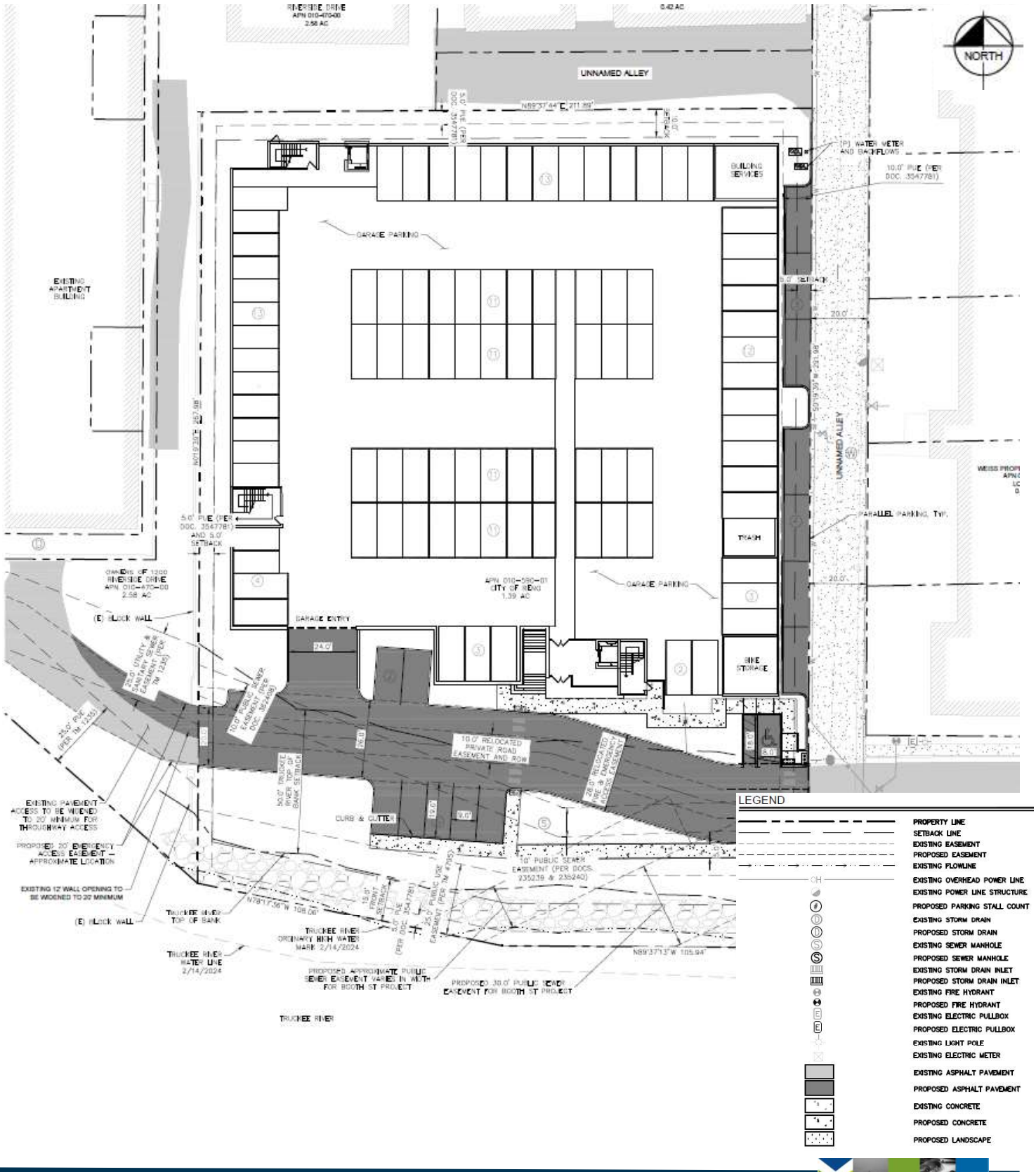
Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles
PROPERTY DAMAGE ONLY	7/28/2016, 1:45 PM	2,016	8:45:00 PM	IDLEWILD DR	No Data	AT INT	BOOTH ST	CLEAR	No Data	No Data	PDO	No Data	ANGLE	2
PROPERTY DAMAGE ONLY	10/31/2016, 12:39 AM	2,016	7:39:00 AM	BOOTH ST	1320	E	FOSTER DR	CLEAR	No Data	No Data	PDO	No Data	ANGLE	2
PROPERTY DAMAGE ONLY	9/14/2017, 9:30 AM	2,017	4:30:00 PM	IDLEWILD DR	No Data	AT INT	BOOTH ST	UNKNOWN	No Data	No Data	PDO	No Data	SIDESWIPE, M	2
INJURY CRASH	1/31/2018, 11:10 AM	2,018	7:10:00 PM	BOOTH ST	No Data	AT INT	IDLEWILD DR	CLEAR	No Data	1	No Data	C	NON-COLLISIO	1
INJURY CRASH	3/27/2018, 3:05 AM	2,018	10:05:00 AM	BOOTH ST	No Data	AT INT	IDLEWILD DR	CLEAR	No Data	2	No Data	C	ANGLE	2
PROPERTY DAMAGE ONLY	11/19/2018, 12:00 AM	2,018	8:00:00 AM	IDLEWILD DR	No Data	AT INT	BOOTH ST	CLEAR	No Data	No Data	PDO	No Data	ANGLE	2
INJURY CRASH	6/12/2019, 10:31 AM	2,019	5:31:00 PM	IDLEWILD DR	50	W	BOOTH ST	CLEAR	No Data	1	No Data	C	ANGLE	2

Crash Severity	V1 Type	V1 Dir	V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracte	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num
PROPERTY DAMAGE ONLY	CARRY-ALL	E	25	No Data	TURNING LEFT	APPARENTLY NORMAL	No Data	FAILED TO YIELD RIGHT OF WAY	No Data	No Data	CARRY-ALL	S	43	No Data
PROPERTY DAMAGE ONLY	PICKUP	W	37	1	LEAVING PARK POSI	APPARENTLY NORMAL	No Data	UNSAFE LANE CHANGE	No Data	No Data	PICKUP	W	41	1
PROPERTY DAMAGE ONLY	SEDAN, 4 DOOR	W	No Data	No Data	TURNING LEFT	No Data	No Data	UNKNOWN	No Data	SLOW/STOPPED VEHICLE	SEDAN, 4 DOOR	E	No Data	No Data
INJURY CRASH	HATCHBACK, 4 DOO	E	25	1	TURNING LEFT	OTHER IMPROPER DRIVI	No Data	FAILED TO YIELD RIGHT OF WAY	No Data	PEDESTRIAN	No Data	No	No Data	No Data
INJURY CRASH	VAN	E	33	No Data	TURNING LEFT	APPARENTLY NORMAL	No Data	FAILED TO YIELD RIGHT OF WAY	No Data	NOT REPORTED	SEDAN, 4 DOOR	N	32	No Data
PROPERTY DAMAGE ONLY	SEDAN, 4 DOOR	No Data	31	L1	TURNING LEFT	APPARENTLY NORMAL	No Data	FAILED TO YIELD RIGHT OF WAY	MOTOR VEHIC	No Data	STAKE OR RACK	N	59	1
INJURY CRASH	SEDAN, 4 DOOR	W	64	1	TURNING LEFT	APPARENTLY NORMAL	No Data	FAILED TO YIELD RIGHT OF WAY	MOTOR VEHIC	No Data	SEDAN, 4 DOOR	E	21	R1

Crash Severity	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Rec Num
PROPERTY DAMAGE ONLY	GOING STRAI	APPARENTLY NORMA	No Data	No Data	No Data	No Data	MOTOR VEHIC	No Data	DRY	DARK - SPOT LIGHTI	NONE	RPD	2370051
PROPERTY DAMAGE ONLY	GOING STRAI	APPARENTLY NORMA	No Data	UNKNOWN	No Data	SLOW/STOPPED VEHICLE	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	2370915
PROPERTY DAMAGE ONLY	STOPPED	No Data	No Data	UNKNOWN	No Data	No Data	No Data	No Data	No Data	No Data	No Data	RPD	2403570
INJURY CRASH	No Data	No Data	No Data	No Data	No Data	No Data	No Data	UNKNOWN	DRY	DARK - SPOT LIGHTI	NONE	RPD	2404346
INJURY CRASH	TURNING LEFT	APPARENTLY NORMA	No Data	No Data	No Data	NOT REPORTED	No Data	No Data	DRY	DAYLIGHT	NONE	RPD	2523785
PROPERTY DAMAGE ONLY	TURNING LEFT	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	No Data	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	3110644
INJURY CRASH	GOING STRAI	APPARENTLY NORMA	No Data	No Data	MOTOR VEH	No Data	MOTOR VEHIC	No Data	DRY	DAYLIGHT	NONE	RPD	3012340

Figure 6: Preliminary Site Plan

(see full size sheet for details)



LDC24-00044 Riverside SPD

COOPER, CLIFFORD E <cc2132@att.com>

Fri 3/15/2024 3:50 PM

To:Grace Mackedon <MackedonG@reno.gov>

Grace,
AT&T does not have any adverse comments for this project.

CLIFF COOPER
SR SPECIALIST-OSP DESIGN ENGINEER
AT&T NEVADA
1375 Capital Blvd rm 115
Reno, NV 89502
ROW Office: 775-453-7578
Cell: 775-200-6015
Email: cc2132@att.com
TEXTING and DRIVING…It Can Wait

Environmental Control

MEMORANDUM

Date: March ~~6~~22, 2024

To: Mike Railey – Planning Manager

Planning Desk

From: Eric Farrar, Environmental Control Officer

Subject: **March 15, 2024 Current Development Projects Review/Comments**

The Environmental Control Section (EC) under the Utility Services Department has reviewed the Development Projects memorandum dated March 15, 2024. We offer the following comments or conditions:

1305 Quilici Ranch Road~~Reno Experience District Digital Sign~~ - MUP24-00017**~~SPR24-00012~~**

~~EC has no comments on the proposed Site Plan Review.~~

~~JCP Expansion -~~ ~~SPR24-00013~~

~~The existing facility has an Environmental Control Permit (ECP) for the cafeteria grease interceptor and the mechanical shop neutralization tank. If the expansion causes increased utilization of these facilities, Environmental Control will update the conditions of the ECP. Any additional facilities requiring inspection of waste handling practices or pretreatment device maintenance will also be added to the ECP, if applicable.~~

~~Chism Mini Storage -~~ ~~SPR24-00014~~

~~EC has no comments on the proposed Site Plan Review.~~

This application appears to show direct discharge to surface water from a sand-oil interceptor in the proposed snow groomer shop. The fixtures connected to the interceptor include interior shop drains and an external wash pad. The previously approved building permit for this location (BLD23-01143E) was for a metal building with only domestic sewage disposal and did not include all the elements shown in the MUP application. Any revised or additional building permits addressing waste water discharge or exterior drainages must be reviewed by Nevada Division of Environmental Protection (NDEP), Northern Nevada Public Health (NNPH), and City of Reno (COR) including EC to ensure compliance with federal, state, and local code. Any type of prohibited discharge will not be approved by this agency. Reno EC requires review and updated approval by NDEP for the On-Site-Disposal System (OSDS) for the additional oil-water separator and loading from this building's proposed use.

Silver Dollar Storage - LDC24-00043

Servicing and maintenance of vehicles will be prohibited. Any operation which plans to offer washing of vehicles, RVs, and boats which involves the cleaning of vehicles or vehicle parts by washing or steam cleaning is also not allowed. This includes, but is not limited to, auto repair, vehicle service, engine maintenance, auto body repair, and/or vehicle detail services. If these activities are planned the facility shall install a properly sized sand-oil separator and obtain an Environmental Control permit.

Riverside SPD - LDC24-00044
EC has no comments regarding the request for a Zoning Map Amendment.

Santerra Quilici Properties Condition Amendment - LDC24-00045
EC has no comments regarding the request for an Amended Condition of Approval.

Rancharrah Village 7 Tentative Map - LDC24-00046
EC has no comments regarding the request for a Tentative Map.

Qualichem Conditional Use Permit - LDC24-00047
An Environmental Control Permit for this Conditional Use Permit is in progress.

Lakeside Crossing Chevron - LDC24-00048
The applicant is an existing Environmental Control Permit (ECP) holder. If the extended hours in the Conditional Use Permit application cause increased loading to the facility pretreatment device, a revision to the ECP may be required.

LDC24-00044 - Riverside Development Specific Plan District

Task
Fire Review
Due Date
03/28/2024
Assigned Date
03/12/2024
Assigned to Department
Fire
Assigned to
John Beck
Status *
Completed
Action by Department * Current Department
Fire
Action By * Current User
John Beck
Status Date *
03/20/2024
Comments Standard Comment

All future development shall comply with the requirements as set forth in the edition of the International Fire Code, as amended and adopted by the City of Reno, in force at the time of development. Such compliance shall include, but shall not be limited to, fire department access, fire sprinkler systems, fire alarm systems, emergency responder radio coverage system and fire hydrant placement.

During construction, temporary fire apparatus access roads shall be provided. Temporary access roads shall be constructed following all the provisions of permanent fire department access roads, except that the surface is required to be an engineered compacted base material, which may or may not include paving. The road base shall support fire trucks, be resistant to wear from travel and weather, and shall be maintained as a drivable surface. During and throughout the construction process, work on a construction project may be prohibited by the Fire Department for failure to service and maintain fire apparatus access roads.

This project shall require a fire access, hydrant location, and water supply map approved by Reno Fire Department Water Supply Inspector, Nick Manzo. (Manzon@reno.gov)

Please ensure that fire apparatus access is provided at the northwest corner of the structure to accommodate hose reach around the entire structure, which would be provided by using the north and south access to the site. Additionally, per 2018 IFC Appendix 'D,' please install 'No Parking Fire Lane' signs per specs provided in Appendix D.

Please refer to attached email document that provided initial fire department approval for this project by Fire Marshal Tray Palmer.

check spelling

Estimated Hours
0.0

Task Specific Information

Development Services Department

MEMORANDUM

Date: March 25, 2024

To: Chris Pingree, Development Services Director

From: James Pehrson, P.E., Senior Civil Engineer

Subject: Application Review

This office has reviewed the following application scheduled for a City Council or Planning Commission meeting, and offers the following comments and/or conditions:

LDC24-00044 (Riverside SPD) – A request has been made for a zoning map amendment from Multi-Family – 30 units per acre (MF-30) to Specific Plan District (SPD). The ±1.39 acre site is located west of the terminus of Riverside Drive north of the Truckee River. The site has a Master Plan land use designation of Suburban Mixed Use (SMU).

PLANNER: Grace Mackedon, Senior Management Analyst
CONTACT NUMBER: 775-657-4691
EMAIL: mackedong@reno.gov
APPLICANT'S REPRESENTATIVE: Chris Baker, Manhard Consulting
CONTACT NUMBER: 775-321-6539
EMAIL: cbaker@manhard.com
WARD BOUNDARY: Ward 1
APN: 010-590-01; 010-590-02; 010-591-01; 010-591-02; 010-592-01, 02, 03, 04, 05, & 06; 010-593-01, 02, 03, 04, 05, & 06; 010-594-01, 02, 03, 04, 05, & 06; 010-595-01, 02, 03, 04, 05, & 06; 010-601-01, 02, 03, 04, 05, & 06; 010-602-01, 02, 03, & 04; 010-603-01, 02, 03, & 04 and 010-604-01
WARD 1 NEIGHBORHOOD ADVISORY BOARD DATE: April 8, 2024
PLANNING COMMISSION HEARING DATE: May 1, 2024
STAFF APP MEETING: March 28, 2024

Comments:

1. The applicant shall obtain all necessary permits and written approvals from applicable river permitting agencies, including but not limited to, Army Corps of Engineers, Carson-Truckee Water Conservancy District, US Department of Fish and Game, Nevada Division of Wildlife, Nevada Division of State Lands and Nevada Division of Environmental Protection.

2. Prior to approval of any permit, including grading, the applicant shall submit a no-rise flood study, a no-rise certification, and FEMA Conditional Letter of Map Revision based on fill (CLOMR-F). CLOMR-F shall be approved by the city flood administrative staff and submitted to FEMA, prior to issuance of the permit to construct the building. All FEMA documentation and correspondence

shall be coordinated through Development Services Engineering, with correspondence, review and approval of Utility Services floodplain management staff (Condition No. 1).

3. The finish floor of the building must be 1' above the Base Flood Elevation of both the effective map, as well as the Base Flood Elevation of the modeling produced for the TRFMA Physical Map Revision. Prior to approval of the building permit, in accordance with RMC 18.04.101, the applicant shall provide an Elevation Certificate to demonstrate the proposed finish floor is 1' above BFE, based on effective map and TRFMA Model.

4. Final Plans shall depict the TRFMA Floodway and AE Floodzone boundary, effective map Floodway Boundary and AE Floodzone Boundary of the effective map, as well as the 14,000cfs boundary and the high water mark of the Truckee River in accordance with city standards.

5. Final Plans shall not depict any work within the FEMA Floodway, unless expressly approved in writing by Utility Services and Development Services Engineering. This includes, but not limited to proposed, grading, walls and landscaping located in the proximity of the Floodway.

6. The applicant shall provide an approved Letter of Map Revision based on fill (LOMR-F) prior to the Certificate of Occupancy. As the process between applicant, city and FEMA can be lengthy, Engineering recommends proper lead time so that proper review time can be provided by both city and FEMA prior to Certificate of Occupancy. All FEMA documentation and correspondence shall be coordinated through Development Services Engineering, with correspondence, review and approval of Utility Services Floodplain Management staff (Condition No. 2).

7. The existing sanitary sewer easements per doc#362406, 235239 and 239240, as identified on the existing conditions map, are not currently wide enough to provide proper maintenance of the sewer line. Prior to approval of a permit for site improvements, the applicant shall submit a new sanitary sewer easement of proper width in accordance with the Public Works Design Manual and relinquish the old easements through Development Services, to the approval of Development Services Engineering, Public Works and Utility Services (Condition No. 3). Coordination between Development Services, Public Works and Utility Services will be through Development Services Engineering.

8. It appears that the 10’ private roadway easement per doc#330828 and right of way per doc#19351, and the 26’ Fire and Emergency Access Easement per Tract Map 4795, as identified on the existing conditions map, will be relocated. The documentation, including easement documentation, as applicable, shall be submitted for approval with final permit documents in accordance with city standards.

9. It appears that the ditch right of way along the north property line, per doc#537 is no longer needed and will be removed. Please provide document to be relinquished. I’m not entirely sure what this existing improvement is for.

10. There appears to be landscaping planned adjacent to the Truckee River. Please explain the need to remove existing trees adjacent to the river. Any work within the high water mark will need to be reviewed and approved by the Army Corps of Engineers.

11. The applicant shall incorporate Traffic Study recommendations in final plans in accordance with city standards (Condition No. 4).

12. Prior to approval of a permit for site improvements, the applicant shall provide a hold harmless agreement for the sanitary sewer connection to the sanitary sewer interceptor (Condition No. 5). The Hold Harmless Agreement shall be in the appropriate form as required by Public Works.

Conditions:

1. Prior to approval of any permit, including grading, the applicant shall submit a no-rise flood study, a no-rise certification, and CLOMR-F submittal. CLOMR-F shall be approved by the city flood administrative staff and submitted to FEMA, prior to issuance of the permit to construct the building. All FEMA documentation and correspondence shall be coordinated through Development Services Engineering, with correspondence, review and approval of Utility Services floodplain management staff.

2. The applicant shall provide an approved LOMR based on fill prior to the Certificate of Occupancy. As the process between applicant, city and FEMA can be lengthy, Engineering recommends proper lead time so that proper review time can be provided by both city and FEMA prior to Certificate of Occupancy. All FEMA documentation and correspondence shall be coordinated through Development Services Engineering, with correspondence, review and approval of Utility Services Floodplain Management staff.

3. Prior to approval of a permit for site improvements, the applicant shall submit a new sanitary sewer easement of proper width in accordance with the Public Works Design Manual and relinquish the old easements through Development Services, to the approval of Development Services Engineering, Public Works and Utility Services.

4. The applicant shall incorporate Traffic Study recommendations in final plans in accordance with city standards

5. Prior to approval of a permit for site improvements, the applicant shall provide a hold harmless agreement for the sanitary sewer connection to the sanitary sewer interceptor.

Development Review Public Comment

The public comment form has a new entry from the public.

Case Number	LDC24-00044
Position	In Opposition
Comments	Creating an SPD to defeat neighborhood zoning requirements is the worst kind of city planning. The project at 0 Riverside Drive being proposed by Built. overburdens the lot with more than 3 times the density of the neighboring parcels which complied with the MF-30 requirements. Most egregiously, the site plans currently offered rely on an Emergency Access easement through private property owned by 1200 Riverside Drive Community Association which will not be granted, and a traffic study that is so flawed that it has no credibility. The traffic study purports to support the addition of hundreds of additional vehicle trips every day in the area comprising Keystone Avenue, Jones Street, Riverside Drive, Booth Street and Idlewild Park by analyze data from a couple of hours on the Wednesday before Thanksgiving. That is akin to estimating average crowd attendance at the Aces Ballpark by looking at a day in December. It bears no relation to reality. Anyone intent on understanding the traffic impact of an additional 123 units at Riverside and Booth Street would understand that spring, summer, and fall events at Idlewild back traffic up for blocks as it is. Good weather brings out scores of pedestrians, cars, and bicycles that wouldn't be counted in November. Nor does the study seem to realize how often Riverside Drive is shut down to vehicle traffic to accommodate charity runs and Artown Events. Parking is scarce most of the year and will be made scarcer because Built. only wants to provide 6/10ths of a parking space per tenant. The study also undercounts pedestrian traffic because it doesn't include the time period in the day in which Reno High School students cross Booth Street by the dozens at around 3 p.m. The study makes no mention of the blind spots for drivers created at that intersection because of the design of the Booth Street Bridge. 1200 Riverside Drive Community Association

supports development of the lot at 0 Riverside Drive, even if it isn't for the open space purpose which gave the City of Reno ownership of the land. Providing additional housing units is a worthy pursuit but it shouldn't come at the expense of neighborhood aesthetics, access to Idlewild Park and the Truckee River, or the safety of students. The footprint of the current planned development is too large, provides none of the tree canopy the City claims to value, fails to account for actual vehicle and pedestrian activity during most of the year, doesn't provide sufficient parking for its tenants and visitors, and hasn't established adequate emergency vehicle access. The zoning change should be denied until all these problems are addressed.

Email Address	theisen1200@gmail.com
Name of Commentor	Ronda Theisen
Phone Number	209-815-6474

Submitted: 4/8/2024 4:47:09 PM

These comments were submitted on behalf of: 1200 Riverside Drive Community Association (self if blank)

Development Review Public Comment

The public comment form has a new entry from the public.

Case Number	LDC24-00044
Position	In Opposition
Comments	I very much oppose changing the zoning of 0 Riverside Drive from single family (30 units per acre) to SPD, which will allow as many units as will fit to be built on that small piece of property. As a longtime homeowner and next door neighbor to 0 Riverside Drive, I dread to think of the problems our neighborhood will suffer with the increase in density, noise, traffic, and parking. Our neighborhood is already congested, and the project now proposed for that property will make things exponentially worse, especially considering that there will not be enough dedicated parking to accommodate the renters who will live there. Students walk and bike through the "unnamed" alley next to the property on their way to school and back. Many folks, including a good number of elderly, walk their dogs through that alley to reach the river path. And those who currently live on Jones Street and along the "unnamed" alley use that route to access Riverside Drive and the Booth Street bridge. People drive, bike, and walk along that alley each day trying to get to the places where they work, catch the bus, attend school, shop, and recreate. Pedestrians already risk being hit as they leave the alley and cross either Booth Street or Riverside Drive. Bikers and people in cars must wait, sometimes for several minutes, for the oncoming traffic to clear before they can proceed on their way. Now think of an additional 100-200 people trying to do the same. The Reno city council is obsessed with cramming tiny apartments into every possible square foot of open land in the city, whether it makes sense or not. Those of us who live at 1200 Riverside Drive are not opposed to the development of 0 Riverside Drive. In fact, we would like to see something suitable built on that property. Just not a project that overtaxes the space and makes living in our neighborhood even more difficult for those of us who already reside here.

Email Address	behonek@gmail.com
Name of Commentor	Pat Behonek
Phone Number	775-525-1965

Submitted: 4/8/2024 5:52:20 PM

These comments were submitted on behalf of: (self if blank)

RENO CITY PLANNING COMMISSION

REQUEST TO SPEAK/PUBLIC COMMENT FORM

THE FORM MUST BE FILLED OUT COMPLETELY

DATE: 5/1/2024 CASE NO. LDC 24-00044

Please Print:

NAME: Ronda Theisen

ADDRESS: 1200 Riverside Dr 1258

I REPRESENT: 1200 RSD

I DO NOT WISH TO MAKE A STATEMENT BUT I AM:
☐ IN FAVOR ☐ IN OPPOSITION

I WISH TO MAKE A STATEMENT: ☐ IN FAVOR ☒ IN OPPOSITION

COMMENTS: _____

SIGNATURE: Ronda Theisen

RENO CITY PLANNING COMMISSION

REQUEST TO SPEAK/PUBLIC COMMENT FORM

THE FORM MUST BE FILLED OUT COMPLETELY

DATE: 5/1/24 CASE NO. LDC LDC24-00044

Please Print:

NAME: DENNIS BLACK

ADDRESS: 1200 RIVERSIDE DR. #1251

I REPRESENT: MYSELF

I DO NOT WISH TO MAKE A STATEMENT BUT I AM:
☐ IN FAVOR ☑ IN OPPOSITION

I WISH TO MAKE A STATEMENT: ☐ IN FAVOR ☐ IN OPPOSITION

COMMENTS: NOT AGAINST BUILDING SOMETHING ON "0 RIVERSIDE" BUT NOT SO MANY UNITS AND THEY NEED MORE PARKING! THE AREA IS ALREADY TOO BUSY W LIMITED PARKING.
THANK YOU!

SIGNATURE: Dennis Black

RENO CITY PLANNING COMMISSION

REQUEST TO SPEAK/PUBLIC COMMENT FORM

THE FORM MUST BE FILLED OUT COMPLETELY

DATE: 5/1/24 CASE NO. LDC 24-00044

Please Print:

NAME: Jodie Black

ADDRESS: 1200 Riverside Dr. #1251

I REPRESENT: Myself

I DO NOT WISH TO MAKE A STATEMENT BUT I AM:
☐ IN FAVOR ☒ IN OPPOSITION

I WISH TO MAKE A STATEMENT: ☐ IN FAVOR ☐ IN OPPOSITION

COMMENTS: I am against having the 1200 Riverside property easement adjusted to allow the turnaround or drive through access to emergency vehicles.

SIGNATURE: Jodie Black

LDC24-00044 (Riverside SPD)

Janet Coombs <jscoombs@yahoo.com>

Mon 4/29/2024 6:26 AM

To:Reno Planning Commission <RenoPlanningCommission@reno.gov>

I believe the change in zoning requested for Riverside Dr from Multi-Family 30 units per acre to Specific Plan District should be DENIED.

I feel the high density (122 units) requested is not suitable for this lot. The number of people living there could easily be 2-3 times that number. Each studio unit could accommodate 2 people and more in the one and two bedroom units. The project looks to maximize the financial return to the builder versus enhancing the neighborhood with additional housing and neighbors who are invested in the area. This design density seems more like a college dormitory or a hotel and is likely to have a high turnover of residents. We have also been told these units will be market based priced so they are not adding to affordable housing. Higher density also has the possibility of adding to local crimes of opportunity. Recent news articles are also questioning the number of new apartments coming into the market might well exceed demand . All the existing neighborhood apartments are currently advertising availability.

I believe the current plan submitted is dependent on the owners of adjacent properties to provide access through their private property for Emergency Access Vehicles to the planned project. A recent survey shows this is unlikely to happen so changes to the proposed plan will be required.

Human density is only one consideration for this project that will negatively impact the neighborhood. The proposed project does not provide full vehicle parking for all the tenants. Not providing full parking will negatively impact the Riverside neighborhood which already has full street parking from current buildings and residents in the evenings and overnight. This neighborhood hosts many special events which require the closing of Riverside Drive for running, bicycling and charity events. Idlewild Park is the venue for community events such as Food Truck Fridays, Earth day, Farmers Market etc. which bring in large numbers of out of neighborhood people whom also require parking to participate. Riverside Drive has been developed for safely biking and strolling along the river by adding No Parking zones, and speed bumps to slow down automobile traffic and will not accommodate additional street parking.

The safety of all will be impacted by the vehicles associated with this project. There will be increased congestion leaving and entering the project. The intersection of Booth St and Riverside is not safe for left hand turns into the project or good visible access onto Riverside Drive. This neighborhood is also home to Reno High School with significant pedestrian and vehicle traffic throughout the day that should be considered as well. Entering or leaving the proposed project via Jones Street will require cars to travel down the unnamed alley adjacent to it and likely create problems there as well. The current traffic study was done on a low traffic day, a Wednesday of Thanksgiving week, with school not in session and many people out of town or in holiday mode which is a traditionally slow time for the area so it does not adequately address these issues.

The question of whether or not the current sewer system could handle the project is also suspect as the sewer outlet closest to the lot already gives off noxious smells frequently on warm spring and

summer days. This project will be right on the river which is a precious resource for Reno and any development should take that into account.

I believe this lot should be developed to enhance the existing neighborhood but at the current historical zoning of 30 units per acre (MF-30)

I was disappointed that the Neighborhood Advisory Meeting scheduled for April 8th was cancelled and not rescheduled until after the planning commission meets. This meeting would have allowed local residents to voice their concerns so they could be presented as part of the Neighborhood Advisory Board recommendations.

Janet Coombs
1200 Riverside Dr. Unit 1237
Reno, NV

LDC24-00044 (Riverside SPD): Statement of opposition

Karen Howze <howzeka@aol.com>

Wed 5/1/2024 4:07 PM

To:Reno Planning Commission <RenoPlanningCommission@reno.gov>

To: Development Services Department

From: Karen Aileen Howze
1200 Riverside Dr. Unit 1276
Reno, NX 89503

Re: LDC24-00044 (Riverside SPD)

I write in opposition to the request for zoning amendment before the Commission. There are a number of concerns regarding this project, however, the greatest is the impact on traffic on the current access road which is part of the property at 1200 Riverside Dr., which is a right of way that currently carries little traffic. I have reviewed the traffic study related to this project and note that the issue of increased traffic on Riverside Dr. onto the right of way even under the current zoning is inadequate for a project of this size.

The developer's proposal does not address the increase in traffic for the project's residents to enter and exit even with the proposed improvements to the right of way (if approved by 1200 Riverside Dr.), access to Riverside Drive crossing Booth or access to Booth. Whether the request for amendment is approved, the developer had not effectively addressed the traffic impact under the current zoning classification nor addressed the impact should the amendment be granted. The traffic study for this project focuses on Jones' street and does not address increased traffic on the alleyway between Jones and Riverside Dr. heading toward the proposed development or the traffic impact on Riverside and Booth. Either access to the proposed development would increase traffic substantially on Jones, the alley and Riverside Drive. The proposed development even without the amendment sought by the developer would effectively make it impossible at times for the residents of 1200 Riverside Dr. and the tenants of the proposed development to traverse the right of way that is the end of Riverside Dr. without considerable delay and congestion. Currently, this area is not used often because left turns onto Riverside from Booth are dangerous. There is no indication that consideration has been given to addressing access from Booth onto the property.

Finally, the developer's request for an amendment if approved would increase the number of units for a development that does not provide enough parking for the current units per acre and approval would exacerbate an already existing neighborhood problem. It is not clear where the additional parking for the residents of the development would be found considering the current parking scarcity on Jones and neighboring streets.

For these reasons, I urge the commission to deny the request for the amendment and also raise questions about the potential impact of the development as it stands for traffic and parking in the area.

Sincerely,

Karen Aileen Howze

Public Comment Received - 2024-05-01 PC Meeting - Agenda Item 5.3

Carter Williams <WilliamsCa@reno.gov>

Mon 4/29/2024 8:51 AM

To:Reno Planning Commission <RenoPlanningCommission@reno.gov>

1 attachments (72 KB)

Public Comment - 14 - 2024-05-01.pdf;

The public comment form has a new entry from the public:

Planning Commission Meeting Date: 2024-05-01

Agenda Item or Case Number: Agenda Item 5.3

Comments:

Many public comments have been submitted with concerns over parking and traffic, and those comments do have some merit, however, those aren't concerns that the city can't easily mitigate by doing things that the city should be doing anyway. That location is within a 5 minute bike ride or 20 minute walk of two full service supermarkets, dozens of restaurants, parks, schools, and even a year round farmers' market. If it weren't for a lack of robust public transit and severe gaps in safe cycling networks, this location would be the ideal location for someone to live car free. The city and RTC have already committed to improving pedestrian and cycling safety in this area, a project like this, rather than being denied due to concerns over parking and traffic, should be seen as a catalyst to speed up the process of making these promised improvements. The only thing that hasn't already been at least partially promised by the city is increasing access to public transit in the area, which more projects like this would make more viable to provide. The city should not ignore the concerns of residents in the area, but rather than denying the construction of much needed housing, especially in an area where the vast majority of needed infrastructure is already in place, the city should more aggressively push the already promised infrastructure improvements that will address the concerns of the people in the area. As someone who frequently uses Idlewild Park, I'll add that even if the city does deny this project, they should speed up delivery of the already promised improvements for pedestrian and cyclist safety and provide more robust public transit to the area.

Email Address: mgawthrop1@gmail.com

Phone Number:

Address: 1690 Carlin St

Name of Commentor: Michael Gawthrop-Hutchins

This comment was submitted on behalf of: (self if blank)

Submitted: 4/29/2024 3:51:04 PM

Public Comment Received - 2024-05-01 PC Meeting - LCD24-00044

Carter Williams <WilliamsCa@reno.gov>

Wed 5/1/2024 6:39 AM

To:Reno Planning Commission <RenoPlanningCommission@reno.gov>

1 attachments (73 KB)

Public Comment - 16 - 2024-05-01.pdf;

The public comment form has a new entry from the public:

Planning Commission Meeting Date: 2024-05-01

Agenda Item or Case Number: LCD24-00044

Comments:

Hello... I will begin by stating I am opposed to this proposed project as planned/designed. I do support infill and responsible use of space within the City limits, however this project as designed/proposed is NOT an example of intelligent design, responsible use. To even consider this project WITHOUT including adequate parking for each unit, any visitor parking or adequate access for EMS/Fire without burdening existing neighbors is the opposite of intelligent, responsible use/leadership. I have lived in this area since 2009 and would defy anyone on the City Council, Planning Commission, to convince a reasonable person that this area could absorb the increased burden of parking as designed. Not to mention is it wise, legal, intelligent to NOT have safe, efficient access from emergency services? Please act responsibly! Sincerely... R. Maser... Citizen/Resident

Email Address: rmaser1@charter.net

Phone Number: 7758422011

Address: 1200 Riverside Dr. #1234 Reno, NV. 89503

Name of Commentor: Richard A Maser

This comment was submitted on behalf of: (self if blank)

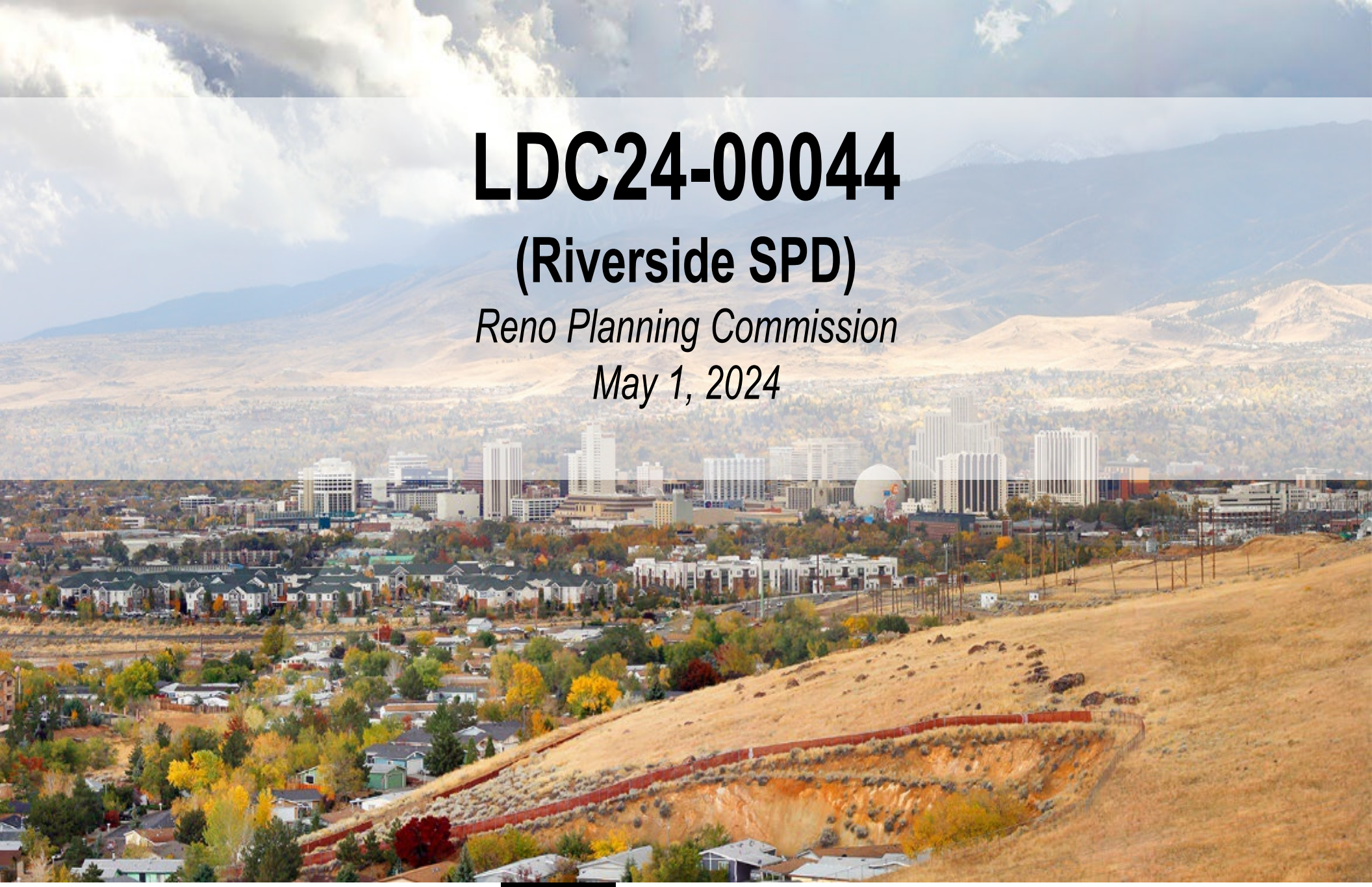
Submitted: 5/1/2024 1:38:10 PM

LDC24-00044

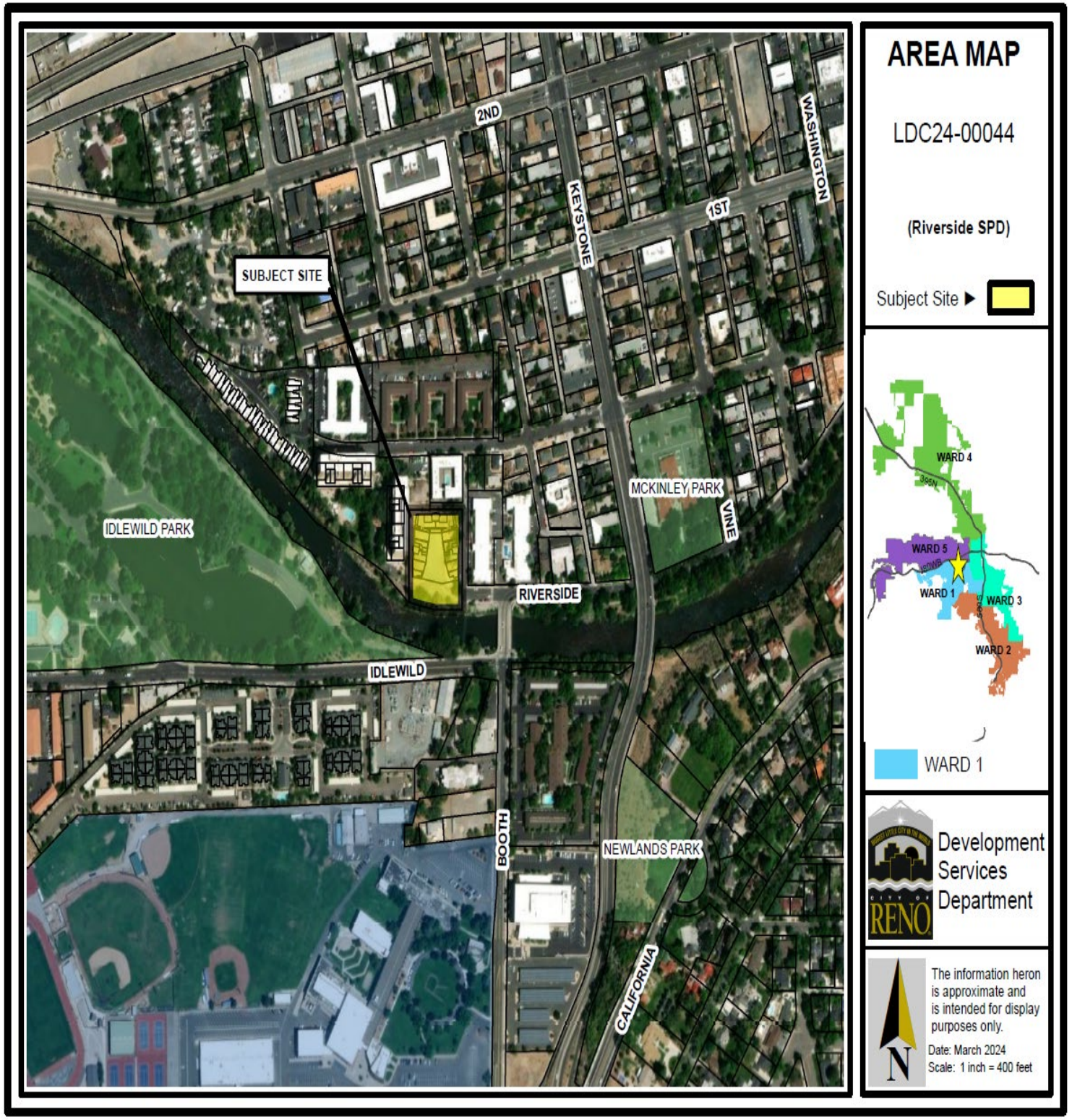
(Riverside SPD)

Reno Planning Commission

May 1, 2024



CITY OF RENO


AREA MAP
LDC24-00044
(Riverside SPD)
Subject Site
SUBJECT SITE
2ND
1ST
KEYSTONE
WASHINGTON
MCKINLEY PARK
VINE
IDLEWILD PARK
RIVERSIDE
IDLEWILD
BOOTH
NEWLANDS PARK
CALIFORNIA
WARD 4
WARD 5
WARD 1
WARD 3
WARD 2
WARD 1
Development Services Department
The information heron is approximate and is intended for display purposes only.
Date: March 2024
Scale: 1 inch = 400 feet

Project Information

Site Size: ±1.39 acres

Zoning Map Amendment

- From MF-30 to SPD

Key Issues:

1. Compatibility
2. Available services and infrastructure
3. Conformance with the Master Plan

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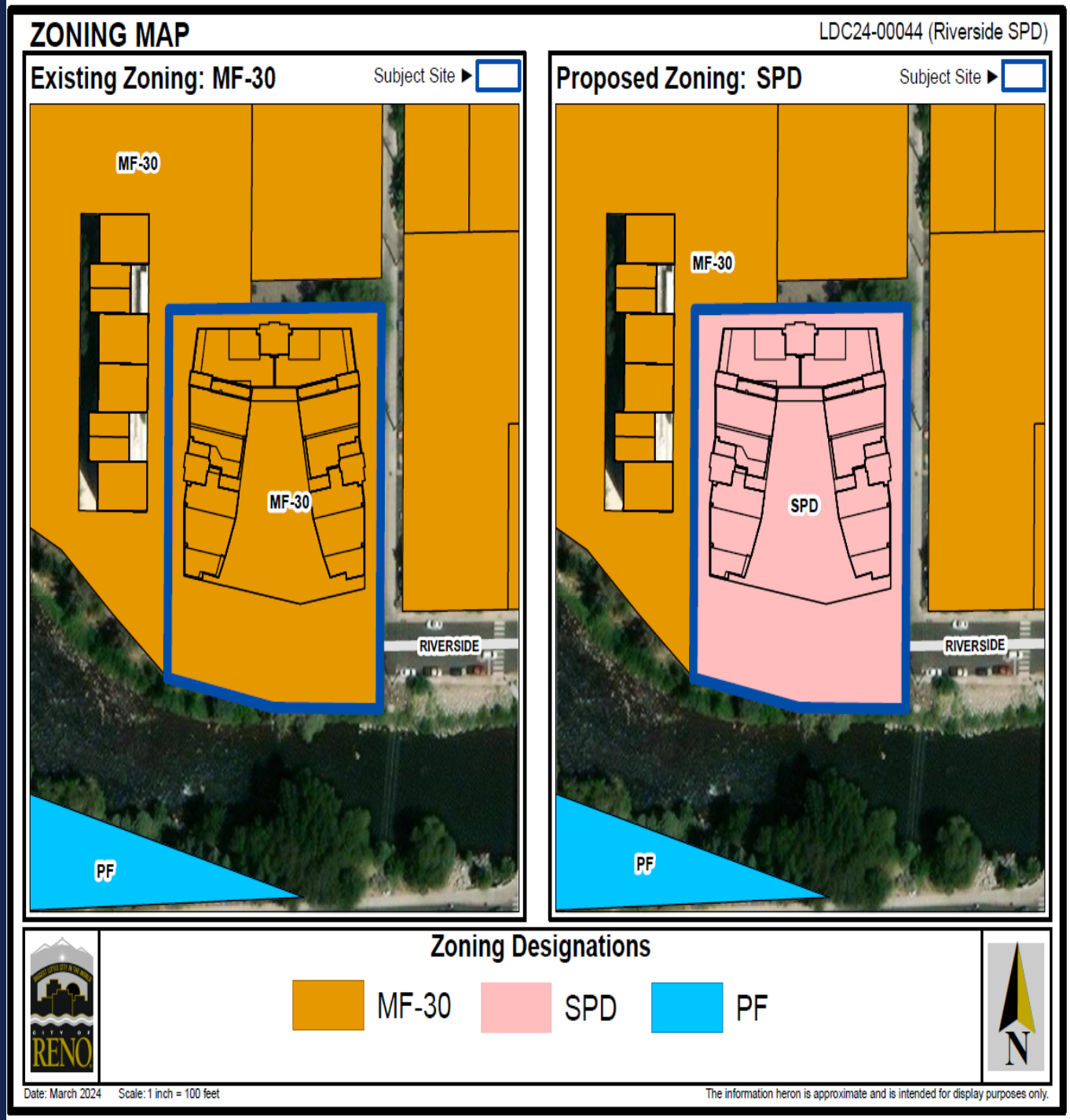

Zoning Map Amendment

- From MF-30 to Specific Plan District with a MF-30 base zone.
- SPD allows for a 65 foot 180 unit multi-family development

CITY OF RENO

Overall Development Plan:

- Up to 65 feet in height
- 180-units of multi-family
- 109 parking spaces
- Items not addressed in handbook defer to RMC Title 18

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Conceptual Elevations:

- Exempt from shadowing ordinance
- Shadow pattern established by building on the east.

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Development Standards

Standard	MF-30	SPD
Base Density	30 du/acre	Up to 180 du
Lot size, minimum	3,000 sqft	3,000 sqft
Lot Width Minimum	50 ft	50 ft
Front Setbacks	10 ft	10 ft
Off-Street Parking	0.6 spaces per unit	0.6 spaces per unit

CITY OF RENO

Zoning Map Amendment Findings

ZMA Findings	Staff Review and Analysis
Conforms with state law NRS Section 278.250(2)	✓ Yes
Conforms with Master Plan	✓ Yes

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Specific Plan District Recommended Findings

SPD Findings	Staff Review and Analysis
Conforms with State Law NRS Section 278.250(2)	✓ Yes
Conforms with the Master Plan	✓ Yes
Meets the intent of the SPD	✓ Yes
Addresses a unique situation, provides a benefit, innovative design, layout, or configuration	✓ Yes

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Recommended Motion

Proposed Motion: Based on compliance with the applicable findings, I recommend that City Council approve the zoning map amendment.

CITY OF RENO

RIVERSIDE DEVELOPMENT

Rezoning to Specific Plan District

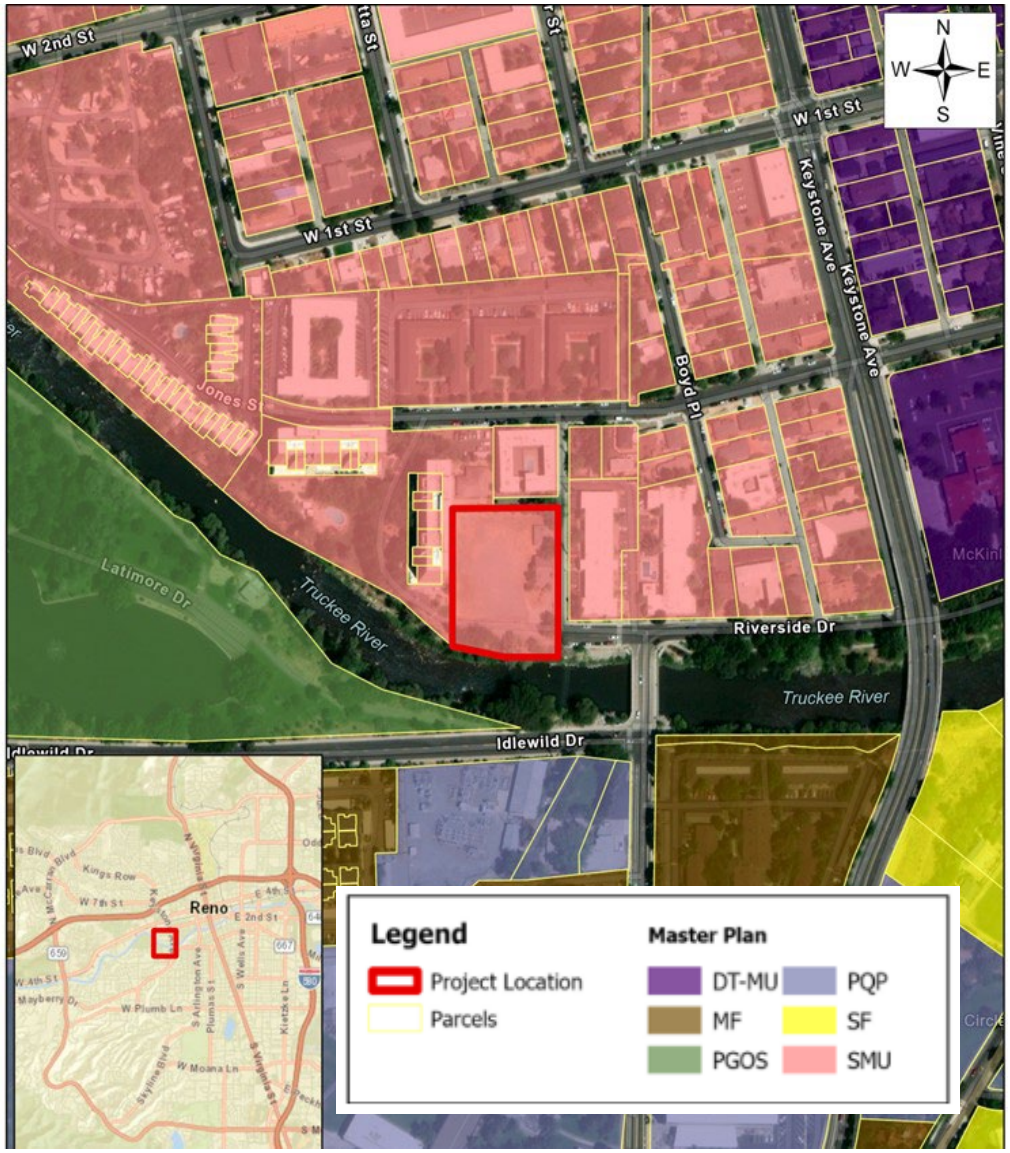
Manhard CONSULTING LTD

PROJECT LOCATION

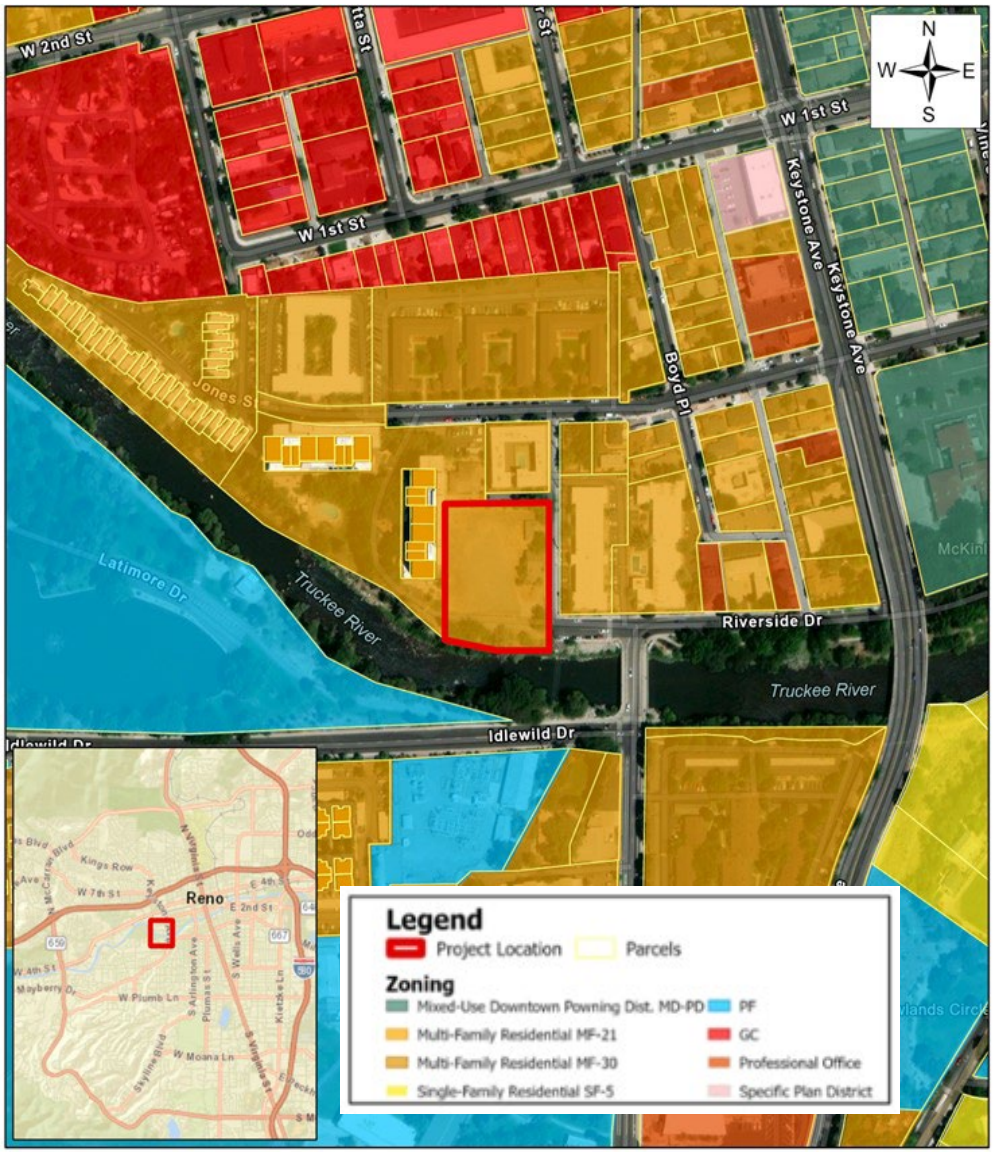
Located at the terminus of Riverside Drive, west of Booth Street.

EXISTING ZONING DESIGNATIONS

Master Plan: SMU



Zoning: MF-30



BACKGROUND

2005- LDC05-00293 was approved on the subject site, allowing for a 165 ft. condominium complex.

2022- The City issued a Request for Proposals (RFP) to develop the site, including strategic goals to:

- Address Affordable and Workforce Housing
- Increase Housing Density
- Placemaking and Quality of Life
- Sustainability
- An Attractive and Vibrant Truckee River

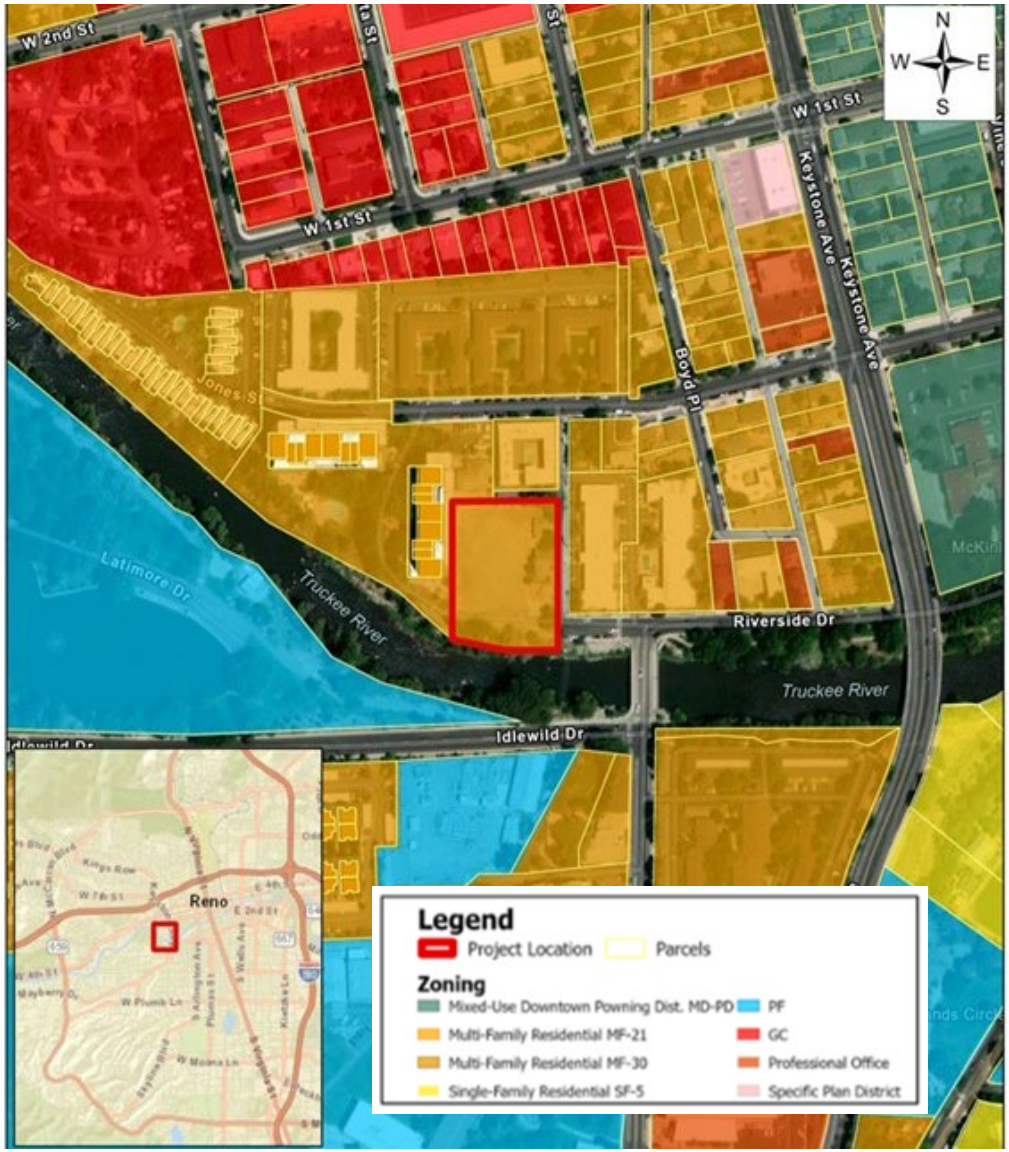
2023- The City entered into a Purchase and Sale Agreement with the applicant.

REQUEST

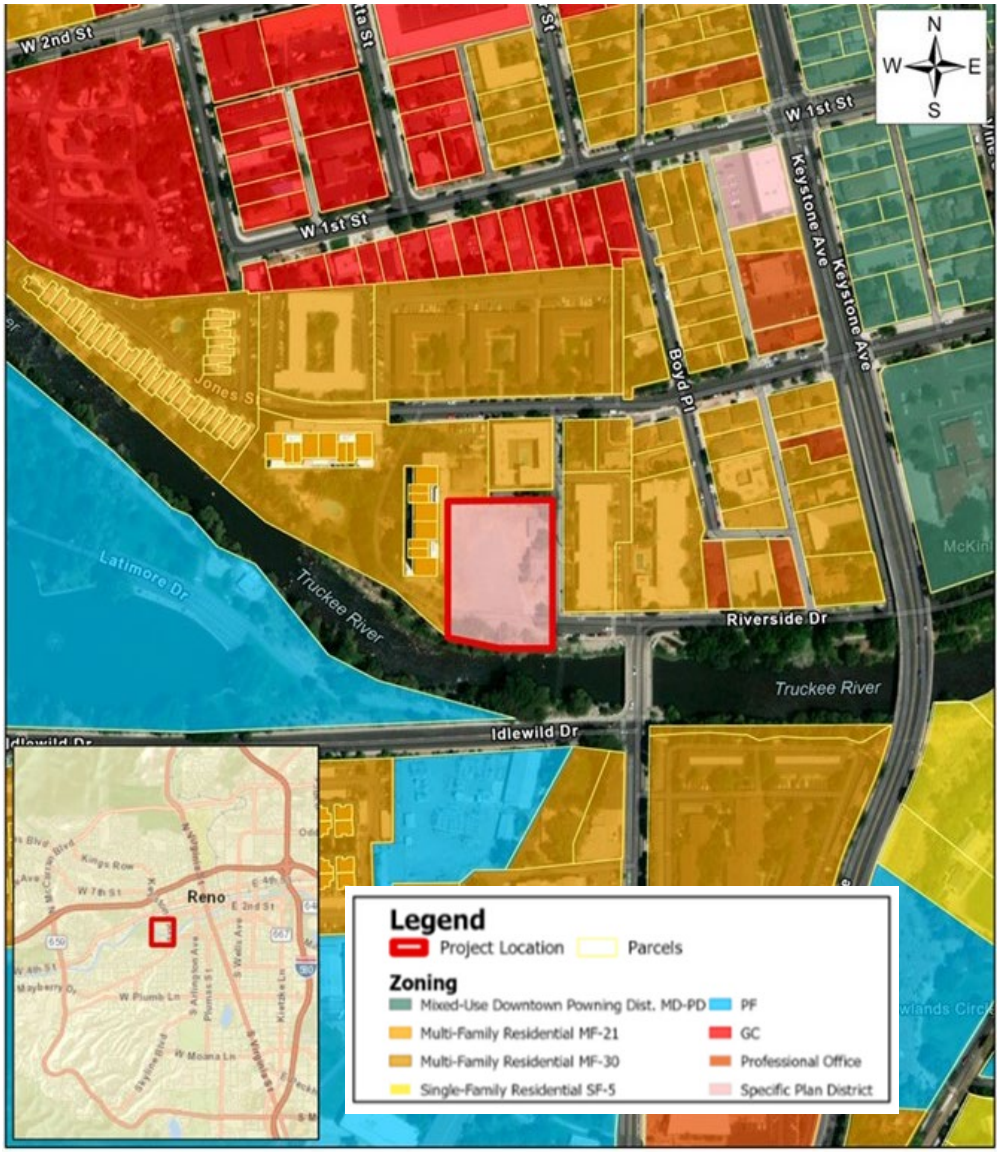
The application is a request for a Zone Change from MF-30 to SPD in accordance with the terms of the Purchase and Sale Agreement

PROPOSED ZONING

Existing Zoning: MF-30



Proposed Zoning: SPD



SPD DESIGN STANDARDS

The proposed SPD utilizes MF-30 base design standards and incorporates MS design standards in the following areas in order to achieve the City's strategic goals for development of the property;

- Allowable Units
- Maximum number of stories and building height
- Minimum landscaping

JUSTIFICATION

The proposed SPD is consistent with the property's SMU Master Plan Designation and is consistent and compatible with the surrounding development.

Q&A

Manhard CONSULTING LTD

PROXIMITY MAP

PARKING ANALYSIS

Radius= 0.25 Miles

On-Street Parking

Subject Property

Off-Street Parking

* Saturday 4/20 Special Events Occurring (2)

- Earth Day at Idlewild Park
- Event at McKinley Arts and Cultural Center

	Total Available	Occupied Saturday 4/20 - 11AM	Saturday % Occupied	Occupied Tuesday 4/23-6PM	Tuesday % Occupied
On-Street Parking	440	358*	81.4%	172	39.1%
Off-Street Parking	544	504*	92.6%	138	25.4%
TOTAL	984	901*	91.6%	310	31.5%