



Hearing Examiner Agenda

September 14, 2026 at 6:00 PM

City Hall Council Chambers – 210 W. 6th Ave

1. CALL TO ORDER
2. PROCEDURAL INFORMATION
3. PUBLIC HEARING
 - a. Pringle Heights Plat
4. CONCLUSION

Procedure for Participation

- The public can submit comments in person, by Zoom or by filling out an online form at <https://www.go2kennewick.com/FormCenter/Planning-Dept-Forms-9/Hearing-Examiner-Public-Hearing-Comments-137>. Comments and Zoom registrations must be received no later than 4:00 p.m. the last business day before the hearing.
- When recognized by the Examiner, state your name, address and whether you are representing only yourself or others.
- All remarks, comments, and questions should be addressed to the Hearing Examiner and not to the audience or parties. You may offer written comments or other items (such as photographs) to the Hearing Examiner as an exhibit for the permanent record.
- Please provide at least three copies of each item submitted: one copy for the Hearing Examiner, one for the Official Record, and one for Staff).
- During an Appeal Hearing, if the appellant and the applicant are different parties, then a fourth copy of all documentation is requested.



COMMUNITY PLANNING DEPARTMENT
STAFF REPORT AND RECOMMENDATION TO
THE HEARING EXAMINER

FILE No: SUB-2026-0006

Staff Report Date: 2 September 2026

Public Hearing Date and Location: 14 September 2026, City Council Chambers / Online Hybrid

Report Prepared By: Joseph Laris, Assistant Planner

Report Reviewed By: Steve Donovan, AICP, Planning Manager

Summary Recommendation: The City of Kennewick RECOMMENDS APPROVAL with conditions of Preliminary Plat SUB-2026-0006

Summary of Proposal: A Preliminary Plat proposed to subdivide 1 lot totaling 37.67 acres into 209 lots.

Proposal Location: Address: 4501 S Olympia St
Parcel Numbers: 124892000001000

Legal Description:

THAT PORTION OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 24 TOWNSHIP 8 NORTH RANGE 29, LESS THE NORTH 30 FEET FOR COUNTY ROAD. LESS RIGHT OF WAY 1.9 ACRES. LESS RIGHT OF WAY .12 ACRES. LESS PORTION DEFINED AS FOLLOWS: THAT PORTION OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER LYING SOUTHERLY OF COUNTY ROAD, DESCRIPTION CHANGE 4-8-71. LESS PORTION TO COUNTY FOR ROAD 7-15-76. SUBJECT TO EASEMENT 11-25-60, 4-2-69. EXCEPT THAT PORTION FOR ROAD RIGHT OF WAY PURPOSES DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION 24; THENCE SOUTH 01°20'03" EAST, ALONG THE WEST LINE OF SAID SECTION 24, FOR A DISTANCE OF 60.60 FEET; THENCE NORTH 88°39'57" EAST, FOR A DISTANCE OF 30.00 FEET, TO A POINT ON THE EAST RIGHT OF WAY LINE OF SOUTH

EXHIBIT 1

OLYMPIA AND THE TRUE POINT OF BEGINNING; THENCE SOUTH 01°20'03" EAST, FOR A DISTANCE OF 37.55 FEET; THENCE NORTH 34°39'26" EAST, FOR A DISTANCE OF 51.82 FEET; THENCE NORTH 56°40'53" EAST, FOR A DISTANCE OF 27.48 FEET; THENCE SOUTH 89°48'17" WEST, FOR A DISTANCE OF 33.77 FEET; THENCE SOUTH 44°14'07" WEST, FOR A DISTANCE OF 28.00 FEET, TO THE TRUE POINT OF BEGINNING. (Per SWD for road purposes AF#2011-006460, 3/1/2011).

Property Owner(s): Big Sky North LLC
12406 Eagle Reach Ct
Pasco, WA 99301

Applicant: Harpster Land Development c/o: Chris Yourdan
8656 W. Gage Blvd. Suite C304
Kennewick, WA 99336

Engineer: Harpster Land Development c/o: Blaine Broberg
8656 W. Gage Blvd. Suite C304
Kennewick, WA 99336

Surveyor: AHBL c/o: Tyler Duncan
5804 Rd 90 Suite H
Pasco, WA 99301

Approval Criteria:

1. Comprehensive Plan – Land Use
2. Kennewick Municipal Code (KMC) Title 18 – Zoning
3. KMC Title 17 – Subdivisions
4. KMC Section 5.56 – Public Works Construction Standards
5. Washington State Environmental Policy Act

Preliminary Plat Key Application Processing Dates:

Pre-Application/Feasibility Meeting	19 November 2025
Application Submittal	14 April 2026
Determination of Completeness Issued	11 May 2026
Notice of Application	11 May 2026
Property Posting Sign	11 May 2026
City Department Review Meeting	N/A
SEPA Threshold Determination Issued	2 June 2026
SEPA Appeal Period Ends	16 June 2026
Date of Published Notice of Public Hearing	30 August 2026
Date of Mailed Notice of Public Hearing	1 September 2026

Exhibits:

1. Staff Report
2. Preliminary Plat
3. Notice of Public Hearing, 300-ft. mailing list and mailing affidavit
4. Public Works Department comments 5/19/2026
5. Traffic Dept. comments 5/20/2026
6. Kennewick Irrigation District comments 7/21/2026
7. Benton Clean Air Agency comments 7/14/2026
8. Department of Archaeological and Historic Preservation comments 5/26/2026
9. Yakama Nation comment 7/16/2026
10. Benton County comment 5/11/2026
11. Benton Franklin Transit comment and Planning Dept. response
12. Environmental Determination – DNS 6/2/2026
13. Trip Generation Letter 4/13/2026

Staff Analysis of Proposal & Discussion:

The proposed Preliminary Plat (SUB-2026-0006) is a request for the subdivision of 37.67 acres into 209 lots. The project is proposed to be built in phases, with 152 lots for phase 1 and 57 lots for phase 2. The project is generally located at 4501 S Olympia St. The subject property currently a vacant lot/former orchard. The plat is proposed as Pringle Heights.

The site has a Comprehensive Plan Land-Use Designation of Low Density Residential and is zoned Residential, Low Density (RL). The minimum lot size in the RL zone is 5500 square feet.

A Preliminary Plat (KMC 17.10) is the first step in a subdivision process for subdivisions with more than nine (9) lots and is an approval for overall lot layout and compliance with land use regulations. A Final Plat is required to create lots from preliminary plats and is the last phase in the subdivision process and must be recorded prior to the creation of individual lots. Final plat approval is based on the Preliminary Plat conditions of approval. A civil permit with a detailed review of street, utility and stormwater construction standards, and street and utility construction or bonding for incomplete work is required prior to final plat approval. Additionally, the City of Kennewick's Residential Design Standards apply to this project.

Property History:

The City of Kennewick annexed the subject area and zoned it Agricultural (A) on June 19, 2007 via Ordinance 5183. The property was rezoned to Residential, Suburban (RS) on November 20, 2018 via Ordinance 5761 and to Residential, Low Density (RL) in 2026 via Ordinance 26-6170. A SEPA Environmental Determination (ED-2026-0010) was issued on 2 June 2026.

Density/Lot Size:

Per the Table of Residential Development Standards (KMC 18.12.010 A.2), the RL zoning district has a minimum lot size requirement of 5500 square feet.

EXHIBIT 1

The proposed development has a minimum residential lot area of 5500 square feet and a maximum residential lot area of 10641 square feet.

As proposed, the preliminary plat meets the Residential Development Standards pursuant to KMC 18.12.010(A.2), and is subject to the Residential Design Standards, Single-Family.

Traffic:

In Exhibit 5, the Traffic Engineering Division provided comments on the proposal. A Traffic Impact Analysis was provided with the application (Exhibit 13). An 18-foot public sidewalk, utility, and irrigation easement is required along lot frontages. All pedestrian facilities within public rights-of-way and easements are required to be ADA compliant. Additionally, traffic calming measures are required on residential streets with more than 1,200-feet of continuous, uninterrupted length. A Transportation Impact Fee (TIF), currently calculated at \$370,146.15, is required for the proposed development. TIF is assessed at building permit issuance and due prior to issuance of a Certificate of Occupancy.

Storm Water:

Storm water design, construction and post construction must meet the requirements of KMC Section 14.28.045 and COK Standard Specification 5-8.

Streets & Utilities:

Proposed public roads, water services and sewer services must be constructed to applicable City of Kennewick Standard Specifications and Drawings. In Exhibit 4, the Public Works Department addresses water and sewer requirements.

Parks:

The proposed development is in Park Impact Fee Zone East. Pursuant to Ordinance 5736, Park Impact Fees will be assessed per Single-Family Unit. The impact fee is assessed at building permit application and due and payable prior to issuance of a Certificate of Occupancy by the City.

Critical Areas:

No critical areas are identified on the subject property, and no outside agencies have provided information identifying critical areas on site.

Schools:

No comments were received from KSD as of the writing of this staff report.

The boundary schools for the proposed development are Sagecrest Elementary School, Horse Heaven Hills Middle School, and Kennewick High School.

Surrounding Property:

The subject property is surrounded by properties zoned Residential, Low Density (RL) to the north, east, and west.

Provisions for Public Health, Safety, and Welfare:

The proposed development will be constructed to City of Kennewick Residential Design Standards and the applicable requirements of the Kennewick Municipal Code.

Appropriate provisions have been made for, but are not limited to, the public health, safety, and general welfare; for open spaces, drainage ways, streets or roads, alleys, public sidewalks, utility easements and other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation areas, playgrounds, schools and school grounds, and

the proposed subdivision has considered all other relevant facts and other planning features that assure safe walking conditions for students who walk to and from school.

Comprehensive Plan:

Staff is of the opinion that this request is consistent with and generally conforms to the City's Comprehensive Plan, and it will implement goals and policies of the Comprehensive Plan. Particularly the following:

RESIDENTIAL GOAL 1: Provide for attractive, walkable, and well-designed residential neighborhoods, with differing densities and compatible with neighboring areas.

The proposed Preliminary Plat is consistent with the Comprehensive Plan Land Use and complies with development standards for the Residential, Low Density (RL) zoning district. The applicant intends to develop a single-family residential neighborhood.

RESIDENTIAL GOAL 2: Provide appropriate public facilities supporting residential areas.

POLICY 1: Ensure provision of parks, schools, drainage, transit, water, sanitation, infrastructure and pedestrian in new residential developments.

POLICY 2: Encourage irrigation service throughout residential areas, when available, to support and maintain healthy landscaping.

POLICY 3: Deny residential developments if concurrency is not met for transportation, water, and sewer, or appropriately condition.

The proposed development will be constructed with the required infrastructure improvements that meet applicable standards.

RESIDENTIAL GOAL 3: Promote a variety of residential densities with a minimum density target of 3 units per acre as averaged throughout the urban areas.

POLICY 4: Residential Low Density: Place lands constrained by sensitive areas, those intended to provide transition to the rural area, or those appropriate for larger lot housing within the Residential Low Density land use designation to allow for a range of lifestyles.

As proposed, the development meets Goal 3 and Policy 4 by providing new low density housing in an area already zoned and constructed for low density housing.

The City of Kennewick hereby RECOMMENDS that Preliminary Plat SUB-2026-0006 be APPROVED with the following conditions:

1. Comply with City of Kennewick regulatory controls, policies and codes, including the Residential Design Standards – Single-Family Residential.
2. A landscape plan must be submitted for approval for all common areas, open spaces and rights-of-way not left in a natural state, listing the number, location, and species of trees, sizes of plant material, and ground cover prior to final plat approval. Street trees shall be placed at 40-foot intervals and within five feet of the back of sidewalk for curb tight sidewalks along with a 10' wide landscaping buffer along S Olympia St. The landscape plan shall be prepared by a licensed landscape architect or licensed landscape installer drawn to a legible scale.

EXHIBIT 1

3. Provide a bond or cash deposit for incomplete sidewalks and applicable landscaping prior to final plat approval. Trees for the individual residential lots shall be planted prior to receiving certificate of occupancy for each new home.
4. All fees required by the City shall be paid prior to approval of the final plat.
5. All development of the plat shall be in conformance and consistent with the plat drawing which was admitted as Exhibit 2.
6. Comply with the memorandum from the Public Works Department dated 19 May 2026 (Exhibit 4).
7. Comply with the Traffic Engineering Division comments dated 7/20/2026 (Exhibit 5).
8. Comply with the requirements of the Kennewick Irrigation District dated 7/21/2026 (Exhibit 6).
9. Comply with the comments submitted by the Benton Clean Air Agency dated 7/14/2026 (Exhibit 7).
10. Comply with the Department of Archaeology and Historic Preservation comment letter dated 5/26/26 (Exhibit 8)
11. Comply with the Yakama Nation comment dated 7/16/26 (Exhibit 9)
12. Provide dust control method(s) such as hydro seeding for all areas of the site that are disturbed.
13. The applicant and/or all of its successors must execute a written agreement to the satisfaction of the City Attorney, which will allow the City to establish enforceable arrangements for maintenance of any common areas, open spaces, private roads and common landscape areas, should the Homeowner's Association fail or refuse to maintain these areas.
14. Both phases of the Preliminary Plat (SUB-2026-0006) expire 5 years from the approval date. The City may grant an extension, but any extension application must be applied for before the approved preliminary plat expires.



OWNER
BIG SKY NORTH, LLC
5810 MIDLAND LANE, UNIT 65
PASCO, WA 99301

APPLICANT
HARPSTER LAND DEVELOPMENT
5804 ROAD 90, SUITE C
PASCO, WA 99301
509.521.4978
CONTACT: PETER HARPSTER

ENGINEER
HARPSTER LAND DEVELOPMENT
5804 ROAD 90, SUITE C
PASCO, WA 99301
509.521.4978
CONTACT: BLAINE BROBERG, PE

LAND SURVEYOR
AHEL, INC.
5804 ROAD 90, SUITE H
PASCO, WA 99301
509.380.5883
CONTACT: TYLER DUNCAN, PLS

SITE ADDRESS
4501 S. OLYMPIA ST.
KENNEWICK, WA 99337

PARCEL NUMBER(S)
124892000001000

UTILITIES

WATER:	CITY OF KENNEWICK
SEWER:	CITY OF KENNEWICK
IRRIGATION:	KENNEWICK IRRIGATION DISTRICT
STORMWATER:	CITY OF KENNEWICK
TELEPHONE:	CHARTER SPECTRUM
POWER:	BENTON PUD
NATURAL GAS:	CASCADE NATURAL GAS CORPORATION
ROADS/ROW:	CITY OF KENNEWICK
STREETLIGHTS:	CITY OF KENNEWICK

VERTICAL DATUM
ELEVATIONS ARE BASED ON GPS OBSERVATIONS OF CITY OF KENNEWICK CONTROL POINT NUMBER K0841. A 3" BRASS CAP MARKING THE NW CORNER OF SECTION 24, VERIFIED UTILZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN), ELEVATION 697.13 FEET (NAVD 88).

HORIZONTAL DATUM
COORDINATES ARE BASED ON NAD83/2011, WASHINGTON STATE PLANE, SOUTH ZONE ESTABLISHED BY UTILZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN).

TOPOGRAPHIC NOTE
THE EXISTING CULTURAL AND TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, HARPSTER LAND DEVELOPMENT CANNOT ENSURE ACCURACY AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

LEGAL DESCRIPTION

THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 24, TOWNSHIP 8 NORTH, RANGE 29 EAST, W.M. RECORDS OF BENTON COUNTY, WASHINGTON;

EXCEPT THAT PORTION THEREOF LYING SOUTHWESTERLY OF SOUTH OLYMPIA STREET AS CONVEYED TO JONAHANA K. AUSTIN A WIDOW, BY DEED RECORDED APRIL 8, 1971, UNDER AUDITOR'S FILE NO. 620334;

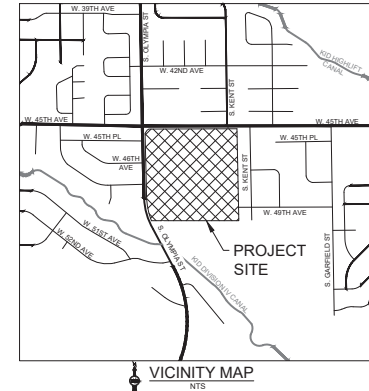
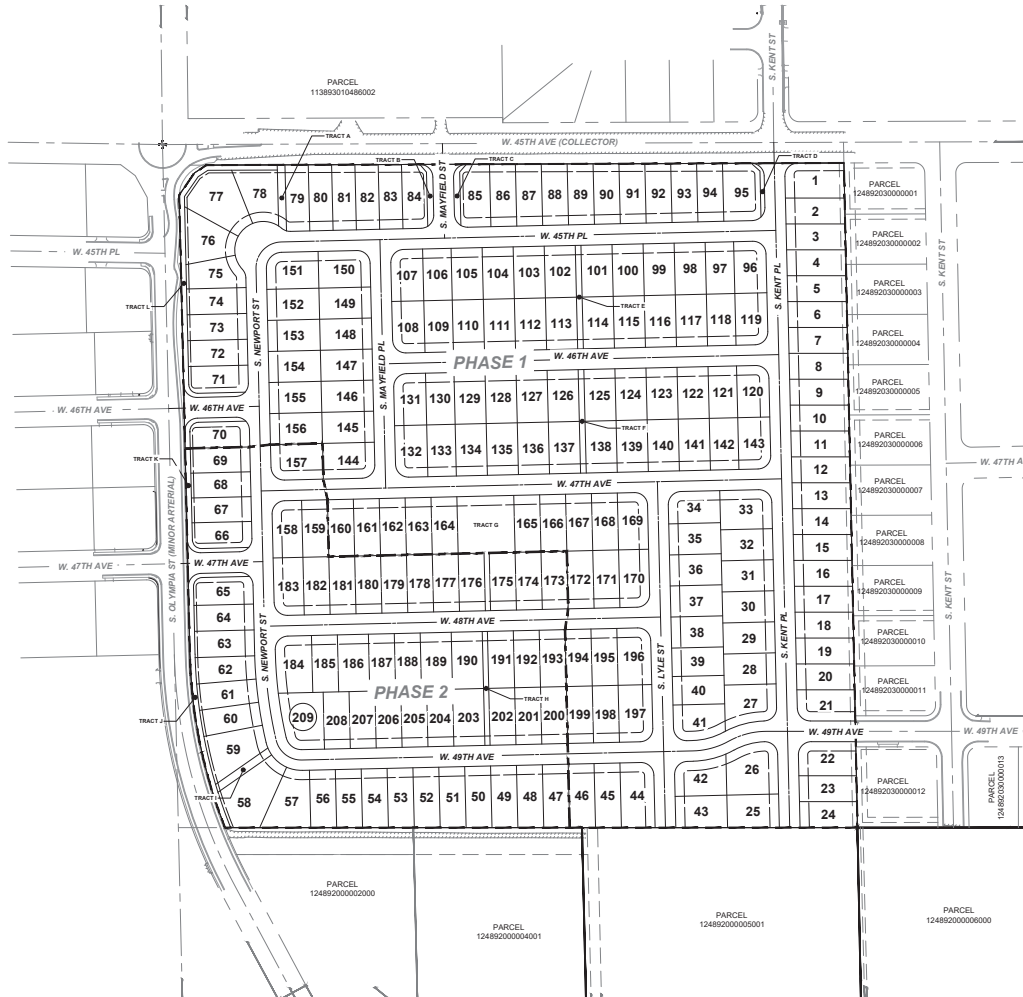
AND EXCEPT THOSE PORTIONS THEREOF CONVEYED TO BENTON COUNTY FOR ROAD PURPOSES BY DEEDS RECORDED ON AUGUST 11, 1950, APRIL 2, 1969, AND JULY 15, 1970, UNDER AUDITOR'S FILE NOS. 298703, 600020, AND 707138, RESPECTIVELY.

SITUATED IN THE CITY OF KENNEWICK, COUNTY OF BENTON, STATE OF WASHINGTON.

ABBREVIATION LEGEND

AFN AUDITOR FILE NUMBER
@ AT
AVE AVENUE
EX EXISTING
EG EXISTING GRADE
E8MT EASEMENT
FT FOOT / FEET
HOA HOMEOWNERS ASSOCIATION
PH PHASE
P PROPERTY LINE
PL PLACE
R RADIUS
ROW RIGHT OF WAY
SF SQUARE FEET
ST STREET
SUE SIDEWALK, UTILITY AND IRRIGATION EASEMENT
TYP TYPICAL

COVER
FOR
PRELIMINARY PLAT OF "PRINGLE HEIGHTS"
NW 1/4 OF SEC. 24, TWN. 08 N, RGE. 29 E, W.M.
BENTON COUNTY, WA



SHEET INDEX	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	PARCEL LAYOUT - NORTH
3	PARCEL LAYOUT - SOUTH
4	PRELIMINARY UTILITY LAYOUT
5	PARCEL TABLES

LAND USE TABLE	
CURRENT ZONING	RESIDENTIAL, LOW DENSITY (RL)
TOTAL SITE AREA	37.59 ACRE (AC)
TOTAL RESIDENTIAL AREA	1,258,798 SF (28.30 AC)
TOTAL TRACT AREA	40,506 SF (0.92 AC)
TOTAL RIGHT OF WAY AREA	336,197 SF (7.69 AC)
RESIDENTIAL LOT COUNT	209 DWELLING UNITS (DU)
RESIDENTIAL LOT DENSITY	5.56 DU/AC
AVERAGE RESIDENTIAL LOT AREA	6,023 SF
MINIMUM RESIDENTIAL LOT AREA	5,500 SF (MULTIPLE LOTS)
MAXIMUM RESIDENTIAL LOT AREA	10,641 SF (0.24 AC)
NUMBER OF CONSTRUCTION PHASES	2
RESIDENTIAL LOTS PER PHASE (IN ORDER, PHASES 1-2)	152 // 57
RIGHT OF WAY AREA PER PHASE (SF) (IN ORDER, PHASES 1-2)	256,295 // 78,902

TRACT TABLE		
TRACT NAME	AREA (SF)	TRACT USE
TRACT A	1,852	PEDESTRIAN CONNECTION TRACT* WITH UNDERLYING SEWER EASEMENT
TRACT B	1324	LANDSCAPE STRIP*
TRACT C	1307	LANDSCAPE STRIP*
TRACT D	780	LANDSCAPE STRIP*
TRACT E	2,200	PEDESTRIAN CONNECTION TRACT*
TRACT F	2,200	PEDESTRIAN CONNECTION TRACT*
TRACT G	15,215	POCKET PARK & PEDESTRIAN CONNECTION TRACT*
TRACT H	2,200	PEDESTRIAN CONNECTION TRACT*
TRACT I	1,886	PEDESTRIAN CONNECTION TRACT*
TRACT J	5,743	LANDSCAPE STRIP*
TRACT K	4,100	LANDSCAPE STRIP*
TRACT L	6,749	LANDSCAPE STRIP*
ROW	335,197	CITY OF KENNEWICK RIGHT-OF-WAY (ROW)

*PEDESTRIAN CONNECTION TRACTS, LANDSCAPE STRIPS AND POCKET PARK TO BE DEDICATED TO THE HOA. HOA WILL BE RESPONSIBLE FOR MAINTENANCE IN PERPETUITY.

HLD

Harpster Land Development, LLC
5804 Road 90, Suite C, Pasco, WA 99301
info@harpsterland.com | 509.212.9508

PROJECT:
PRINGLE HEIGHTS

CLIENT:
BIG SKY NORTH, LLC

5810 MIDLAND LANE, UNIT 65,
PASCO, WA 99301
DAVE GREENO

SHEET TITLE:
COVER

DESIGNED BY: BCB
DRAWN BY: BCB
CHECKED BY: DJF
APPROVED BY: BCB
DATE: 7/7/26

SCALE:
HORIZONTAL
1" = 120'
VERTICAL
N/A

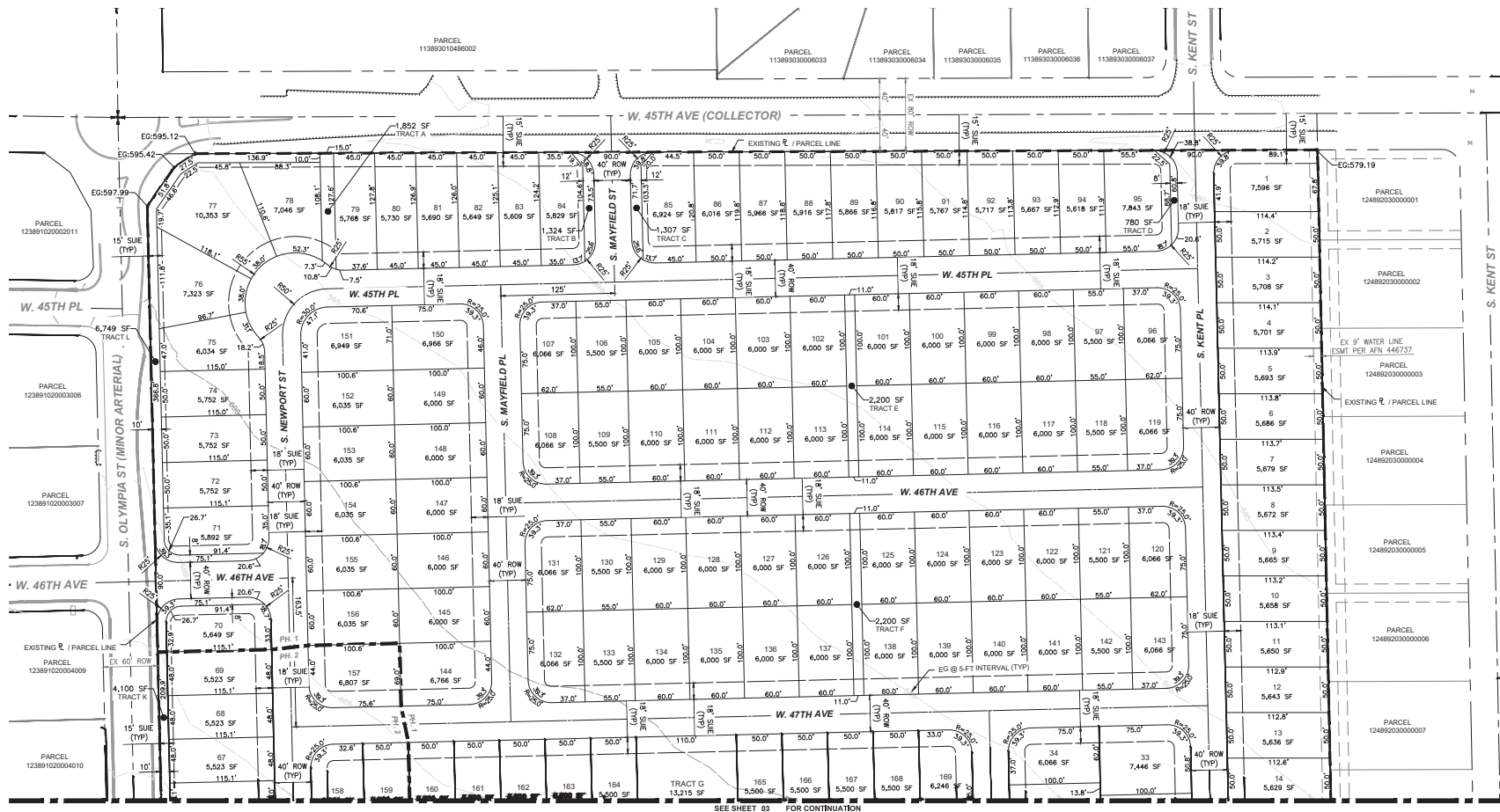


REVISIONS:		
NO.	DESCRIPTION	DATE
1	CDK COMMENTS & OTHER LAYOUT UPDATES	JULY 07, 2026

SHEET NUMBER:
01 OF 05



NW 1/4 OF SEC. 24, TWN. 08 N, RGE. 29 E, W.M.
BENTON COUNTY, WA



SEE SHEET 03 FOR CONTINUATION



Harpster Land Development, LLC
5804 Road 90 Suite C, Pasco, WA 99301
peber@harpsterld.com | 509.212.9596

PROJECT:

PRINGLE HEIGHTS

KENNEWICK, WA

CLIENT:

BIG SKY NORTH, LLC

5810 MIDLAND LANE, UNIT 65,
PASCO, WA 99301

DAVE GREENO

SHEET TITLE:

PARCEL LAYOUT -
NORTH

DESIGNED BY:

DESIGNED BY:	BCB
DRAWN BY:	BCB
CHECKED BY:	DJF
APPROVED BY:	BCB

DATE: 7/7/26

SCALE:

SCALE:
HORIZONTAL
1" = 60'
VERTICAL
N/A



7/7/2026

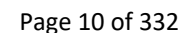
REVISIONS:

[illegible]

SHEET NUMBER:

02 OF 05

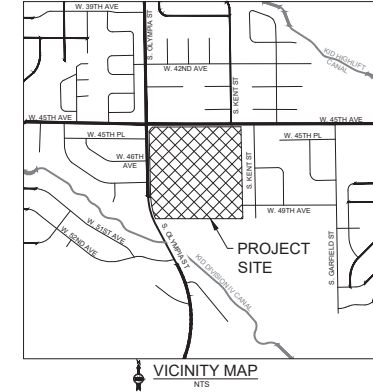
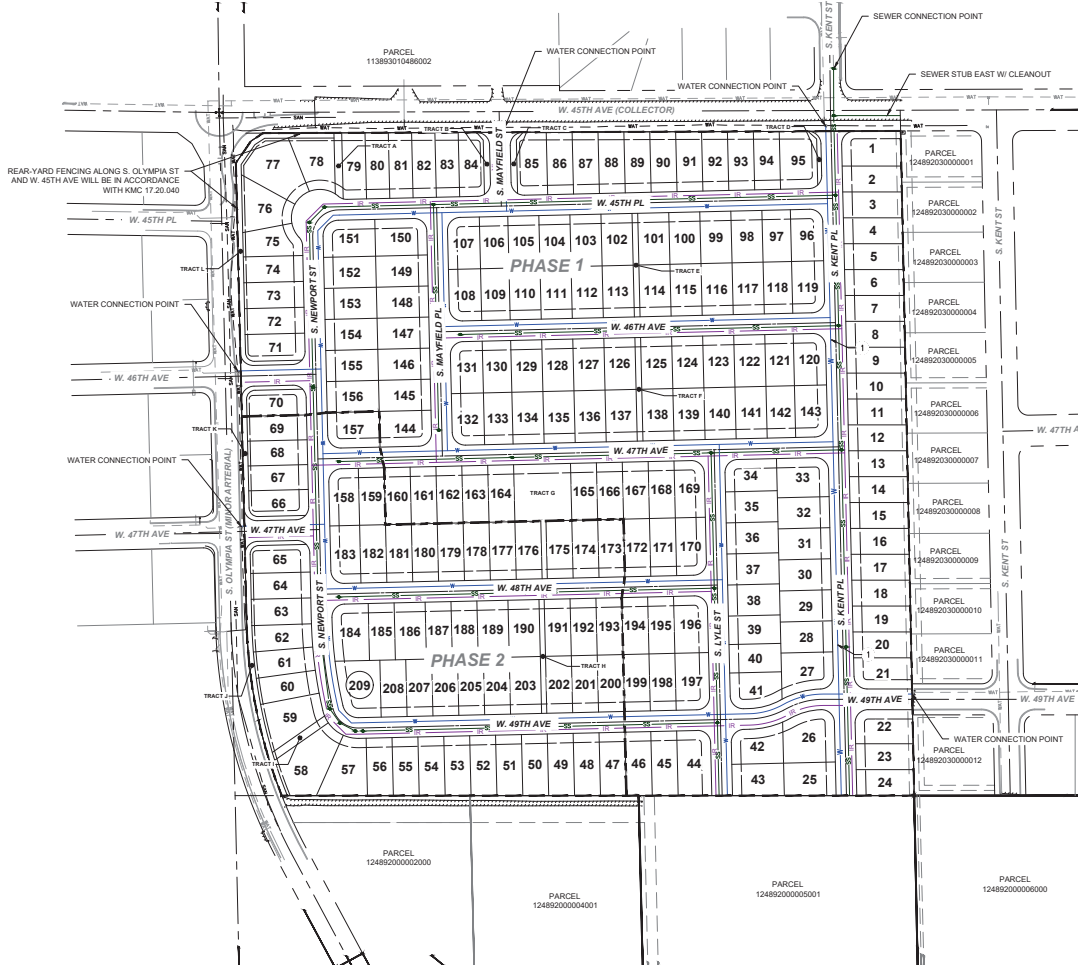
03 OF 05





0 60' 120' 240'
SCALE 1"= 120'

PRELIMINARY UTILITY PLAN FOR PRELIMINARY PLAT OF "PRINGLE HEIGHTS" NW 1/4 OF SEC. 24, TWN. 08 N, RGE. 29 E, W.M. BENTON COUNTY, WA



LINETYPE LEGEND

- PROPOSED WATER
- PROPOSED IRRIGATION
- PROPOSED GRAVITY SEWER MAIN

KEY NOTES:

1. 12-INCH WATER MAIN RUNNING NORTH-SOUTH IN ROAD L.

UTILITIES

- CONNECT TO EXISTING ZONE 3 WATER MAINS ALONG S. OLYMPIA ST, W. 45TH AVENUE AND W. 49TH AVENUE.
- ALL PROPOSED WATER MAINS ARE 8-INCH DIAMETER UNLESS OTHERWISE NOTED.

IRRIGATION

- THIS SITE PREVIOUSLY RECEIVED IRRIGATION WATER FROM THE KENNEWICK IRRIGATION DISTRICT FOR AGRICULTURAL PURPOSES. THE PROJECT WILL RECEIVE IRRIGATION WATER FOR RESIDENTIAL USE FROM THE KENNEWICK IRRIGATION DISTRICT. EXACT CONNECTION POINT(S) AND MAINLINE SIZES ARE TO BE DETERMINED.

SEWER

- SEWER IS PLANNED TO FOLLOW THE SITE GRADING AND FLOW TO THE NORTHEAST CORNER OF THE PROJECT SITE AND CONNECT TO THE EXISTING SEWER MAIN IN S. KENT STREET.
- ALL PROPOSED SEWER MAINS ARE 8-INCH DIAMETER UNLESS OTHERWISE NOTED.

STORM

- COLLECT ROW STORM RUNOFF VIA CATCH BASINS, DISPOSE VIA UIC INFILTRATION GALLERIES.

SITE GRADING

THE EXISTING GRADE OF THE SITE GENERALLY SLOPES DOWN IN ELEVATION FROM SOUTHWEST TO NORTHEAST AT APPROXIMATELY 3% - 5%. THE GRADING PLAN FOR THIS SITE IS EXPECTED TO BE A BALANCE OF CUT/FILL MATERIALS AND WILL GENERALLY FOLLOW THE EXISTING GRADE OF THE SITE. ALL SITE GRADING SHALL COMPLY WITH THE METHODS AND SPECIFICATIONS PROVIDED IN THE GEOTECHNICAL SITE INVESTIGATION REPORT.

INTERSECTIONS WILL ADHERE TO ADA REQUIREMENTS FOR ROAD PROFILES WITHIN CROSSWALKS.

- 5.0% MAX FOR THROUGH STREETS
- 2.0% MAX SLOPES FOR STOP-CONTROLLED STREETS

TOPOGRAPHIC NOTE

THE EXISTING CULTURAL AND TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, **HARPSTER LAND DEVELOPMENT** CANNOT ENSURE ACCURACY AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

UTILITY NOTES

1. SURFACE UTILITY FACILITIES ARE SHOWN HEREON PER FIELD LOCATED VISIBLE EVIDENCE. THERE MAY BE UTILITIES THAT EXIST ON THIS SITE OTHER THAN THOSE GRAPHICALLY DEPICTED HEREON.
2. UNDERGROUND (BURIED) UTILITIES SHOWN HEREON ARE BASED ON COMBINATIONS OF VISIBLE SURFACE EVIDENCE, UTILITY LOCATOR MARKINGS AND RECORD DATA (SUCH AS AS-BUILT OR UTILITY DESIGN DRAWINGS). ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND, IN SOME CASES, ARE SHOWN AS STRAIGHT LINES BETWEEN FIELD LOCATED SURFACE UTILITY FACILITIES. UNDERGROUND UTILITIES MAY HAVE BENDS, CURVES OR CONNECTIONS WHICH ARE NOT SHOWN.
3. ALTHOUGH LOCATIONS OF UNDERGROUND UTILITIES BASED ON UTILITY LOCATOR MARKINGS AND RECORD DATA (SUCH AS AS-BUILT OR UTILITY DESIGN DRAWINGS) ARE DEEMED RELIABLE, **HARPSTER LAND DEVELOPMENT** ASSUMES NO LIABILITY FOR THE ACCURACY OF SAID DATA.
4. CALL 1-800-424-5555 BEFORE ANY CONSTRUCTION.

HLD

Harpster Land Development, LLC
5000 First St. Suite C, Pasco, WA 99301
info@harpsterland.com | 509.212.9508

PROJECT:

PRINGLE HEIGHTS

KENNEWICK, WA

CLIENT:

BIG SKY NORTH, LLC

5810 MIDLAND LANE, UNIT 65,
PASCO, WA 99301
DAVE GREENO

SHEET TITLE:

PRELIMINARY
UTILITY PLAN

DESIGNED BY:

BCB

DRAWN BY:

BCB

CHECKED BY:

DJF

APPROVED BY:

BCB

DATE:

7/7/26

SCALE:

HORIZONTAL
1" = 120'
VERTICAL
N/A



7/7/2026

REVISIONS:

DESCRIPTION	DATE
CKD COMMENTS & OTHER	JULY 07, 2026
LAYOUT UPDATES	2026

SHEET NUMBER:

04 OF 05



Know what's below.
Call before you dig.

PARCEL TABLES FOR PRELIMINARY PLAT OF "PRINGLE HEIGHTS"

NW 1/4 OF SEC. 24, TWN. 08 N, RGE. 29 E, W.M.
BENTON COUNTY, WA

PARCEL TABLE - ORDERED BY LOT NUMBER

Parcel #	Area	Parcel #	Area	Parcel #	Area	Parcel #	Area
1	7,596 SF	61	5,532 SF	121	5,500 SF	181	5,575 SF
2	5,715 SF	62	5,532 SF	122	6,000 SF	182	5,575 SF
3	5,708 SF	63	5,801 SF	123	6,000 SF	183	6,287 SF
4	5,701 SF	64	5,755 SF	124	6,000 SF	184	7,527 SF
5	5,693 SF	65	6,068 SF	125	6,000 SF	185	5,500 SF
6	5,686 SF	66	5,662 SF	126	6,000 SF	186	6,600 SF
7	5,679 SF	67	5,523 SF	127	6,000 SF	187	5,500 SF
8	5,672 SF	68	5,523 SF	128	6,000 SF	188	5,500 SF
9	5,665 SF	69	5,523 SF	129	6,000 SF	189	6,600 SF
10	5,658 SF	70	5,649 SF	130	5,500 SF	190	6,600 SF
11	5,650 SF	71	5,692 SF	131	6,066 SF	191	5,500 SF
12	5,643 SF	72	5,752 SF	132	6,066 SF	192	5,500 SF
13	5,636 SF	73	5,752 SF	133	5,500 SF	193	5,500 SF
14	5,629 SF	74	5,752 SF	134	6,000 SF	194	5,500 SF
15	5,622 SF	75	6,034 SF	135	6,000 SF	195	5,500 SF
16	5,614 SF	76	7,323 SF	136	6,000 SF	196	7,016 SF
17	5,607 SF	77	10,353 SF	137	6,000 SF	197	7,016 SF
18	5,600 SF	78	7,046 SF	138	6,000 SF	198	5,500 SF
19	5,593 SF	79	5,768 SF	139	6,000 SF	199	5,500 SF
20	5,586 SF	80	5,730 SF	140	6,000 SF	200	5,500 SF
21	5,587 SF	81	5,690 SF	141	6,000 SF	201	5,500 SF
22	7,181 SF	82	5,649 SF	142	5,500 SF	202	5,500 SF
23	5,555 SF	83	5,609 SF	143	6,066 SF	203	6,600 SF
24	5,563 SF	84	5,829 SF	144	6,766 SF	204	5,500 SF
25	6,380 SF	85	6,924 SF	145	6,000 SF	205	5,500 SF
26	9,435 SF	86	6,016 SF	146	6,000 SF	206	5,500 SF
27	7,429 SF	87	5,966 SF	147	6,000 SF	207	5,500 SF
28	6,000 SF	88	5,916 SF	148	6,000 SF	208	5,500 SF
29	6,000 SF	89	5,866 SF	149	6,000 SF	209	8,537 SF
30	6,000 SF	90	5,817 SF	150	6,966 SF		
31	6,000 SF	91	5,767 SF	151	6,949 SF		
32	5,999 SF	92	5,717 SF	152	6,035 SF		
33	7,446 SF	93	5,667 SF	153	6,035 SF		
34	6,066 SF	94	5,618 SF	154	6,035 SF		
35	6,000 SF	95	7,843 SF	155	6,035 SF		
36	6,000 SF	96	6,066 SF	156	6,035 SF		
37	6,000 SF	97	5,500 SF	157	6,807 SF		
38	6,000 SF	98	6,000 SF	158	6,201 SF		
39	5,500 SF	99	6,000 SF	159	5,500 SF		
40	5,500 SF	100	6,000 SF	160	5,500 SF		
41	6,474 SF	101	6,000 SF	161	5,500 SF		
42	6,826 SF	102	6,000 SF	162	5,500 SF		
43	6,147 SF	103	6,000 SF	163	5,500 SF		
44	8,033 SF	104	6,000 SF	164	5,500 SF		
45	6,216 SF	105	6,000 SF	165	5,500 SF		
46	6,157 SF	106	5,500 SF	166	5,500 SF		
47	6,099 SF	107	6,066 SF	167	5,500 SF		
48	6,041 SF	108	6,066 SF	168	5,500 SF		
49	5,983 SF	109	5,500 SF	169	6,246 SF		
50	5,925 SF	110	6,000 SF	170	6,333 SF		
51	5,867 SF	111	6,000 SF	171	5,575 SF		
52	5,808 SF	112	6,000 SF	172	5,575 SF		
53	5,750 SF	113	6,000 SF	173	5,575 SF		
54	5,692 SF	114	6,000 SF	174	5,575 SF		
55	5,634 SF	115	6,000 SF	175	5,575 SF		
56	5,576 SF	116	6,000 SF	176	5,575 SF		
57	8,113 SF	117	6,000 SF	177	5,575 SF		
58	10,641 SF	118	5,500 SF	178	5,575 SF		
59	8,132 SF	119	6,066 SF	179	5,575 SF		
60	5,533 SF	120	6,066 SF	180	5,575 SF		

PARCEL TABLE - ORDERED BY LOT AREA

Parcel #	Area	Parcel #	Area	Parcel #	Area	Parcel #	Area
163	5,500 SF	19	5,593 SF	125	6,000 SF	41	6,474 SF
164	5,500 SF	18	5,600 SF	138	6,000 SF	21	6,587 SF
159	5,500 SF	17	5,607 SF	124	6,000 SF	190	6,600 SF
165	5,500 SF	83	5,609 SF	139	6,000 SF	189	6,600 SF
160	5,500 SF	16	5,614 SF	123	6,000 SF	186	6,600 SF
166	5,500 SF	94	5,618 SF	140	6,000 SF	203	6,600 SF
161	5,500 SF	15	5,622 SF	122	6,000 SF	144	6,766 SF
167	5,500 SF	14	5,629 SF	141	6,000 SF	157	6,807 SF
162	5,500 SF	55	5,634 SF	104	6,000 SF	42	6,826 SF
168	5,500 SF	13	5,636 SF	111	6,000 SF	85	6,924 SF
130	5,500 SF	12	5,643 SF	103	6,000 SF	151	6,949 SF
133	5,500 SF	70	5,649 SF	112	6,000 SF	150	6,966 SF
121	5,500 SF	82	5,649 SF	110	6,000 SF	197	7,016 SF
142	5,500 SF	11	5,650 SF	102	6,000 SF	196	7,016 SF
106	5,500 SF	10	5,658 SF	105	6,000 SF	78	7,046 SF
109	5,500 SF	66	5,662 SF	101	6,000 SF	22	7,181 SF
97	5,500 SF	9	5,665 SF	114	6,000 SF	76	7,323 SF
118	5,500 SF	93	5,667 SF	100	6,000 SF	27	7,429 SF
39	5,500 SF	8	5,672 SF	115	6,000 SF	33	7,446 SF
40	5,500 SF	7	5,679 SF	99	6,000 SF	184	7,527 SF
191	5,500 SF	6	5,686 SF	116	6,000 SF	1	7,596 SF
202	5,500 SF	81	5,690 SF	98	6,000 SF	95	7,843 SF
201	5,500 SF	54	5,692 SF	117	6,000 SF	44	8,033 SF
208	5,500 SF	5	5,693 SF	137	6,000 SF	57	8,113 SF
200	5,500 SF	4	5,701 SF	113	6,000 SF	59	8,132 SF
207	5,500 SF	3	5,708 SF	28	6,000 SF	209	8,537 SF
199	5,500 SF	2	5,715 SF	35	6,000 SF	26	9,435 SF
195	5,500 SF	92	5,717 SF	29	6,000 SF	77	10,353 SF
188	5,500 SF	80	5,730 SF	36	6,000 SF	58	10,641 SF
206	5,500 SF	53	5,750 SF	30	6,000 SF		
198	5,500 SF	74	5,752 SF	37	6,000 SF		
194	5,500 SF	73	5,752 SF	31	6,000 SF		
187	5,500 SF	72	5,752 SF	38	6,000 SF		
205	5,500 SF	64	5,755 SF	86	6,016 SF		
193	5,500 SF	91	5,767 SF	75	6,034 SF		
204	5,500 SF	79	5,768 SF	155	6,035 SF		
192	5,500 SF	63	5,801 SF	154	6,035 SF		
185	5,500 SF	52	5,808 SF	153	6,035 SF		
69	5,523 SF	90	5,817 SF	152	6,035 SF		
68	5,523 SF	84	5,829 SF	156	6,035 SF		
67	5,523 SF	89	5,866 SF	48	6,041 SF		
61	5,532 SF	51	5,867 SF	131	6,066 SF		
62	5,532 SF	71	5,892 SF	132	6,066 SF		
60	5,533 SF	88	5,916 SF	107	6,066 SF		
23	5,555 SF	50	5,925 SF	108	6,066 SF		
24	5,563 SF	87	5,966 SF	120	6,066 SF		
174	5,575 SF	49	5,983 SF	143	6,066 SF		
181	5,575 SF	32	5,999 SF	96	6,066 SF		
175	5,575 SF	147	6,000 SF	119	6,066 SF		
182	5,575 SF	146	6,000 SF	34	6,066 SF		
176	5,575 SF	145	6,000 SF	65	6,066 SF		
177	5,575 SF	149	6,000 SF	47	6,099 SF		
171	5,575 SF	148	6,000 SF	43	6,147 SF		
178	5,575 SF	128	6,000 SF	46	6,157 SF		
172	5,575 SF	135	6,000 SF	158	6,201 SF		
179	5,575 SF	127	6,000 SF	45	6,216 SF		
173	5,575 SF	136	6,000 SF	169	6,246 SF		
180	5,575 SF	134	6,000 SF	183	6,287 SF		
56	5,576 SF	126	6,000 SF	170	6,333 SF		
20	5,586 SF	129	6,000 SF	25	6,380 SF		



Harper Land Development, LLC
5050 West 50th Street, C. Pineda, WA 99301
info@harperland.com | 509.212.9508

PROJECT:

PRINGLE HEIGHTS

KENNEWICK, WA

CLIENT:

BIG SKY NORTH, LLC

5810 MIDLAND LANE, UNIT 65,
PASCO, WA 99301

DAVE GREENO

SHEET TITLE:

PARCEL TABLES

DESIGNED BY: BCB

DRAWN BY: BCB

CHECKED BY: DJF

APPROVED BY: BCB

DATE: 7/7/26

SCALE:

HORIZONTAL

N/A

VERTICAL

N/A



7/7/2026

REVISIONS:

NO.	DESCRIPTION	DATE
1	ADD COMMENTS & OTHER LAYOUT UPDATES	JULY 07, 2026

SHEET NUMBER:

05 OF 05



NOTICE OF PUBLIC HEARING – September 14th, 2026, 6:00 P.M.

Proposal: A 37.67-acre, 209 lot Preliminary Plat at 4501 S Olympia St. The project will consist of standard single-family lots. The site is zoned Residential, Low Density (RL). The file number is SUB-2026-0006. **SEE PLAT MAP ON BACK**

Open Record Hearing: The City of Kennewick Hearing Examiner will conduct an open record hearing at **6:00 p.m. on September 14th, 2026 at 210 W 6th Avenue, City Hall Council Chambers**. The meeting will be conducted in a hybrid format, which allows in person or virtual participation. To participate in this meeting online, visit the link below:

www.go2kennewick.com/244/Hearing-Examiner.

Environmental Documents and/or Studies Applicable to this Proposal: SEPA Checklist (ED-2026-0010)

Determination of Completeness: The application was determined complete on May 11, 2026 for processing.

Project Permits Associated with this Proposal: Civil permit

Preliminary Determination of Regulations Used for Project Mitigation: Title 18 (Zoning), Title 17 (Subdivision), Title 4 (Administrative Procedures) of the Kennewick Municipal Code and the land use policies contained in the Kennewick Comprehensive Plan.

Estimated Date of Decision: Within 10 business days of the Hearing Date of September 14th, 2026.

To Receive Notification of the Decision: Contact the Development Services Division at 210 W. 6th Avenue, Kennewick, WA 99336 or via telephone at (509) 585-4280.

Appeal: Any person aggrieved by the decision of the Kennewick Hearing Examiner on this proposal may appeal to the Superior Court of Benton County within twenty-one (21) days of the date of decision.

Joseph Laris, Assistant Planner

The City of Kennewick welcomes full participation in public meetings by all citizens. No qualified individual with a disability shall be excluded or denied the benefit of participating in such meetings. If you wish to use auxiliary aids or require assistance to comment at this public meeting, please contact Steve Donovan at (509) 585-4361 or through the Washington Relay Service Center TTY by dialing 711, at least ten days prior to the date of the meeting to make arrangements for special needs.

210 W. 6th Avenue / PO Box 6108, Kennewick, WA 99336

[illegible][illegible]



To: Joseph Laris, Assistant Planner
 From: Kristin Stowe, Development Review Supervisor
 Date: May 19, 2026
 Re: Public Works Utility Comments
 Project: SUB-2026-0006 – 4501 S Olympia St.

1. All Civil Plan submittals shall be submitted online through the Citizen Self Service ([CSS](#)) portal.
2. Civil plans shall show any proposed phasing for construction and the type of building use and number of floors. Each phase will require a separate set of civil plans for review and approval.
3. Developer will be required to provide construction of public roads, sidewalks, streetlights, storm drainage, and designate sidewalk and utility easements, all in conformance with the latest City of Kennewick (COK) Standard Specifications and Details.
4. Civil drawings shall include only the infrastructure proposed with each phase of the project. Design engineer has the option of showing adjacent phases in a lighter line style to assure clarity for review, permitting, and construction.
5. As part of all residential development construction plans, there shall be a separate schematic drawing which, at a minimum, shows the power source(s), wiring diagram, streetlight pole spacing, and street permanent signing per COK Standard Specifications. Combine signing, striping, and illumination plans onto the same drawing with other elements left off.
6. The maximum street grade per Kennewick Municipal Code (KMC) 5.56.275 is 12%. Show grades on the street centerline profile.
7. Sidewalks which have a wall or fence within 18-inches of edge of 5-foot sidewalk shall be widened to 6.5-feet.
8. Permanent structures shall not be located over COK utilities, or within any easement.
9. W 45th Ave, W 49th Ave, and the majority of S Olympia St all have Pavement Condition Index (PCI) ratings equal to or above 75, therefore any trenching done on pavement will require a minimum 25-foot wide patch, the full width of each travel lane or shoulder disturbed per KMC 5.56.215.
10. The segment of S Olympia St from W 46th Ave to W 45th PI has a PCI rating below 75, therefore any trenching done on pavement will require a minimum 6-foot wide patch, half the width of each travel lane or shoulder disturbed per KMC 5.56.215. All other adjacent segments of S Olympia St have a PCI Rating above 75.
11. There is one 10-inch ductile iron water main located in W 45th Ave, see COK Record Drawing C-3091. There is also a 16-inch asbestos concrete water main that runs parallel to the 10-inch in W 45th Ave, see COK Record Drawing C-3082. On the west side of the parcel, there is another 16-inch asbestos concrete water main located in S Olympia St, see COK Record Drawing C-3082. There is also a 16-inch ductile iron water main located in S Olympia St, however there are no available record drawings for this.

PUBLIC WORKS

EMAIL kristin.stowe@ci.kennewick.wa.us **PHONE** 509-585-4349 **FAX** 509-585-4511

ADDRESS 1010 E Chemical Dr. Kennewick, WA 99336-0108

WEBSITE go2kennewick.com

12. Provide water and sanitary sewer services for each proposed dwelling or building per KMC 14.13.020, KMC 14.22.020(1), KMC 17.13.095(1), KMC 17.12.055 and fire flow as required by the Fire Department. Water and sewer services to be constructed per City of Kennewick (COK) Detail 3-6. The meter shall be placed as close to the main line as possible (not in a driveway or parking area) per KMC 14.12.080.
13. When a property undergoing development has an existing water service or a mainline stub that will not be used, the developer's contractor must expose the water main and, in accordance with COK Standard Specification Section 4-3.01, remove the abandoned corporation stop and install a plug or remove the abandoned valve and install a blind flange.
14. Contractor will be required to install the meter box and tail pipe when the water service to the building is installed. The City will provide the meter box and tail pipe when requested.
15. Include a Comprehensive Water Plan for the Subdivision on the plans meeting KMC 14.10.010. Comprehensive water plan needs to be approved by the City for the entire plat prior to approval of Phase 1 construction plans. Comprehensive Plan can be submitted with the Preliminary Civil Plan review. Water Comprehensive plan shall include pipe size on their proposal.
16. Please note that this parcel is located within Zone 3 and is surrounded by existing Zone 3 waterlines along Olympia Street, W. 45th Avenue, W. 49th Avenue, and Kent Street. Because the parcel is situated near the upper limits of Zone 3, the City will require installation of a 12-inch waterline through the parcel to provide future service to the adjacent parcel to the southeast and to ultimately allow for a future connection at the Garfield Street/Cascade Street intersection.
17. Provide 15-foot wide easements or tracts centered over all water mains outside of the right-of-way. These easements must extend to 5 feet behind blow offs, water meters, fire hydrants, or other fixtures. Newly planted trees are not permitted within any existing easements.
18. All proposed water main extensions must conform to the adopted City master plan, as amended and must conform to an overall program for a grid system, with provisions made for extensions of looping for circulation where at all possible per KMC 14.10.030.
19. Provide backflow prevention assemblies on the building side of the water meter for commercial, multi-story, and sprinklered buildings per KMC 15.41.070.
20. Provide water lines and hydrants as required by Fire Department to meet fire protection.
21. Design Fire Line connections to serve buildings per COK Standard Drawing 4-25.
22. Provide a "fire flow requirement" signature block on the civil plans. Fire flow block will call out the type of construction material to for the building, the required fire flow and duration based on that type of construction, a fire sprinkler indication, any reduction in fire flow as allowed by the IFC, and the net required fire flow remaining.
23. On private development projects, all hydrants within 100-feet of the project limits shall be updated to current standards per COK Standard Specification 4-5.01.
24. Looping may be required based on hydraulic need to support maximum required fire flow at minimum residuals (per NFPA), as well as ensure sufficient turn over for water quality. If the applicant can demonstrate required fire flow is met, and water quality turnover is achieved, looping may not be required.
25. City potable water is not available for irrigation purposes unless special permission is given by the Public Works Director. Contact the Kennewick Irrigation District in order to provide irrigation water to irrigate the parcels.

PUBLIC WORKS

EMAIL kristin.stowe@ci.kennewick.wa.us **PHONE** 509-585-4349 **FAX** 509-585-4511

ADDRESS 1010 E Chemical Dr. Kennewick, WA 99336-0108

WEBSITE go2kennewick.com

26. There is an 8-inch sewer main located in S Olympia St available for connection, see COK Record Drawing C-4042. Please note that the Developer will be required to extend the existing sewer main located in W 45th Ave across the property's frontage at the developer's expense.
27. Every proposed dwelling shall be separately connected with the public sewer per KMC 14.22.030(10).
28. Main line cleanouts are not allowed for use in the right of way per COK Standard Specification Section 3-1.01.
29. Provide 15-foot wide easements or tracts centered over all sewer mains outside of the right-of-way. Newly planted trees are not permitted within any existing easements.
30. All proposed sanitary sewer extensions will be required at Developer expense. On the Plans, provide a Sewer Comprehensive Plan for the subdivision meeting KMC 14.22.040. A comprehensive sewer plan needs to be approved by the City for the entire plat prior to approval of Phase 1 construction plans. Comprehensive Plan can be submitted with the Preliminary Civil Plan review. Sewer Comprehensive plan shall include pipe size on their proposal.
31. Provide a Comprehensive Stormwater plan for the subdivision per KMC 14.28.045, City Standard Specifications Section 5-9, The Southridge Area Stormwater Master Plan, and Storm Management Manual of Eastern Washington (SMMEW) available at <https://www.go2kennewick.com/334/Stormwater>.
32. Storm design must include erosion control and conveyance of the upstream storm flow through the site as well as overflows at low points and the effect on downstream capacity. Infiltration tests are required at the location and depth of the planned infiltration structures along with a soils log to 5 feet below that point. Surface infiltration within each basin is the preferred method (ponds). All underground infiltration structures must be designed and installed to meet the Washington State Underground Injection Control (UIC) Rule. Provide an assessment of the design against the UIC pretreatment requirements. Provide UIC registration numbers on the plans prior seeking the City's signature. All drywells or infiltration structures shall be installed behind the curb and gutter, and may not be installed in the right of way. Stormwater infiltration structures serving the public right of way shall be installed in a dedicated tract to be maintained by the HOA or Developer. Contact Martin Nelson at (509) 585-4306 with any questions.
33. All plans showing existing utilities shall call out the Record Drawing set number that installed the utilities. All plans need to clearly identify the size and type of water/sewer utility that is being proposed or connected to (i.e. "Existing 8-inch Water" or similar). Label private lines "Private".
34. All required infrastructure improvements must be substantially completed prior to Final Plat approval per KMC17.10.260(2).
35. Any off site tracts, easements, or agreements required for the project shall be submitted with the civil plans for review. Before a permit can be issued for the project, a copy shall be provided to the Public Works Department. The Auditor File Number shall be added to the Final Record Drawings submitted at the end of construction.
36. This site will require a separate Public Works Construction permit. You may apply for this by submitting the information below for Civil Plan Review through the City of Kennewick's [Citizen Self Service Portal](#):
 - a. PDF copy of the Application for Civil Review and Storm Report.
 - b. One full size (24"x36") PDF copy of the construction plans.

PUBLIC WORKS

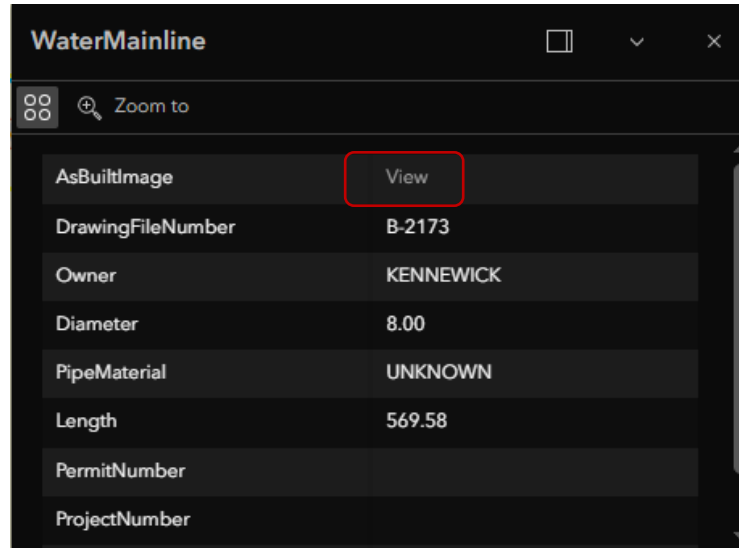
EMAIL kristin.stowe@ci.kennewick.wa.us **PHONE** 509-585-4349 **FAX** 509-585-4511

ADDRESS 1010 E Chemical Dr. Kennewick, WA 99336-0108

WEBSITE go2kennewick.com

37. Construct all projects using current City Survey Data. After project completion, Record Drawings showing improvements made on the property will be required prior to acceptance of the construction permit(s). For detailed information on Kennewick Survey Data and Record Drawings go to COK website at <https://www.go2kennewick.com/314/Civil-Plan-Review>.

The City of Kennewick has added a link to our as-built images in the [Utilities Map](#) located on the COK website.



PUBLIC WORKS

EMAIL kristin.stowe@ci.kennewick.wa.us **PHONE** 509-585-4349 **FAX** 509-585-4511

ADDRESS 1010 E Chemical Dr. Kennewick, WA 99336-0108

WEBSITE go2kennewick.com



MEMORANDUM**Traffic Engineering Division**

To: Joseph Laris, Planner
From: Kevin Biersner, Assistant Traffic Engineer
Date: May 20, 2026
Re: Traffic Engineering Comments for 4501 S Olympia St
Project: SUB-2026-0006

Project Description

4501 S Olympia St is proposing to develop the existing lot into 215 single family lots.

KMC 13.16 Transportation Impact Fees

1. The Transportation Impact Fee (TIF) is a one-time charge for direct impacts caused by the traffic generated from the proposed development and used to pay for transportation projects needed to address said impacts. The TIF amendment on June 5 2018 (effective June 14 2018) created Traffic Impact Fee Districts, which allows fees be remitted to projects congruent with the area where the impact is realized.
2. The 2026 District 1 Traffic Impact Fee for 215 Single-Family dwelling units is \$1,721.61 per dwelling unit. The total TIF is estimated to be \$370,146.15
3. The final fee will be assessed at the building permit for the structure as designed and is due prior to Certificate of Occupancy.

Traffic Operations

1. The Traffic Impact Analysis has been completed for the complete buildout of the development. The city concurs with the findings in the submitted TIA.

Proposed Roadway

1. Please refer to KMC 5.56.275(1)'s roadway centerline requirements.

5.56.275: - Street Radii and Grade.



- (1) Local Streets: Unless otherwise approved by the Deputy Director of Public Works, local streets shall be constructed with centerline radii which meet the following standards. On minor loop streets and cul-de-sac streets, where the street makes a 90-degree plus or minus five-degree turn, the minimum centerline radius shall be 50 feet. On all other minor loop street and cul-de-sac street curves, the minimum centerline radius shall be 150 feet. On all local through streets, other than minor loop streets, as determined by the Deputy Director of Public Works, the minimum centerline radius shall be 200. Unless otherwise approved by the Deputy Director of Public Works, the maximum grade on local streets shall be 12 percent.
- Please refer to KMC Standard Drawing No. 2-8 for intersection design guidelines.
 - Please refer to the table below for the design rate of vertical curvature, K, values for vertical curves at the proposed roadway design speed.

Table 3-34. Design Controls for Crest Vertical Curves Based on Stopping Sight Distance

Metric				U.S. Customary			
Design Speed (km/h)	Stopping Sight Distance (m)	Rate of Vertical Curvature, K ²		Design Speed (mph)	Stopping Sight Distance (ft)	Rate of Vertical Curvature, K ²	
		Calculated	Design			Calculated	Design
20	20	0.6	1	15	80	3.0	3
30	35	1.9	2	20	115	6.1	7
40	50	3.8	4	25	155	11.1	12
50	65	6.4	7	30	200	18.5	19
60	85	11.0	11	35	250	29.0	29
70	105	16.8	17	40	305	43.1	44
80	130	25.7	26	45	360	60.1	61
90	160	38.9	39	50	425	83.7	84
100	185	52.0	52	55	495	113.5	114
110	220	73.6	74	60	570	150.6	151
120	250	95.0	95	65	645	192.8	193
130	285	123.4	124	70	730	246.9	247
				75	820	311.6	312
				80	910	383.7	384

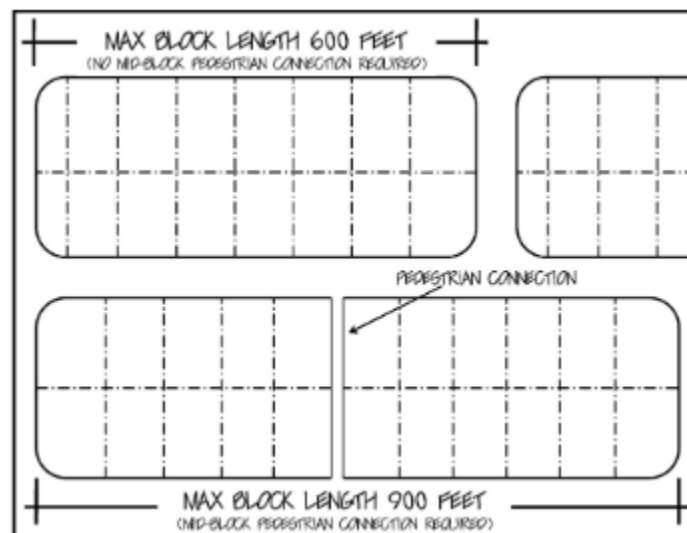
² Rate of vertical curvature, K, is the length of curve per percent algebraic difference in intersecting grades (A), $K = L/A$.

Table 3-36. Design Controls for Sag Vertical Curves

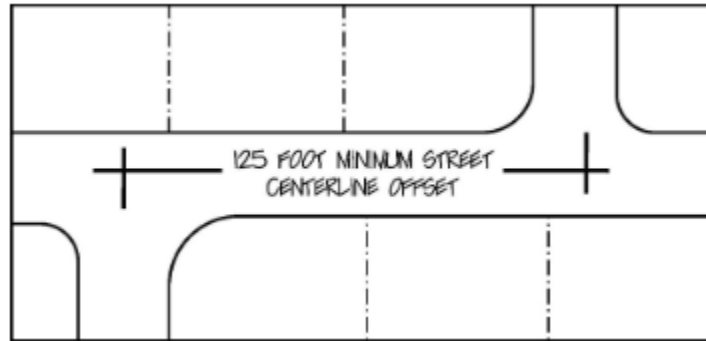
Metric				U.S. Customary			
Design Speed (km/h)	Stopping Sight Distance (m)	Rate of Vertical Curvature, K^2		Design Speed (mph)	Stopping Sight Distance (ft)	Rate of Vertical Curvature, K^2	
		Calculated	Design			Calculated	Design
20	20	2.1	3	15	80	9.4	10
30	35	5.1	6	20	115	16.5	17
40	50	8.5	9	25	155	25.5	26
50	65	12.2	13	30	200	36.4	37
60	85	17.3	18	35	250	49.0	49
70	105	22.8	23	40	305	63.4	64
80	130	29.4	30	45	360	78.1	79
90	160	37.6	38	50	425	95.7	96
100	185	44.6	45	55	495	114.9	115
110	220	54.4	55	60	570	135.7	136
120	250	62.8	63	65	645	156.5	157
130	285	72.7	73	70	730	180.3	181
				75	820	205.6	206
				80	910	231.0	231

² Rate of vertical curvature, K, is the length of curve (m) per percent algebraic difference intersecting grades (A), $K = L/A$.

- Please note that sightline setback triangles are required for all intersections per KMC 13.12.020(5) No view obstruction(s) between 36 inches and 90 inches above the roadway surface for both sides of the setback triangles, except as allowed in Section 13.12.020(6).
- KMC 17.20.010(2)(a) – Streets greater than 1,200 feet in continuous uninterrupted length will need traffic calming measure. Provide adequate right-of-way for traffic calming device.
- KMC 17.20.010(3)(b) – Mid-block pedestrian crossings



7. KMC 17.20.010(2)(I) – Residential streets shall be aligned at the center line or be offset a minimum of 125' while intersection with arterial or collector streets shall have a minimum centerline offset of 300'



8. The access on S Olympia St will need to align with the existing roadway across the street.
9. The western access on W 45th Ave will need to align with the church access. The eastern access on W 45th Ave will need to align with S Kent St.

Right of Way and Easement

1. The proposed internal streets will be functionally classified Local Street. Per KMC 5.56.65 full width street improvements are required per City of Kennewick Standard Drawing 2-1.
2. Dedicate the proposed internal streets to the City. The proposed development's license land surveyor will need to verify the right of way dedication to satisfy the roadway's minimum width based functional classification per City of Kennewick Standard Drawing 2-1.
3. ½ street improvements will be required along W 45th Ave. W 45th ave is classified as a collector. See COK std. dwg. 2-3 for details.
4. Record 18' public sidewalk, utility and irrigation easement along the proposed internal public streets per City of Kennewick Standard Drawing 2-1.
5. Record 15' public sidewalk, utility and irrigation easement along the frontage of the development on W 45th Ave and S Olympia St. proposed internal public streets per City of Kennewick Standard Drawing 2-1.
6. Please note that if joint or shared driveways will require recorded mutual Access Easement with the AFN shown on the plans.

Proposed Driveways

1. New driveway to be constructed to City of Kennewick standards.

2. Sight triangles need to follow COK code 18.27.060.

American Disability Act (ADA) Compliance

1. All proposed and existing pedestrian facilities within the public right of way and easement, including but not limited to driveways, sidewalks, curb ramps, etc, shall be ADA compliant.
2. We evaluated the existing sidewalk along S Olympia St and found that multiple locations where the cross slope is greater than the maximum allowed 2.1%.

Street Lights

1. Existing street lights along S Olympia St will need to be brought up to current city standards S Olympia St is classified a Minor Arterial.
2. New street lights will need to be installed along W 45th Ave. W 45th ave is classified as a collector.
3. See COK std. dwg. 6-2 for specifications.
4. New streets located within the development are classified as residential streets. Street lights will need to be installed per section 6 of City of Kennewick's standard specifications.
5. Roadway light plan sheet needs to include call-outs for power source, meter locations, junction boxes conduits and street light locations.



July 21, 2026

Joseph Laris, Assistant Planner
City of Kennewick - Community Planning
PO Box 6108
Kennewick, WA 99336

Subject: Review Comments Preliminary Plat of Pringle Heights (SUB-2026-0006)-Revision 1 Submittal

Dear Joseph:

This letter provides Kennewick Irrigation District (KID) review comments on the Preliminary Plat of Pringle Heights (City Application SUB-2026-0006), Revision 1 submittal, submitted by Harpster Land Development ("Applicant"¹) on behalf of Big Sky North, LLC. This letter supersedes the final review comment letter dated June 2, 2026. The subject property is generally located at 4501 South Olympia Street, Kennewick, Washington, in the Northwest Quarter of the Northwest Quarter of Section 24, Township 8 North, Range 29 East, W.M., Kennewick, Benton County, Washington, and includes the following parcels:

- 124892000001000 (37.70 irrigable acres)

The subject property identified on the proposed preliminary plat is located within KID boundaries, consists of 37.70 irrigable acres, and is classified as irrigable land. Accordingly, KID provides the following comments to be included as required conditions of approval by the legislative authority under RCW 58.17.310(2):

- 1) The plat shall include the following irrigation easements consistent with KID requirements:
 - a. Dedicate to KID an irrigation easement 10 feet in width via a recorded deed to match irrigation system components, centered on an irrigation pipeline.
 - b. On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or a five (5) feet in width "Kennewick Irrigation District Easement" if adjacent to a utility easement, located along the road frontage of each lot. An irrigation easement may be included within the 'sidewalk and utility' easement if

¹ Reference to the "Applicant" throughout this comment letter shall refer to the property owner and/or developer of the proposed plat.

one is proposed, denoting the easement as a "Sidewalk, Utility, and Irrigation Easement."

- c. A 15-foot wide irrigation easement will be required over Tract 'I', and over Tract 'J' running from Tract 'I' to the southerly line of the subdivision, or alternatively, adjacent to (not centered on) the common lot line of Lots 57 and 58.
- 2) The Applicant is required to install an irrigation system that conforms to the most recent edition of the KID Standard Specifications pursuant to Resolution 86-15-A. This includes providing distribution pipelines adequate to provide individual pressurized irrigation services to each lot within the preliminary plat. This system will be dedicated to KID upon completion, at the time of final plat.
 - a. KID Standard Specifications require a storage pond facility be constructed and sized appropriately for this plat application. Please dedicate this storage facility as a tract of land deeded to the KID. In addition, the KID Standard Specifications require a pump station facility be constructed and sized appropriately for this plat application.
 - i. Connection of the subject development's irrigation system to the KID system will be at the KID Division 4 Main Canal, Olympia Pool, along with necessary irrigation infrastructure to convey the irrigation water to the subject property.
 - b. **As an alternative** to a pond, pump station, and other "on-site" construction requirements per KID Standards Specifications, the Applicant and KID may mutually agree that it is in each of their best interests that other "off-site" improvements may be made to allow for the delivery of pressurized irrigation water to the plat. The other improvements would be proportionate and equal to the "on-site" requirements and may include:
 - i. Contributions made towards a regional pump facility.
 - ii. The installation of pipelines off site.
 - 3) Design of the required irrigation system must be approved by KID prior to installation. The Applicant is required to submit an irrigation plan designed by a professional engineer for review and approval by KID. The plan may be hand drawn or computer drafted. The plan shall be accurate and to a scale not to exceed one (1) inch = 50 feet. This is a vital step of the approval process. In addition to compliance with condition 2 above, the plan must ensure all reasonable measures are taken to protect any easements, rights-of-way, and facilities. Please contact Jan Enstad at 586-6012 for more information regarding this irrigation plan.
 - 4) Completion of all the facilities, consistent with an irrigation plan approved by KID, is required prior to KID signature on the final plat.
 - a. In the event any KID facilities are damaged during construction, the damage must be fully repaired to KID's then-existing standards.
 - b. For each phase of the plat, KID review and approval of construction and grading plans is required to allow KID to assure all reasonable measures to protect any

easements and rights-of-way. Such review and approval will be coordinated as part of City review and the final plat approval process.

- c. KID must inspect any new irrigation system installations or modifications. The Applicant shall contact KID to schedule an inspection at least two business days in advance of the desired inspection date.
- d. As an alternative to immediate construction prior to approval of the final plat, the Applicant may choose to delay installation of the irrigation system by entering into a facilities installation agreement with KID. The Applicant must still provide KID with an irrigation system design that conforms to the most recent addition of the KID standard specifications. This irrigation system may be bonded and delayed up to five years. The facility installation agreement charge is \$750.00. The Applicant must establish an approved bonding mechanism with KID in an amount approved by KID.

Finally, KID requests the following additional conditions of final plat approval:

- 5) Prior to approval of each phase, the current year's assessment must be paid. If the final plat is submitted for review after May 31st of a given year or submitted for review prior to May 31st but not submitted for final approval prior to June 15th, the next year's estimated assessment (125% of the current year's assessment) must be paid prior to plat approval.
- 6) Prior to approval of the first phase, the United States Bureau of Reclamation (USBR) construction loan payoff for **all parcels** owned by the property owner within the boundaries of KID must be paid. According to KID records, the subject property is the only property owned by the property owner at this time.
 - a. The current construction loan payoff rates provided by the USBR is 13.20/acre (new lands). The total construction loan payoff amount for this project is \$497.64.
- 7) The review and inspection fees in place at the time of each review request must be paid. At the time of application the review fees are as follows:
 - a. A preliminary plat review fee of \$1,000 which must be paid prior to scheduling for final plat approval at a KID Board meeting for the first phase.
 - b. For each phase an inspection fee of \$500 for the first 20 lots/tracts plus \$30 per lot/tract after 20 lots/tracts.
 - c. Final plat review fee for each phase of \$500.
- 8) Per KID Policy 4.17, "Irrigable Land Recalibration Principles," as land within the plat is subdivided or developed, KID will remove the irrigation water allocation from the impermeable surfaces, such as streets, from the plats.

- 9) In order to receive KID irrigation water delivery, a water master (or point of contact) for the subdivision must be appointed. This water master can be appointed by the Homeowners Association (or similar organization) officers or must be elected from among the property owners within the boundary of this proposed subdivision. If no HOA (or similar organization) is organized, then an election method similar to the attached document is required.
- 10) Prior to approval of each phase, an electronic file (AutoCAD 2004 format or later) and hard copy (6-mil mylar, sealed by a professional engineer) of construction as-builts must be provided to KID.
- 11) Please include the following irrigation title block on future final plats related to the proposed preliminary plat:
 - a. I HEREBY CERTIFY THAT THE PROPERTY DESCRIBED HEREIN IS LOCATED WITHIN THE BOUNDARIES OF THE KENNEWICK IRRIGATION DISTRICT, AND THAT THE IRRIGATION EASEMENTS SHOWN ON THIS FINAL PLAT ARE ADEQUATE TO SERVE ALL LOTS SHOWN HEREON. I FURTHER CERTIFY THAT THOSE LOTS WHICH ARE ENTITLED TO IRRIGATION WATER UNDER THE OPERATING RULES AND REGULATIONS OF THE DISTRICT HAVE SATISFIED THE REQUIREMENTS OF RCW 58.17.310, AND THAT ALL ASSESSMENTS HAVE BEEN PAID THROUGH THE YEAR 20____ A.D.
- 12) All subdivisions of land are required to be approved by the KID Board of Directors during a KID board meeting. KID board meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of two weeks prior to a regularly scheduled board meeting to be considered at that meeting.

KID reserves the following rights regarding future review of the plat:

- 13) KID reserves the right to provide review comments under RCW 58.17.330(1) and RCW 58.17.330(2) in response to future design submittals by the Applicant prior to final plat approval. The scope of these reviews will be limited to phases that are adjacent to the District's ROW. KID review of construction plans will be consistent with the City's plan review timelines.
- 14) KID reserves the right to review and comment on the Applicant's plat line revisions for potential additional revisions to protect KID system components for phases that are adjacent to KID's easements or ROW.
- 15) KID reserves the right to review and comment on the Applicant's covenants, conditions, and restrictions to evaluate whether they should include any terms regarding protection of KID system components after construction and fencing requirements.

16) KID reserves the right to submit additional comments during the City's review process under the State Environmental Policy Act (SEPA).

Please provide notice to KID of any public meeting or hearing where this project will be an agenda item. If you have any questions regarding these comments, please contact me at the address/phone number listed below.

Sincerely,

A handwritten signature in blue ink, appearing to read 'B. Woodard', with a stylized flourish at the end.

Ben Woodard, P.E.
Engineering & Operations Manager

Enc: Sample Water Master Information

cc: LB\correspondence\File: [24-8-29]
Applicant via mail - Harpster Land Development, ATTN: Peter Harpster, 5804 Road 90, Suite C, Pasco, WA 99301

Sample Watermaster Election Process

That the Water Users are deemed to agree as a condition of water delivery as follows::

- i. The LID participants will elect a Watermaster from among themselves, as follows:
 - a. Election of First Watermaster. The first Watermaster shall be elected prior to April 1, 2011, and shall be elected as described in paragraph d. below.
 - b. Resignation of Watermaster. If the Watermaster resigns, the parties shall meet at a place and time designated by the resigning Watermaster in a written notice and elect a new Watermaster, or if the Watermaster does not designate a time and a place for such a meeting, the parties shall meet at a time and a place first designated in writing by two of the parties hereto to elect a new Watermaster.
 - c. Death or Incapacity of Watermaster. If the Watermaster dies or becomes incapacitated, the parties shall meet at a time and a place first designated in writing by two of the parties hereto to elect a new Watermaster.
 - d. Elections and Replacement of Watermaster. The Watermaster shall be assigned by the elected members of the Royal Ann Estates Homeowner Association Board of Directors. If the Homeowner's Association defaults or stops functioning, the Watermaster shall be elected by and may be replaced by a sixty percent (60%) majority of the Water Users participating in the LID at an election called for by a majority of the properties that are subject hereto. Each property shall have one (1) vote. If more than one person owns a property, the owners of the property shall designate in writing the person who shall have the right to vote for that property. If the owners of the property cannot agree on the person who shall vote for the property, that property shall have no vote in the election. The owners' properties which are calling for an election or replacement of a new Watermaster shall give or cause the other parties to be given a written notice stating the place and time of the election. Any notice required under this paragraph, which notice shall be mailed by U.S. Mail as certified mail to the common address identified above for the property not more than thirty days and not less than ten days

prior to the election. Any election held hereunder shall be held in Benton County, Washington, between 6:00 p.m. and 9:00 p.m.

- ii. Powers and Duties of Watermaster. The Watermaster shall have the power and it shall be his or her duty to take all actions reasonably necessary to fulfill the purposes of this agreement, including but not limited to:
 - a. Provide a primary point of contact for KID to communicate system problems, outages, schedules, drought mitigation measures, etc.
 - b. Assist KID in providing the LID participants information regarding system problems, outages, water schedules, drought mitigation measures, etc.
- iii. Qualified Immunity of Watermaster from Liability. The Watermaster shall not be liable for any damages caused to the parcels or persons subject hereto so long as the Watermaster acts in good faith.
- iv. No water delivery unless a Watermaster is performing duties. If at any time a Watermaster no longer is performing his/her duties, as outlined above, for more than 30 days, KID will stop water delivery to the participants of the LID until a new Watermaster has been elected.
- v. Alternate Watermaster. An alternate Watermaster may be elected in the same manner as described above for the Watermaster. This alternate Watermaster can function as Watermaster for a limited time, not to exceed 60 days, in case of the elected Watermaster being unavailable.



BENTON CLEAN AIR AGENCY

July 14, 2026

Re: SUB-2026-0006

Joseph Laris
Assistant Planner
210 W 6th Ave
Kennewick, WA 99336

Applicant/Proponent: Big Sky North LLC
Attn: Dave Greeno
5810 Midland Ln, Unit 65
Pasco, WA 99301

Dear Mr. Laris:

It has come to our attention that you are reviewing a proposal for the above named SEPA proposal in which a parcel or parcels will be disturbed for development. Because these activities may cause possible fugitive dust emissions, we would like to take this opportunity to provide information to ensure that the applicant takes reasonable steps to control the dust from his/her project.

The Benton Clean Air Agency (BCAA) requires the applicant submit a Proof of Contact: Soil Destabilization Notification for this project prior to any excavation/construction taking place. This will insure that the proponent has the ability and resources to control fugitive dust emissions that may be created as a result of construction activities. This will also inform them of the regulations and requirements of the BCAA. Additionally, a written dust control plan must be developed and maintained for all soil destabilization projects, and must be readily available upon request by the BCAA. Part of this plan is submitting the name of at least one person for the project so that the BCAA has a point of contact should we receive any dust complaints from the project. The Soil Destabilization Notification form can be found and submitted on our website, www.bentoncleanair.org.

Thank you for the opportunity to comment on this proposal. If you have any questions, or would like further information on this subject, please contact us at (509) 783-1304.

Sincerely,

Deon Steichen

Deon Steichen
Inspector



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

May 26, 2026

Joseph Laris
Assistant Planner
City of Kennewick

In future correspondence please refer to:

Project Tracking Code: **2026-05-03755**

Property: City of Kennewick - SUB 2026-0006 ED-2026-0010 - Pringle Heights Subdivision

Re: **Survey Requested**

Dear Joseph Laris:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) and providing documentation regarding the above referenced project. As a result of our review, our professional opinion is that the project area has the potential to contain archaeological resources. The project is in an area determined to be at Moderate- risk of containing archaeology according to the DAHP risk assessment model. The scale of the proposed ground disturbing actions would destroy any archaeological resources present. Identification during construction is not a recommended detection method because inadvertent discoveries often result in costly construction delays and damage to the resource. Therefore, we recommend a professional archaeological survey with testing of the project area be conducted prior to ground disturbing activities. We also recommend continuing consultation with the Affected Tribes' cultural committees and staff regarding cultural resource issues.

These comments are based on the information available at the time of this review and on behalf of the SHPO in conformance with Washington State law. Should additional information become available, our assessment may be revised.

Thank you for the opportunity to comment on this project and we look forward to receiving the survey report. The survey report should be uploaded directly into the DAHP Online WISAARD system by the cultural resource consultant to expedite DAHP review. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. Should you have any questions, please feel free to contact me.

Sincerely,

James MacNaughton, M.S.
Local Government Archaeologist
(360) 280-7563
James.MacNaughton@dahp.wa.gov



Joseph Laris

From: Regan Hutchinson <Regan_Hutchinson@Yakama.com>
Sent: Thursday, July 16, 2026 3:45 PM
To: Joseph Laris
Cc: Jessica Lally; Ian Gray; MacNaughton, James (DAHP)
Subject: RE: Agency Notification Revised Plat SUB-2026-0006

Categories: External Agency Responses

Good afternoon, Joseph

Thank you for contacting the Yakama Nation Cultural Resource Program. YNCRP is requesting that an Inadvertent Discovery Plan (IDP) is implemented for this project, and that Yakama Nation CRP is one of the points of contact for the IDP.

Thank you, and have a good day,

Regan Hutchinson
 Archeologist III
 Yakama Nation Cultural Resources Program

Email: Regan_Hutchinson@yakama.com
 Phone: 509 865 5121 Ext. 4776

From: Jessica Lally <Jessica_Lally@Yakama.com>
Sent: Tuesday, July 14, 2026 12:54 PM
To: Regan Hutchinson <Regan_Hutchinson@Yakama.com>; Ian Gray <Ian_Gray@Yakama.com>
Subject: Fw: Agency Notification Revised Plat SUB-2026-0006

From: Joseph Laris <Joseph.Laris@ci.kennewick.wa.us>
Sent: Monday, July 13, 2026 4:45 PM
To: Ashley M. Morton; Ben Franklin Transit; Benton Clean Air Agency; Benton Clean Air Authority - Rob Rodger; Benton Clean Air Authority - Tyler Thompson; Benton Clean Air John Lyle; Benton County Assessor - Segregations; Benton Franklin Health Dept. - Erin Hockaday; Benton PUD - engineering services; Benton PUD - Jeff Vosahlo; Benton PUD Chad Brooks; Benton PUD Evan Edwards; Benton PUD Shanna Everson; Benton PUD Tina Glines; BPA - Deborah Rodgers; BPA - Valorie Connell; BPA- Melissa Kelly; BPUD - Angela Richman (richmana@bentonpud.org); Cascade Gas James Thomas; Cascade Natural Gas; Cascade Natural Gas - Jody Adams; Casey Barney; Charter - Junior Campos; Columbia Irrigation District; Dept of Arhaeology and Historic Preservation (sepa@dahp.wa.gov); Dustin Fisk - Kennewick School District (dustin.fisk@ksd.org); Greg Wendt (Greg.Wendt@co.benton.wa.us); Jessica Lally; KID Development; Mike Beck - Spectrum ; Mike Rizzitiello- City of Richland; Noah Oliver ; Spectrum; US Army Corps of Engineers - Seattle; US Army Corps of Engineers- Walla Walla; USPS- Kim Salazar (Kim.K.Salazar@usps.gov); WDFW (R3Planning@dfw.wa.gov);

Williams Pipeline- Eric Smull; WSDOT; Environmental Review; Ziply Fiber Christy Ross

Subject: Agency Notification Revised Plat SUB-2026-0006

Good afternoon,

The City of Kennewick has received a revised Preliminary Plat that requires your attention.

Description: This proposal is for the approval of a preliminary plat application for future development of the full 37.67 acres of Parcel 124892000001000 into 209 single-family lots

Address: 4501 S Olympia St

Parcel #: 124892000001000

Land Use: Low Density Residential

Please review over the attached plat map and submit any comments by July 23, You can submit comments to joseph.laris@ci.kennewick.wa.us or mail them to: Development Services Division, PO Box 6108, Kennewick, WA 99336.



Joseph Laris

Assistant Planner

Office 509.585.4558

Email joseph.laris@ci.kennewick.wa.us

210 W 6th Ave Kennewick, WA 99336



This communication (and any reply) is subject to the public records act, RCW 42.56. The City of Kennewick is committed to transparency in government, and we will provide our customers with the fullest assistance

Exhibit 9

possible when they request access to public records. Individuals wishing to obtain public records shall submit their requests in accordance with the [City's Public Records Policy](#).

Joseph Laris

From: Segregations <segregations@co.benton.wa.us>
Sent: Monday, May 11, 2026 11:56 AM
To: Joseph Laris
Subject: RE: Agency Notification SUB-2026-0006 and ED-2026-0010

Categories: External Agency Responses

Hi Joseph,

In the legal description on pre-plat map attachment, it is missing a portion in the legal, where a portion was taken by eminent domain for road purposes AF# 2011-006460, 03/01/2011.

Thank you,



Kimberly Schultz
 Office Specialist
 Benton County Assessor's Office
 Kennewick: (509) 735-2394 (ext. 2518)
kimberly.schultz@co.benton.wa.us

From: Joseph Laris <Joseph.Laris@ci.kennewick.wa.us>
Sent: Monday, May 11, 2026 11:16 AM
To: Ashley M. Morton <AshleyMorton@ctuir.org>; Ben Franklin Transit <BFTdevelopmentreview@bft.org>; Benton Clean Air Agency <contact@bentoncleanair.org>; rob.rodger@bentoncleanair.org; Benton Clean Air Authority - Tyler Thompson <tyler.thompson@bentoncleanair.org>; john.lyle@bentoncleanair.org; Segregations <segregations@co.benton.wa.us>; Benton Franklin Health Dept. - Erin Hockaday <erint@bfhd.wa.gov>; Benton PUD - engineering services <engservice@bentonpud.org>; Benton PUD - Jeff Vosahlo <vosahloj@bentonpud.org>; Benton PUD Chad Brooks <brooksc@bentonpud.org>; Benton PUD Evan Edwards <edwardse@bentonpud.org>; Benton PUD Shanna Everson <eversons@bentonpud.org>; Benton PUD Tina Glines <glinest@bentonpud.org>; BPA - Deborah Rodgers <dxrogers@bpa.gov>; BPA - Nicole Cummings <NMCummings@bpa.gov>; BPA - Valorie Connell <VLConnell@bpa.gov>; BPA- Angela Castle <ACCastle@BPA.gov>; BPUD - Angela Richman (richmana@bentonpud.org) <richmana@bentonpud.org>; Cascade Gas James Thomas <james.thomas@cngc.com>; Cascade Natural Gas <roger.johnson@cngc.com>; Cascade Natural Gas - Jody Adams <jody.adams@cngc.com>; Casey Barney <Casey_Barney@Yakama.com>; Charter - Junior Campos <junior.campos@charter.com>; Columbia Irrigation District <cid@columbiairrigation.com>; Dept of Archaeology and Historic Preservation (sepa@dahp.wa.gov) <sepa@dahp.wa.gov>; Dustin Fisk - Kennewick School District (dustin.fisk@ksd.org) <dustin.fisk@ksd.org>; Greg Wendt <Greg.Wendt@co.benton.wa.us>; Jessica Lally <Jessica_Lally@Yakama.com>; KID Development <development@kid.org>; Mike Beck - Spectrum <Mike.Beck@charter.com>; Mike Stevens - (mstevens@ci.richland.wa.us) <mstevens@ci.richland.wa.us>; Noah Oliver <Noah_Oliver@Yakama.com>; Spectrum <Ryan.Sams@charter.com>; US Army Corps of Engineers - Seattle <paoteam@nws02.usace.army.mil>; US Army Corps of Engineers- Walla Walla <cenww-re@usace.army.mil>; USPS- Kim Salazar (Kim.K.Salazar@usps.gov) <Kim.K.Salazar@usps.gov>; WDFW (R3Planning@dfw.wa.gov) <R3Planning@dfw.wa.gov>; Williams Pipeline- Eric Smull <Eric.Smull@williams.com>; WSDOT <scplanning@wsdot.wa.gov>; Yakama Nation - Thalia Sachtelban <enviroreview@yakama.com>; Ziply Fiber Christy Ross <christy.ross@ziply.com>
Subject: [EXTERNAL] Agency Notification SUB-2026-0006 and ED-2026-0010

Good morning,

The City of Kennewick has received a preliminary plat and SEPA checklist that requires your attention.

Description: preliminary plat application for future development of the full 37.67 acres of Parcel 124892000001000 into 213 single-family lots.

Address: 4501 S Olympia St

Parcel #: 124892000001000

Land Use: Low Density Residential

Please review over the attached documents and have any comments back by May 27. You can submit comments to joseph.laris@ci.kennewick.wa.us or mail them to: Development Services Division, PO Box 6108, Kennewick, WA 99336.



Joseph Laris

Assistant Planner

Office 509.585.4558

Email joseph.laris@ci.kennewick.wa.us

210 W 6th Ave Kennewick, WA 99336



This communication (and any reply) is subject to the public records act, RCW 42.56. The City of Kennewick is committed to transparency in government, and we will provide our customers with the fullest assistance possible when they request access to public records. Individuals wishing to obtain public records shall submit their requests in accordance with the [City's Public Records Policy](#).

Joseph Laris

From: Joseph Laris
Sent: Thursday, July 16, 2026 10:11 AM
To: 'BFT Development Review'
Cc: Gabe Martin; Christopher Lilyblade
Subject: RE: Agency Notification Revised Plat SUB-2026-0006

Hello,

Yes, those skinny tracts are intended for pedestrian walkways. As far as I know, the developer will be required to make at least half street improvements along 45th which includes installing new sidewalk. I've forwarded this email to traffic so if I get any other information I will let you know.



Joseph Laris
Assistant Planner
Office 509.585.4558
Email joseph.laris@ci.kennewick.wa.us
210 W 6th Ave Kennewick, WA 99336



This communication (and any reply) is subject to the public records act, RCW 42.56. The City of Kennewick is committed to transparency in government, and we will provide our customers with the fullest assistance possible when they request access to public records. Individuals wishing to obtain public records shall submit their requests in accordance with the [City's Public Records Policy](#).

From: BFT Development Review <BFTdevelopmentreview@bft.org>
Sent: Wednesday, July 15, 2026 12:34 PM
To: Joseph Laris <Joseph.Laris@ci.kennewick.wa.us>
Cc: Gabe Martin <GMartin@bft.org>; Christopher Lilyblade <CLilyblade@bft.org>
Subject: RE: Agency Notification Revised Plat SUB-2026-0006

Hello Joseph,

I hope you are doing well.

Thank you for sharing this development plan with us. We reviewed it carefully and have one question regarding pedestrian access to and from the development.

I have attached an image to this email and wanted to confirm whether the area highlighted in red represents the pedestrian access to the street.

If we consider bringing Route 41 closer to serve this development in the future, the most likely bus stop locations would be either along W 45th Ave, on the west side of the development, or along S Olympia St,

to the north. We wanted to make sure that residents of this development will have safe and convenient pedestrian access to these potential bus stop locations.

We were also wondering whether sidewalks will be provided around the development to make pedestrian access easier and safer.

Thank you, and we look forward to your clarification.

From: Joseph Laris <Joseph.Laris@ci.kennewick.wa.us>

Sent: Monday, July 13, 2026 4:46 PM

To: Ashley M. Morton <AshleyMorton@ctuir.org>; BFT Development Review <BFTdevelopmentreview@bft.org>; Benton Clean Air Agency <contact@bentoncleanair.org>; Benton Clean Air Authority - Rob Rodger <rob.rodger@bentoncleanair.org>; Benton Clean Air Authority - Tyler Thompson <tyler.thompson@bentoncleanair.org>; Benton Clean Air John Lyle <john.lyle@bentoncleanair.org>; Benton County Assessor - Segregations <Segregations@co.benton.wa.us>; Benton Franklin Health Dept. - Erin Hockaday <erint@bfhd.wa.gov>; Benton PUD - engineering services <engservice@bentonpud.org>; Benton PUD - Jeff Vosahlo <vosahloj@bentonpud.org>; Benton PUD Chad Brooks <brooksc@bentonpud.org>; Benton PUD Evan Edwards <edwardse@bentonpud.org>; Benton PUD Shanna Everson <eversons@bentonpud.org>; Benton PUD Tina Glines <glinest@bentonpud.org>; BPA - Deborah Rodgers <dxrodders@bpa.gov>; BPA - Valorie Connell <VLConnell@bpa.gov>; BPA- Melissa Kelly <MSKelly@bpa.gov>; BPUD - Angela Richman <richmana@bentonpud.org>; Cascade Gas James Thomas <james.thomas@cngc.com>; Cascade Natural Gas <roger.johnson@cngc.com>; Cascade Natural Gas - Jody Adams <jody.adams@cngc.com>; Casey Barney <Casey_Barney@Yakama.com>; Charter - Junior Campos <junior.campos@charter.com>; Columbia Irrigation District <cid@columbiairrigation.com>; Dept of Archaeology and Historic Preservation <sepa@dahp.wa.gov>; Dustin Fisk - Kennewick School District <dustin.fisk@ksd.org>; Greg Wendt <Greg.Wendt@co.benton.wa.us>; Jessica Lally <Jessica_Lally@Yakama.com>; KID Development <development@kid.org>; Mike Beck - Spectrum <Mike.Beck@charter.com>; Mike Rizzitiello- City of Richland <mrizzitiello@richlandwa.gov>; Noah Oliver <Noah_Oliver@Yakama.com>; Spectrum <Ryan.Sams@charter.com>; US Army Corps of Engineers - Seattle <paoteam@nws02.usace.army.mil>; US Army Corps of Engineers- Walla Walla <cenww-re@usace.army.mil>; USPS- Kim Salazar <Kim.K.Salazar@usps.gov>; WDFW <R3Planning@dfw.wa.gov>; Williams Pipeline- Eric Smull <Eric.Smull@williams.com>; WSDOT <scplanning@wsdot.wa.gov>; Yakama Nation - Thalia Sachtleban <enviroreview@yakama.com>; Ziplly Fiber Christy Ross <christy.ross@ziplly.com>

Subject: Agency Notification Revised Plat SUB-2026-0006

External sender <joseph.laris@ci.kennewick.wa.us>

Make sure you trust this sender before taking any actions.

Good afternoon,

The City of Kennewick has received a revised Preliminary Plat that requires your attention.

Description: This proposal is for the approval of a preliminary plat application for future development of the full 37.67 acres of Parcel 124892000001000 into 209 single-family lots

Address: 4501 S Olympia St

Parcel #: 124892000001000

Land Use: Low Density Residential

Exhibit 11A

Please review over the attached plat map and submit any comments by July 23, You can submit comments to joseph.laris@ci.kennewick.wa.us or mail them to: Development Services Division, PO Box 6108, Kennewick, WA 99336.



Joseph Laris

Assistant Planner

Office 509.585.4558

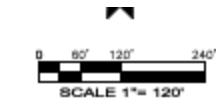
Email joseph.laris@ci.kennewick.wa.us

210 W 6th Ave Kennewick, WA 99336



This communication (and any reply) is subject to the public records act, RCW 42.56. The City of Kennewick is committed to transparency in government, and we will provide our customers with the fullest assistance possible when they request access to public records. Individuals wishing to obtain public records shall submit their requests in accordance with the [City's Public Records Policy](#).

Exhibit 11B



SCALE 1"= 120'

DISTRICT

CORPORATION

NG OF CITY OF KENNEWICK
AP MARKING THE NW
1/4 OF SECTION 24,
T11N, R10E, S10E, 1/4
7.13 FEET (NAVD 88).

ABISHED BY
IS NETWORK (MGR).

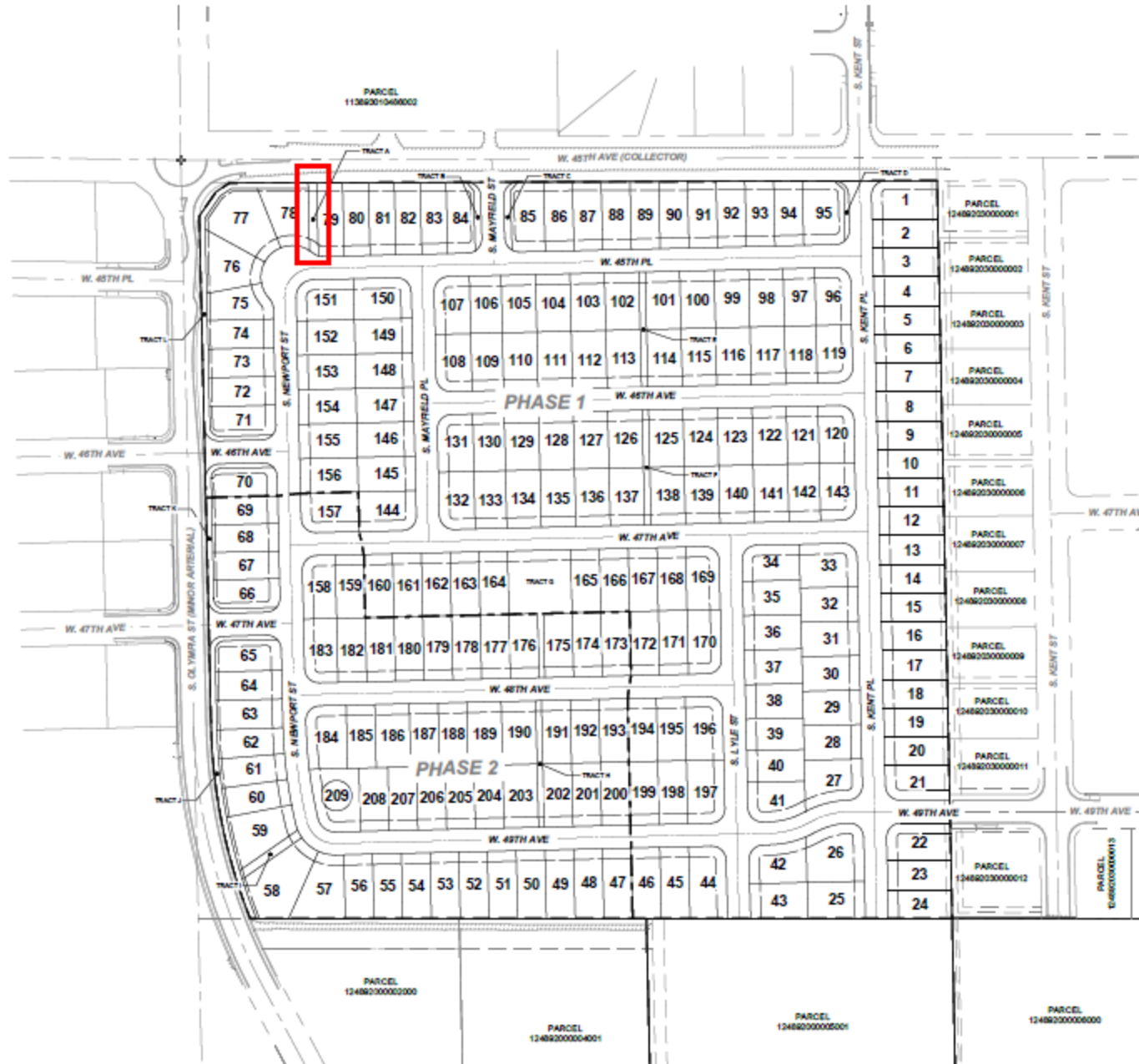
DATA SHOWN ON THESE
SED ON INFORMATION FURNISHED
VED TO BE RELIABLE, HARPSTER
JACY AND THIS IS NOT
FORMATION OR FOR ANY ERRORS
PORATED INTO THESE DRAWINGS

ST QUARTER OF SECTION 24,
CORDS OF BENTON COUNTY,

HWESTERLY OF SOUTH OLYMPIA
A WIDOW, BY DEED RECORDED
34;

VEYED TO BENTON COUNTY FOR
IGUST 11, 1953, APRIL 3, 1969, AND
0703, 800020, AND 707136,

Y OF BENTON, STATE OF



SHEET INDEX

SHEET NUMBER	SHEET
1	COVER
2	PARCEL LAY
3	PARCEL LAY
4	PRELIMINARY
5	PARCEL

LAND USE TABLE

CURRENT ZONING
TOTAL SITE AREA
TOTAL RESIDENTIAL AREA
TOTAL TRACT AREA
TOTAL RIGHT OF WAY AREA
RESIDENTIAL LOT COUNT
RESIDENTIAL LOT DENSITY
AVERAGE RESIDENTIAL LOT
MINIMUM RESIDENTIAL LOT
MAXIMUM RESIDENTIAL LOT
NUMBER OF CONSTRUCTION
RESIDENTIAL LOTS PER PHASE (IN ORDER, PHASES 1-3)
RIGHT OF WAY AREA PER PHASE (IN ORDER, PHASES 1-3)

TRACT TABLE

TRACT NAME	AREA (ACRES)
TRACT A	1.851
TRACT B	1.824
TRACT C	1.807
TRACT D	7.803
TRACT E	2.338
TRACT F	2.338
TRACT G	13.271
TRACT H	2.338
TRACT I	1.806
TRACT J	6.740
TRACT K	6.102
TRACT L	6.740
ROW	335.19

*PEDESTRIAN CONNECT
BE DEDICATED TO THE IN
PERPETUITY.



CITY OF KENNEWICK DETERMINATION OF NON-SIGNIFICANCE

FILE/PROJECT NUMBER: ED-2026-0010

DESCRIPTION OF PROPOSAL: Future development of the full 37.67 acres of Parcel 124892000001000 into 213 single-family lots.

PROPONENT: Harpster Land Development, c/o Peter Harpster, 5804 Road 90 Suite C, Pasco, WA 99301

LOCATION OF PROPOSAL, INCLUDING STREET ADDRESS, IF ANY: 4501 S OLYMPIA ST

LEAD AGENCY: City of Kennewick

DETERMINATION: The City of Kennewick has determined that this proposal does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) will not be required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the city. This information is available to the public on request. Application for other required permits may require further review under SEPA procedures.

- ☒ There is no comment period for this DNS.
- ☐ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.
- ☐ This DNS is issued under 197-11-340(2); the City will not act on this proposal for fifteen days from the date below. Comments must be submitted by _____. After the review period has elapsed, all comments received will be evaluated and the DNS will be retained, modified, or withdrawn as required by SEPA regulations.

RESPONSIBLE OFFICIAL: Anthony Muai, AICP

POSITION/TITLE: Planning Director

ADDRESS: 210 W 6th Ave., P.O. Box 6108, Kennewick, WA 99336

PHONE: (509) 585-4386

☐ Changes, modifications and/or additions to the checklist have been made on the attached Environmental Checklist Review.

This DNS is subject to the attached conditions:

- ☐ No conditions.
- ☒ See attached condition(s).

Project is subject to the following conditions:

- Comply with the DAHP comment letter dated May 26, 2026.
- Comply with the BCAA comment letter dated May 11, 2026.

Date: June 2, 2026

Signature: _____

Appeal: An appeal of this determination must be submitted to the Community Planning Department within fourteen (14) calendar days after the date issued and no later than 5 p.m. This appeal must be written and make specific factual objections to the City's threshold determination. Appeals shall be conducted in conformance with Section 4.12.090(9) of the Kennewick Municipal Code and the required fees pursuant to the City's adopted Fee Schedule shall be paid at time of appeal submittal.

Copies of this DNS were mailed to:

Dept. of Ecology
WA Dept. of Fish & Wildlife
WSDOT
Yakama Nation
CTUIR



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

May 26, 2026

Joseph Laris
Assistant Planner
City of Kennewick

In future correspondence please refer to:

Project Tracking Code: **2026-05-03755**

Property: City of Kennewick - SUB 2026-0006 ED-2026-0010 - Pringle Heights Subdivision

Re: **Survey Requested**

Dear Joseph Laris:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) and providing documentation regarding the above referenced project. As a result of our review, our professional opinion is that the project area has the potential to contain archaeological resources. The project is in an area determined to be at Moderate- risk of containing archaeology according to the DAHP risk assessment model. The scale of the proposed ground disturbing actions would destroy any archaeological resources present. Identification during construction is not a recommended detection method because inadvertent discoveries often result in costly construction delays and damage to the resource. Therefore, we recommend a professional archaeological survey with testing of the project area be conducted prior to ground disturbing activities. We also recommend continuing consultation with the Affected Tribes' cultural committees and staff regarding cultural resource issues.

These comments are based on the information available at the time of this review and on behalf of the SHPO in conformance with Washington State law. Should additional information become available, our assessment may be revised.

Thank you for the opportunity to comment on this project and we look forward to receiving the survey report. The survey report should be uploaded directly into the DAHP Online WISAARD system by the cultural resource consultant to expedite DAHP review. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. Should you have any questions, please feel free to contact me.

Sincerely,

James MacNaughton, M.S.
Local Government Archaeologist
(360) 280-7563
James.MacNaughton@dahp.wa.gov





BENTON CLEAN AIR AGENCY

May 11, 2026

Re: SUB-2026-0006 & ED-2026-0010

Joseph Laris
Assistant Planner
210 W 6th Ave
Kennewick, WA 993336

Applicant/Proponent: Harpster Land Development
Attn:
5804 Rd 90, Ste. C
Pasco, WA 99301

Dear Mr. Laris:

It has come to our attention that you are reviewing a proposal for the above named SEPA proposal in which a parcel or parcels will be disturbed for development. Because these activities may cause possible fugitive dust emissions, we would like to take this opportunity to provide information to ensure that the applicant takes reasonable steps to control the dust from his/her project.

The Benton Clean Air Agency (BCAA) requires the applicant submit a Proof of Contact: Soil Destabilization Notification for this project prior to any excavation/construction taking place. This will insure that the proponent has the ability and resources to control fugitive dust emissions that may be created as a result of construction activities. This will also inform them of the regulations and requirements of the BCAA. Additionally, a written dust control plan must be developed and maintained for all soil destabilization projects, and must be readily available upon request by the BCAA. Part of this plan is submitting the name of at least one person for the project so that the BCAA has a point of contact should we receive any dust complaints from the project. The Soil Destabilization Notification form can be found and submitted on our website, www.bentoncleanair.org.

Thank you for the opportunity to comment on this proposal. If you have any questions, or would like further information on this subject, please contact us at (509) 783-1304.

Sincerely,

Deon Steichen

Deon Steichen
Inspector

Pringl Proj Kennewick, WA

Traffic Impact Analysis
April 13, 2026

Prepared for:

*Big Sky North, LLC
5810 Midland Lane, Unit 65
Pasco, WA 99301*

Prepared by:



520 Kirkland Way, Suite 100
Kirkland, WA 98033
(425) 889-6747

TABLE OF CONTENTS

FINDINGS/CONCLUSIONS	1
INTRODUCTION	3
Project Description	3
Project Approach	3
Primary Data and Information Sources	4
EXISTING CONDITIONS	6
Study Area.....	6
Roadway Network	6
Transit Service.....	6
Non-Motorized Transportation Facilities	7
Traffic Volumes	7
Intersection Levels of Service	10
Crash History	11
FUTURE CONDITIONS	12
Planned Transportation Improvements.....	12
Project Trip Generation.....	12
Project Trip Distribution.....	13
Future Traffic Volumes	13
Intersection Levels of Service	23
Site Access Evaluation	24
<i>LOS and Queuing.....</i>	<i>24</i>
<i>Turn Lane Evaluations.....</i>	<i>26</i>
Existing Crosswalk Evaluation.....	26
<i>Existing Conditions.....</i>	<i>26</i>
<i>FHWA Comparison to Existing Conditions</i>	<i>27</i>
MITIGATION	28

APPENDICES

Appendix A – Site Plan

Appendix B – Existing Traffic Counts

Appendix C – Level of Service (LOS) Methodology and Calculations

Appendix D – WSDOT Crash History

Appendix E – Trip Generation Calculations

Appendix F – Federal Highway Administration (FHWA), *Guide for Improving Pedestrian Safety at Uncontrolled Locations*, 2018; Table 1

LIST OF FIGURES AND TABLES

Figure 1 Project Site Vicinity	5
Figure 2 Off-Site Study Intersections and Site Access Intersections	8
Figure 3 2026 Existing Weekday Peak Hour Traffic Volumes	9
Figure 4 Project Trip Distribution	14
Figure 5 Weekday AM Peak Hour Project Trip Assignment	15
Figure 6 Weekday PM Peak Hour Project Trip Assignment	16
Figure 7 2030 No Action Weekday Peak Hour Traffic Volumes (Buildout Year)	17
Figure 8 2030 With Project Weekday AM Peak Hour Traffic Volumes (Buildout Year)	18
Figure 9 2030 With Project Weekday PM Peak Hour Traffic Volumes (Buildout Year).....	19
Figure 10 2040 No Action Weekday Peak Hour Traffic Volumes (Horizon Year).....	20
Figure 11 2040 With Project Weekday AM Peak Hour Traffic Volumes (Horizon Year).....	21
Figure 12 2040 With Project Weekday PM Peak Hour Traffic Volumes (Horizon Year).....	22
Table 1 Existing Roadway Network Summary	6
Table 2 Existing 2026 Weekday Peak Hour LOS Summary	10
Table 3 Crash Data Summary by Year, January 1, 2021 to December 31, 2025	11
Table 4 Crash Data Summary by Type, January 1, 2021 to December 31, 2025.....	11
Table 5 Trip Generation Summary	12
Table 6 Future 2030 Weekday Peak Hour LOS Summary	23
Table 7 Future 2040 Weekday Peak Hour LOS Summary	24
Table 8 Future 2030 Weekday Peak Hour Site Access LOS and Queue Summary	25
Table 9 Future 2040 Weekday Peak Hour Site Access LOS and Queue Summary	25

FINDINGS/CONCLUSIONS

This Traffic Impact Analysis (TIA) has been prepared for the proposed *Pringle Project* located east of S Olympic St and south of W 45th Ave (Parcel #124892000001000, #124892000005001, and 124892000006000) in the City of Kennewick.

Project Proposal.

The proposed *Pringle Project* includes the development of up to 520 single-family homes on the Pringle Orchards site and is planned to be developed in four phases.

Phases 1 and 2 would develop up to 215 single-family residential units on Parcel #124892000001000 located east of S Olympia St and south of W 45th Ave. Phases 1 and 2 are anticipated to be completed in 2027 and 2028, respectively. Vehicular access to Phases 1 and 2 is assumed to be provided via two (2) site access driveways on S Olympia St. The north driveway on S Olympia St would align with W 46th Ave and the south driveway would align with W 47th Ave. Two (2) site access driveways would also be provided on W 45th Ave. The west driveway on W 45th Ave would align with an existing Church driveway the east driveway would align with S Kent St.

Phases 3 and 4 would develop up to 305 single-family residential units on Parcel #124892000005001 and #124892000006000 located west of S Garfield St and south of W 49th Ave. Phases 3 and 4 are anticipated to be completed in 2029 and 2030, respectively. Vehicular access to Phases 3 and 4 is assumed to be provided via two (2) site access driveways on S Garfield Street. The north driveway on S Garfield St would align with W 50th Court, and the south driveway would align with S Dayton St.

This TIA evaluates traffic impacts associated with full buildout of the proposed *Pringle Project* for 2030 full buildout conditions and a 2040 horizon year.

Trip Generation.

Full buildout of the proposed *Pringle Project* is estimated to generate 4,462 new weekday daily trips with 354 new trips occurring during the weekday AM peak hour (96 in, 258 out) and 439 new trips occurring during the weekday PM peak hour (272 in, 167 out).

Intersection Level of Service (LOS).

Weekday AM and PM peak hour LOS analyses were conducted at 7 off-site study intersections. Each of the 7 off-site study intersections are anticipated to meet the applicable LOS standards in 2030 (buildout year) and 2040 (horizon year) during the weekday AM and PM peak hours with or without full buildout of the proposed *Pringle Project*.

Site Access Evaluation.

Based on the results of the analysis, the individual movements entering and exiting the site at each of the proposed stop-controlled site access intersections are expected to operate at LOS C or better with minimal queuing during the weekday AM and PM peak hours in 2030 (buildout year) and 2040 (horizon year) with full buildout of the proposed *Pringle Project*.

The need for left and right-turn lanes was evaluated at each of the proposed site access intersections based on City of Kennewick and WSDOT guidelines. Based on the results of the analysis, left or right-turn lanes are not being proposed at any of the site access intersections.

Crosswalk Evaluation.

The existing crosswalk at the east leg of the S Everett St/W 45th Ave intersection was evaluated based on Federal Highway Administration (FHWA) recommendations. Based on a comparison of the existing conditions to the recommended pedestrian crash countermeasures, the crosswalk currently meets the FHWA recommendations with one exception. Streetlighting is currently not provided at the crosswalk location.

Mitigation.

Off-Site Improvements.

Based on the results of the traffic analysis, all study intersections are expected to meet City of Kennewick LOS standards with full buildout of the proposed project. Therefore, no project-specific off-site transportation improvements are proposed.

Frontage and Access Improvements.

All site access intersections will be constructed to City of Kennewick design standards. The internal streets proposed with the project will be functionally classified public Local Streets. The internal streets will be designed with full-width street improvements per Kennewick Municipal Code 5.56.65 and Kennewick Standard Drawing 2-1. Additionally, frontage improvements may be required by the City of Kennewick on W 45th Ave and/or S Garfield Street.

City of Kennewick Traffic Impact Fees.

The City of Kennewick requires payment of traffic impact fees to help fund planned roadway improvements throughout the City.

The current (2026) traffic impact fee in district 1 is \$1,721.61 per single-family dwelling unit (detached). Based on the full buildout of 520 single-family dwelling units, the traffic impact fee would be \$895,237.20 based on the current traffic impact fee rate (\$1,721.61 X 520 DU). Traffic impact fees are due at the time of building permit issuance and are subject to change.

INTRODUCTION

This Traffic Impact Analysis (TIA) has been prepared for the proposed *Pringle Project* located east of S Olympic St and south of W 45th Ave (Parcel #124892000001000, #124892000005001, and 124892000006000) in the City of Kennewick as shown in **Figure 1**.

Project Description

The proposed *Pringle Project* includes the development of up to 520 single-family homes on the Pringle Orchards site and is planned to be developed in four phases between 2027 and 2030.

Phases 1 and 2 would develop up to 215 single-family residential units on Parcel #124892000001000 located east of S Olympia Street and south of W 45th Ave. Phases 1 and 2 are anticipated to be completed in 2027 and 2028, respectively. Vehicular access to Phases 1 and 2 is assumed to be provided via two (2) site access driveways on S Olympia St. The north driveway on S Olympia St would align with W 46th Ave and the south driveway would align with W 47th Ave. Two (2) site access driveways would also be provided on W 45th Ave. The west driveway on W 45th Ave would align with an existing Church driveway the east driveway would align with S Kent St.

Phases 3 and 4 would develop up to 305 single-family residential units on Parcel #124892000005001 and #124892000006000 located west of S Garfield Street and south of W 49th Ave. Phases 3 and 4 are anticipated to be completed in 2029 and 2030, respectively. Vehicular access to Phases 3 and 4 is assumed to be provided via two (2) site access driveways on S Garfield Street. The north driveway on S Garfield St would align with W 50th Court, and the south driveway would align with S Dayton St.

This TIA evaluates traffic impacts associated with full buildout of the proposed *Pringle Project* (up to 520 single-family units) by 2030, as well as a ten-year horizon following its completion (2040). Preliminary site plans for Phases 1 and 2 and Phases 3 and 4 are included in **Appendix A**.

Project Approach

To analyze the traffic impacts from the proposed *Pringle Project*, the following tasks were undertaken:

- Assessed existing conditions through field reconnaissance and reviewed existing planning documents.
- Described and assessed existing transportation conditions in the area.
- Documented existing (2026) traffic volumes and intersection levels of service (LOS) at 7 off-site study intersections during the weekday AM and PM peak hours.
- Documented the most recent 5 years of available crash history in the project vicinity provided by WSDOT.
- Documented future planned transportation improvements in the project vicinity.
- Developed trip generation estimates for weekday daily, AM, and PM peak hour conditions for full buildout of the proposed project.
- Documented trip distribution and assignment of weekday AM and PM peak hour project-generated traffic.
- Documented traffic forecasts and assumptions for future 2030 (buildout year) and 2040 (horizon year) conditions at the study intersections without and with full buildout of the proposed project.
- Analyzed weekday AM and PM peak hour LOS for future 2030 (buildout year) and 2040 (horizon year) conditions without and with full buildout of the proposed project at the 7 off-site study intersections.

- Evaluated weekday AM and PM peak hour LOS and queuing for future 2030 (buildout year) and 2040 (horizon year) conditions at the proposed site access intersections.
- Evaluated the need for left and right-turn lanes at the proposed site access intersections.
- Evaluated the crosswalk on the east side of the S Everett St/W 45th Ave intersection.
- Documented proposed traffic mitigation.

Primary Data and Information Sources

- Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 12th Edition, 2025.
- Weekday AM and PM peak hour traffic counts, IDAX, 2026.
- City of Kennewick *2026-2031 Transportation Improvement Program (TIP)*
- City of Kennewick *2040 Transportation System Plan*, 2018.
- WSDOT *2026-2029 Statewide Transportation Improvement Program (STIP)*.
- Transportation Research Board (TRB), *Highway Capacity Manual (HCM)*, 7th Edition, 2022.
- Kennewick County *2025-2030 Six-Year Transportation Improvement Program (TIP)*.
- City of Kennewick *Comprehensive Plan*, 2021.
- WSDOT Crash History, 2021-2025.
- Signal Timing Data, WSDOT.
- WSDOT SIDRA Protocol, 2018.
- Federal Highway Administration (FHWA), *Guide for Improving Pedestrian Safety at Uncontrolled Locations*, 2018.

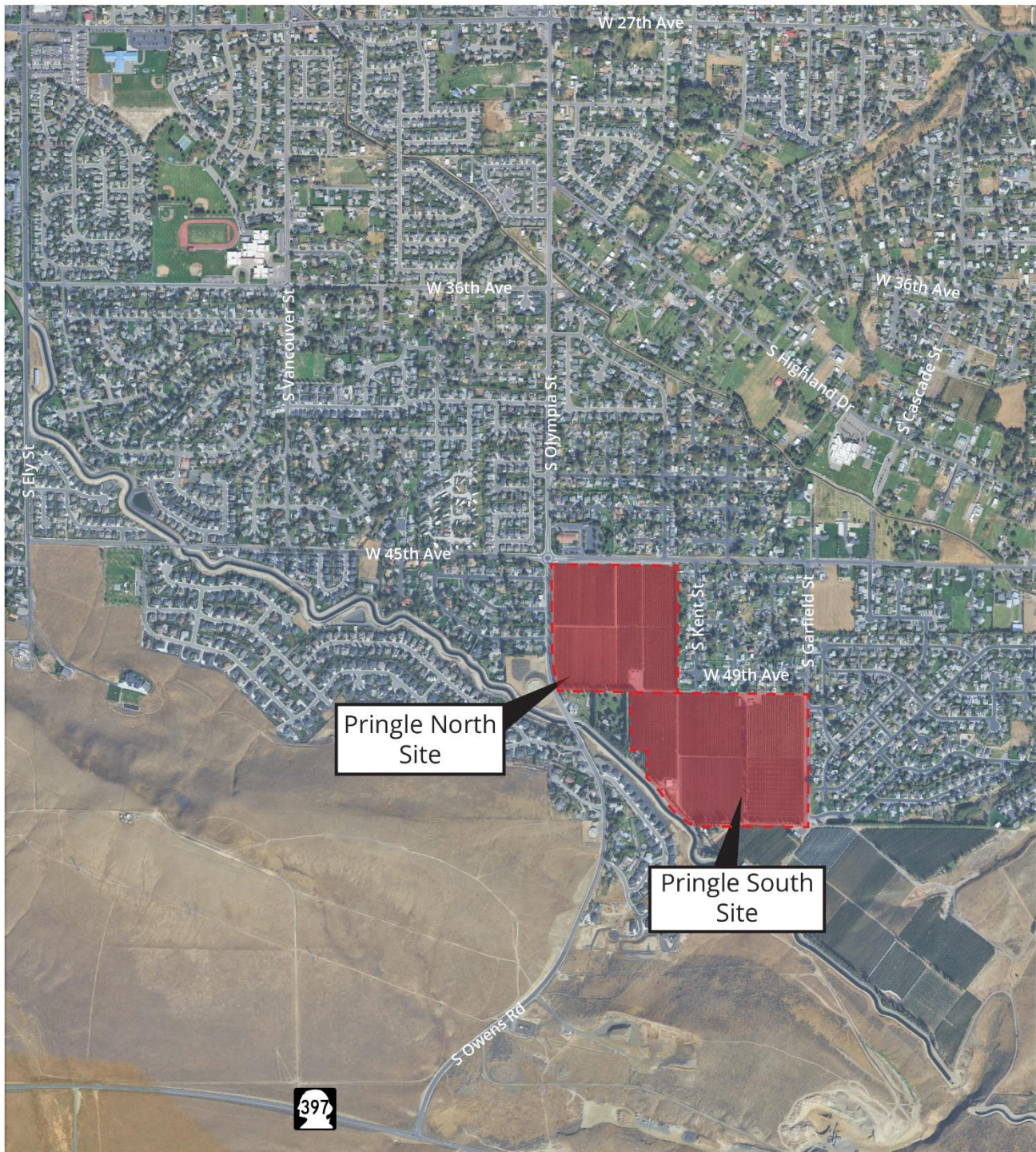


Figure 1: Project Site Vicinity



EXISTING CONDITIONS

Study Area

Based on scoping comments received from the City of Kennewick, the following 7 off-site study intersections are included in this traffic impact analysis (see also **Figure 3**):

1. S Olympia St/W 27th Ave – signal (City)
2. S Ely St/W 45th Ave – stop-controlled (City)
3. S Olympia St/W 45th Ave – roundabout (City)
4. S Kent St/W 45th Ave – stop-controlled (City)
5. S Garfield St/W 45th Ave – stop-controlled (City)
6. S Kent St/W 49th Ave – stop-controlled (City)
7. S Garfield St/W 49th Ave – stop-controlled (City)

Roadway Network

Table 1 describes the existing characteristics of the streets that would be used as primary routes to and from the site. Roadway characteristics are described in terms of orientation, arterial classification, posted speed limits, parking, sidewalks, and bicycle facilities. The relationship of these roadways to the project site is shown in **Figure 1**.

Table 1
Existing Roadway Network Summary

Roadway	Direction	Classification ¹	# of Lanes	Speed Limit	Parking	Sidewalks	Bicycle Facilities
S Olympia St	N/S	Minor Arterial	2/3	35/40	None	Both Sides	Paved Shoulders Both Sides
S Kent St	N/S	Local Road	2	25	None	None	Paved Shoulders Both Sides
S Garfield St	N/S	Local Road	2	35	None	None	None
W 45 th Ave	E/W	Collector Arterial	2	40	None	Intermittent Both Sides	None

1. Source: City of Kennewick 2040 Transportation System Plan, 2018.

Transit Service

Transit service in the City of Kennewick is provided by Ben Franklin Transit (BFT). No public transportation currently exists in the immediate project vicinity. The closest bus stops are located greater than 0.5 miles north of the project site on W 36th Ave and S Olympia St. The transit stops provide access to the following BFT route.

- **Route 41** provides service between the Dayton Transfer Point and W 36th Ave. Transit service is provided on weekdays from approximately 6:00 AM to 8:00 PM with approximate 30-minute headways.

Non-Motorized Transportation Facilities

Non-motorized transportation facilities in the project site vicinity are limited. Sidewalks are present on both sides of S Olympia St, and intermittently along both sides of W 45th Ave west of S Olympia St. Paved shoulders also currently exist along both sides of W 45th Ave. Marked crosswalks and ADA curb ramps also exist at the nearby S Olympia St/W 45th Ave intersection. Based on the existing turning movement counts at the study intersections, pedestrian activity in the study area is minimal.

Traffic Volumes

Existing weekday AM and PM peak hour traffic volumes at the study intersections were based on counts collected by IDAX in March 2026. The AM peak hour traffic volumes represent the highest hour of traffic between 7:00 and 9:00 a.m. The PM peak hour traffic volumes represent the highest hour of traffic between 4:00 and 6:00 p.m. **Figure 2** illustrates the locations of the 7 off-site study intersections and proposed site access intersections evaluated throughout this analysis. **Figure 3** illustrates the existing 2026 weekday AM and PM peak hour traffic volumes at the 7 off-site study intersections. The existing traffic count sheets are included in **Appendix B**.

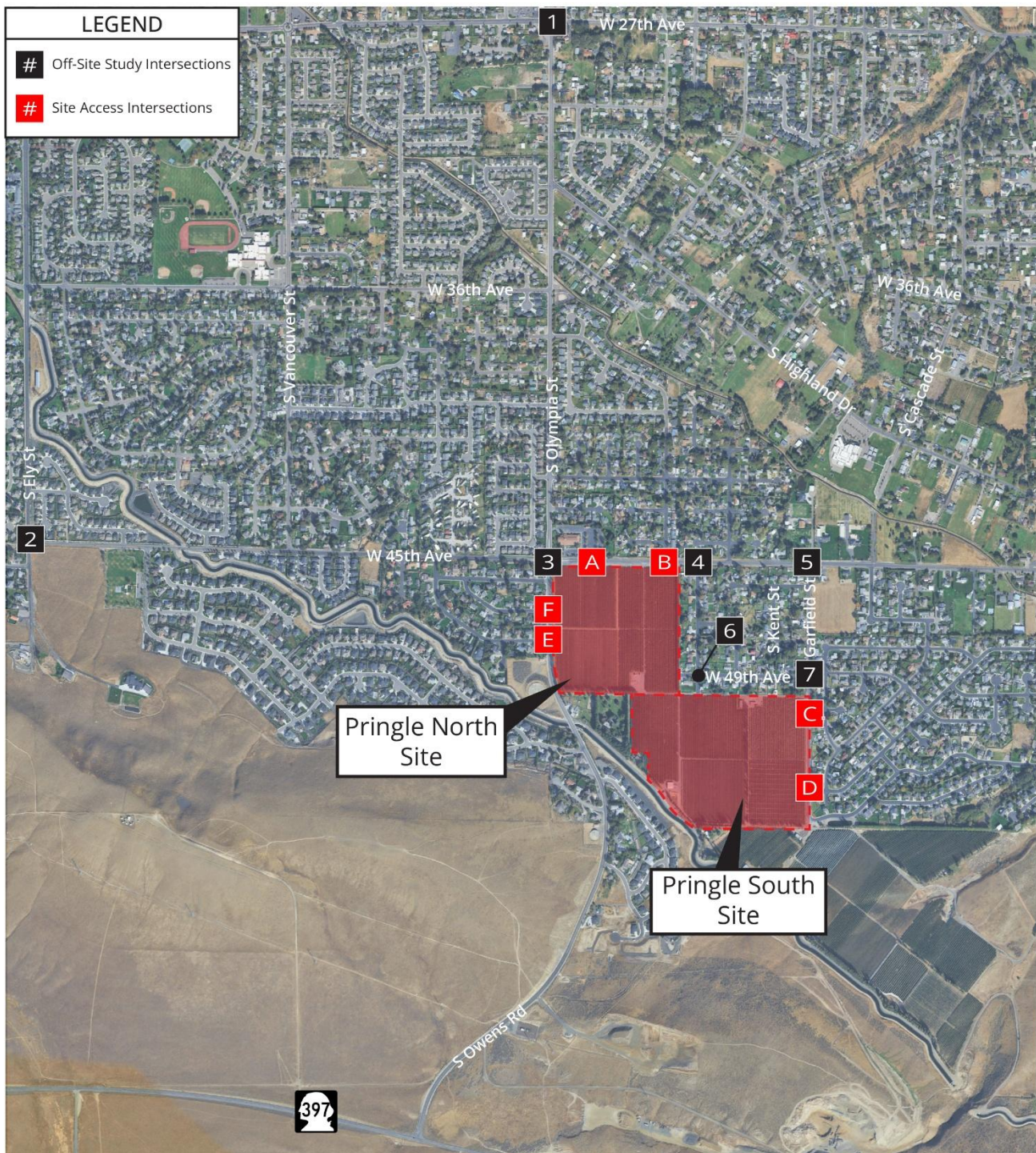
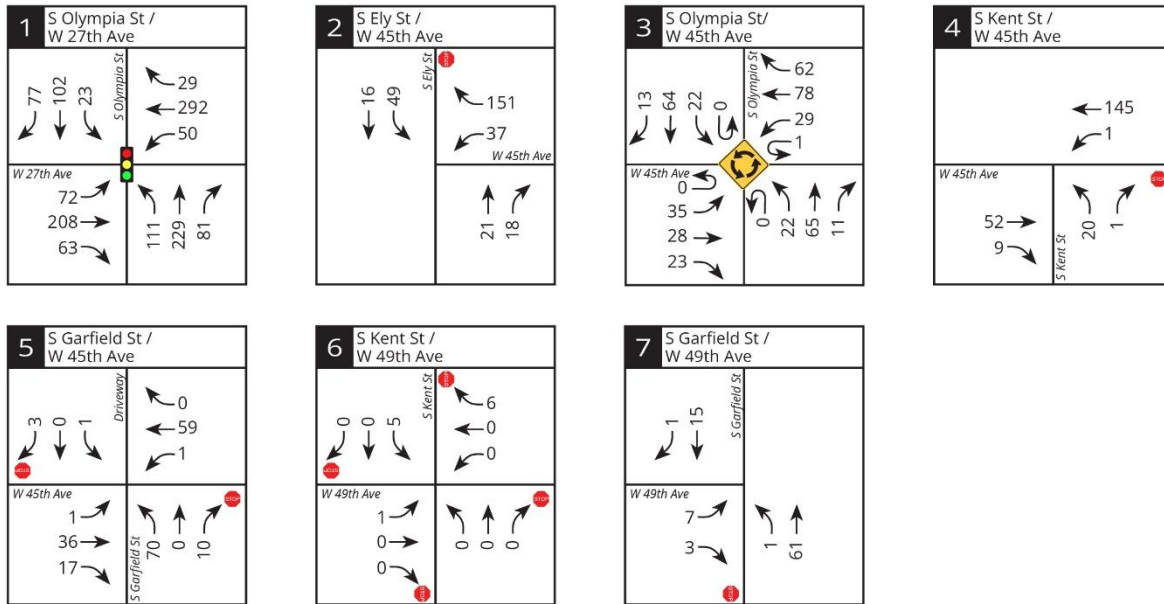


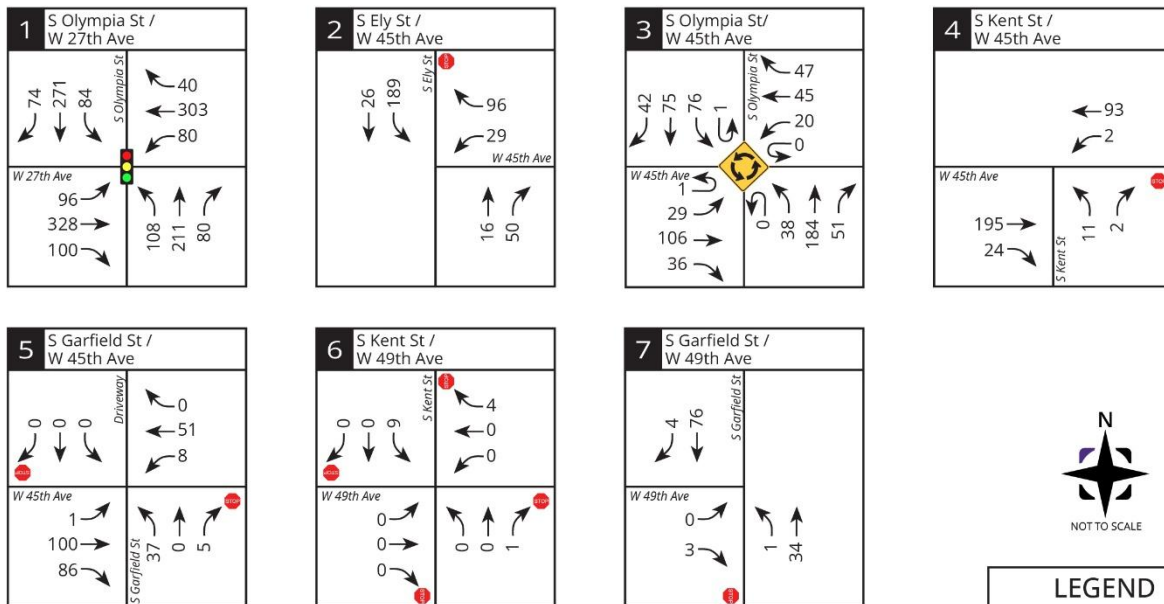
Figure 2: Off-site Study Intersections and Site Access Intersections



AM Peak Hour



PM Peak Hour



LEGEND

- # Study Intersection
- ↑ Peak Hour
- XX Traffic Volume

Figure 3: 2026 Existing Weekday Peak Hour Traffic Volumes

Intersection Levels of Service

Existing weekday peak hour level of service (LOS) analyses were conducted at the 7 off-site study intersections. Intersection LOS was calculated using the methodology and procedures outlined in the *Highway Capacity Manual* (HCM 7th Edition), and WSDOT SIDRA Protocol using the *Synchro 12* and *SIDRA 11* software programs. Existing signal timing used in the analysis was provided by the City of Kennewick.

The LOS standards for the City of Kennewick are LOS C for local streets and LOS D for arterials and collectors.

The 2026 existing weekday peak hour LOS analysis results for the 7 off-site study intersections are summarized in **Table 2**. The LOS methodology and calculations are included in **Appendix C**.

Table 2
Existing 2026 Weekday Peak Hour LOS Summary

Study Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (sec)	LOS	Delay (sec)
<u>Signalized Intersections:</u>				
1. S Olympia St / W 27 th Ave	B	10.1	B	10.5
<u>Two-Way Stop-Controlled Intersections¹:</u>				
2. S Ely St / W 45 th Ave	A	9.9	B	10.6
4. S Kent St / W 45 th Ave	A	9.5	B	10.4
5. S Garfield St / W 45 th Ave	A	9.7	B	10.3
7. S Garfield St / W 49 th Ave	A	9.1	A	8.7
<u>All-Way Stop-Controlled Intersections:</u>				
6. S Kent St / W 49 th Ave	A	7.9	A	7.2
<u>Roundabout Intersections:</u>				
3. S Olympia St / W 45 th Ave	A	4.4	A	5.1

1. LOS reported at the two-way stop-controlled study intersections is based on the control delay of the movement with the highest delay, which tends to be from the stop-controlled minor approaches.

As shown in **Table 2**, each of the 7 off-site study intersections currently meet the applicable LOS standards during the weekday peak hours.

Crash History

Crash history at the 7 off-site study intersections was reviewed and summarized for the five-year period from 2021 to 2025 (the most recent 5-year period as provided by WSDOT). A summary of the total, annual average crashes, and crashes per million entering vehicles (MEV) during this period are provided in **Table 3**. A summary of crashes by type over the five-year period are provided in **Table 4**. The summarized crash data is included **Appendix D**.

Table 3
Crash Data Summary by Year, January 1, 2021 to December 31, 2025

Study Intersection	2021	2022	2023	2024	2025	5-Year Total Crashes	Average Annual Crashes	Crashes per MEV ¹
1. S Olympia St / W 27 th Ave	3	4	6	3	3	19	3.8	0.59
2. S Ely St / W 45 th Ave	0	0	0	1	0	1	0.2	0.13
3. S Olympia St / W 45 th Ave	0	2	0	1	0	3	0.6	0.22
4. S Kent St / W 45 th Ave	0	1	0	0	0	1	0.2	0.17
5. S Garfield St / W 45 th Ave	0	0	0	0	0	0	0.0	0.00
6. S Kent St / W 49 th Ave	0	0	0	0	0	0	0.0	0.00
7. S Garfield St / W 49 th Ave	0	0	0	0	0	0	0.0	0.00

1. MEV = Million Entering Vehicles

Table 4
Crash Data Summary by Type, January 1, 2021 to December 31, 2025

Study Intersection	5-Year Total Crashes	Average Annual Crashes	Crash Type						
			Angle (Left/Right)	Angle (T)	Side Swipe	Rear End	Parked Veh/ Fixed Object	Ped/Cyclist	Other
1. S Olympia St / W 27 th Ave	19	3.8	7	9	0	2	0	1	
2. S Ely St / W 45 th Ave	1	0.2	0	1	0	0	0	0	0
3. S Olympia St / W 45 th Ave	3	0.6	0	0	0	1	2	0	0
4. S Kent St / W 45 th Ave	1	0.2	1	0	0	0	0	0	0
5. S Garfield St / W 45 th Ave	0	0.0	0	0	0	0	0	0	0
6. S Kent St / W 49 th Ave	0	0.0	0	0	0	0	0	0	0
7. S Garfield St / W 49 th Ave	0	0.0	0	0	0	0	0	0	0

FUTURE CONDITIONS

Planned Transportation Improvements

The following summary of planned transportation capacity improvements in the vicinity of the proposed *Pringle Project* is based on a review of the following sources/documents:

- City of Kennewick *2026-2031 Six-Year Transportation Improvement Program* (TIP)
- City of Kennewick *2040 Transportation System Plan* (TSP)
- Washington State Department of Transportation (WSDOT) *2026-2029 Statewide Transportation Improvement Program* (STIP)

The transportation projects within the study area from each document that was reviewed are summarized below.

City of Kennewick 2026-2031 TIP

- Map ID #4 (TSP #R-6 – 45th Ave Widening) – This project would reconstruct W 45th Ave (2/3 lane road) from S Ely Street to S Olympia Street with curb, gutter, sidewalks, storm drainage and illumination; additionally, it would replace AC water lines.

Note: Specific intersection improvements at the S Ely Street and S Olympia Street intersections on W 45th Ave have not yet been identified. Therefore, as a conservative measure existing channelization was assumed at all study intersections for the future 2030 (buildout year) and 2040 (horizon year) analysis.

City of Kennewick TSP

There are no planned projects within the immediate project vicinity identified in the City of Kennewick TSP (except for TSP #R-6 which is mentioned above).

WSDOT 2026-2029 STIP

There are no planned projects within the immediate project vicinity identified in the WSDOT 2026-2029 STIP.

Project Trip Generation

The trip generation estimates for the proposed *Pringle Project* were based on methodology documented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 12th edition for Land Use Code (LUC) 210 (Single-Family Detached Housing). The resulting new trip generation associated with full buildout of the proposed project is summarized in **Table 5**. Detailed trip generation calculations are included in **Appendix E**.

Table 5
Trip Generation Summary

Weekday Time Period	New Trips Generated		
	In	Out	Total
Daily	2,231	2,231	4,462
AM Peak Hour	96	258	354
PM Peak Hour	272	167	439

Project Trip Distribution

The anticipated distribution of peak hour vehicle trips generated by the proposed *Pringle Project* was based on existing and anticipated travel patterns in the area and confirmed with City staff during the traffic scoping process. The estimated peak hour project trip distribution is illustrated in **Figure 4**. The assignment of new weekday AM and PM peak hour project trips through the 7 off-site study intersections and site access intersections is also illustrated in **Figures 5 and 6**.

Future Traffic Volumes

To estimate the future 2030 (buildout year) and 2040 (horizon year) No Action (Without Project) weekday peak hour traffic volumes, a 2 percent annual growth rate was applied to the 2026 existing traffic volumes (confirmed by City staff as part of the traffic scoping discussions) at the 7 off-site study intersections. The growth factor is used to account for new development in the study area and growth in existing traffic.

The resulting future 2030 No Action weekday AM and PM peak hour traffic volumes at the 7 off-site study intersections are shown in **Figure 7**. The future 2040 No Action weekday AM and PM peak hour traffic volumes are shown in **Figure 10**.

The future 2030 and 2040 With Project traffic volumes at the 7 off-site study intersections and site access intersections were determined by adding the project-generated trips (shown in **Figures 5 and 6**) to the No Action traffic volumes (shown in **Figures 7 and 10**). The future 2030 With Project weekday AM and PM peak hour traffic volumes are shown in **Figures 8 and 9**. The future 2040 With Project weekday AM and PM peak hour traffic volumes are shown in **Figures 11 and 12**.

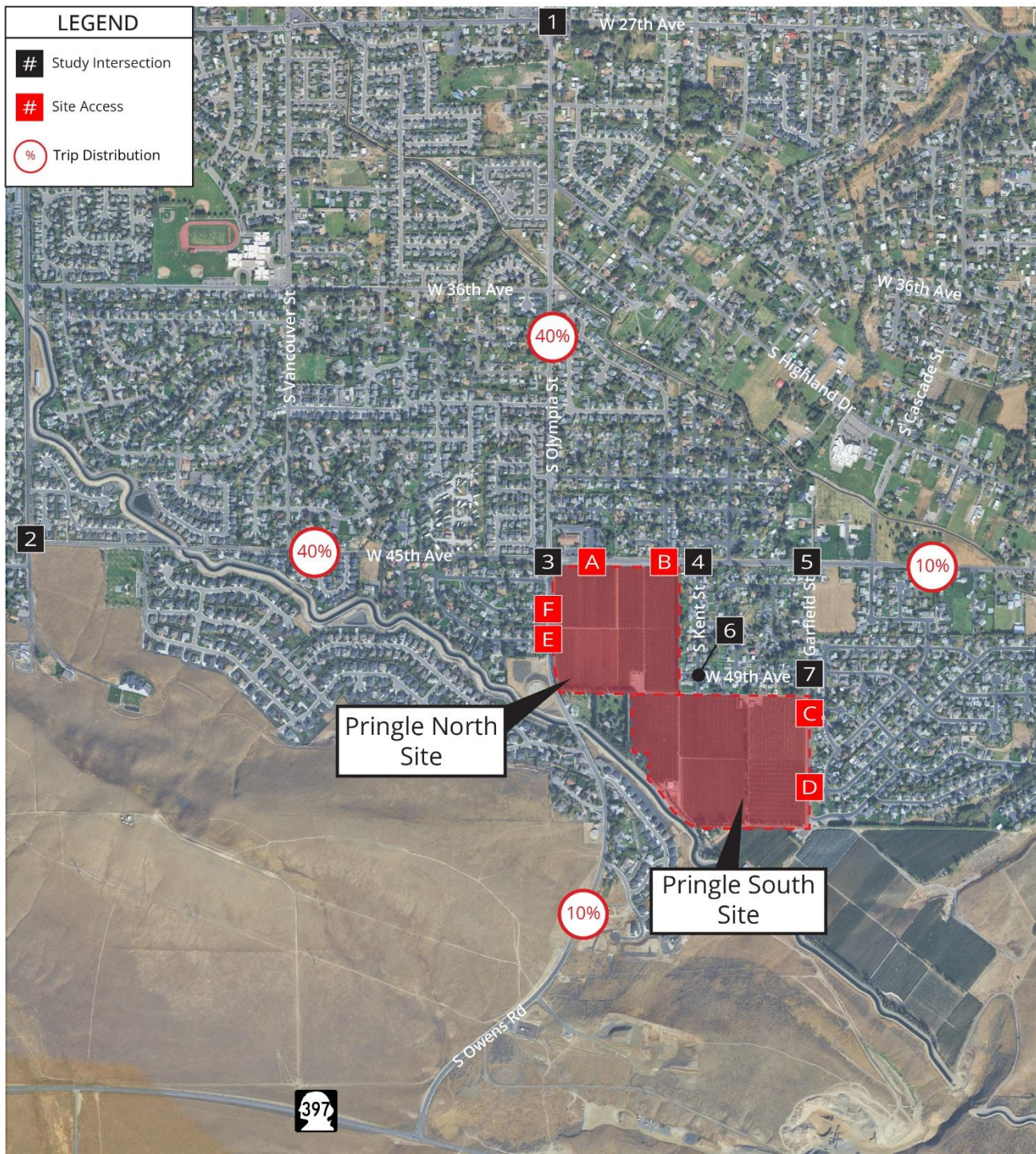
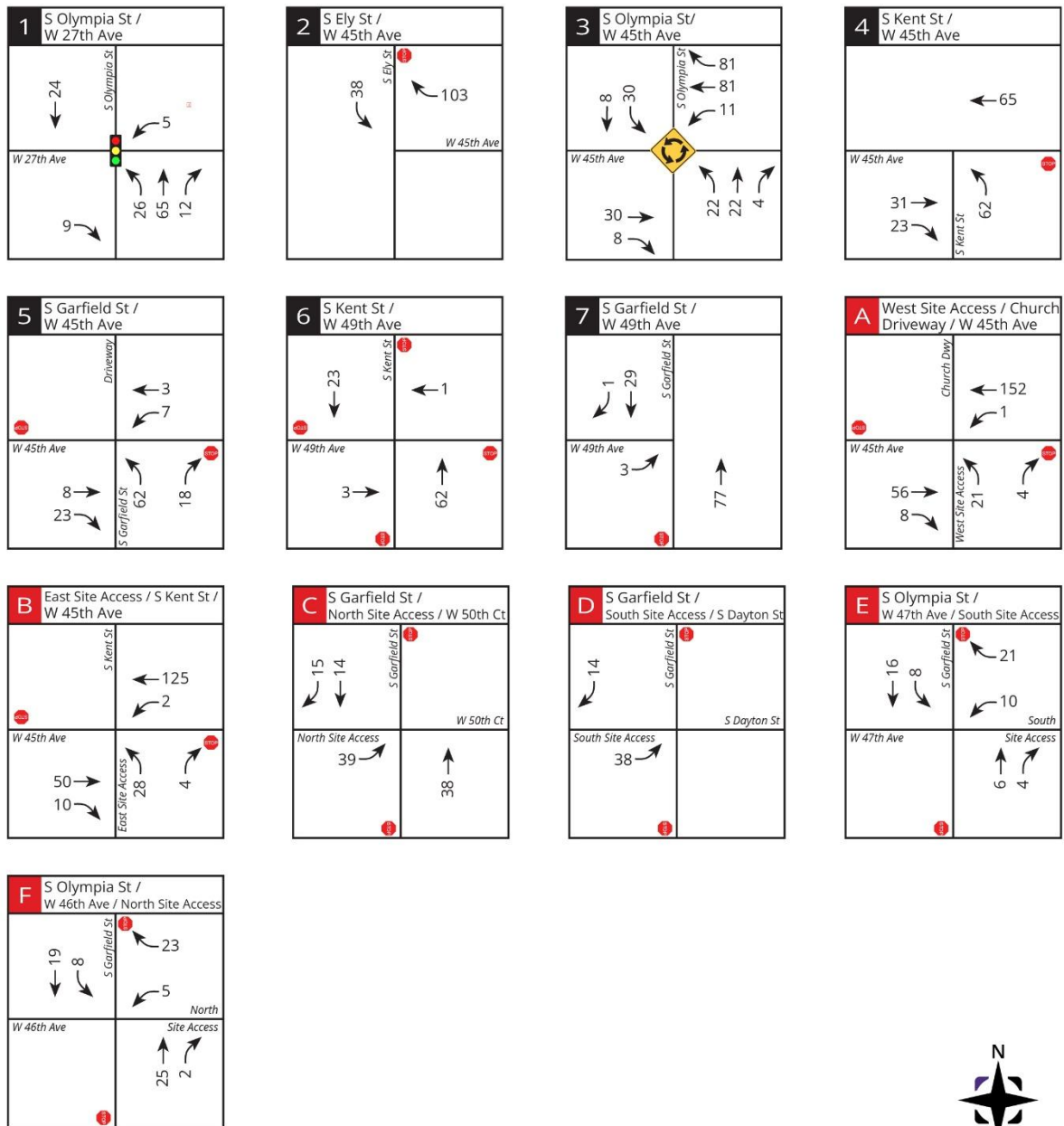


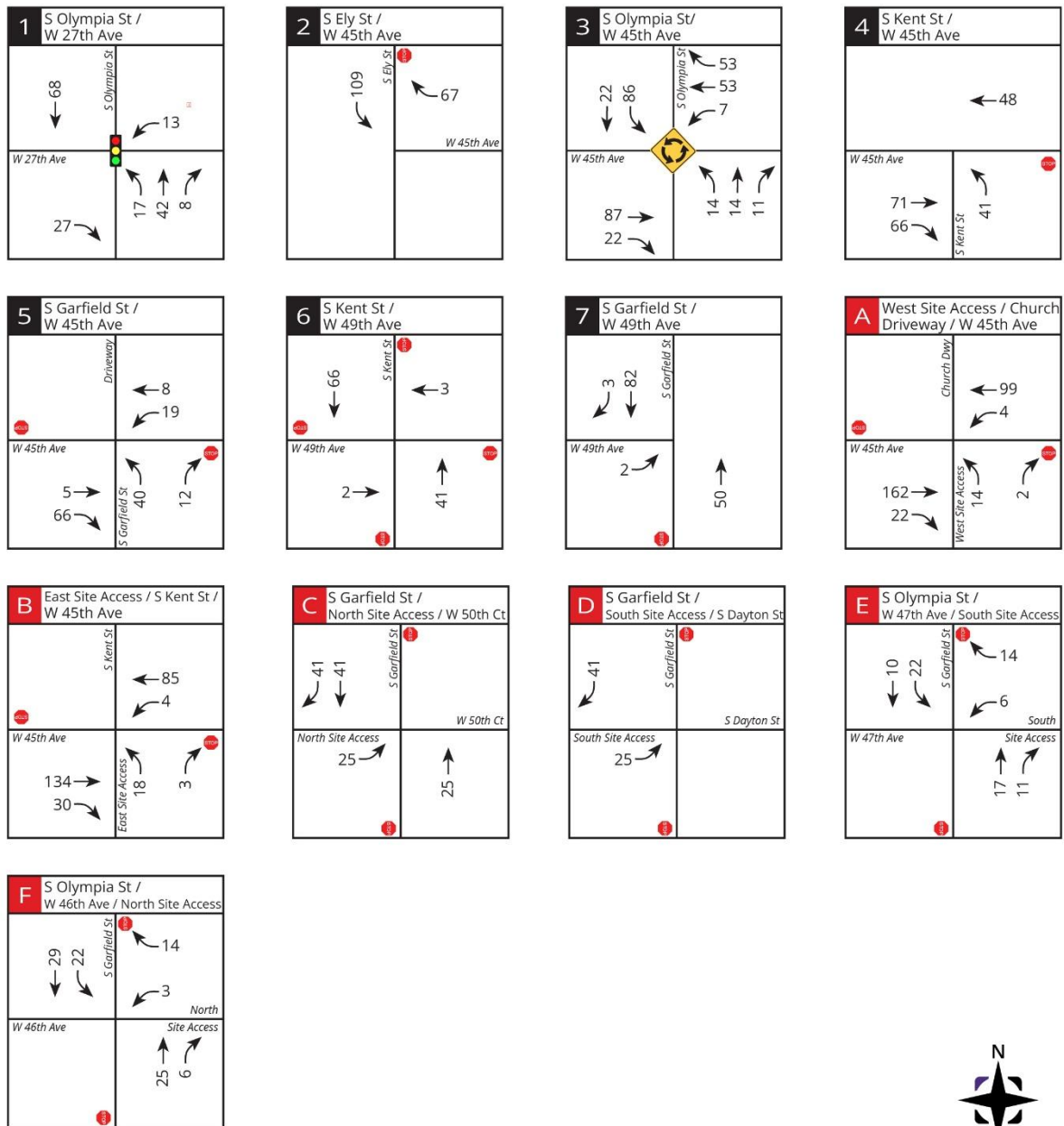
Figure 4: Project Trip Distribution





LEGEND	
#	Study Intersection
#	Site Access
↑	AM Peak Hour Project Trips

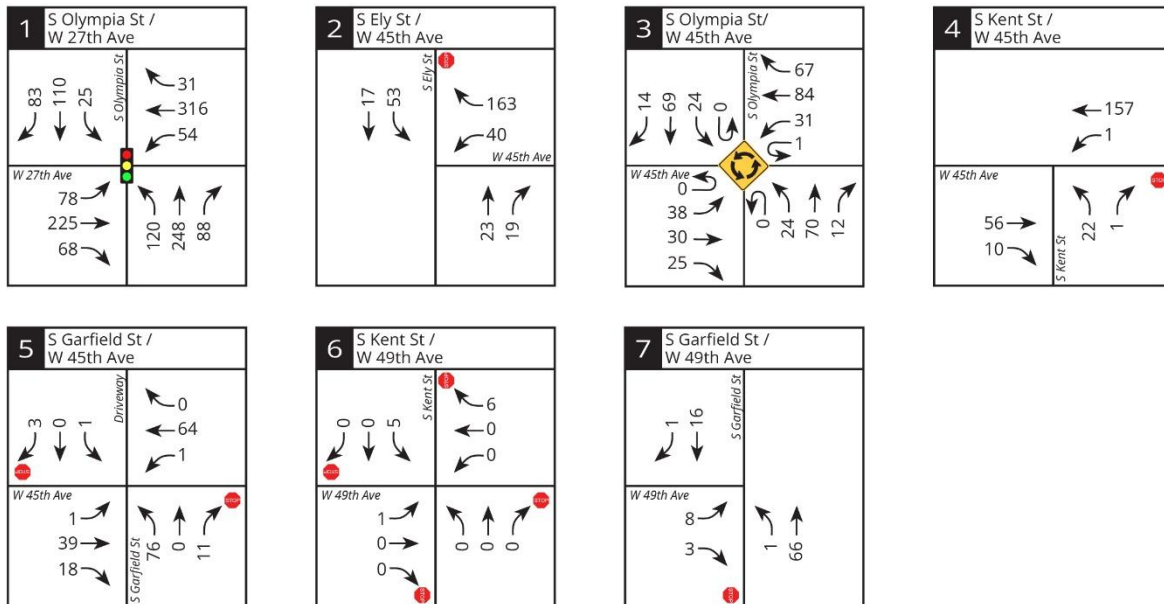
Figure 5: Weekday AM Peak Hour Project Trip Assignment



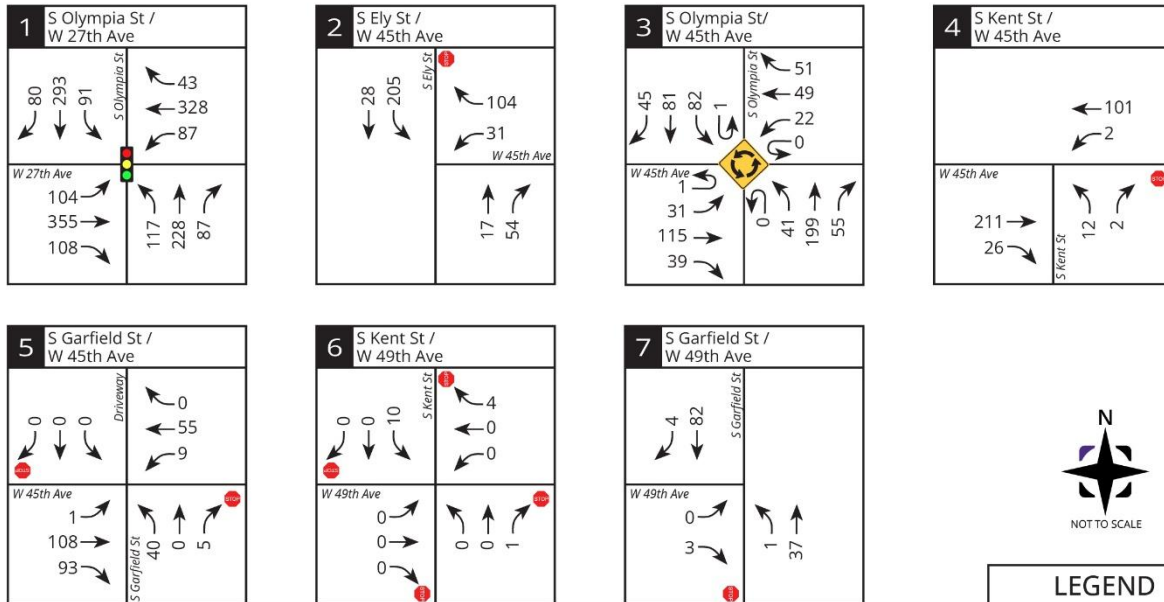
LEGEND	
#	Study Intersection
#	Site Access
↑	PM Peak Hour Project Trips

Figure 6: Weekday PM Peak Hour Project Trip Assignment

AM Peak Hour



PM Peak Hour



LEGEND

- # Study Intersection
- ↑ Peak Hour
- XX Traffic Volume

Figure 7: 2030 No Action Weekday Peak Hour Traffic Volumes (Buildout Year)

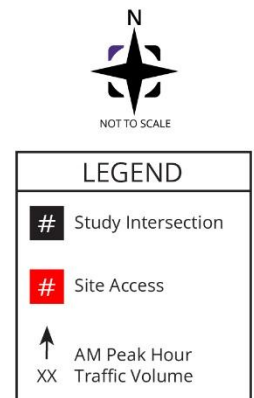
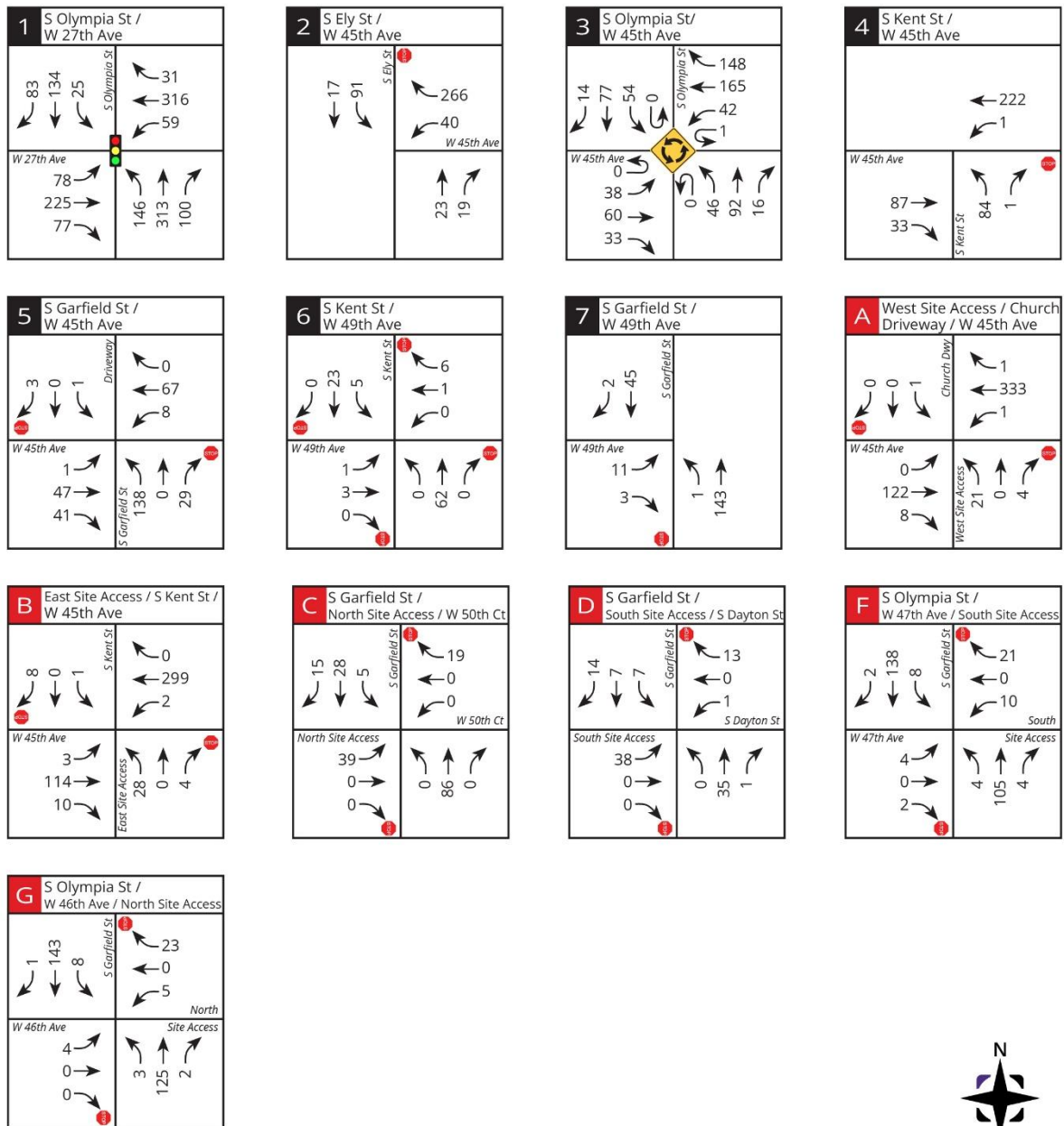


Figure 8: 2030 With Project Weekday AM Peak Hour Traffic Volumes (Buildout Year)

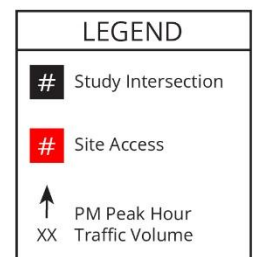
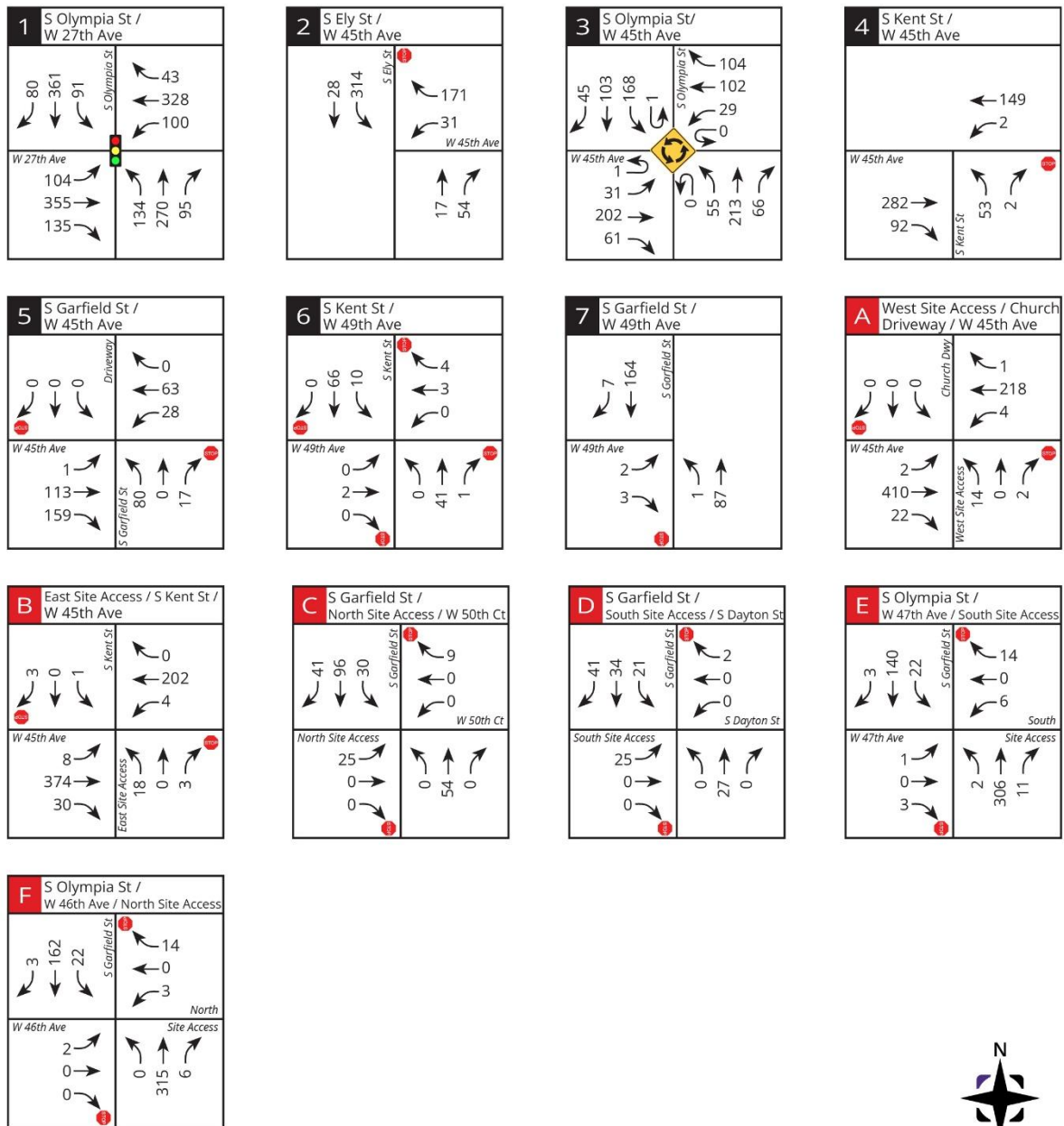
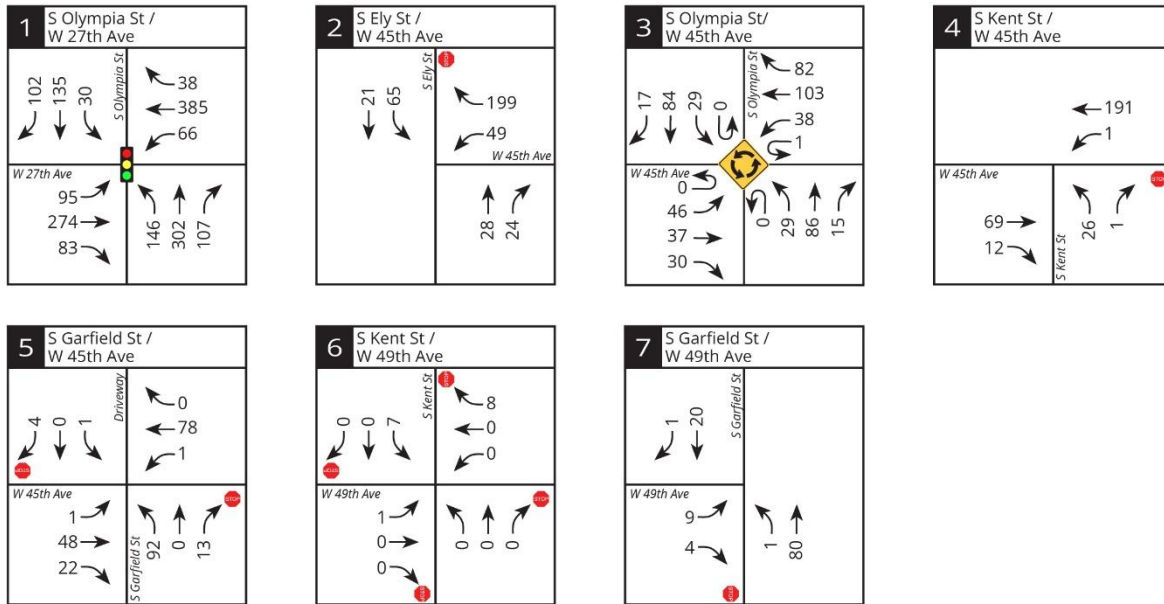
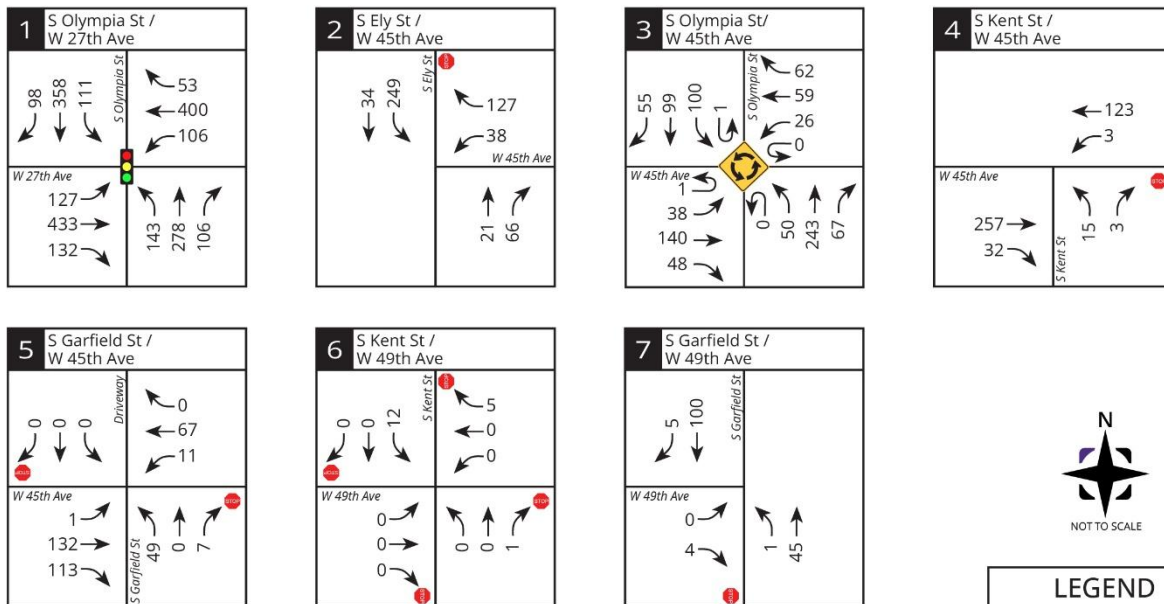


Figure 9: 2030 With Project Weekday PM Peak Hour Traffic Volumes (Buildout Year)

AM Peak Hour



PM Peak Hour



LEGEND	
#	Study Intersection
↑	Peak Hour
XX	Traffic Volume

Figure 10: 2040 No Action Weekday Peak Hour Traffic Volumes (Horizon Year)

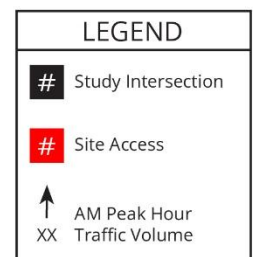
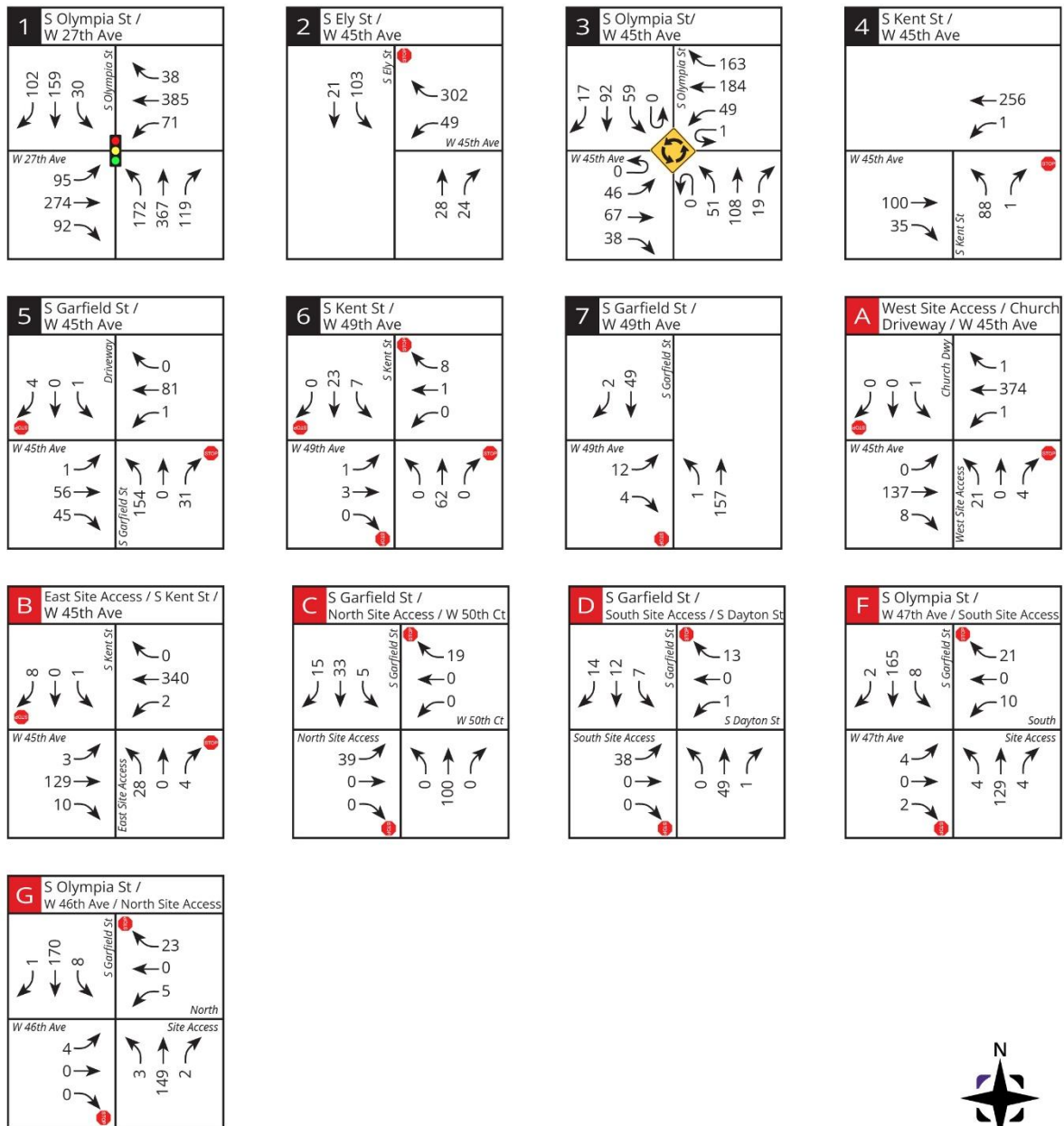


Figure 11: 2040 With Project Weekday AM Peak Hour Traffic Volumes (Horizon Year)

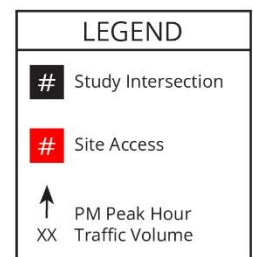
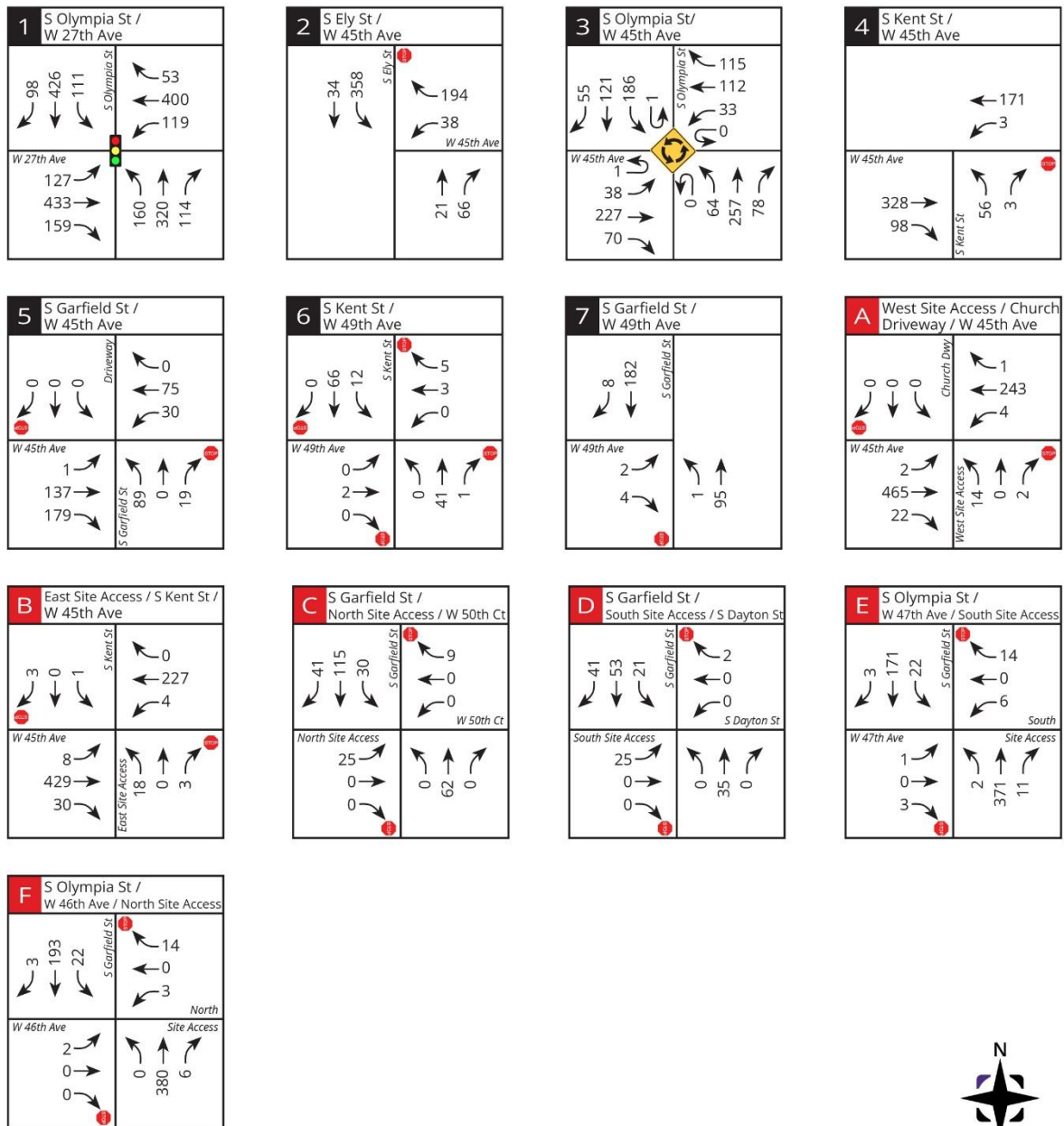


Figure 12: 2040 With Project Weekday PM Peak Hour Traffic Volumes (Horizon Year)

Intersection Levels of Service

Weekday PM peak hour level of service (LOS) analyses were conducted for future 2030 (buildout year) and 2040 (horizon year) conditions at the 7 off-site study intersections. The channelization and signal timing for the future year analyses were assumed to be the same as existing conditions.

The LOS results at the 7 off-site study intersections without and with the proposed project are summarized in **Tables 6 and 7**. The detailed LOS worksheets are included in **Appendix C**.

As shown in **Tables 6 and 7**, the 7 off-site study intersections are anticipated to meet the applicable LOS standards in years 2030 and 2040 during the weekday peak hours with the proposed *Pringle Project*.

Table 6
Future 2030 Weekday Peak Hour LOS Summary

Study Intersection	AM Peak Hour				PM Peak Hour			
	2030		2030		2030		2030	
	No Action	Delay	With Project	Delay	No Action	Delay	With Project	Delay
	LOS	(sec)	LOS	(sec)	LOS	(sec)	LOS	(sec)
<u>Signalized Intersections:</u>								
1. S Olympia St / W 27 th Ave	B	10.8	B	12.0	B	11.4	B	12.6
<u>Two-Way Stop-Controlled Intersections¹:</u>								
2. S Ely St / W 45 th Ave	B	10.1	B	11.2	B	11.0	B	12.6
4. S Kent St / W 45 th Ave	A	9.6	B	10.9	B	10.6	B	12.9
5. S Garfield St / W 45 th Ave	A	9.9	B	11.0	B	10.5	B	12.1
7. S Garfield St / W 49 th Ave	A	9.1	A	9.9	A	8.8	A	9.7
<u>All-Way Stop-Controlled Intersections:</u>								
6. S Kent St / W 49 th Ave	A	7.9	A	8.2	A	7.2	A	7.6
<u>Roundabout Intersections:</u>								
3. S Olympia St / W 45 th Ave	A	4.6	A	6.5	A	5.4	A	7.3

1. LOS reported at the two-way stop-controlled study intersections is based on the control delay of the movement with the highest delay, which tends to be from the stop-controlled minor approaches.

Table 7
Future 2040 Weekday Peak Hour LOS Summary

Study Intersection	AM Peak Hour				PM Peak Hour			
	2040		2040		2040		2040	
	No Action	Delay	With Project	Delay	No Action	Delay	With Project	Delay
	LOS	(sec)	LOS	(sec)	LOS	(sec)	LOS	(sec)
<u>Signalized Intersections:</u>								
1. S Olympia St / W 27 th Ave	B	13.4	B	15.2	B	14.6	B	16.2
<u>Two-Way Stop-Controlled Intersections¹:</u>								
2. S Ely St / W 45 th Ave	B	10.8	B	12.3	B	12.3	C	15.1
4. S Kent St / W 45 th Ave	A	9.9	B	11.4	B	11.3	B	14.0
5. S Garfield St / W 45 th Ave	B	10.3	B	11.6	B	11.1	B	13.0
7. S Garfield St / W 49 th Ave	A	9.2	A	10.0	A	8.9	A	9.8
<u>All-Way Stop-Controlled Intersections:</u>								
6. S Kent St / W 49 th Ave	A	7.9	A	8.2	A	7.2	A	7.6
<u>Roundabout Intersections:</u>								
3. S Olympia St / W 45 th Ave	A	5.1	A	7.3	A	6.3	A	8.9

1. LOS reported at the stop-controlled study intersections is based on the control delay of the movement with the highest delay, which tends to be from the stop-controlled minor approaches.

Site Access Evaluation

Primary vehicular access to the *Pringle Project* site is proposed as follows:

- A) West Site Access on W 45th Ave – full access (aligned with Church)
- B) East Site Access on W 45th Ave – full access (aligned with S Kent St)
- C) North Site Access on S Garfield St – full access (aligned with W 50th St)
- D) South Site Access on S Garfield St – full access (aligned with S Dayton St)
- E) South Site Access on S Olympia St – full access (aligned with W 47th Ave)
- F) North Site Access on S Olympia St – full access (aligned with W 46th Ave)

This section includes evaluation of the proposed site access locations including LOS, queuing, and turn lane evaluations.

LOS and Queuing

To assess operations at the proposed site access intersections, LOS and queuing analysis was conducted during the weekday peak hours for future 2030 (buildout year) and 2040 (horizon year) conditions at the proposed site access intersections. The reported queues for the individual movements at each of the proposed site access intersections are 95th-percentile queues, which are only exceeded five (5) percent of the time. The 2030 weekday peak hour traffic volumes at the proposed site access intersections were shown previously in **Figures 8 and 9**, and the 2040 weekday peak hour traffic volumes at the proposed site access intersections were shown previously in **Figures 11 and 12**.

The weekday peak hour site access analyses for future year 2030 and 2040 conditions are summarized below in **Tables 8 and 9**. The LOS worksheets are included in **Appendix C**.

Table 8
Future 2030 Weekday Peak Hour Site Access LOS and Queue Summary

Site Access Intersection / Movement	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec)	95 th % Queue (ft)	LOS	Delay (sec)	95 th % Queue (ft)
A. West Site Access / W 45 th Ave						
Northbound Approach (exiting)	B	12.3	< 25'	C	15.3	< 25'
Westbound Left-Turn (entering)	A	7.5	0'	A	8.3	0'
B. East Site Access / S Kent St / W 45 th Ave						
Northbound Approach (exiting)	B	12.3	<25'	B	14.9	< 25'
Westbound Left-Turn (entering)	A	7.5	0'	A	8.2	0'
C. S Garfield St / W 50 th St / North Site Access						
Northbound Left-Turn (entering)	A	0.0	0'	A	0.0	0'
Eastbound Approach (exiting)	A	9.7	<25'	B	10.5	<25'
D. S Garfield St / S Dayton St / South Site Access						
Northbound Left-Turn (entering)	A	0.0	0'	A	0.0	0'
Eastbound Approach (exiting)	A	9.2	<25'	A	9.5	<25'
E. S Olympia St / W 47 th Ave / South Site Access						
Southbound Left-Turn (entering)	A	7.5	0'	A	8.0	<25'
Westbound Approach (exiting)	A	9.7	<25'	B	10.8	<25'
F. S Olympia St / W 46 th Ave / North Site Access						
Southbound Left-Turn (entering)	A	7.6	0'	A	8.0	<25'
Westbound Approach (exiting)	A	9.4	<25'	B	10.7	<25'

Table 9
Future 2040 Weekday Peak Hour Site Access LOS and Queue Summary

Site Access Intersection / Movement	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec)	95 th % Queue (ft)	LOS	Delay (sec)	95 th % Queue (ft)
A. West Site Access / W 45 th Ave						
Northbound Approach (exiting)	B	13.0	< 25'	C	16.9	< 25'
Westbound Left-Turn (entering)	A	7.6	0'	A	8.5	0'
B. East Site Access / S Kent St / W 45 th Ave						
Northbound Approach (exiting)	B	13.0	<25'	C	16.4	< 25'
Westbound Left-Turn (entering)	A	7.6	0'	A	8.4	0'
C. S Garfield St / W 50 th St / North Site Access						
Northbound Left-Turn (entering)	A	0.0	0'	A	0.0	<25'
Eastbound Approach (exiting)	A	9.9	<25'	B	10.8	<25'
D. S Garfield St / S Dayton St / South Site Access						
Northbound Left-Turn (entering)	A	0.0	0'	A	0.0	0'
Eastbound Approach (exiting)	A	9.3	<25'	A	9.8	<25'
E. S Olympia St / W 47 th Ave / South Site Access						
Southbound Left-Turn (entering)	A	7.6	0'	A	8.2	<25'
Westbound Approach (exiting)	A	9.7	<25'	B	11.5	<25'
F. S Olympia St / W 46 th Ave / North Site Access						
Southbound Left-Turn (entering)	A	7.7	0'	A	8.2	<25'
Westbound Approach (exiting)	A	9.6	<25'	B	11.2	<25'

As shown in **Tables 8 and 9**, the individual movements entering and exiting the site at the proposed site access intersections are expected to operate at LOS C or better in 2030 and 2040 during the weekday peak hours with minimal queuing.

Turn Lane Evaluations

Left-Turn Lane Evaluation

The potential need for left-turn lanes on S Olympia Street, W 45th Ave, and S Garfield Street for entering traffic at the proposed site access intersections was evaluated. It should be noted that S Olympia Street has an existing two-way left-turn lane at the southern W 47th Ave site access intersection but not the northern W 46th Ave site access intersection. The turn lane analysis conducted at the site access intersections based on traffic volume criteria in the current *WSDOT Design Manual*. The turn lane evaluation was based on Exhibit 1310-9 (Left-Turn Storage Guidelines).

Based on the future 2040 (horizon year) peak hour With Project (Full Buildout) traffic volumes, left-turn lanes on S Olympia Street, W 45th Ave, and S Garfield Street into the site would not be warranted.

Right-Turn Lane Evaluation

The potential need for right-turn lanes on S Olympia Street, W 45th Ave, and S Garfield Street was evaluated based on future 2040 (horizon year) peak hour With Project (Full Buildout) traffic volumes and traffic volume criteria in the current *WSDOT Design Manual*. The turn lane evaluation was based on Exhibit 1310-24 (Right-Turn Lane Guidelines). Based on the future peak hour traffic volumes, right-turn lanes on S Olympia Street, W 45th Ave, and S Garfield Street into the site would not be warranted.

Existing Crosswalk Evaluation

An evaluation of existing conditions was conducted for the crosswalk on the east leg of the S Everett St/W 45th Ave intersection. The crosswalk evaluation was based on the Federal Highway Administration (FHWA) report *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*. The evaluation of existing conditions includes documentation of weekday peak hour vehicle and pedestrian volumes, lighting conditions, sight distance, signage, and crash history at the existing crosswalk location. Additionally, a comparison is provided between the existing conditions to the application of recommended pedestrian crash countermeasures suggested for the roadway layout of W 45th St by the FHWA.

Existing Conditions

A field visit was conducted by TENW in April 2026 to verify the existing conditions of the crosswalk. The following information was reviewed.

Street Classification and Posted Speed: W 45th Ave is a collector arterial with a posted speed limit of 40 MPH and no on-street parking is provided. A 20-mph school zone speed limit sign with a flashing beacon is located within 390 feet of the existing crosswalk in both the eastbound and westbound directions; therefore, vehicles are required to slow down to 20 mph during school drop-off/pick-up times.

Current Peak Hour Traffic and Pedestrian Volumes: AM and PM peak hour turning movement counts (TMCs) and pedestrian volumes were collected by IDAX in March 2026. Based on a review of these counts, the average annual daily traffic (AADT) at the intersection is estimated to be 1,700 vehicles per day. Additionally, 5 pedestrians and 0 bicyclists were observed at the crosswalk on the east leg of the S Everett St/W 45th Ave intersection during the AM peak hour, and 2 pedestrians and 0 bicyclists were observed during the PM peak hour. The existing counts are provided in **Appendix B**.

Crash History: Based on a review of the most recent 5-year crash data provided by WSDOT, zero recorded crashes have occurred at or within the vicinity of the intersection of S Everett St/W 45th Ave. The detailed WSDOT crash data is included in **Appendix C**.

Existing Lighting Conditions: There is no existing street lighting along W 45th Ave within the vicinity of the existing crossing.

Existing Sight Distance Conditions: The City of Kennewick does not have specific stopping sight distance standards. Therefore, the stopping sight distance along W 45th Ave is based on Section 3.2.2. of the *AASHTO – A Policy on Geometric Design of Highways and Streets* (7th Edition). With a design speed of 45 mph (posted speed + 5 mph) and no vertical grade adjustments, the calculated stopping sight distance for this crossing location is 496 ft. Site observations revealed no obstructions to the stopping sight distance (i.e. horizontal and/or vertical curves).

Signage: Site observations revealed that pedestrian crossing signage currently exists at the marked crosswalk location. Additionally, advanced warning (S1-1) signs are placed in advance of the crossing in both the eastbound and westbound directions approximately 675 feet from the crosswalk location. Per Kennewick City Code (KCC) 13.12.040, the placement of advanced signage meets City standards for advance traffic control device placement for a roadway with a posted speed limit of 40 mph, exceeding the 390-foot minimum requirement.

FHWA Comparison to Existing Conditions

The existing conditions reviewed by TENW were compared to Table 1 of the FHWA report (included in **Appendix F**). Based on FHWA recommendations, an existing roadway with less than 9,000 Vehicle AADT and a posted speed of 40 mph should provide the countermeasures listed in Item 1 (high-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crosswalk warning signs). Therefore, the existing crosswalk includes all FHWA crosswalk recommendations with the exception of nighttime lighting levels.

MITIGATION

The following measures are identified to mitigate the transportation impacts of the proposed *Pringle Project*.

Off-Site Improvements.

Based on the results of the traffic analysis, all study intersections are expected to meet City of Kennewick LOS standards with full buildout of the proposed project. Therefore, no project-specific off-site transportation improvements are proposed.

Frontage and Access Improvements.

All site access intersections will be constructed to City of Kennewick design standards. The internal streets proposed with the project will be functionally classified public Local Streets. The internal streets will be designed with full-width street improvements per Kennewick Municipal Code 5.56.65 and Kennewick Standard Drawing 2-1. Additionally, frontage improvements may be required by the City of Kennewick on W 45th Ave and/or S Garfield Street.

City of Kennewick Traffic Impact Fees.

The City of Kennewick requires payment of traffic impact fees to help fund planned roadway improvements throughout the City.

The current (2026) traffic impact fee in district 1 is \$1,721.61 per single-family dwelling unit (detached). Based on the full buildout of 520 single-family dwelling units, the traffic impact fee would be \$895,237.20 based on the current traffic impact fee rate (\$1,721.61 X 520 DU). Traffic impact fees are due at the time of building permit issuance and are subject to change.

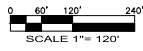


Appendix A

Site Plan



Know what's below.
Call before you dig.



OWNER
BIG SKY NORTH, LLC
5810 MIDLAND LANE, UNIT 65
PASCO, WA 99301

APPLICANT
HARPSTER LAND DEVELOPMENT
5804 ROAD 90, SUITE C
PASCO, WA 99301
509.212.9596
CONTACT: PETER HARPSTER

ENGINEER
HARPSTER LAND DEVELOPMENT
5804 ROAD 90, SUITE C
PASCO, WA 99301
509.521.4978
CONTACT: BLAINE BROBERG, PE

LAND SURVEYOR
AKS ENGINEERING & FORESTRY, INC.

501 N QUAY STREET, SUITE C-102
KENNEWICK, WA 99336
509.905.0219
CONTACT: JOSEPH R. LATIMER, PLS

SITE ADDRESS
4501 S. OLYMPIA ST.

43.48000000000000

UTILITIES

WATER: CITY OF KENNEWICK
SEWER: CITY OF KENNEWICK
IRRIGATION: KENNEWICK IRRIGATION DISTRICT
STORMWATER: CITY OF KENNEWICK
TELEPHONE: CHARTER SPECTRUM
POWER: BENTON PUD
NATURAL GAS: CASCADE NATURAL GAS CORPORATION
ROADS/ROW: CITY OF KENNEWICK
STREETLIGHTS: CITY OF KENNEWICK

VERTICAL DATUM

ELEVATIONS ARE BASED ON GPS OBSERVATIONS OF CITY OF KENNEWICK CONTROL POINT NUMBER K0841, A 3" BRASS CAP MARKING THE NW CORNER OF SECTION 24, VERIFIED UTILIZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN), ELEVATION 597.13 FEET (NAVD 88).

HORIZONTAL DATUM
COORDINATES ARE BASED ON NAD83/2011,
WASHINGTON STATE PLANE, SOUTH ZONE ESTABLISHED BY
UTILIZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN).

TOPOGRAPHIC NOTE
THE EXISTING CULTURAL AND TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, HARPSTER LAND DEVELOPMENT CANNOT ENSURE ACCURACY AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

LEGAL DESCRIPTION

THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 24,
TOWNSHIP 8 NORTH, RANGE 29 EAST, W.M., RECORDS OF BENTON COUNTY,
WASHINGTON;

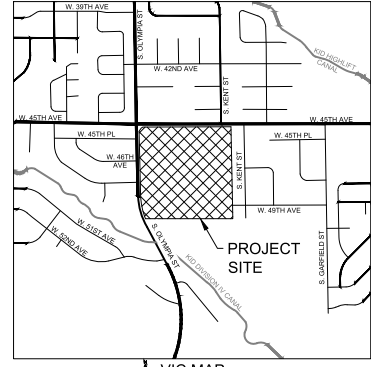
EXCEPT THAT PORTION THEREOF LYING SOUTHWESTERLY OF SOUTH OLYMPIA STREET AS CONVEYED TO JOHANNA K. AUSTIN, A WIDOW, BY DEED RECORDED APRIL 8, 1971, UNDER AUDITOR'S FILE NO. 620334;

AND EXCEPT THOSE PORTIONS THEREOF CONVEYED TO BENTON COUNTY FOR ROAD PURPOSES BY DEEDS RECORDED ON AUGUST 11, 1950, APRIL 2, 1969, AND JULY 15, 1976, UNDER AUDITOR'S FILE NOS. 258703, 600020, AND 707136, RESPECTIVELY.

SITUATED IN THE CITY OF KENNEWICK, COUNTY OF BENTON, STATE OF WASHINGTON.

COVER
FOR
PRELIMINARY PLAT OF "PRINGLE NORTH"

NW 1/4 OF SEC. 24, TWN. 08, RGE. 29 E, W.M.
BENTON COUNTY, WA



SHEET INDEX	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	PARCEL LAYOUT - N
3	PARCEL LAYOUT - S
4	PRELIMINARY UTILITY LAYOUT

LAND USE TABLE	
CURRENT ZONING	RESIDENTIAL LOW DENSITY (RL)
TOTAL SITE AREA	27.26 ACRES (AD)
TOTAL RESIDENTIAL AREA	1,289,900 SF (29.42 AC)
TOTAL TRACT AREA	12,151 SF (0.28 AC)
TOTAL RIGHT OF WAY AREA	334,976 SF (7.69 AC)
RESIDENTIAL LOT COUNT	215 DWELLING UNITS (DU)
RESIDENTIAL LOT DENSITY	5.72 DU/AC
AVERAGE RESIDENTIAL LOT AREA	6,000 SF
MINIMUM RESIDENTIAL LOT AREA	5,500 SF (MULTIPLE LOTS)
MAXIMUM RESIDENTIAL LOT AREA	13,111 SF (0.17 AC)
NUMBER OF CONSTRUCTION PHASES	2
RESIDENTIAL LOTS PER PHASE (IN ORDER, PHASES 1-2)	108 / 107
RIGHT OF WAY AREA PER PHASE (SF)	169,494 / 165,492
RESIDENTIAL LOTS PER PHASE (1-2)	

TRACT TABLE		
TRACT NAME	AREA (SF)	TRACT USE
TRACT A	1,854	PEDESTRIAN CONNECTION TRACT* WITH UNDERLYING SEWER EASEMENT
TRACT B	1,935	PEDESTRIAN CONNECTION TRACT*
TRACT C	1,930	PEDESTRIAN CONNECTION TRACT*
TRACT D	2,350	PEDESTRIAN CONNECTION TRACT*
TRACT E	2,200	PEDESTRIAN CONNECTION TRACT*
TRACT F	1,882	PEDESTRIAN CONNECTION TRACT*
ROW	334,976	CITY OF KENNEWICK RIGHT-OF-WAY (ROW)

*PEDESTRIAN CONNECTION TRACTS TO BE DEDICATED TO THE HOA. HOA WILL BE RESPONSIBLE FOR MAINTENANCE OF WALKWAYS AND LANDSCAPING IN PERPETUITY.



Know what's below.
Call before you dig.



OWNER

BIG SKY NORTH, LLC
5810 MIDLAND LANE, UNIT 65
PASCO, WA 99301

APPLICANT

HARPSTER LAND DEVELOPMENT
5804 ROAD 90, SUITE C
PASCO, WA 99301
509.212.9596
CONTACT: PETER HARPSTER

ENGINEER

HARPSTER LAND DEVELOPMENT
5804 ROAD 90, SUITE C
PASCO, WA 99301
509.212.9596
CONTACT: BLAINE BROBERG, PE

LAND SURVEYOR

AKS ENGINEERING & FORESTRY, INC.
501 N QUAY STREET, SUITE C-102
KENNEWICK, WA 99336
509.905.0219
CONTACT: JOSEPH R. LATIMER, PLS

SITE ADDRESS

XXX
KENNEWICK, WA 99337

PARCEL NUMBER(S)

XXX

UTILITIES

WATER: CITY OF KENNEWICK
SEWER: KENNEWICK IRRIGATION DISTRICT
STORMWATER: CITY OF KENNEWICK
TELEPHONE: CHARTER SPECTRUM
POWER: BENTON PUD
NATURAL GAS: CASCADE NATURAL GAS CORPORATION
ROADS/ROW: CITY OF KENNEWICK
STREETLIGHTS: CITY OF KENNEWICK

VERTICAL DATUM

ELEVATIONS ARE BASED ON GPS OBSERVATIONS OF CITY OF KENNEWICK
CONTROL POINT NUMBER K0841. A 3" BRASS CAP MARKING THE NW
CORNER OF SECTION 24, VERIFIED UTILING THE WASHINGTON STATE
REFERENCE NETWORK (WSRN), ELEVATION 507.13 FEET (PVA018).

HORIZONTAL DATUM

COORDINATES ARE BASED ON NAD83/2011.
WASHINGTON STATE PLANE, SOUTH ZONE ESTABLISHED BY
UTILIZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN).

TOPOGRAPHIC NOTE

THE EXISTING CULTURAL AND TOPOGRAPHIC DATA SHOWN ON THESE
DRAWINGS HAS BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED
BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, HARPSTER
LAND DEVELOPMENT CANNOT ENSURE ACCURACY AND THIS IS NOT
RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS
OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS
AS A RESULT.

LEGAL DESCRIPTION

XXX

ABBREVIATION LEGEND

AFN AUDITOR FILE NUMBER
@ AT
AVE AVENUE
EX EXISTING
EG EXISTING GRADE
ESMT EASEMENT
FT FOOT / FEET
HOA HOMEOWNERS ASSOCIATION
PH PHASE
PL PROPERTY LINE
PL PLACE
R RADIUS
ROW RIGHT OF WAY
SF SQUARE FEET
ST STREET
SUE SIDEWALK, UTILITY AND IRRIGATION EASEMENT
TYP TYPICAL

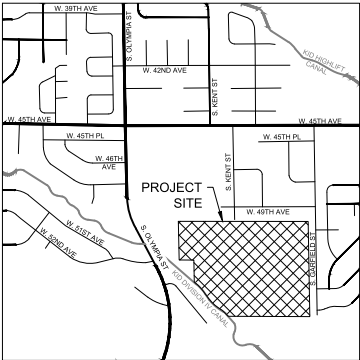
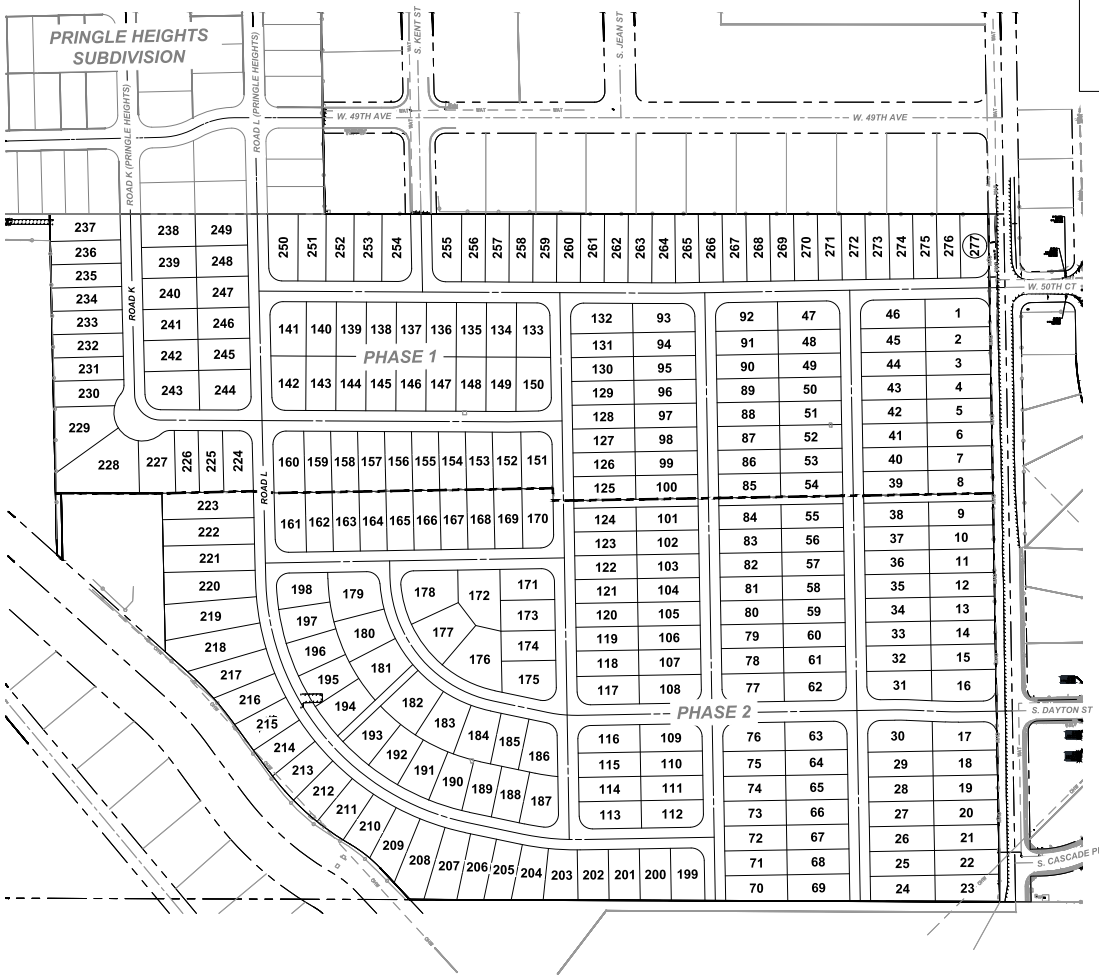
####

FOR

ALTERNATIVE 1

OF "PRINGLE HEIGHTS II"

NW 1/4 OF SEC. 24, TWN. 08 N, RGE. 29 E, W.M.
BENTON COUNTY, WA



SHEET INDEX

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	PARCEL LAYOUT - NW
3	PARCEL LAYOUT - NE
4	PARCEL LAYOUT - SW
5	PARCEL LAYOUT - SE
6	PRELIMINARY UTILITY LAYOUT
7	PARCEL TABLES

LAND USE TABLE

CURRENT ZONING	
TOTAL SITE AREA	
TOTAL RESIDENTIAL AREA	
TOTAL TRACT AREA	
TOTAL RIGHT OF WAY AREA	
RESIDENTIAL LOT COUNT	277 DWELLING UNITS (DU)
RESIDENTIAL LOT DENSITY	5.86 DU/AC
AVERAGE RESIDENTIAL LOT AREA	
MINIMUM RESIDENTIAL LOT AREA	
MAXIMUM RESIDENTIAL LOT AREA	
NUMBER OF CONSTRUCTION PHASES	2
RESIDENTIAL LOTS PER PHASE (IN ORDER, PHASES 1-2)	130 / 147
RIGHT OF WAY AREA PER PHASE (SF) (IN ORDER, PHASES 1-2)	

TRACT TABLE

TRACT NAME	AREA (SF)	TRACT USE
TRACT A		
TRACT B		
TRACT C		
TRACT D		
TRACT E		
TRACT F		
ROW		CITY OF KENNEWICK RIGHT-OF-WAY (ROW)

*PEDESTRIAN CONNECTION TRACTS TO BE DEDICATED TO THE HOA.
HOA WILL BE RESPONSIBLE FOR MAINTENANCE OF WALKWAYS AND
LANDSCAPING IN PERPETUITY.

HLD

Harpster Land Development, LLC
5804 Road 90, Suite C, Pasco, WA 99301
peter@harpsterland.com | 509.212.9596

PROJECT:

PRINGLE HEIGHTS II

KENNEWICK, WA

CLIENT:

BIG SKY NORTH, LLC

5810 MIDLAND LANE, UNIT 65,
PASCO, WA 99301

DAVE GREENO

SHEET TITLE:

####

DESIGNED BY: BCB

DRAWN BY: BCB

CHECKED BY: DJF

APPROVED BY: BCB

DATE: 4/10/26

SCALE:

HORIZONTAL

1" = XX'

VERTICAL

1" = XX'

REVISIONS:

NO.	DESCRIPTION	DATE

SHEET NUMBER:

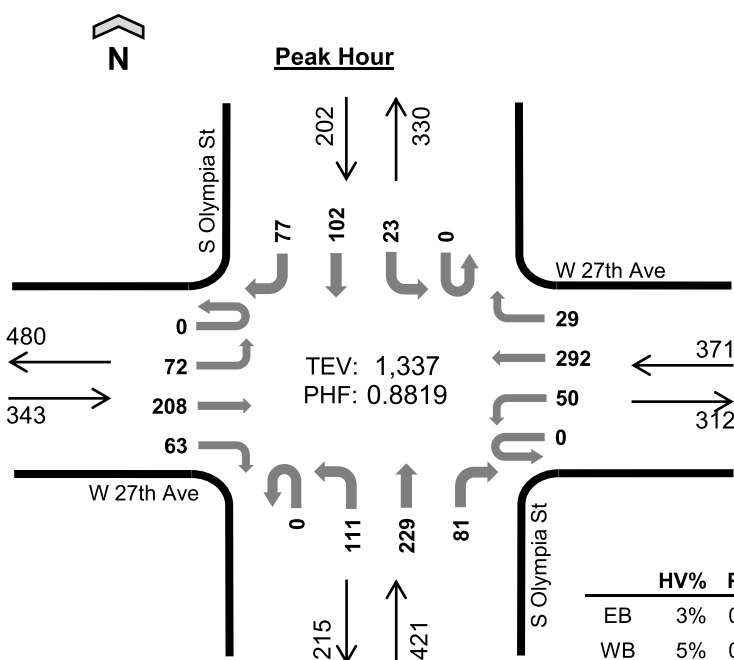
OF XX



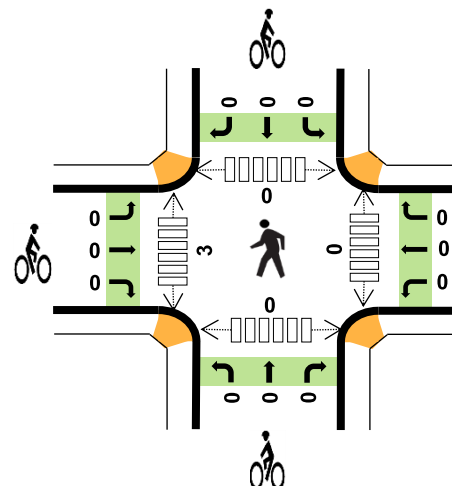
Appendix B

Existing Traffic Counts

S Olympia St W 27th Ave



Date: 3/25/2026
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV%	PHF
EB	3%	0.71
WB	5%	0.79
NB	2%	0.79
SB	6%	0.92
TOTAL	4%	0.88

Peak Hour Count Summaries

Peak Hour Interval Start		W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:30 AM		0	14	52	8	0	17	92	8	0	32	69	32	0	1	27	26	378	0
7:45 AM		0	21	78	21	0	15	77	4	0	27	63	24	0	11	25	13	379	0
8:00 AM		0	16	43	14	0	9	56	8	0	23	39	10	0	3	23	18	262	0
8:15 AM		0	21	35	20	0	9	67	9	0	29	58	15	0	8	27	20	318	1,337
Pk Hr	All	0	72	208	63	0	50	292	29	0	111	229	81	0	23	102	77	1,337	
	HV	0	3	7	1	0	3	14	1	0	2	4	3	0	1	10	2	51	
	HV%	-	4%	3%	2%	-	6%	5%	3%	-	2%	2%	4%	-	4%	10%	3%	4%	

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

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

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:30 AM	2	6	0	8	16	0	0	0	0	0	0	1	0	0	1
7:45 AM	4	1	2	1	8	0	0	0	0	0	0	0	0	0	0
8:00 AM	3	4	7	2	16	0	0	0	0	0	0	2	0	0	2
8:15 AM	2	7	0	2	11	0	0	0	0	0	0	0	0	0	0
Peak Hour	11	18	9	13	51	0	0	0	0	0	0	3	0	0	3

Count Summaries - All Vehicles

Interval Start		W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	5	31	3	0	1	50	2	0	24	49	17	0	4	20	7	213	0
7:15 AM		0	18	42	14	0	8	72	7	0	32	53	19	0	10	20	11	306	0
7:30 AM		0	14	52	8	0	17	92	8	0	32	69	32	0	1	27	26	378	0
7:45 AM		0	21	78	21	0	15	77	4	0	27	63	24	0	11	25	13	379	1,276
8:00 AM		0	16	43	14	0	9	56	8	0	23	39	10	0	3	23	18	262	1,325
8:15 AM		0	21	35	20	0	9	67	9	0	29	58	15	0	8	27	20	318	1,337
8:30 AM		0	35	38	17	0	13	66	13	0	51	47	10	0	6	30	13	339	1,298
8:45 AM		0	13	41	16	0	4	50	4	0	29	52	5	0	13	19	15	261	1,180
Count Total		0	143	360	113	0	76	530	55	0	247	430	132	0	56	191	123	2,456	
Pk Hr	All	0	72	208	63	0	50	292	29	0	111	229	81	0	23	102	77	1,337	
	HV	0	3	7	1	0	3	14	1	0	2	4	3	0	1	10	2	51	
	HV%	-	4%	3%	2%	-	6%	5%	3%	-	2%	2%	4%	-	4%	10%	3%	4%	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	4	4	3	4	15	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	2	2	5	13	0	0	0	0	0	2	0	2	1	5
7:30 AM	2	6	0	8	16	0	0	0	0	0	0	1	0	0	1
7:45 AM	4	1	2	1	8	0	0	0	0	0	0	0	0	0	0
8:00 AM	3	4	7	2	16	0	0	0	0	0	0	2	0	0	2
8:15 AM	2	7	0	2	11	0	0	0	0	0	0	0	0	0	0
8:30 AM	4	5	0	2	11	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	1	0	2	0	0	0	0	0	0	2	0	0	2
Count Total	23	30	15	24	92	0	0	0	0	0	2	5	2	1	10
Peak Hour	11	18	9	13	51	0	0	0	0	0	0	3	0	0	3

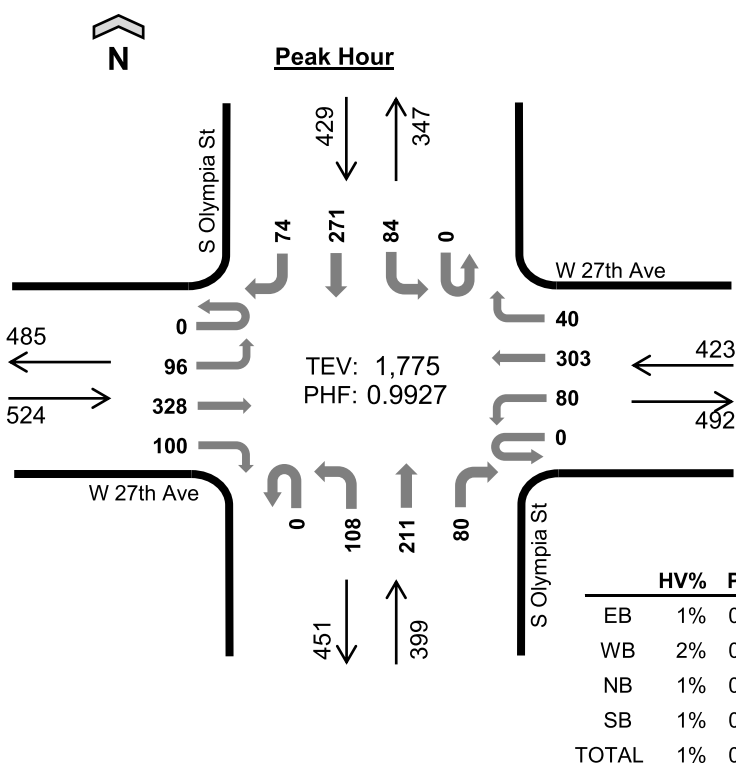
Count Summaries - Heavy Vehicles

Interval Start	W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	3	0	0	0	4	0	0	1	2	0	0	1	3	0	15	0
7:15 AM	0	1	2	1	0	0	2	0	0	1	1	0	0	2	2	1	13	0
7:30 AM	0	0	1	1	0	0	6	0	0	0	0	0	0	0	6	2	16	0
7:45 AM	0	0	4	0	0	0	0	1	0	0	0	2	0	0	1	0	8	52
8:00 AM	0	1	2	0	0	2	2	0	0	2	4	1	0	1	1	0	16	53
8:15 AM	0	2	0	0	0	1	6	0	0	0	0	0	0	0	2	0	11	51
8:30 AM	0	3	1	0	0	1	4	0	0	0	0	0	0	0	2	0	11	46
8:45 AM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	40
Count Total	0	8	13	2	0	4	25	1	0	4	8	3	0	4	17	3	92	
Pk Hr Heavy	0	3	7	1	0	3	14	1	0	2	4	3	0	1	10	2	51	

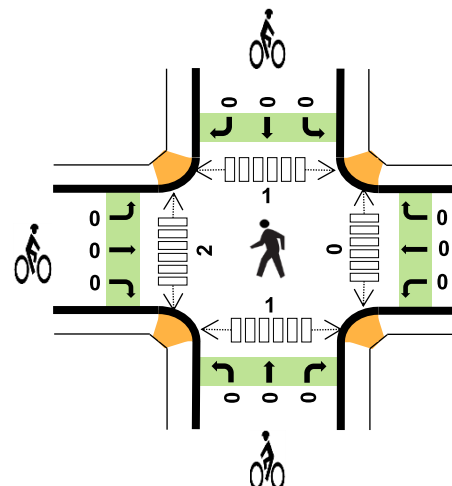
Count Summaries - Bikes

Interval Start	W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

S Olympia St W 27th Ave



Date: 3/24/2026
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



Peak Hour Count Summaries

Peak Hour Interval Start		W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM		0	23	87	24	0	19	89	17	0	24	45	12	0	15	60	19	434	0
4:30 PM		0	23	82	24	0	18	75	9	0	27	60	24	0	25	61	19	447	0
4:45 PM		0	33	76	28	0	19	64	7	0	27	53	15	0	16	85	24	447	0
5:00 PM		0	17	83	24	0	24	75	7	0	30	53	29	0	28	65	12	447	1,775
Pk Hr	All	0	96	328	100	0	80	303	40	0	108	211	80	0	84	271	74	1,775	
	HV	0	0	5	1	0	0	7	0	0	0	2	0	0	2	3	1	21	
	HV%	-	0%	2%	1%	-	0%	2%	0%	-	0%	1%	0%	-	2%	1%	1%	1%	

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

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

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:15 PM	3	3	0	1	7	0	0	0	0	0	0	0	1	0	1
4:30 PM	1	1	1	1	4	0	0	0	0	0	0	1	0	1	2
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1
5:00 PM	2	3	0	4	9	0	0	0	0	0	0	0	0	0	0
Peak Hour	6	7	2	6	21	0	0	0	0	0	0	2	1	1	4

Count Summaries - All Vehicles

Interval Start		W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	22	74	23	0	13	93	4	0	24	50	13	0	16	52	20	404	0
4:15 PM		0	23	87	24	0	19	89	17	0	24	45	12	0	15	60	19	434	0
4:30 PM		0	23	82	24	0	18	75	9	0	27	60	24	0	25	61	19	447	0
4:45 PM		0	33	76	28	0	19	64	7	0	27	53	15	0	16	85	24	447	1,732
5:00 PM		0	17	83	24	0	24	75	7	0	30	53	29	0	28	65	12	447	1,775
5:15 PM		0	25	72	27	0	23	70	4	0	21	52	11	0	19	80	23	427	1,768
5:30 PM		0	18	70	22	0	18	64	4	0	16	63	9	0	15	70	18	387	1,708
5:45 PM		0	15	59	24	0	9	58	2	0	22	45	11	0	25	75	26	371	1,632
Count Total		0	176	603	196	0	143	588	54	0	191	421	124	0	159	548	161	3,364	
Pk Hr	All	0	96	328	100	0	80	303	40	0	108	211	80	0	84	271	74	1,775	
	HV	0	0	5	1	0	0	7	0	0	0	2	0	0	2	3	1	21	
	HV%	-	0%	2%	1%	-	0%	2%	0%	-	0%	1%	0%	-	2%	1%	1%	1%	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	2	3	1	1	7	0	0	0	0	0	0	1	2	0	3
4:15 PM	3	3	0	1	7	0	0	0	0	0	0	0	1	0	1
4:30 PM	1	1	1	1	4	0	0	0	0	0	0	1	0	1	2
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1
5:00 PM	2	3	0	4	9	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	1	1	1	4	0	0	0	0	0	0	0	0	1	1
5:30 PM	2	1	0	1	4	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Count Total	11	12	4	9	36	0	0	0	0	0	0	5	3	2	10
Peak Hour	6	7	2	6	21	0	0	0	0	0	0	2	1	1	4

Count Summaries - Heavy Vehicles

Interval Start	W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	3	0	0	0	1	0	0	0	1	0	7	0
4:15 PM	0	0	2	1	0	0	3	0	0	0	0	0	0	1	0	0	7	0
4:30 PM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	19
5:00 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	1	2	1	9	21
5:15 PM	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	0	4	18
5:30 PM	0	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	4	18
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Count Total	0	1	8	2	0	0	12	0	0	0	4	0	0	2	6	1	36	
Pk Hr Heavy	0	0	5	1	0	0	7	0	0	0	2	0	0	2	3	1	21	

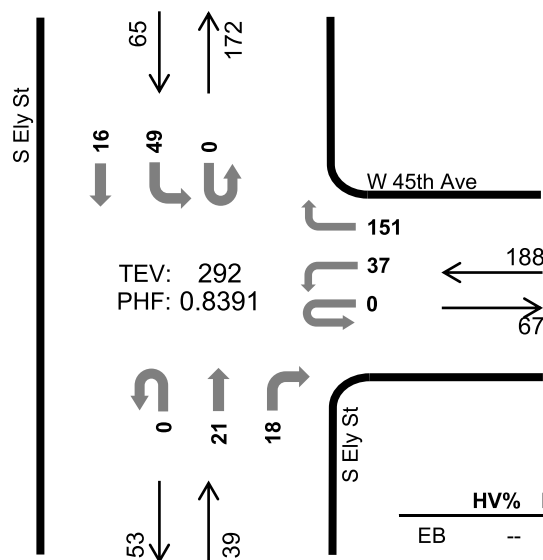
Count Summaries - Bikes

Interval Start	W 27th Ave				W 27th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

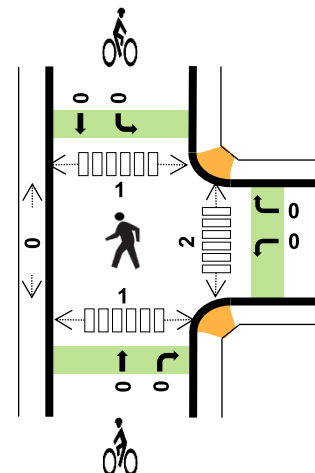
S Ely St W 45th Ave



Peak Hour



Date: 3/25/2026
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



Peak Hour Count Summaries

Peak Hour Interval Start		n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:15 AM		0	0	0	0	0	8	0	41	0	0	3	3	0	8	6	0	69	0
7:30 AM		0	0	0	0	0	17	0	41	0	0	7	5	0	15	2	0	87	0
7:45 AM		0	0	0	0	0	6	0	35	0	0	3	9	0	13	5	0	71	0
8:00 AM		0	0	0	0	0	6	0	34	0	0	8	1	0	13	3	0	65	292
Pk Hr	All	0	0	0	0	0	37	0	151	0	0	21	18	0	49	16	0	292	
	HV	0	0	0	0	0	0	0	5	0	0	1	1	0	6	2	0	15	
	HV%	-	-	-	-	-	0%	-	3%	-	-	5%	6%	-	12%	13%	-	5%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	8	0	27	0	0	6	5	0	9	5	0	60	0
7:15 AM		0	0	0	0	0	8	0	41	0	0	3	3	0	8	6	0	69	0
7:30 AM		0	0	0	0	0	17	0	41	0	0	7	5	0	15	2	0	87	0
7:45 AM		0	0	0	0	0	6	0	35	0	0	3	9	0	13	5	0	71	287
8:00 AM		0	0	0	0	0	6	0	34	0	0	8	1	0	13	3	0	65	292
8:15 AM		0	0	0	0	0	6	0	32	0	0	7	5	0	13	2	0	65	288
8:30 AM		0	0	0	0	0	7	0	36	0	0	1	4	0	13	3	0	64	265
8:45 AM		0	0	0	0	0	3	0	28	0	0	2	6	0	17	4	0	60	254
Count Total		0	0	0	0	0	61	0	274	0	0	37	38	0	101	30	0	541	
Pk Hr	All	0	0	0	0	0	37	0	151	0	0	21	18	0	49	16	0	292	
	HV	0	0	0	0	0	0	0	5	0	0	1	1	0	6	2	0	15	
	HV%	-	-	-	-	-	0%	-	3%	-	-	5%	6%	-	12%	13%	-	5%	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	0	3	1	3	7	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	2	3	0	0	0	0	0	1	0	0	1	2
7:30 AM	0	2	0	2	4	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	1	0	1	2	0	0	0	0	0	0	0	1	0	1
8:00 AM	0	1	2	3	6	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	2	0	2	4	0	0	0	0	0	1	0	0	0	1
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
Count Total	0	13	3	13	29	0	0	0	0	0	3	0	1	1	5
Peak Hour	0	5	2	8	15	0	0	0	0	0	2	0	1	1	4

Count Summaries - Heavy Vehicles

Interval Start	n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	3	0	0	0	1	0	1	2	0	7	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	3	0
7:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	4	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	16
8:00 AM	0	0	0	0	0	0	0	1	0	0	1	1	0	2	1	0	6	15
8:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	4	16
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	13
8:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	13
Count Total	0	0	0	0	0	1	0	12	0	0	1	2	0	9	4	0	29	
Pk Hr Heavy	0	0	0	0	0	0	0	5	0	0	1	1	0	6	2	0	15	

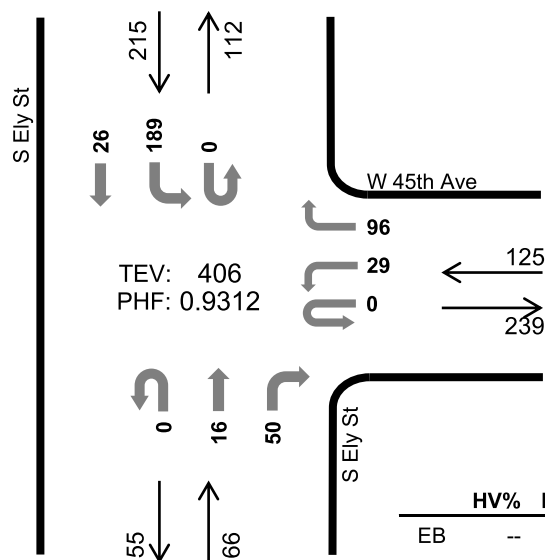
Count Summaries - Bikes

Interval Start	n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

S Ely St W 45th Ave

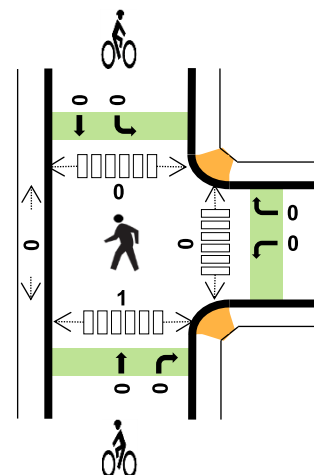


Peak Hour



	HV%	PHF
EB	--	--
WB	1%	0.92
NB	0%	0.79
SB	0%	0.90
TOTAL	0%	0.93

Date: 3/24/2026
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



Peak Hour Count Summaries

Peak Hour Interval Start		n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	0	0	0	0	7	0	22	0	0	8	13	0	35	6	0	91	0
4:45 PM		0	0	0	0	0	9	0	23	0	0	4	14	0	51	3	0	104	0
5:00 PM		0	0	0	0	0	8	0	22	0	0	3	9	0	49	11	0	102	0
5:15 PM		0	0	0	0	0	5	0	29	0	0	1	14	0	54	6	0	109	406
Pk Hr	All	0	0	0	0	0	29	0	96	0	0	16	50	0	189	26	0	406	
	HV	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	
	HV%	-	-	-	-	-	0%	-	1%	-	-	0%	0%	-	1%	0%	-	0%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	4	0	34	0	0	5	11	0	37	7	0	98	0
4:15 PM		0	0	0	0	0	7	0	26	0	0	6	6	0	35	6	0	86	0
4:30 PM		0	0	0	0	0	7	0	22	0	0	8	13	0	35	6	0	91	0
4:45 PM		0	0	0	0	0	9	0	23	0	0	4	14	0	51	3	0	104	379
5:00 PM		0	0	0	0	0	8	0	22	0	0	3	9	0	49	11	0	102	383
5:15 PM		0	0	0	0	0	5	0	29	0	0	1	14	0	54	6	0	109	406
5:30 PM		0	0	0	0	0	4	0	22	0	0	4	7	0	53	0	0	90	405
5:45 PM		0	0	0	0	0	4	0	28	0	0	1	5	0	37	5	0	80	381
Count Total		0	0	0	0	0	48	0	206	0	0	32	79	0	351	44	0	760	
Pk Hr	All	0	0	0	0	0	29	0	96	0	0	16	50	0	189	26	0	406	
	HV	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	
	HV%	-	-	-	-	-	0%	-	1%	-	-	0%	0%	-	1%	0%	-	0%	

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

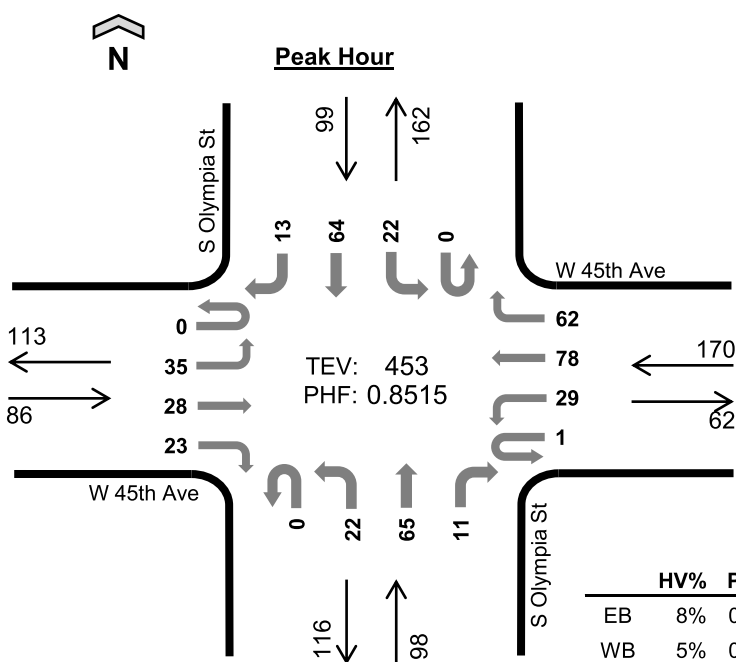
Count Summaries - Heavy Vehicles

Interval Start	n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Count Total	0	0	0	0	0	0	0	4	0	0	1	1	0	2	0	0	8	
Pk Hr Heavy	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	

Count Summaries - Bikes

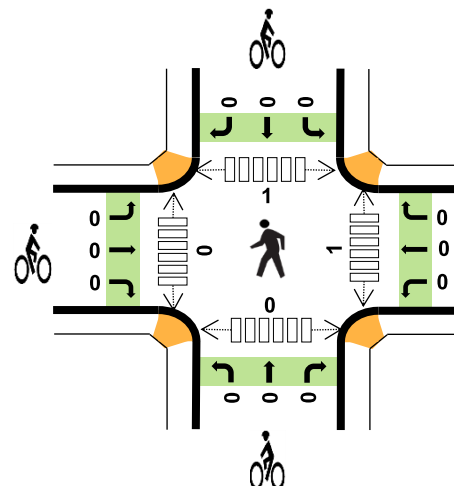
Interval Start	n/a				W 45th Ave				S Ely St				S Ely St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

S Olympia St W 45th Ave



	HV%	PHF
EB	8%	0.77
WB	5%	0.82
NB	9%	0.68
SB	13%	0.88
TOTAL	8%	0.85

Date: 3/25/2026
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM



Peak Hour Count Summaries

Peak Hour Interval Start		W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	7	6	6	1	7	19	11	0	0	14	3	0	5	12	2	93	0
7:15 AM		0	8	6	2	0	10	22	20	0	7	14	1	0	8	17	2	117	0
7:30 AM		0	12	6	10	0	4	20	20	0	11	21	4	0	6	18	1	133	0
7:45 AM		0	8	10	5	0	8	17	11	0	4	16	3	0	3	17	8	110	453
Pk Hr	All	0	35	28	23	1	29	78	62	0	22	65	11	0	22	64	13	453	
	HV	0	2	3	2	1	2	4	1	0	2	5	2	0	5	8	0	37	
	HV%	-	6%	11%	9%	100%	7%	5%	2%	-	9%	8%	18%	-	23%	13%	0%	8%	

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

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

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	1	3	3	2	9	0	0	0	0	0	0	0	0	0	0
7:15 AM	2	3	1	3	9	0	0	0	0	0	0	0	0	0	0
7:30 AM	2	1	3	8	14	0	0	0	0	0	0	0	0	0	0
7:45 AM	2	1	2	0	5	0	0	0	0	0	1	0	1	0	2
Peak Hour	7	8	9	13	37	0	0	0	0	0	1	0	1	0	2

Count Summaries - All Vehicles

Interval Start		W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	7	6	6	1	7	19	11	0	0	14	3	0	5	12	2	93	0
7:15 AM		0	8	6	2	0	10	22	20	0	7	14	1	0	8	17	2	117	0
7:30 AM		0	12	6	10	0	4	20	20	0	11	21	4	0	6	18	1	133	0
7:45 AM		0	8	10	5	0	8	17	11	0	4	16	3	0	3	17	8	110	453
8:00 AM		0	7	8	2	0	10	13	6	0	8	8	5	1	4	12	2	86	446
8:15 AM		0	10	1	6	0	6	12	18	0	4	14	1	0	3	21	5	101	430
8:30 AM		0	4	4	2	0	4	15	13	1	4	20	5	0	6	8	10	96	393
8:45 AM		0	11	6	7	0	2	17	21	0	4	9	2	0	3	10	2	94	377
Count Total		0	67	47	40	1	51	135	120	1	42	116	24	1	38	115	32	830	
Pk Hr	All	0	35	28	23	1	29	78	62	0	22	65	11	0	22	64	13	453	
	HV	0	2	3	2	1	2	4	1	0	2	5	2	0	5	8	0	37	
	HV%	-	6%	11%	9%	100%	7%	5%	2%	-	9%	8%	18%	-	23%	13%	0%	8%	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	1	3	3	2	9	0	0	0	0	0	0	0	0	0	0
7:15 AM	2	3	1	3	9	0	0	0	0	0	0	0	0	0	0
7:30 AM	2	1	3	8	14	0	0	0	0	0	0	0	0	0	0
7:45 AM	2	1	2	0	5	0	0	0	0	0	1	0	1	0	2
8:00 AM	4	2	2	2	10	0	0	0	0	0	1	0	2	0	3
8:15 AM	1	2	1	4	8	0	0	0	0	0	0	0	0	1	1
8:30 AM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	2	1	1	4	0	0	0	0	0	0	1	0	0	1
Count Total	12	15	14	20	61	0	0	0	0	0	2	1	3	1	7
Peak Hour	7	8	9	13	37	0	0	0	0	0	1	0	1	0	2

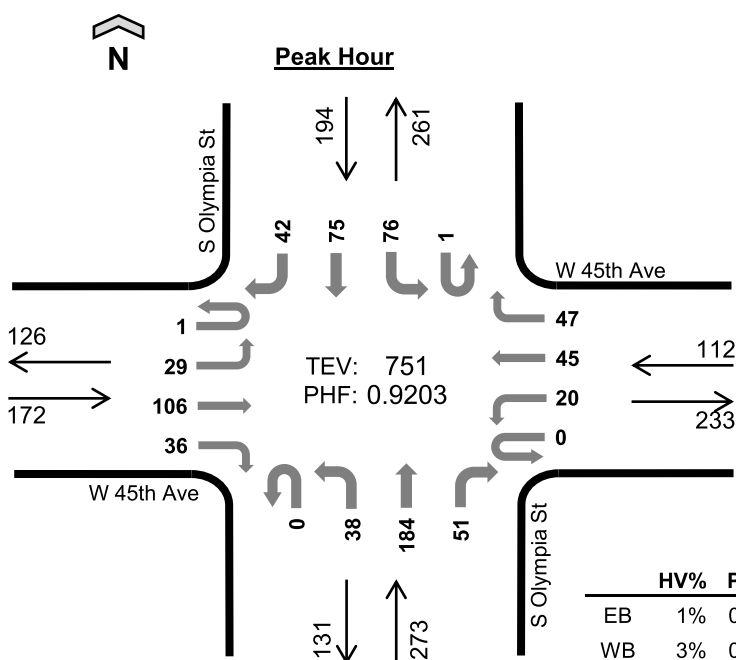
Count Summaries - Heavy Vehicles

Interval Start	W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	1	1	1	0	0	0	3	0	0	2	0	0	9	0
7:15 AM	0	0	1	1	0	0	3	0	0	0	0	1	0	1	2	0	9	0
7:30 AM	0	1	0	1	0	0	0	1	0	1	1	1	0	2	6	0	14	0
7:45 AM	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	5	37
8:00 AM	0	0	2	2	0	0	1	1	0	0	2	0	0	0	1	1	10	38
8:15 AM	0	1	0	0	0	0	1	1	0	0	0	1	0	2	1	1	8	37
8:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	25
8:45 AM	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	4	24
Count Total	0	3	5	4	1	2	7	5	0	3	8	3	0	7	11	2	61	
Pk Hr Heavy	0	2	3	2	1	2	4	1	0	2	5	2	0	5	8	0	37	

Count Summaries - Bikes

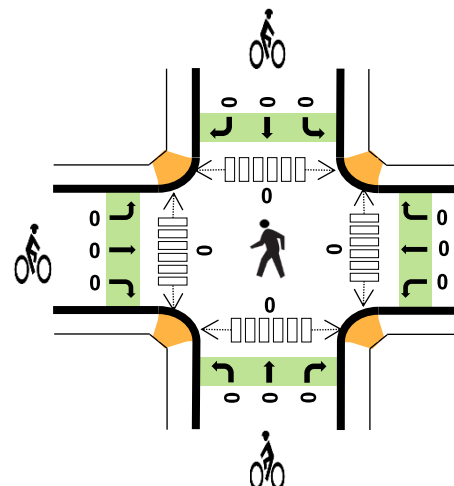
Interval Start	W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

S Olympia St W 45th Ave



	HV%	PHF
EB	1%	0.93
WB	3%	0.82
NB	2%	0.95
SB	0%	0.84
TOTAL	1%	0.92

Date: 3/24/2026
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



Peak Hour Count Summaries

Peak Hour Interval Start		W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	10	28	8	0	4	14	10	0	15	44	13	1	27	23	7	204	0
5:00 PM		0	7	18	13	0	8	12	14	0	8	55	8	0	21	12	16	192	0
5:15 PM		1	6	29	9	0	4	11	6	0	6	40	17	0	15	17	7	168	0
5:30 PM		0	6	31	6	0	4	8	17	0	9	45	13	0	13	23	12	187	751
Pk Hr	All	1	29	106	36	0	20	45	47	0	38	184	51	1	76	75	42	751	
	HV	0	0	1	0	0	0	0	3	0	1	4	1	0	0	0	0	10	
	HV%	0%	0%	1%	0%	-	0%	0%	6%	-	3%	2%	2%	0%	0%	0%	0%	1%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	7	25	6	0	3	12	22	0	11	22	11	0	10	14	4	147	0
4:15 PM		0	7	18	4	0	2	7	12	0	6	26	3	0	11	25	12	133	0
4:30 PM		0	10	25	8	1	3	13	18	0	13	39	9	0	15	24	6	184	0
4:45 PM		0	10	28	8	0	4	14	10	0	15	44	13	1	27	23	7	204	668
5:00 PM		0	7	18	13	0	8	12	14	0	8	55	8	0	21	12	16	192	713
5:15 PM		1	6	29	9	0	4	11	6	0	6	40	17	0	15	17	7	168	748
5:30 PM		0	6	31	6	0	4	8	17	0	9	45	13	0	13	23	12	187	751
5:45 PM		0	3	15	11	0	4	16	13	0	7	24	10	0	15	11	5	134	681
Count Total		1	56	189	65	1	32	93	112	0	75	295	84	1	127	149	69	1,349	
Pk Hr	All	1	29	106	36	0	20	45	47	0	38	184	51	1	76	75	42	751	
	HV	0	0	1	0	0	0	0	3	0	1	4	1	0	0	0	0	10	
	HV%	0%	0%	1%	0%	-	0%	0%	6%	-	3%	2%	2%	0%	0%	0%	0%	1%	

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

Count Summaries - Heavy Vehicles

Interval Start	W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	1	0	1	0	0	0	1	0	1	0	0	5	0
4:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	3	0
4:30 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	3	13
5:00 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	10
5:15 PM	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	4	11
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	10
5:45 PM	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	4	11
Count Total	0	0	2	1	0	2	0	6	0	2	6	3	0	1	1	0	24	
Pk Hr Heavy	0	0	1	0	0	0	0	3	0	1	4	1	0	0	0	0	10	

Count Summaries - Bikes

Interval Start	W 45th Ave				W 45th Ave				S Olympia St				S Olympia St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

S Kent St W 45th Ave

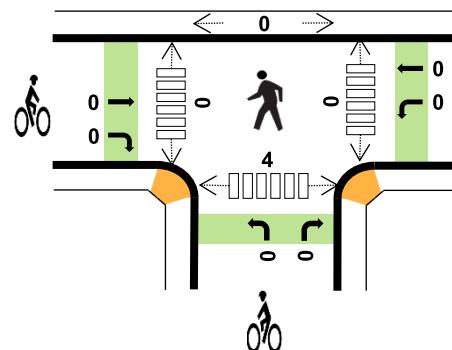
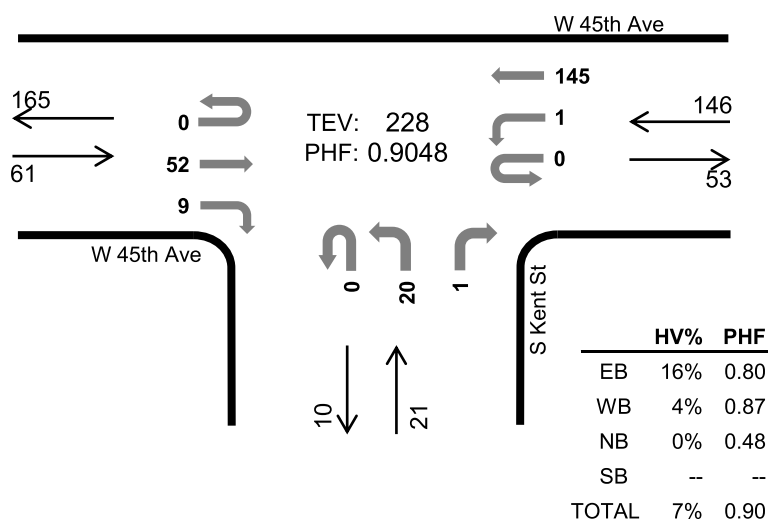


Peak Hour

Date: 3/25/2026

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

Peak Hour: 7:00 AM to 8:00 AM



Peak Hour Count Summaries

Peak Hour Interval Start		W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	12	1	0	0	35	0	0	2	0	0	0	0	0	0	50	0
7:15 AM		0	0	6	5	0	0	38	0	0	11	0	0	0	0	0	0	60	0
7:30 AM		0	0	17	1	0	1	41	0	0	3	0	0	0	0	0	0	63	0
7:45 AM		0	0	17	2	0	0	31	0	0	4	0	1	0	0	0	0	55	228
Pk Hr	All	0	0	52	9	0	1	145	0	0	20	0	1	0	0	0	0	228	
	HV	0	0	8	2	0	0	6	0	0	0	0	0	0	0	0	0	16	
	HV%	-	-	15%	22%	-	0%	4%	-	-	0%	-	0%	-	-	-	-	7%	

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

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

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	2	2	0	0	4	0	0	0	0	0	0	0	0	1	1
7:15 AM	2	3	0	0	5	0	0	0	0	0	0	0	0	1	1
7:30 AM	3	0	0	0	3	0	0	0	0	0	0	0	0	1	1
7:45 AM	3	1	0	0	4	0	0	0	0	0	0	0	0	1	1
Peak Hour	10	6	0	0	16	0	0	0	0	0	0	0	0	4	4

Count Summaries - All Vehicles

Interval Start		W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	12	1	0	0	35	0	0	2	0	0	0	0	0	0	50	0
7:15 AM		0	0	6	5	0	0	38	0	0	11	0	0	0	0	0	0	60	0
7:30 AM		0	0	17	1	0	1	41	0	0	3	0	0	0	0	0	0	63	0
7:45 AM		0	0	17	2	0	0	31	0	0	4	0	1	0	0	0	0	55	228
8:00 AM		0	0	14	1	0	0	22	0	0	3	0	0	0	0	0	0	40	218
8:15 AM		0	0	5	0	0	0	30	0	0	2	0	1	0	0	0	0	38	196
8:30 AM		0	0	14	0	0	0	30	0	0	1	0	2	0	0	0	0	47	180
8:45 AM		0	0	11	1	0	1	31	0	0	2	0	0	0	0	0	0	46	171
Count Total		0	0	96	11	0	2	258	0	0	28	0	4	0	0	0	0	399	
Pk Hr	All	0	0	52	9	0	1	145	0	0	20	0	1	0	0	0	0	228	
	HV	0	0	8	2	0	0	6	0	0	0	0	0	0	0	0	0	16	
	HV%	-	-	15%	22%	-	0%	4%	-	-	0%	-	0%	-	-	-	-	7%	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	2	2	0	0	4	0	0	0	0	0	0	0	0	1	1
7:15 AM	2	3	0	0	5	0	0	0	0	0	0	0	0	1	1
7:30 AM	3	0	0	0	3	0	0	0	0	0	0	0	0	1	1
7:45 AM	3	1	0	0	4	0	0	0	0	0	0	0	0	1	1
8:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0
8:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0
8:30 AM	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Count Total	16	8	0	0	24	0	0	0	0	0	0	0	0	4	4
Peak Hour	10	6	0	0	16	0	0	0	0	0	0	0	0	4	4

Count Summaries - Heavy Vehicles

Interval Start	W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	1	1	0	0	3	0	0	0	0	0	0	0	0	0	5	0
7:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
7:45 AM	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	4	16
8:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	14
8:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
8:30 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	11
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	8
Count Total	0	0	14	2	0	0	8	0	0	0	0	0	0	0	0	0	24	
Pk Hr Heavy	0	0	8	2	0	0	6	0	0	0	0	0	0	0	0	0	16	

Count Summaries - Bikes

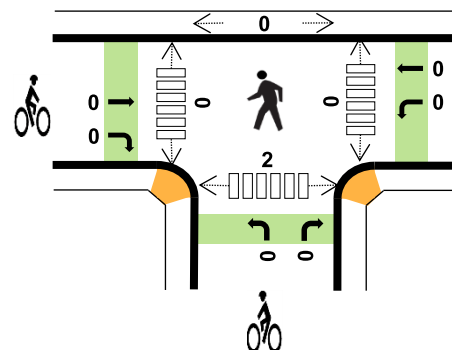
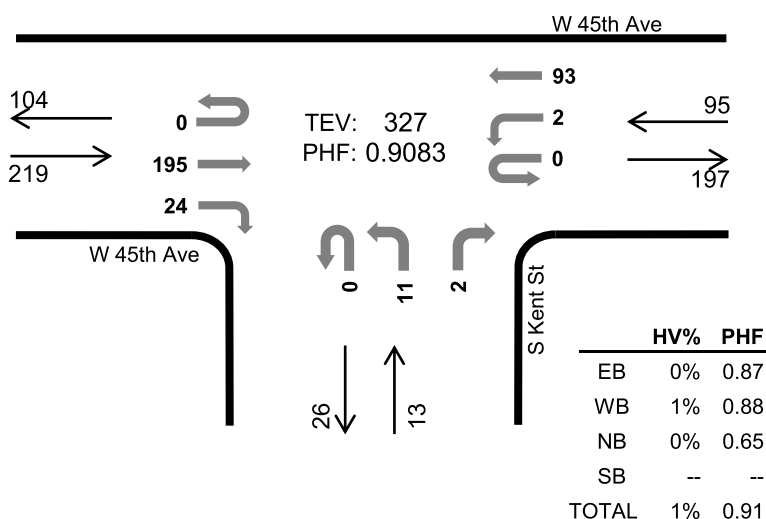
Interval Start	W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

S Kent St W 45th Ave



Peak Hour

Date: 3/24/2026
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



Peak Hour Count Summaries

Peak Hour Interval Start		W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	0	55	8	0	0	26	0	0	1	0	0	0	0	0	0	90	0
5:00 PM		0	0	38	5	0	1	26	0	0	2	0	1	0	0	0	0	73	0
5:15 PM		0	0	48	9	0	1	15	0	0	5	0	0	0	0	0	0	78	0
5:30 PM		0	0	54	2	0	0	26	0	0	3	0	1	0	0	0	0	86	327
Pk Hr	All	0	0	195	24	0	2	93	0	0	11	0	2	0	0	0	0	327	
	HV	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	
	HV%	-	-	1%	0%	-	0%	1%	-	-	0%	-	0%	-	-	-	-	1%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	38	4	0	0	31	0	0	3	0	0	0	0	0	0	76	0
4:15 PM		0	0	34	0	0	1	16	0	0	3	0	0	0	0	0	0	54	0
4:30 PM		0	0	42	5	0	1	28	0	0	6	0	0	0	0	0	0	82	0
4:45 PM		0	0	55	8	0	0	26	0	0	1	0	0	0	0	0	0	90	302
5:00 PM		0	0	38	5	0	1	26	0	0	2	0	1	0	0	0	0	73	299
5:15 PM		0	0	48	9	0	1	15	0	0	5	0	0	0	0	0	0	78	323
5:30 PM		0	0	54	2	0	0	26	0	0	3	0	1	0	0	0	0	86	327
5:45 PM		0	0	38	5	0	1	29	0	0	2	0	0	0	0	0	0	75	312
Count Total		0	0	347	38	0	5	197	0	0	25	0	2	0	0	0	0	614	
Pk Hr	All	0	0	195	24	0	2	93	0	0	11	0	2	0	0	0	0	327	
	HV	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	
	HV%	-	-	1%	0%	-	0%	1%	-	-	0%	-	0%	-	-	-	-	1%	

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

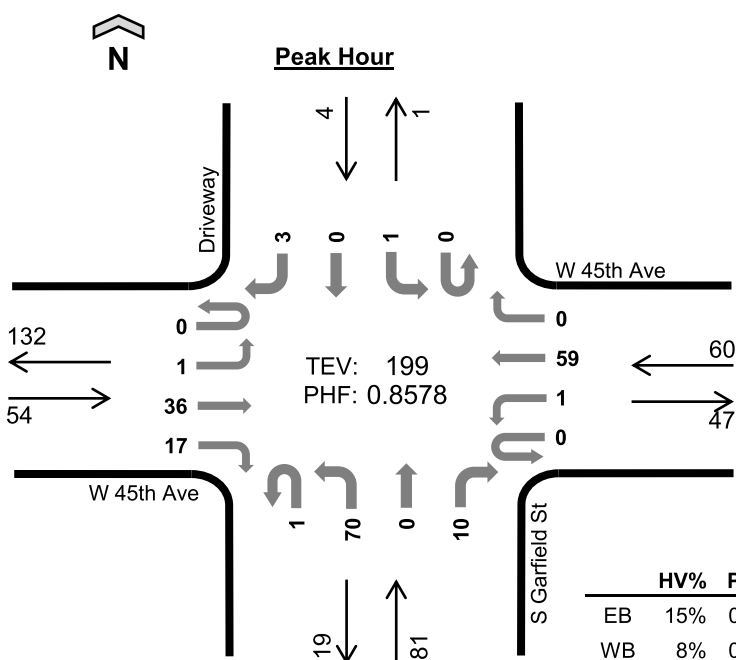
Count Summaries - Heavy Vehicles

Interval Start	W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	5	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	7
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Count Total	0	0	4	0	0	0	4	0	0	1	0	0	0	0	0	0	0	9	
Pk Hr Heavy	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	

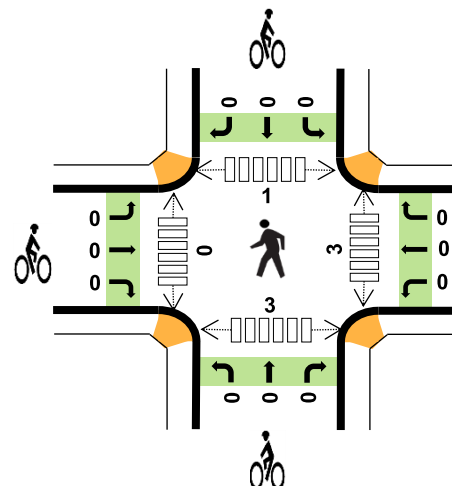
Count Summaries - Bikes

Interval Start	W 45th Ave				W 45th Ave				S Kent St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

S Garfield St W 45th Ave



Date: 3/25/2026
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM



	HV%	PHF
EB	15%	0.71
WB	8%	0.88
NB	2%	0.81
SB	0%	0.33
TOTAL	8%	0.86

Peak Hour Count Summaries

Peak Hour Interval Start		W 45th Ave				W 45th Ave				S Garfield St				Driveway				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	8	3	0	0	14	0	0	17	0	1	0	1	0	2	47	0
7:15 AM		0	0	4	3	0	1	15	0	0	16	0	5	0	0	0	1	45	0
7:30 AM		0	0	9	7	0	0	17	0	0	22	0	3	0	0	0	0	58	0
7:45 AM		0	0	15	4	0	0	13	0	1	15	0	1	0	0	0	0	49	199
Pk Hr	All	0	1	36	17	0	1	59	0	1	70	0	10	0	1	0	3	199	
	HV	0	0	5	3	0	0	5	0	0	1	0	1	0	0	0	0	15	
	HV%	-	0%	14%	18%	-	0%	8%	-	0%	1%	-	10%	-	0%	-	0%	8%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 45th Ave				W 45th Ave				S Garfield St				Driveway				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	8	3	0	0	14	0	0	17	0	1	0	1	0	2	47	0
7:15 AM		0	0	4	3	0	1	15	0	0	16	0	5	0	0	0	1	45	0
7:30 AM		0	0	9	7	0	0	17	0	0	22	0	3	0	0	0	0	58	0
7:45 AM		0	0	15	4	0	0	13	0	1	15	0	1	0	0	0	0	49	199
8:00 AM		0	0	7	5	0	0	16	0	0	7	0	0	0	0	0	0	35	187
8:15 AM		0	0	4	4	0	0	13	0	0	14	0	5	0	0	0	0	40	182
8:30 AM		0	0	14	2	0	4	24	0	0	7	0	2	0	0	0	0	53	177
8:45 AM		0	0	7	4	0	2	13	0	0	21	0	0	0	0	0	0	47	175
Count Total		0	1	68	32	0	7	125	0	1	119	0	17	0	1	0	3	374	
Pk Hr	All	0	1	36	17	0	1	59	0	1	70	0	10	0	1	0	3	199	
	HV	0	0	5	3	0	0	5	0	0	1	0	1	0	0	0	0	15	
	HV%	-	0%	14%	18%	-	0%	8%	-	0%	1%	-	10%	-	0%	-	0%	8%	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	2	2	1	0	5	0	0	0	0	0	2	0	1	1	4
7:15 AM	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0
7:30 AM	3	0	1	0	4	0	0	0	0	0	1	0	0	1	2
7:45 AM	2	1	0	0	3	0	0	0	0	0	0	0	0	1	1
8:00 AM	2	0	0	0	2	2	1	0	0	3	0	0	1	0	1
8:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	2	0	2
8:30 AM	2	2	0	0	4	2	0	0	0	2	1	0	1	0	2
8:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Count Total	14	7	3	0	24	4	1	0	0	5	4	0	5	3	12
Peak Hour	8	5	2	0	15	0	0	0	0	0	3	0	1	3	7

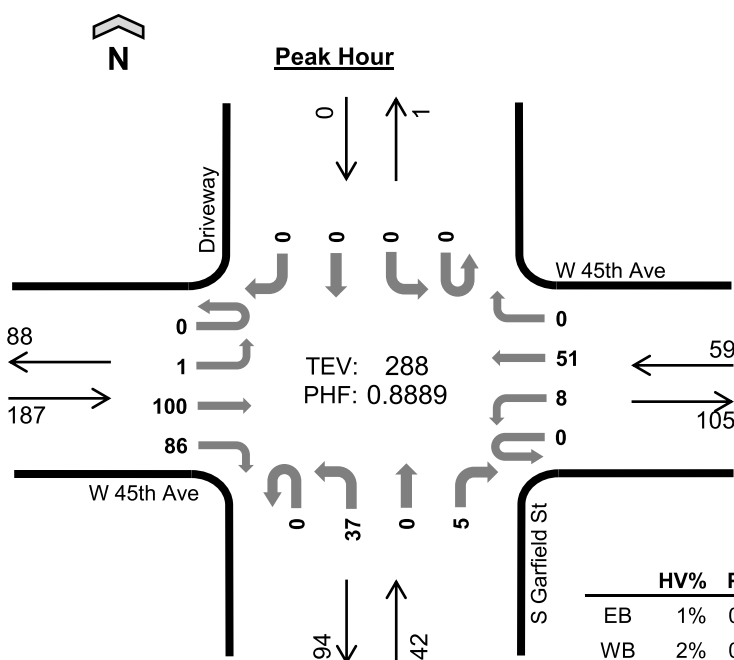
Count Summaries - Heavy Vehicles

Interval Start	W 45th Ave				W 45th Ave				S Garfield St				Driveway				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	1	0	0	2	0	0	0	0	1	0	0	0	0	5	0
7:15 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
7:30 AM	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	4	0
7:45 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	15
8:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12
8:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	11
8:30 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	11
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	9
Count Total	0	0	10	4	0	0	7	0	0	2	0	1	0	0	0	0	24	
Pk Hr Heavy	0	0	5	3	0	0	5	0	0	1	0	1	0	0	0	0	15	

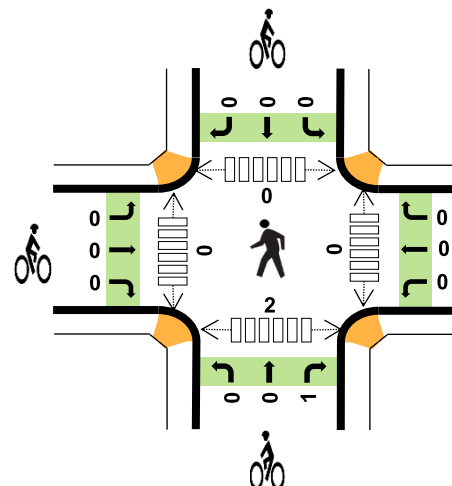
Count Summaries - Bikes

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

S Garfield St W 45th Ave



Date: 3/24/2026
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV%	PHF
EB	1%	0.88
WB	2%	0.87
NB	0%	0.70
SB	--	--
TOTAL	1%	0.89

Peak Hour Count Summaries

Peak Hour Interval Start		W 45th Ave				W 45th Ave				S Garfield St				Driveway				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	0	31	21	0	4	13	0	0	11	0	1	0	0	0	0	81	0
5:00 PM		0	0	16	22	0	1	14	0	0	8	0	2	0	0	0	0	63	0
5:15 PM		0	0	23	21	0	2	15	0	0	3	0	2	0	0	0	0	66	0
5:30 PM		0	1	30	22	0	1	9	0	0	15	0	0	0	0	0	0	78	288
Pk Hr	All	0	1	100	86	0	8	51	0	0	37	0	5	0	0	0	0	288	
	HV	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
	HV%	-	0%	2%	0%	-	0%	2%	-	-	0%	-	0%	-	-	-	-	1%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 45th Ave				W 45th Ave				S Garfield St				Driveway				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	1	20	15	0	5	15	1	0	13	0	2	0	1	0	0	73	0
4:15 PM		0	0	21	14	0	1	7	0	0	10	0	3	0	0	0	0	56	0
4:30 PM		0	0	22	17	0	1	15	0	0	16	0	1	0	0	0	0	72	0
4:45 PM		0	0	31	21	0	4	13	0	0	11	0	1	0	0	0	0	81	282
5:00 PM		0	0	16	22	0	1	14	0	0	8	0	2	0	0	0	0	63	272
5:15 PM		0	0	23	21	0	2	15	0	0	3	0	2	0	0	0	0	66	282
5:30 PM		0	1	30	22	0	1	9	0	0	15	0	0	0	0	0	0	78	288
5:45 PM		0	0	16	17	0	1	18	0	0	8	0	0	0	0	0	2	62	269
Count Total		0	2	179	149	0	16	106	1	0	84	0	11	0	1	0	2	551	
Pk Hr	All	0	1	100	86	0	8	51	0	0	37	0	5	0	0	0	0	288	
	HV	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
	HV%	-	0%	2%	0%	-	0%	2%	-	-	0%	-	0%	-	-	-	-	1%	

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

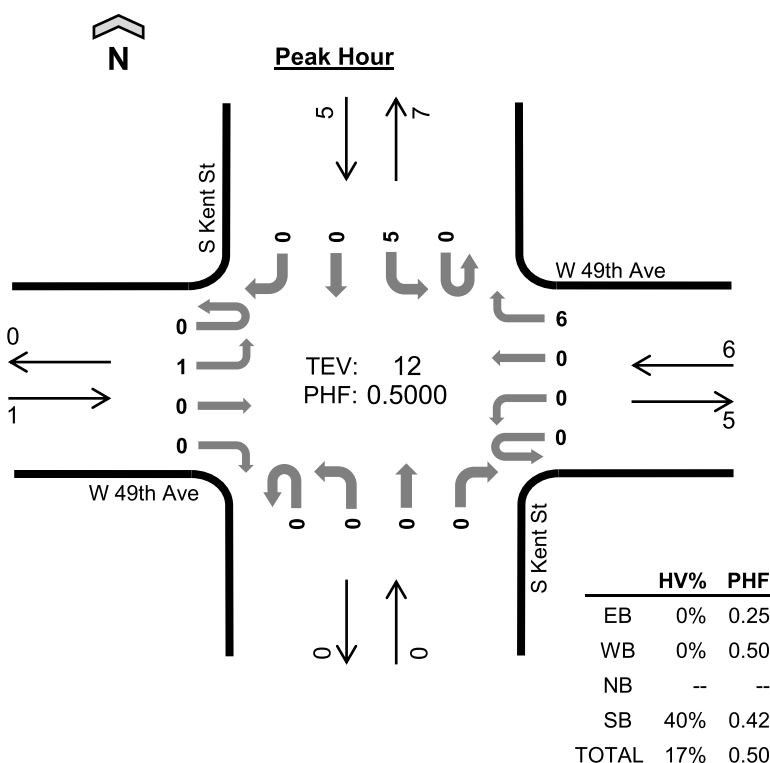
Count Summaries - Heavy Vehicles

Interval Start	W 45th Ave				W 45th Ave				S Garfield St				Driveway				15-min Total	Rolling Hour Total	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	4
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	0	3	2	0	0	3	0	0	1	0	0	0	0	0	0	0	9	
Pk Hr Heavy	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	

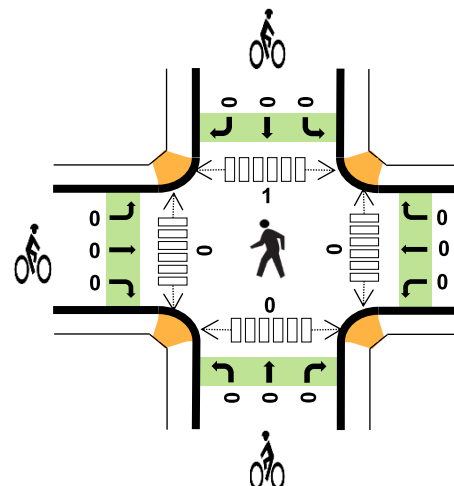
Count Summaries - Bikes

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

S Kent St W 49th Ave



Date: 3/25/2026
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



Peak Hour Count Summaries

Peak Hour Interval Start		W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:15 AM		0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	6	0
7:30 AM		0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0
7:45 AM		0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3	0
8:00 AM		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	12
Pk Hr	All	0	1	0	0	0	0	0	6	0	0	0	0	0	5	0	0	12	
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
	HV%	-	0%	-	-	-	-	-	0%	-	-	-	-	-	40%	-	-	17%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM		0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	6	0
7:30 AM		0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0
7:45 AM		0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3	11
8:00 AM		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	12
8:15 AM		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	7
8:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:45 AM		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3
Count Total		0	1	0	0	0	0	0	8	0	0	0	0	0	5	0	0	14	
Pk Hr	All	0	1	0	0	0	0	0	6	0	0	0	0	0	5	0	0	12	
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
	HV%	-	0%	-	-	-	-	-	0%	-	-	-	-	-	40%	-	-	17%	

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

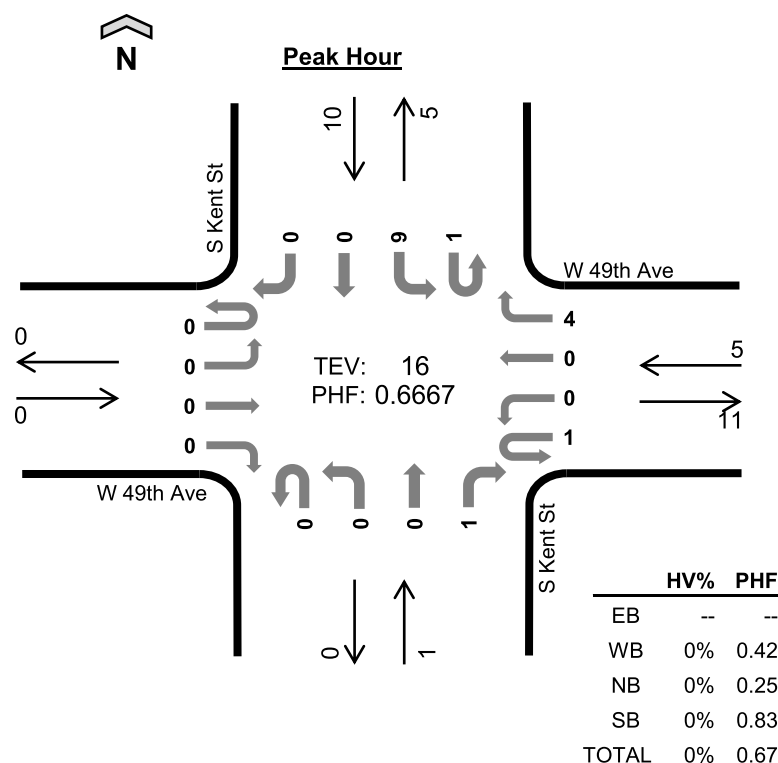
Count Summaries - Heavy Vehicles

Interval Start	W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
Pk Hr Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	

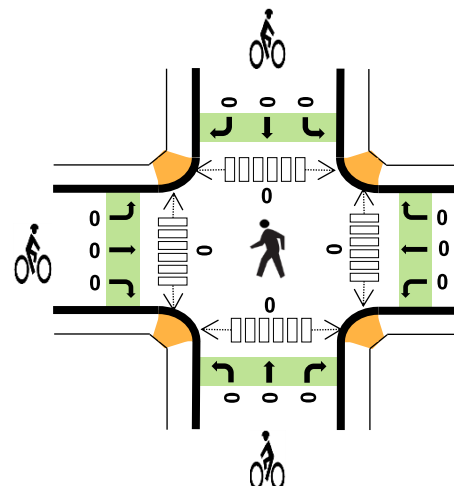
Count Summaries - Bikes

Interval Start	W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

S Kent St W 49th Ave



Date: 3/24/2026
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



Peak Hour Count Summaries

Peak Hour Interval Start		W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	4	0
4:45 PM		0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3	0
5:00 PM		0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	0
5:15 PM		0	0	0	0	0	0	0	3	0	0	0	0	1	2	0	0	6	16
Pk Hr	All	0	0	0	0	1	0	0	4	0	0	0	1	1	9	0	0	16	
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	HV%	-	-	-	-	0%	-	-	0%	-	-	-	0%	0%	0%	-	-	0%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	3	0
4:15 PM		0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0
4:30 PM		0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	4	0
4:45 PM		0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3	13
5:00 PM		0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	13
5:15 PM		0	0	0	0	0	0	0	3	0	0	0	0	1	2	0	0	6	16
5:30 PM		0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3	15
5:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	14
Count Total		0	3	0	0	1	0	0	7	0	0	0	1	1	12	0	2	27	
Pk Hr	All	0	0	0	0	1	0	0	4	0	0	0	1	1	9	0	0	16	
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	HV%	-	-	-	-	0%	-	-	0%	-	-	-	0%	0%	0%	-	-	0%	

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

Count Summaries - Heavy Vehicles

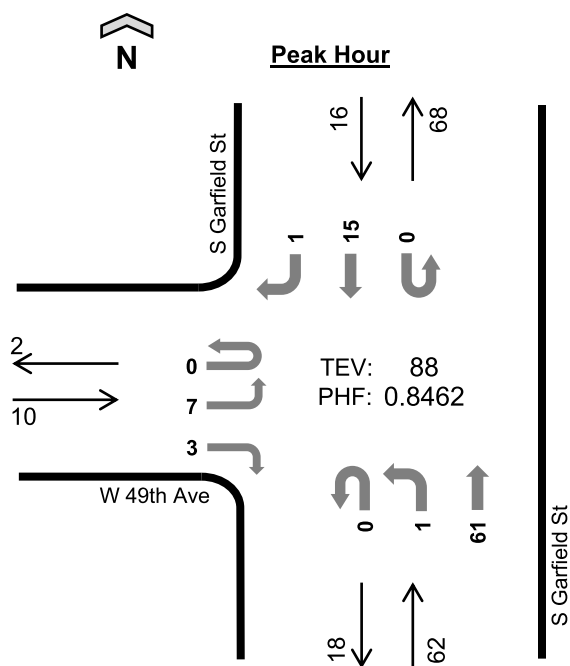
Interval Start	W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
Pk Hr Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Count Summaries - Bikes

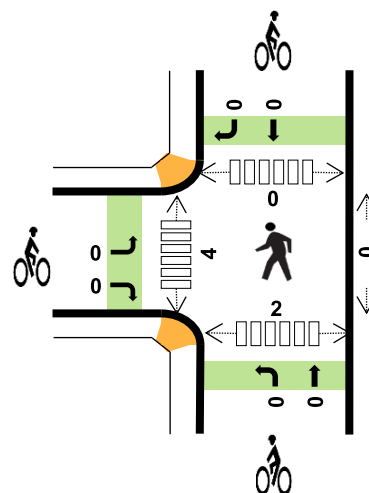
Interval Start	W 49th Ave				W 49th Ave				S Kent St				S Kent St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		



S Garfield St W 49th Ave



Date: 3/25/2026
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM



	HV%	PHF
EB	20%	0.83
WB	--	--
NB	2%	0.82
SB	13%	0.67
TOTAL	6%	0.85

Peak Hour Count Summaries

Peak Hour Interval Start		W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	0	0	0	0	0	0	0	1	15	0	0	0	2	0	19	0
7:15 AM		0	1	0	2	0	0	0	0	0	0	19	0	0	0	4	0	26	0
7:30 AM		0	3	0	0	0	0	0	0	0	0	16	0	0	0	5	1	25	0
7:45 AM		0	2	0	1	0	0	0	0	0	0	11	0	0	0	4	0	18	88
Pk Hr	All	0	7	0	3	0	0	0	0	0	1	61	0	0	0	15	1	88	
	HV	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0	5	
	HV%	-	0%	-	67%	-	-	-	-	-	0%	2%	-	-	-	13%	0%	6%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	0	0	0	0	0	0	0	1	15	0	0	0	2	0	19	0
7:15 AM		0	1	0	2	0	0	0	0	0	0	19	0	0	0	4	0	26	0
7:30 AM		0	3	0	0	0	0	0	0	0	0	16	0	0	0	5	1	25	0
7:45 AM		0	2	0	1	0	0	0	0	0	0	11	0	0	0	4	0	18	88
8:00 AM		0	1	0	0	0	0	0	0	0	0	5	0	0	0	4	0	10	79
8:15 AM		0	0	0	0	0	0	0	0	0	0	12	0	0	0	4	0	16	69
8:30 AM		0	0	0	0	0	0	0	0	0	0	8	0	0	0	3	0	11	55
8:45 AM		0	0	0	0	0	0	0	0	0	0	17	0	0	0	7	0	24	61
Count Total		0	8	0	3	0	0	0	0	0	1	103	0	0	0	33	1	149	
Pk Hr	All	0	7	0	3	0	0	0	0	0	1	61	0	0	0	15	1	88	
	HV	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0	5	
	HV%	-	0%	-	67%	-	-	-	-	-	0%	2%	-	-	-	13%	0%	6%	

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

Count Summaries - Heavy Vehicles

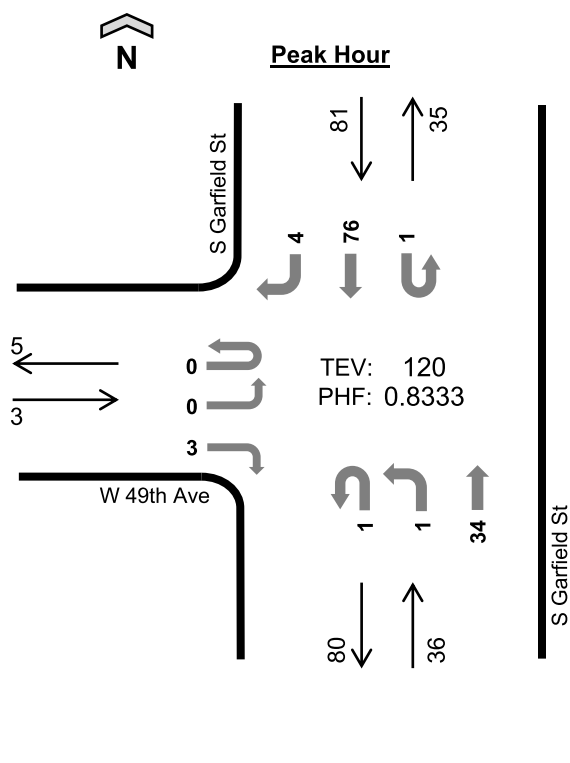
Interval Start	W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	3
Count Total	0	0	0	2	0	0	0	0	0	0	3	0	0	0	3	0	8	
Pk Hr Heavy	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0	5	

Count Summaries - Bikes

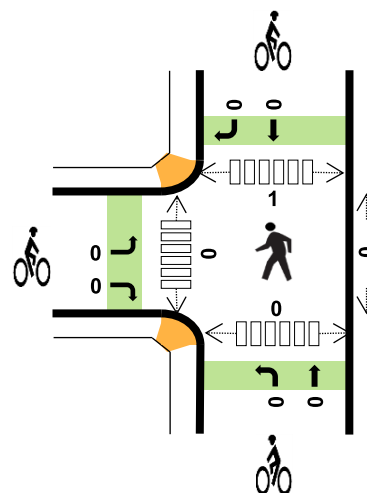
Interval Start	W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



S Garfield St W 49th Ave



Date: 3/24/2026
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



Peak Hour Count Summaries

Peak Hour Interval Start		W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	0	0	2	0	0	0	0	0	1	8	0	0	0	21	1	33	0
5:00 PM		0	0	0	0	0	0	0	0	0	0	7	0	1	0	16	2	26	0
5:15 PM		0	0	0	0	0	0	0	0	1	0	4	0	0	0	20	0	25	0
5:30 PM		0	0	0	1	0	0	0	0	0	0	15	0	0	0	19	1	36	120
Pk Hr	All	0	0	0	3	0	0	0	0	1	1	34	0	1	0	76	4	120	
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
	HV%	-	-	-	0%	-	-	-	-	0%	0%	0%	-	0%	-	1%	0%	1%	

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

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

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

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

Count Summaries - All Vehicles

Interval Start		W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	1	0	0	0	0	0	0	0	1	11	0	0	0	13	0	26	0
4:15 PM		0	1	0	0	0	0	0	0	0	0	10	0	0	0	12	0	23	0
4:30 PM		0	0	0	0	0	0	0	0	0	0	12	0	0	0	10	0	22	0
4:45 PM		0	0	0	2	0	0	0	0	0	1	8	0	0	0	21	1	33	104
5:00 PM		0	0	0	0	0	0	0	0	0	0	7	0	1	0	16	2	26	104
5:15 PM		0	0	0	0	0	0	0	0	1	0	4	0	0	0	20	0	25	106
5:30 PM		0	0	0	1	0	0	0	0	0	0	15	0	0	0	19	1	36	120
5:45 PM		0	0	0	0	0	0	0	0	0	1	7	0	0	0	17	0	25	112
Count Total		0	2	0	3	0	0	0	0	1	3	74	0	1	0	128	4	216	
Pk Hr	All	0	0	0	3	0	0	0	0	1	1	34	0	1	0	76	4	120	
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
	HV%	-	-	-	0%	-	-	-	-	0%	0%	0%	-	0%	-	1%	0%	1%	

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

Count Summaries - Heavy Vehicles

Interval Start	W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Count Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	5	
Pk Hr Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	

Count Summaries - Bikes

Interval Start	W 49th Ave				n/a				S Garfield St				S Garfield St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pk Hr Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		



Date: 3/24/2026 (PM) & 3/25/2025 (AM)
 Location: SE Church Driveway & W 45th Ave
 Site Code: #B
 Time: 7-9AM, 4-6PM

In					Out				
Time	Left In	Right In	Total	Total	Time	Left Out	Right Out	Total	Total
7:00	0	0	0	1	7:00	0	0	0	1
7:15	0	0	0		7:15	0	0	0	
7:30	0	1	1		7:30	1	0	1	
7:45	0	0	0		7:45	0	0	0	
8:00	0	0	0	1	8:00	0	0	0	0
8:15	0	0	0		8:15	0	0	0	
8:30	0	1	1		8:30	0	0	0	
8:45	0	0	0		8:45	0	0	0	
16:00	0	0	0	2	16:00	0	0	0	0
16:15	0	0	0		16:15	0	0	0	
16:30	0	0	0		16:30	0	0	0	
16:45	2	0	2		16:45	0	0	0	
17:00	0	1	1	1	17:00	0	0	0	0
17:15	0	0	0		17:15	0	0	0	
17:30	0	0	0		17:30	0	0	0	
17:45	0	0	0		17:45	0	0	0	
Total:	2	3	5		Total:	1	0	1	



Date: 3/24/2026 (PM) & 3/25/2025 (AM)

Location: S Kent St & W 45th Ave

Site Code: 1C

Time: 7-9AM, 4-6PM

In					Out				
Time	Left In	Right In	Total	Total	Time	Left Out	Right Out	Total	Total
7:00	1	0	1	2	7:00	0	2	2	8
7:15	1	0	1		7:15	0	2	2	
7:30	0	0	0		7:30	0	2	2	
7:45	0	0	0		7:45	1	1	2	
8:00	2	0	2	3	8:00	0	3	3	8
8:15	0	0	0		8:15	0	2	2	
8:30	0	0	0		8:30	0	1	1	
8:45	0	1	1		8:45	0	2	2	
16:00	2	0	2	5	16:00	0	2	2	4
16:15	1	0	1		16:15	0	1	1	
16:30	0	0	0		16:30	0	0	0	
16:45	2	0	2		16:45	1	0	1	
17:00	2	0	2	6	17:00	0	1	1	4
17:15	1	0	1		17:15	0	1	1	
17:30	3	0	3		17:30	0	1	1	
17:45	0	0	0		17:45	1	0	1	
Total:	15	1	16		Total:	3	21	24	



Date: 3/24/2026 (PM) & 3/25/2025 (AM)

Location: S Garfield St & W 50th Ct

Site Code: #D

Time: 7-9AM, 4-6PM

In					Out				
Time	Left In	Right In	Total	Total	Time	Left Out	Right Out	Total	Total
7:00	1	0	1	5	7:00	0	4	4	19
7:15	2	0	2		7:15	0	6	6	
7:30	1	0	1		7:30	0	6	6	
7:45	1	0	1		7:45	0	3	3	
8:00	0	0	0	5	8:00	0	3	3	17
8:15	3	0	3		8:15	0	4	4	
8:30	1	0	1		8:30	0	3	3	
8:45	1	0	1		8:45	0	7	7	
16:00	7	0	7	19	16:00	0	2	2	14
16:15	3	0	3		16:15	0	5	5	
16:30	2	0	2		16:30	0	4	4	
16:45	7	0	7		16:45	0	3	3	
17:00	6	0	6	28	17:00	0	1	1	10
17:15	8	0	8		17:15	0	3	3	
17:30	9	0	9		17:30	0	2	2	
17:45	5	0	5		17:45	0	4	4	
Total:	57	0	57		Total:	0	60	60	



Date: 3/24/2026 (PM) & 3/25/2025 (AM)

Location: S Garfield St & S Dayton St

Site Code: #E

Time: 7-9AM, 4-6PM

In					Out				
Time	Left In	Right In	Total	Total	Time	Left Out	Right Out	Total	Total
7:00	1	0	1	8	7:00	0	4	4	14
7:15	4	1	5		7:15	1	2	3	
7:30	1	0	1		7:30	0	6	6	
7:45	1	0	1		7:45	0	1	1	
8:00	0	0	0	1	8:00	0	2	2	5
8:15	0	0	0		8:15	0	1	1	
8:30	0	0	0		8:30	0	1	1	
8:45	1	0	1		8:45	0	1	1	
16:00	2	0	2	11	16:00	0	4	4	6
16:15	2	0	2		16:15	0	1	1	
16:30	3	0	3		16:30	0	1	1	
16:45	4	0	4		16:45	0	0	0	
17:00	5	0	5	21	17:00	0	0	0	2
17:15	5	0	5		17:15	0	0	0	
17:30	7	0	7		17:30	0	2	2	
17:45	4	0	4		17:45	0	0	0	
Total:	40	1	41		Total:	1	26	27	



Date: 3/24/2026 (PM) & 3/25/2025 (AM)

Location: S Olympia St & W 47th Ave

Site Code: /G

Time: 7-9AM, 4-6PM

In					Out				
Time	Left In	Right In	Total	Total	Time	Left Out	Right Out	Total	Total
7:00	1	0	1	3	7:00	1	0	1	6
7:15	0	0	0		7:15	0	0	0	
7:30	1	0	1		7:30	2	0	2	
7:45	0	1	1		7:45	2	1	3	
8:00	1	1	2	6	8:00	1	0	1	5
8:15	0	1	1		8:15	0	1	1	
8:30	1	1	2		8:30	1	0	1	
8:45	0	1	1		8:45	1	1	2	
16:00	0	2	2	5	16:00	1	0	1	1
16:15	0	1	1		16:15	0	0	0	
16:30	0	1	1		16:30	0	0	0	
16:45	1	0	1		16:45	0	0	0	
17:00	1	1	2	5	17:00	0	0	0	4
17:15	1	1	2		17:15	0	2	2	
17:30	0	0	0		17:30	0	0	0	
17:45	0	1	1		17:45	1	1	2	
Total:	7	12	19		Total:	10	6	16	



Date: 3/24/2026 (PM) & 3/25/2025 (AM)

Location: S Olympia St & W 46th Ave

Site Code: FH

Time: 7-9AM, 4-6PM

In					Out				
Time	Left In	Right In	Total	Total	Time	Left Out	Right Out	Total	Total
7:00	0	0	0	2	7:00	2	0	2	3
7:15	0	0	0		7:15	0	0	0	
7:30	0	0	0		7:30	0	0	0	
7:45	0	2	2		7:45	1	0	1	
8:00	0	1	1	2	8:00	1	0	1	3
8:15	1	0	1		8:15	2	0	2	
8:30	0	0	0		8:30	0	0	0	
8:45	0	0	0		8:45	0	0	0	
16:00	1	0	1	3	16:00	0	0	0	1
16:15	0	0	0		16:15	1	0	1	
16:30	0	0	0		16:30	0	0	0	
16:45	0	2	2		16:45	0	0	0	
17:00	0	1	1	2	17:00	1	0	1	1
17:15	0	1	1		17:15	0	0	0	
17:30	0	0	0		17:30	0	0	0	
17:45	0	0	0		17:45	0	0	0	
Total:	2	7	9		Total:	8	0	8	

Appendix C

Level of Service (LOS) Methodology and Calculations

Level of Service Methodology

Level of Service (LOS) generally refers to the degree of congestion at an intersection. It is a measure of vehicle operating speed, travel time, travel delays, and driving comfort. A letter scale from A to F generally describes intersection LOS.

Signalized Intersection LOS represents the average control delay (sec/veh) and can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only). The table below outlines the HCM (7th Edition) LOS criteria for signalized intersections.

LOS Criteria for Signalized Intersections ¹

Control Delay (sec/veh)	Level of Service ²	General Description ³
≤ 10	A	Exceptionally Favorable Progression (or very short cycle lengths) – Most vehicles arrive during the green indication and travel through the intersection without stopping.
> 10 to ≤ 20	B	Highly Favorable Progression (or short cycle lengths) – While more vehicles than LOS A stop, most vehicles still pass through the intersection without stopping.
> 20 to ≤ 35	C	Favorable Progression (or moderate cycle lengths) – Individual cycle failures begin to appear, but many vehicles still pass through the intersection without stopping.
> 35 to ≤ 55	D	Ineffective Progression (or long cycle lengths) – Many vehicles stop and individual cycle failures are noticeable.
> 55 to ≤ 80	E	Unfavorable Progression (and long cycle lengths) – Individual cycle failures are frequent.
> 80	F	Very Poor Progression (and long cycle lengths) – Most cycles fail to clear the queue at this level.

¹ Source: Highway Capacity Manual 7th Edition, Transportation Research Board, 2022.

² If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0, LOS F is assigned to the individual lane group. For approach-based and intersection-wide assessments at signals, LOS is defined solely by control delay.

³ Individual cycle failures: one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle.

Synchro 12 and/or HCM 2000 LOS methodology may be used when HCM 7th Edition methodology is not supported at an intersection (i.e., intersection geometry and/or custom phasing) or jurisdictional standards require use of an alternative methodology.

Unsignalized Intersection LOS (two-way stop control, all-way stop control, and roundabouts) is based on the average control delay. For two-way stop-controlled intersections, the LOS criteria apply to each controlled minor-street approach, controlled minor-street lane group, and controlled major-street movement (additional v/c ratio criteria apply to lane group LOS only). LOS is not calculated for major-street approaches or for the intersection as a whole at two-way stop-controlled intersections. For all-way stop-controlled intersections and roundabouts, LOS can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only). The table below outlines the HCM (7th Edition) LOS criteria for unsignalized intersections based on these methodologies.

Note: LOS reported for WSDOT roundabouts use signalized intersection delay criteria, per *WSDOT Sidra Policy Settings*.

LOS Criteria for Unsignalized Intersections¹

Control Delay (sec/veh)	Level of Service ²
≤ 10	A
> 10 to ≤ 15	B
> 15 to ≤ 25	C
> 25 to ≤ 35	D
> 35 to ≤ 50	E
> 50	F

¹ Source: Highway Capacity Manual 7th Edition, Transportation Research Board, 2022.

² If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0, LOS F is assigned to the individual lane group. For approach-based and intersection-wide assessments at unsignalized intersections, LOS is defined solely by control delay.



2026 Existing AM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/08/2026

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	208	63	50	292	29	111	229	81	23	102	77
Future Volume (vph)	72	208	63	50	292	29	111	229	81	23	102	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	2%	2%	2%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 45

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

	Ø2		Ø4
35 s		35 s	
	Ø6		Ø8
35 s		35 s	

Exhibit 13

HCM 7th Signalized Intersection Summary 1: S Olympia St & W 27th Ave

04/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	208	63	50	292	29	111	229	81	23	102	77
Future Volume (veh/h)	72	208	63	50	292	29	111	229	81	23	102	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2012	2012	2012	1826	1826	1826	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	82	236	72	57	332	33	126	260	92	26	116	88
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	5	5	5	2	2	2	6	6	6
Cap, veh/h	432	754	639	502	612	61	558	464	164	388	637	538
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1094	2012	1705	1046	1634	162	1175	1318	466	994	1811	1528
Grp Volume(v), veh/h	82	236	72	57	0	365	126	0	352	26	116	88
Grp Sat Flow(s),veh/h/ln	1094	2012	1705	1046	0	1797	1175	0	1784	994	1811	1528
Q Serve(g_s), s	2.3	3.0	1.0	1.5	0.0	5.8	3.0	0.0	5.8	0.8	1.6	1.4
Cycle Q Clear(g_c), s	8.2	3.0	1.0	4.5	0.0	5.8	4.7	0.0	5.8	6.6	1.6	1.4
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	432	754	639	502	0	673	558	0	628	388	637	538
V/C Ratio(X)	0.19	0.31	0.11	0.11	0.00	0.54	0.23	0.00	0.56	0.07	0.18	0.16
Avail Cap(c_a), veh/h	920	1651	1399	968	0	1474	1109	0	1464	855	1486	1254
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	8.1	7.5	9.7	0.0	9.0	9.8	0.0	9.6	12.2	8.2	8.1
Incr Delay (d2), s/veh	0.5	0.5	0.2	0.2	0.0	1.5	0.4	0.0	1.7	0.2	0.3	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.0	0.3	0.3	0.0	1.8	0.6	0.0	1.8	0.2	0.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.6	8.6	7.6	9.9	0.0	10.4	10.3	0.0	11.2	12.4	8.5	8.4
LnGrp LOS	B	A	A	A		B	B		B	B	A	A
Approach Vol, veh/h	390			422			478			230		
Approach Delay, s/veh	9.3			10.4			11.0			8.9		
Approach LOS	A			B			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	18.7			17.9			18.7			17.9		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	10.2			8.6			7.8			7.8		
Green Ext Time (p_c), s	3.5			1.9			4.6			5.0		
Intersection Summary												
HCM 7th Control Delay, s/veh	10.1											
HCM 7th LOS	B											

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	151	21	18	49	16
Future Volume (vph)	37	151	21	18	49	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-6%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1	1		2	2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	5%	5%	12%	12%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	7.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	151	21	18	49	16
Future Vol, veh/h	37	151	21	18	49	16
Conflicting Peds, #/hr	1	1	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-6	-	-	4
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	5	5	12	12
Mvmt Flow	44	180	25	21	58	19
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	174	39	0	0	48	0
Stage 1	38	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	7.23	6.63	-	-	4.22	-
Critical Hdwy Stg 1	6.23	-	-	-	-	-
Critical Hdwy Stg 2	6.23	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.308	-
Pot Cap-1 Maneuver	782	1026	-	-	1497	-
Stage 1	974	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	750	1023	-	-	1494	-
Mov Cap-2 Maneuver	750	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	9.92	0		5.66		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	954	1494	-	
HCM Lane V/C Ratio	-	-	0.235	0.039	-	
HCM Ctrl Dly (s/v)	-	-	9.9	7.5	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-AM-E] S Olympia St/W 45th Ave (2026 Existing - AM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2026 Existing - AM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-AM-E] S Olympia St/W 45th Ave (2026 Existing - AM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2026 Existing - AM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] ft				mph
			veh/h		veh/h		v/c	sec							
South: S Olympia St															
3	L2	All MCs	26	9.0	26	9.0	0.102	4.0	LOS A	0.4	11.4	0.26	0.12	0.26	32.6
8	T1	All MCs	76	9.0	76	9.0	0.102	4.0	LOS A	0.4	11.4	0.26	0.12	0.26	33.3
18	R2	All MCs	13	9.0	13	9.0	0.102	4.0	LOS A	0.4	11.4	0.26	0.12	0.26	33.0
Approach			115	9.0	115	9.0	0.102	4.0	LOS A	0.4	11.4	0.26	0.12	0.26	33.1
East: W 45th Ave															
1u	U	All MCs	1	5.0	1	5.0	0.179	4.8	LOS A	0.8	21.4	0.33	0.17	0.33	32.4
1	L2	All MCs	34	5.0	34	5.0	0.179	4.8	LOS A	0.8	21.4	0.33	0.17	0.33	32.4
6	T1	All MCs	92	5.0	92	5.0	0.179	4.8	LOS A	0.8	21.4	0.33	0.17	0.33	33.1
16	R2	All MCs	73	5.0	73	5.0	0.179	4.8	LOS A	0.8	21.4	0.33	0.17	0.33	32.8
Approach			200	5.0	200	5.0	0.179	4.8	LOS A	0.8	21.4	0.33	0.17	0.33	32.9
North: S Olympia St															
7	L2	All MCs	26	13.0	26	13.0	0.114	4.5	LOS A	0.5	12.5	0.32	0.17	0.32	32.2
4	T1	All MCs	75	13.0	75	13.0	0.114	4.5	LOS A	0.5	12.5	0.32	0.17	0.32	32.9
14	R2	All MCs	15	13.0	15	13.0	0.114	4.5	LOS A	0.5	12.5	0.32	0.17	0.32	32.6
Approach			116	13.0	116	13.0	0.114	4.5	LOS A	0.5	12.5	0.32	0.17	0.32	32.7
West: W 45th Ave															
5	L2	All MCs	41	8.0	41	8.0	0.093	4.1	LOS A	0.4	10.1	0.30	0.16	0.30	32.2
2	T1	All MCs	33	8.0	33	8.0	0.093	4.1	LOS A	0.4	10.1	0.30	0.16	0.30	32.8
12	R2	All MCs	27	8.0	27	8.0	0.093	4.1	LOS A	0.4	10.1	0.30	0.16	0.30	32.6
Approach			101	8.0	101	8.0	0.093	4.1	LOS A	0.4	10.1	0.30	0.16	0.30	32.5
All Vehicles			533	8.2	533	8.2	0.179	4.4	LOS A	0.8	21.4	0.31	0.16	0.31	32.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 11 | Copyright © 2000-2026 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: TENW | Licence: PLUS / 1PC | Processed: Wednesday, April 8, 2026 2:03:44 PM

Project: T:\Active Projects\Pringle Project (Kennewick) - 2026-079\Planning\LOS\Pringle Project.sipx

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	52	9	1	145	20	1
Future Volume (vph)	52	9	1	145	20	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-5%	
Link Speed (mph)	40			40	25	
Link Distance (ft)	143			195	222	
Travel Time (s)	2.4			3.3	6.1	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	16%	4%	4%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	9	1	145	20	1
Future Vol, veh/h	52	9	1	145	20	1
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	-5	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	16	4	4	0	0
Mvmt Flow	58	10	1	161	22	1
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	72	0	230	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	-	-	4.14	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1516	-	813	1012
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1510	-	809	1008
Mov Cap-2 Maneuver	-	-	-	-	809	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	910	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.05		9.54	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	817		-	-	12	-
HCM Lane V/C Ratio	0.029		-	-	0.001	-
HCM Ctrl Dly (s/v)	9.5		-	-	7.4	0
HCM Lane LOS	A		-	-	A	A
HCM 95th %tile Q(veh)	0.1		-	-	0	-

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	36	17	1	59	0	71	0	10	1	0	3
Future Volume (vph)	1	36	17	1	59	0	71	0	10	1	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			30	
Link Distance (ft)		127			138			199			148	
Travel Time (s)		2.2			2.4			3.9			3.4	
Confl. Peds. (#/hr)	1		3	3		1			3	3		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	15%	15%	15%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	36	17	1	59	0	71	0	10	1	0	3
Future Vol, veh/h	1	36	17	1	59	0	71	0	10	1	0	3
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	15	15	15	8	8	8	3	3	3	2	2	2
Mvmt Flow	1	42	20	1	69	0	83	0	12	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	70	0	0	65	0	0	128	129	58	119	139	70
Stage 1	-	-	-	-	-	-	57	57	-	72	72	-
Stage 2	-	-	-	-	-	-	71	72	-	47	67	-
Critical Hdwy	4.25	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1452	-	-	1500	-	-	843	760	1006	856	752	993
Stage 1	-	-	-	-	-	-	952	845	-	938	835	-
Stage 2	-	-	-	-	-	-	936	833	-	966	839	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1451	-	-	1496	-	-	836	756	1000	842	748	992
Mov Cap-2 Maneuver	-	-	-	-	-	-	836	756	-	842	748	-
Stage 1	-	-	-	-	-	-	949	842	-	936	834	-
Stage 2	-	-	-	-	-	-	932	832	-	952	836	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.14			0.12			9.74			8.81		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	853	31	-	-	30	-	-	950
HCM Lane V/C Ratio	0.11	0.001	-	-	0.001	-	-	0.005
HCM Ctrl Dly (s/v)	9.7	7.5	0	-	7.4	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	6	0	0	0	5	0	0
Future Volume (vph)	1	0	0	0	0	6	0	0	0	5	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			-4%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	40%	40%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 7.1
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	0	0	6	0	0	0	5	0	0
Future Vol, veh/h	1	0	0	0	0	6	0	0	0	5	0	0
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	40	40	40
Mvmt Flow	2	0	0	0	0	12	0	0	0	10	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.1	6.4	0	7.9
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	0%	100%
Vol Thru, %	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	1	6	5
LT Vol	0	1	0	5
Through Vol	0	0	0	0
RT Vol	0	0	6	0
Lane Flow Rate	0	2	12	10
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.002	0.011	0.013
Departure Headway (Hd)	3.933	4.127	3.319	4.806
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	871	1082	749
Service Time	1.936	2.135	1.327	2.806
HCM Lane V/C Ratio	0	0.002	0.011	0.013
HCM Control Delay, s/veh	6.9	7.1	6.4	7.9
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0	0	0

Lanes, Volumes, Timings
 7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	3	1	61	15	1
Future Volume (vph)	7	3	1	61	15	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			124	124	
Travel Time (s)	5.0			2.4	2.4	
Confl. Peds. (#/hr)		2	4			4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	20%	20%	2%	2%	13%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	3	1	61	15	1
Future Vol, veh/h	7	3	1	61	15	1
Conflicting Peds, #/hr	0	2	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	20	20	2	2	13	13
Mvmt Flow	8	4	1	72	18	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	96	24	23	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	74	-	-	-	-	-
Critical Hdwy	6.6	6.4	4.12	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.48	2.218	-	-	-
Pot Cap-1 Maneuver	861	1003	1592	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	854	997	1586	-	-	-
Mov Cap-2 Maneuver	854	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	9.09	0.12		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	29	-	892	-	-	
HCM Lane V/C Ratio	0.001	-	0.013	-	-	
HCM Ctrl Dly (s/v)	7.3	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	



2026 Existing PM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	328	100	80	303	40	108	211	80	84	271	74
Future Volume (vph)	96	328	100	80	303	40	108	211	80	84	271	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 41.4

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

Ø2 Ø4 Ø6	Ø4 Ø8 Ø8
35 s	35 s
35 s	35 s

Exhibit 13

HCM 7th Signalized Intersection Summary 1: S Olympia St & W 27th Ave

04/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	328	100	80	303	40	108	211	80	84	271	74
Future Volume (veh/h)	96	328	100	80	303	40	108	211	80	84	271	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2003	2003	2003	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	97	331	101	81	306	40	109	213	81	85	274	75
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	460	784	664	443	634	83	436	459	175	431	666	563
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1107	2003	1695	956	1620	212	1039	1300	494	1092	1885	1593
Grp Volume(v), veh/h	97	331	101	81	0	346	109	0	294	85	274	75
Grp Sat Flow(s),veh/h/ln	1107	2003	1695	956	0	1832	1039	0	1795	1092	1885	1593
Q Serve(g_s), s	2.8	4.7	1.5	2.6	0.0	5.6	3.5	0.0	5.0	2.6	4.3	1.3
Cycle Q Clear(g_c), s	8.4	4.7	1.5	7.4	0.0	5.6	7.8	0.0	5.0	7.5	4.3	1.3
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	460	784	664	443	0	717	436	0	634	431	666	563
V/C Ratio(X)	0.21	0.42	0.15	0.18	0.00	0.48	0.25	0.00	0.46	0.20	0.41	0.13
Avail Cap(c_a), veh/h	874	1533	1297	800	0	1402	864	0	1373	881	1442	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	8.7	7.7	11.4	0.0	8.9	12.5	0.0	9.8	12.7	9.6	8.6
Incr Delay (d2), s/veh	0.5	0.8	0.2	0.4	0.0	1.1	0.6	0.0	1.1	0.5	0.9	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.6	0.4	0.5	0.0	1.7	0.7	0.0	1.6	0.5	1.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.6	9.5	7.9	11.8	0.0	10.0	13.2	0.0	10.9	13.2	10.5	8.8
LnGrp LOS	B	A	A	B		B	B		B	B	B	A
Approach Vol, veh/h	529				427				403			
Approach Delay, s/veh	9.7				10.4				11.5			
Approach LOS	A				B				B			
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	20.4			18.9			20.4			18.9		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	10.4			9.5			9.4			9.8		
Green Ext Time (p_c), s	5.0			4.1			4.5			4.0		
Intersection Summary												
HCM 7th Control Delay, s/veh	10.5											
HCM 7th LOS	B											

Lanes, Volumes, Timings

2: S Ely St & W 45th Ave

04/08/2026



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	96	16	50	189	26
Future Volume (vph)	29	96	16	50	189	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-4%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	6.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	96	16	50	189	26
Future Vol, veh/h	29	96	16	50	189	26
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	31	103	17	54	203	28
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	479	44	0	0	71	0
Stage 1	44	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	7.21	6.61	-	-	4.11	-
Critical Hdwy Stg 1	6.21	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	492	1024	-	-	1536	-
Stage 1	971	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	426	1024	-	-	1536	-
Mov Cap-2 Maneuver	426	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	10.64	0		6.77		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	772	1536	-	
HCM Lane V/C Ratio	-	-	0.174	0.132	-	
HCM Ctrl Dly (s/v)	-	-	10.6	7.7	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.6	0.5	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-PM-E] S Olympia St/W 45th Ave (2026 Existing - PM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2026 Existing - PM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-PM-E] S Olympia St/W 45th Ave (2026 Existing - PM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2026 Existing - PM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist]		Rate to Depart		mph
South: S Olympia St															
3	L2	All MCs	41	2.0	41	2.0	0.279	6.0	LOS A	1.4	36.0	0.45	0.27	0.45	32.0
8	T1	All MCs	200	2.0	200	2.0	0.279	6.0	LOS A	1.4	36.0	0.45	0.27	0.45	32.6
18	R2	All MCs	55	2.0	55	2.0	0.279	6.0	LOS A	1.4	36.0	0.45	0.27	0.45	32.4
Approach			297	2.0	297	2.0	0.279	6.0	LOS A	1.4	36.0	0.45	0.27	0.45	32.5
East: W 45th Ave															
1	L2	All MCs	22	3.0	22	3.0	0.122	4.7	LOS A	0.5	13.3	0.42	0.27	0.42	32.6
6	T1	All MCs	49	3.0	49	3.0	0.122	4.7	LOS A	0.5	13.3	0.42	0.27	0.42	33.2
16	R2	All MCs	51	3.0	51	3.0	0.122	4.7	LOS A	0.5	13.3	0.42	0.27	0.42	32.9
Approach			122	3.0	122	3.0	0.122	4.7	LOS A	0.5	13.3	0.42	0.27	0.42	32.9
North: S Olympia St															
7u	U	All MCs	1	0.0	1	0.0	0.172	4.4	LOS A	0.8	20.9	0.28	0.13	0.28	32.3
7	L2	All MCs	83	0.0	83	0.0	0.172	4.4	LOS A	0.8	20.9	0.28	0.13	0.28	32.3
4	T1	All MCs	82	0.0	82	0.0	0.172	4.4	LOS A	0.8	20.9	0.28	0.13	0.28	32.9
14	R2	All MCs	46	0.0	46	0.0	0.172	4.4	LOS A	0.8	20.9	0.28	0.13	0.28	32.7
Approach			211	0.0	211	0.0	0.172	4.4	LOS A	0.8	20.9	0.28	0.13	0.28	32.6
West: W 45th Ave															
5u	U	All MCs	1	1.0	1	1.0	0.166	4.6	LOS A	0.8	19.5	0.36	0.20	0.36	32.7
5	L2	All MCs	32	1.0	32	1.0	0.166	4.6	LOS A	0.8	19.5	0.36	0.20	0.36	32.7
2	T1	All MCs	115	1.0	115	1.0	0.166	4.6	LOS A	0.8	19.5	0.36	0.20	0.36	33.2
12	R2	All MCs	39	1.0	39	1.0	0.166	4.6	LOS A	0.8	19.5	0.36	0.20	0.36	33.0
Approach			187	1.0	187	1.0	0.166	4.6	LOS A	0.8	19.5	0.36	0.20	0.36	33.1
All Vehicles			816	1.4	816	1.4	0.279	5.1	LOS A	1.4	36.0	0.38	0.22	0.38	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c >1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	195	24	2	93	11	2
Future Volume (vph)	195	24	2	93	11	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	40			40	25	
Link Distance (ft)	143			195	222	
Travel Time (s)	2.4			3.3	6.1	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	24	2	93	11	2
Future Vol, veh/h	195	24	2	93	11	2
Conflicting Peds, #/hr	0	2	2	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	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	214	26	2	102	12	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	243	0	336	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	107	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1330	-	663	815
Stage 1	-	-	-	-	813	-
Stage 2	-	-	-	-	923	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1327	-	661	813
Mov Cap-2 Maneuver	-	-	-	-	661	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	921	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.16		10.4		
HCM LOS				B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	681	-	-	38	-	
HCM Lane V/C Ratio	0.021	-	-	0.002	-	
HCM Ctrl Dly (s/v)	10.4	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	100	86	8	51	0	37	0	5	0	0	0
Future Volume (vph)	1	100	86	8	51	0	37	0	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		127			138			199			177	
Travel Time (s)		2.2			2.4			3.9			4.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.92	0.89	0.92	0.89	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%	0%	2%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

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	1	100	86	8	51	0	37	0	5	0	0	0
Future Vol, veh/h	1	100	86	8	51	0	37	0	5	0	0	0
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	89	89	89	89	92	89	92	89	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2	0	2	0	2	2	2
Mvmt Flow	1	112	97	9	57	0	42	0	6	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	57	0	0	211	0	0	240	240	163	190	288	57
Stage 1	-	-	-	-	-	-	165	165	-	75	75	-
Stage 2	-	-	-	-	-	-	75	75	-	115	213	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1547	-	-	1360	-	-	718	661	887	770	622	1009
Stage 1	-	-	-	-	-	-	842	762	-	934	832	-
Stage 2	-	-	-	-	-	-	939	832	-	890	726	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1547	-	-	1357	-	-	711	655	886	760	616	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	655	-	760	616	-
Stage 1	-	-	-	-	-	-	840	760	-	928	827	-
Stage 2	-	-	-	-	-	-	933	827	-	884	724	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.04			1.04			10.28			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	728	9	-	-	244	-	-	-
HCM Lane V/C Ratio	0.065	0.001	-	-	0.007	-	-	-
HCM Ctrl Dly (s/v)	10.3	7.3	0	-	7.7	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	4	0	0	1	10	0	0
Future Volume (vph)	0	0	0	1	0	4	0	0	1	10	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 6.9
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	4	0	0	1	10	0	0
Future Vol, veh/h	0	0	0	1	0	4	0	0	1	10	0	0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	1	0	6	0	0	1	15	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0	6.5	6.3	7.2
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	20%	100%
Vol Thru, %	0%	100%	0%	0%
Vol Right, %	100%	0%	80%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	0	5	10
LT Vol	0	0	1	10
Through Vol	0	0	0	0
RT Vol	1	0	4	0
Lane Flow Rate	1	0	7	15
Geometry Grp	1	1	1	1
Degree of Util (X)	0.001	0	0.007	0.017
Departure Headway (Hd)	3.325	3.933	3.487	4.115
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	1082	0	1030	875
Service Time	1.328	1.941	1.495	2.115
HCM Lane V/C Ratio	0.001	0	0.007	0.017
HCM Control Delay, s/veh	6.3	6.9	6.5	7.2
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0	0	0	0.1

Lanes, Volumes, Timings
7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	3	1	34	76	4
Future Volume (vph)	0	3	1	34	76	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			124	124	
Travel Time (s)	5.0			2.4	2.4	
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	1	34	76	4
Future Vol, veh/h	0	3	1	34	76	4
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	0	4	1	41	92	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	138	94	96	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	44	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	860	968	1510	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	859	968	1510	-	-	-
Mov Cap-2 Maneuver	859	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	8.73	0.21		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	51	-	968	-	-	
HCM Lane V/C Ratio	0.001	-	0.004	-	-	
HCM Ctrl Dly (s/v)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

2030 No Action AM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/08/2026

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	225	68	54	316	31	120	248	88	25	110	83
Future Volume (vph)	78	225	68	54	316	31	120	248	88	25	110	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	2%	2%	2%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 47.5

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

	Ø2		Ø4
35 s		35 s	
	Ø6		Ø8
35 s		35 s	

HCM 7th Signalized Intersection Summary
1: S Olympia St & W 27th Ave

04/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	225	68	54	316	31	120	248	88	25	110	83
Future Volume (veh/h)	78	225	68	54	316	31	120	248	88	25	110	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2012	2012	2012	1826	1826	1826	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	89	256	77	61	359	35	136	282	100	28	125	94
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	5	5	5	2	2	2	6	6	6
Cap, veh/h	411	781	662	487	635	62	544	475	168	361	653	551
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1065	2012	1705	1022	1638	160	1159	1317	467	968	1811	1528
Grp Volume(v), veh/h	89	256	77	61	0	394	136	0	382	28	125	94
Grp Sat Flow(s),veh/h/ln	1065	2012	1705	1022	0	1797	1159	0	1784	968	1811	1528
Q Serve(g_s), s	2.8	3.5	1.2	1.8	0.0	6.8	3.6	0.0	6.9	1.0	1.9	1.7
Cycle Q Clear(g_c), s	9.7	3.5	1.2	5.3	0.0	6.8	5.5	0.0	6.9	7.9	1.9	1.7
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	411	781	662	487	0	697	544	0	643	361	653	551
V/C Ratio(X)	0.22	0.33	0.12	0.13	0.00	0.57	0.25	0.00	0.59	0.08	0.19	0.17
Avail Cap(c_a), veh/h	802	1518	1287	861	0	1356	1000	0	1346	743	1366	1153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	8.5	7.8	10.4	0.0	9.5	10.6	0.0	10.3	13.6	8.7	8.7
Incr Delay (d2), s/veh	0.6	0.5	0.2	0.2	0.0	1.5	0.5	0.0	1.9	0.2	0.3	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.2	0.3	0.3	0.0	2.1	0.8	0.0	2.3	0.2	0.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	9.1	8.0	10.6	0.0	11.1	11.1	0.0	12.2	13.8	9.0	9.0
LnGrp LOS	B	A	A	B		B	B		B	B	A	A
Approach Vol, veh/h	422			455			518			247		
Approach Delay, s/veh	9.9			11.0			11.9			9.5		
Approach LOS	A			B			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	20.4			19.3			20.4			19.3		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	11.7			9.9			8.8			8.9		
Green Ext Time (p_c), s	3.8			2.0			4.9			5.4		
Intersection Summary												
HCM 7th Control Delay, s/veh	10.8											
HCM 7th LOS	B											

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	163	23	19	53	17
Future Volume (vph)	40	163	23	19	53	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-6%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1	1		2	2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	5%	5%	12%	12%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	7.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	163	23	19	53	17
Future Vol, veh/h	40	163	23	19	53	17
Conflicting Peds, #/hr	1	1	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-6	-	-	4
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	5	5	12	12
Mvmt Flow	48	194	27	23	63	20
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	188	42	0	0	52	0
Stage 1	41	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	7.23	6.63	-	-	4.22	-
Critical Hdwy Stg 1	6.23	-	-	-	-	-
Critical Hdwy Stg 2	6.23	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.308	-
Pot Cap-1 Maneuver	766	1022	-	-	1492	-
Stage 1	970	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	731	1019	-	-	1489	-
Mov Cap-2 Maneuver	731	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	10.11	0		5.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	945	1489	-	
HCM Lane V/C Ratio	-	-	0.256	0.042	-	
HCM Ctrl Dly (s/v)	-	-	10.1	7.5	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	1	0.1	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-AM-NAB] S Olympia St/W 45th Ave (2030 No Action - AM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2030 No Action - AM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-AM-NAB] S Olympia St/W 45th Ave (2030 No Action - AM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave

Site Category: 2030 No Action - AM Peak Hour

Roundabout

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	Dist]				mph
South: S Olympia St															
3	L2	All MCs	28	9.0	28	9.0	0.112	4.2	LOS A	0.5	12.5	0.27	0.13	0.27	32.5
8	T1	All MCs	82	9.0	82	9.0	0.112	4.2	LOS A	0.5	12.5	0.27	0.13	0.27	33.2
18	R2	All MCs	14	9.0	14	9.0	0.112	4.2	LOS A	0.5	12.5	0.27	0.13	0.27	32.9
Approach			125	9.0	125	9.0	0.112	4.2	LOS A	0.5	12.5	0.27	0.13	0.27	33.0
East: W 45th Ave															
1u	U	All MCs	1	5.0	1	5.0	0.195	5.0	LOS A	0.9	23.6	0.35	0.19	0.35	32.4
1	L2	All MCs	36	5.0	36	5.0	0.195	5.0	LOS A	0.9	23.6	0.35	0.19	0.35	32.4
6	T1	All MCs	99	5.0	99	5.0	0.195	5.0	LOS A	0.9	23.6	0.35	0.19	0.35	33.0
16	R2	All MCs	79	5.0	79	5.0	0.195	5.0	LOS A	0.9	23.6	0.35	0.19	0.35	32.7
Approach			215	5.0	215	5.0	0.195	5.0	LOS A	0.9	23.6	0.35	0.19	0.35	32.8
North: S Olympia St															
7	L2	All MCs	28	13.0	28	13.0	0.124	4.7	LOS A	0.5	13.7	0.33	0.18	0.33	32.2
4	T1	All MCs	81	13.0	81	13.0	0.124	4.7	LOS A	0.5	13.7	0.33	0.18	0.33	32.9
14	R2	All MCs	16	13.0	16	13.0	0.124	4.7	LOS A	0.5	13.7	0.33	0.18	0.33	32.6
Approach			126	13.0	126	13.0	0.124	4.7	LOS A	0.5	13.7	0.33	0.18	0.33	32.7
West: W 45th Ave															
5	L2	All MCs	45	8.0	45	8.0	0.102	4.2	LOS A	0.4	11.2	0.31	0.17	0.31	32.1
2	T1	All MCs	35	8.0	35	8.0	0.102	4.2	LOS A	0.4	11.2	0.31	0.17	0.31	32.8
12	R2	All MCs	29	8.0	29	8.0	0.102	4.2	LOS A	0.4	11.2	0.31	0.17	0.31	32.5
Approach			109	8.0	109	8.0	0.102	4.2	LOS A	0.4	11.2	0.31	0.17	0.31	32.4
All Vehicles			575	8.2	575	8.2	0.195	4.6	LOS A	0.9	23.6	0.32	0.17	0.32	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 11 | Copyright © 2000-2026 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: TENW | Licence: PLUS / 1PC | Processed: Wednesday, April 8, 2026 8:41:32 AM

Project: T:\Active Projects\Pringle Project (Kennewick) - 2026-079\Planning\LOS\Pringle Project.sipx

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Traffic Volume (vph)	56	10	1	157	22	1
Future Volume (vph)	56	10	1	157	22	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-5%	
Link Speed (mph)	40			40	25	
Link Distance (ft)	143			195	222	
Travel Time (s)	2.4			3.3	6.1	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	16%	4%	4%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	10	1	157	22	1
Future Vol, veh/h	56	10	1	157	22	1
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	-5	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	16	4	4	0	0
Mvmt Flow	62	11	1	174	24	1
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	77	0	248	72
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	-	-	4.14	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1509	-	798	1006
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1503	-	794	1002
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	901	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.05		9.64		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	801	-	-	11	-	
HCM Lane V/C Ratio	0.032	-	-	0.001	-	
HCM Ctrl Dly (s/v)	9.6	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	39	18	1	64	0	77	0	11	1	0	3
Future Volume (vph)	1	39	18	1	64	0	77	0	11	1	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			30	
Link Distance (ft)		127			138			199			148	
Travel Time (s)		2.2			2.4			3.9			3.4	
Confl. Peds. (#/hr)	1		3	3		1			3	3		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	15%	15%	15%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	39	18	1	64	0	77	0	11	1	0	3
Future Vol, veh/h	1	39	18	1	64	0	77	0	11	1	0	3
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	15	15	15	8	8	8	3	3	3	2	2	2
Mvmt Flow	1	45	21	1	74	0	90	0	13	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	69	0	0	138	139	62	128	149	75
Stage 1	-	-	-	-	-	-	61	61	-	78	78	-
Stage 2	-	-	-	-	-	-	77	78	-	51	72	-
Critical Hdwy	4.25	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1445	-	-	1494	-	-	830	750	1000	845	742	986
Stage 1	-	-	-	-	-	-	948	842	-	931	830	-
Stage 2	-	-	-	-	-	-	930	828	-	962	835	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1444	-	-	1490	-	-	824	746	995	829	738	985
Mov Cap-2 Maneuver	-	-	-	-	-	-	824	746	-	829	738	-
Stage 1	-	-	-	-	-	-	944	839	-	929	829	-
Stage 2	-	-	-	-	-	-	926	827	-	946	832	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.13			0.11			9.87			8.85		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	842	29	-	-	28	-	-	941
HCM Lane V/C Ratio	0.122	0.001	-	-	0.001	-	-	0.005
HCM Ctrl Dly (s/v)	9.9	7.5	0	-	7.4	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	6	0	0	0	5	0	0
Future Volume (vph)	1	0	0	0	0	6	0	0	0	5	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			-4%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	40%	40%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 7.1
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	0	0	6	0	0	0	5	0	0
Future Vol, veh/h	1	0	0	0	0	6	0	0	0	5	0	0
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	40	40	40
Mvmt Flow	2	0	0	0	0	12	0	0	0	10	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.1	6.4	0	7.9
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	0%	100%
Vol Thru, %	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	1	6	5
LT Vol	0	1	0	5
Through Vol	0	0	0	0
RT Vol	0	0	6	0
Lane Flow Rate	0	2	12	10
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.002	0.011	0.013
Departure Headway (Hd)	3.933	4.127	3.319	4.806
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	871	1082	749
Service Time	1.936	2.135	1.327	2.806
HCM Lane V/C Ratio	0	0.002	0.011	0.013
HCM Control Delay, s/veh	6.9	7.1	6.4	7.9
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0	0	0

Lanes, Volumes, Timings
 7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	3	1	66	16	1
Future Volume (vph)	8	3	1	66	16	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			124	124	
Travel Time (s)	5.0			2.4	2.4	
Confl. Peds. (#/hr)		2	4			4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	20%	20%	2%	2%	13%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	3	1	66	16	1
Future Vol, veh/h	8	3	1	66	16	1
Conflicting Peds, #/hr	0	2	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	20	20	2	2	13	13
Mvmt Flow	9	4	1	78	19	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	103	25	24	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.6	6.4	4.12	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.48	2.218	-	-	-
Pot Cap-1 Maneuver	853	1001	1591	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	846	995	1585	-	-	-
Mov Cap-2 Maneuver	846	-	-	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	9.14	0.11		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	27	-	882	-	-	
HCM Lane V/C Ratio	0.001	-	0.015	-	-	
HCM Ctrl Dly (s/v)	7.3	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

2030 No Action PM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/08/2026

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	355	108	87	328	43	117	228	87	91	293	80
Future Volume (vph)	104	355	108	87	328	43	117	228	87	91	293	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 44

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

	Ø2		Ø4
35 s		35 s	
	Ø6		Ø8
35 s		35 s	

HCM 7th Signalized Intersection Summary
1: S Olympia St & W 27th Ave

04/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	355	108	87	328	43	117	228	87	91	293	80
Future Volume (veh/h)	104	355	108	87	328	43	117	228	87	91	293	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2003	2003	2003	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	105	359	109	88	331	43	118	230	88	92	296	81
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	437	807	683	419	653	85	417	473	181	411	687	581
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1079	2003	1695	925	1621	211	1012	1298	497	1069	1885	1593
Grp Volume(v), veh/h	105	359	109	88	0	374	118	0	318	92	296	81
Grp Sat Flow(s),veh/h/ln	1079	2003	1695	925	0	1832	1012	0	1794	1069	1885	1593
Q Serve(g_s), s	3.5	5.6	1.8	3.3	0.0	6.6	4.3	0.0	5.9	3.1	5.1	1.5
Cycle Q Clear(g_c), s	10.1	5.6	1.8	8.9	0.0	6.6	9.4	0.0	5.9	9.0	5.1	1.5
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	437	807	683	419	0	738	417	0	654	411	687	581
V/C Ratio(X)	0.24	0.45	0.16	0.21	0.00	0.51	0.28	0.00	0.49	0.22	0.43	0.14
Avail Cap(c_a), veh/h	757	1400	1185	693	0	1280	755	0	1254	768	1317	1113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	9.3	8.2	12.6	0.0	9.6	13.8	0.0	10.5	14.0	10.3	9.1
Incr Delay (d2), s/veh	0.6	0.8	0.2	0.5	0.0	1.2	0.8	0.0	1.2	0.6	0.9	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.9	0.5	0.6	0.0	2.1	0.9	0.0	1.9	0.7	1.7	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.0	10.2	8.4	13.1	0.0	10.8	14.6	0.0	11.7	14.6	11.2	9.4
LnGrp LOS	B	B	A	B		B	B		B	B	B	A
Approach Vol, veh/h	573			462			436			469		
Approach Delay, s/veh	10.5			11.2			12.5			11.6		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	22.3			20.6			22.3			20.6		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	12.1			11.0			10.9			11.4		
Green Ext Time (p_c), s	5.2			4.3			4.8			4.3		
Intersection Summary												
HCM 7th Control Delay, s/veh	11.4											
HCM 7th LOS	B											

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	104	17	54	205	28
Future Volume (vph)	31	104	17	54	205	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-4%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	104	17	54	205	28
Future Vol, veh/h	31	104	17	54	205	28
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	33	112	18	58	220	30
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	519	47	0	0	76	0
Stage 1	47	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Critical Hdwy	7.21	6.61	-	-	4.11	-
Critical Hdwy Stg 1	6.21	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	462	1019	-	-	1529	-
Stage 1	967	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	395	1019	-	-	1529	-
Mov Cap-2 Maneuver	395	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	10.97	0		6.82		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	748	1529	-	
HCM Lane V/C Ratio	-	-	0.194	0.144	-	
HCM Ctrl Dly (s/v)	-	-	11	7.8	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.7	0.5	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-PM-NAB] S Olympia St/W 45th Ave (2030 No Action - PM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2030 No Action - PM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-PM-NAB] S Olympia St/W 45th Ave (2030 No Action - PM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2030 No Action - PM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				mph
South: S Olympia St															
3	L2	All MCs	45	2.0	45	2.0	0.307	6.5	LOS A	1.6	40.4	0.47	0.30	0.47	31.9
8	T1	All MCs	216	2.0	216	2.0	0.307	6.5	LOS A	1.6	40.4	0.47	0.30	0.47	32.4
18	R2	All MCs	60	2.0	60	2.0	0.307	6.5	LOS A	1.6	40.4	0.47	0.30	0.47	32.2
Approach			321	2.0	321	2.0	0.307	6.5	LOS A	1.6	40.4	0.47	0.30	0.47	32.3
East: W 45th Ave															
1	L2	All MCs	24	3.0	24	3.0	0.136	4.9	LOS A	0.6	14.9	0.44	0.29	0.44	32.4
6	T1	All MCs	53	3.0	53	3.0	0.136	4.9	LOS A	0.6	14.9	0.44	0.29	0.44	33.1
16	R2	All MCs	55	3.0	55	3.0	0.136	4.9	LOS A	0.6	14.9	0.44	0.29	0.44	32.8
Approach			133	3.0	133	3.0	0.136	4.9	LOS A	0.6	14.9	0.44	0.29	0.44	32.8
North: S Olympia St															
7u	U	All MCs	1	0.0	1	0.0	0.187	4.5	LOS A	0.9	23.1	0.30	0.14	0.30	32.3
7	L2	All MCs	89	0.0	89	0.0	0.187	4.5	LOS A	0.9	23.1	0.30	0.14	0.30	32.3
4	T1	All MCs	88	0.0	88	0.0	0.187	4.5	LOS A	0.9	23.1	0.30	0.14	0.30	32.8
14	R2	All MCs	49	0.0	49	0.0	0.187	4.5	LOS A	0.9	23.1	0.30	0.14	0.30	32.6
Approach			227	0.0	227	0.0	0.187	4.5	LOS A	0.9	23.1	0.30	0.14	0.30	32.5
West: W 45th Ave															
5u	U	All MCs	1	1.0	1	1.0	0.182	4.8	LOS A	0.9	21.7	0.38	0.22	0.38	32.6
5	L2	All MCs	34	1.0	34	1.0	0.182	4.8	LOS A	0.9	21.7	0.38	0.22	0.38	32.6
2	T1	All MCs	125	1.0	125	1.0	0.182	4.8	LOS A	0.9	21.7	0.38	0.22	0.38	33.1
12	R2	All MCs	42	1.0	42	1.0	0.182	4.8	LOS A	0.9	21.7	0.38	0.22	0.38	32.9
Approach			202	1.0	202	1.0	0.182	4.8	LOS A	0.9	21.7	0.38	0.22	0.38	33.0
All Vehicles			883	1.4	883	1.4	0.307	5.4	LOS A	1.6	40.4	0.40	0.24	0.40	32.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c >1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Traffic Volume (vph)	211	26	2	101	12	2
Future Volume (vph)	211	26	2	101	12	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	40			40	25	
Link Distance (ft)	143			195	222	
Travel Time (s)	2.4			3.3	6.1	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	211	26	2	101	12	2
Future Vol, veh/h	211	26	2	101	12	2
Conflicting Peds, #/hr	0	2	2	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	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	232	29	2	111	13	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	262	0	364	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	115	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1308	-	640	796
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1305	-	637	794
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	913	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.15		10.62		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	656	-	-	35	-	
HCM Lane V/C Ratio	0.023	-	-	0.002	-	
HCM Ctrl Dly (s/v)	10.6	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	108	93	9	55	0	40	0	5	0	0	0
Future Volume (vph)	1	108	93	9	55	0	40	0	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		127			138			199			177	
Travel Time (s)		2.2			2.4			3.9			4.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.92	0.89	0.92	0.89	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%	0%	2%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

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	1	108	93	9	55	0	40	0	5	0	0	0
Future Vol, veh/h	1	108	93	9	55	0	40	0	5	0	0	0
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	89	89	89	89	92	89	92	89	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2	0	2	0	2	2	2
Mvmt Flow	1	121	104	10	62	0	45	0	6	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	228	0	0	260	260	176	206	312	62
Stage 1	-	-	-	-	-	-	178	178	-	82	82	-
Stage 2	-	-	-	-	-	-	82	82	-	124	230	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1541	-	-	1340	-	-	697	645	873	752	603	1003
Stage 1	-	-	-	-	-	-	829	752	-	926	827	-
Stage 2	-	-	-	-	-	-	931	827	-	881	714	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1541	-	-	1338	-	-	690	638	871	741	597	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	690	638	-	741	597	-
Stage 1	-	-	-	-	-	-	826	750	-	919	820	-
Stage 2	-	-	-	-	-	-	924	820	-	874	712	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.04			1.08			10.49			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	706	8	-	-	253	-	-	-
HCM Lane V/C Ratio	0.072	0.001	-	-	0.008	-	-	-
HCM Ctrl Dly (s/v)	10.5	7.3	0	-	7.7	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	4	0	0	1	11	0	0
Future Volume (vph)	0	0	0	1	0	4	0	0	1	11	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 6.9
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	4	0	0	1	11	0	0
Future Vol, veh/h	0	0	0	1	0	4	0	0	1	11	0	0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	1	0	6	0	0	1	16	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0	6.5	6.3	7.2
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	20%	100%
Vol Thru, %	0%	100%	0%	0%
Vol Right, %	100%	0%	80%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	0	5	11
LT Vol	0	0	1	11
Through Vol	0	0	0	0
RT Vol	1	0	4	0
Lane Flow Rate	1	0	7	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.001	0	0.007	0.019
Departure Headway (Hd)	3.326	3.937	3.491	4.115
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	1081	0	1029	875
Service Time	1.329	1.945	1.499	2.115
HCM Lane V/C Ratio	0.001	0	0.007	0.018
HCM Control Delay, s/veh	6.3	6.9	6.5	7.2
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0	0	0	0.1

Lanes, Volumes, Timings
7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	3	1	37	82	4
Future Volume (vph)	0	3	1	37	82	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			124	124	
Travel Time (s)	5.0			2.4	2.4	
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	1	37	82	4
Future Vol, veh/h	0	3	1	37	82	4
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	0	4	1	45	99	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	149	101	104	0	-	0
Stage 1	101	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	848	960	1501	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	847	960	1501	-	-	-
Mov Cap-2 Maneuver	847	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	8.77	0.19		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	47	-	960	-	-	
HCM Lane V/C Ratio	0.001	-	0.004	-	-	
HCM Ctrl Dly (s/v)	7.4	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

2030 With Project AM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/13/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	225	77	59	316	31	146	313	100	25	134	83
Future Volume (vph)	78	225	77	59	316	31	146	313	100	25	134	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	2%	2%	2%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 51.2

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

 Ø2	 Ø4
35 s	35 s
 Ø6	 Ø8
35 s	35 s

HCM 7th Signalized Intersection Summary
1: S Olympia St & W 27th Ave

04/13/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	225	77	59	316	31	146	313	100	25	134	83
Future Volume (veh/h)	78	225	77	59	316	31	146	313	100	25	134	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2012	2012	2012	1826	1826	1826	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	89	256	88	67	359	35	166	356	114	28	152	94
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	5	5	5	2	2	2	6	6	6
Cap, veh/h	374	755	640	449	615	60	553	544	174	329	727	614
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1065	2012	1705	1012	1638	160	1131	1356	434	893	1811	1529
Grp Volume(v), veh/h	89	256	88	67	0	394	166	0	470	28	152	94
Grp Sat Flow(s),veh/h/ln	1065	2012	1705	1012	0	1797	1131	0	1790	893	1811	1529
Q Serve(g_s), s	3.3	4.1	1.5	2.3	0.0	7.9	5.0	0.0	9.5	1.2	2.5	1.8
Cycle Q Clear(g_c), s	11.1	4.1	1.5	6.3	0.0	7.9	7.5	0.0	9.5	10.7	2.5	1.8
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	374	755	640	449	0	675	553	0	718	329	727	614
V/C Ratio(X)	0.24	0.34	0.14	0.15	0.00	0.58	0.30	0.00	0.65	0.09	0.21	0.15
Avail Cap(c_a), veh/h	688	1348	1143	747	0	1204	857	0	1200	569	1214	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	10.0	9.2	12.3	0.0	11.2	11.2	0.0	10.9	15.2	8.8	8.6
Incr Delay (d2), s/veh	0.7	0.6	0.2	0.3	0.0	1.7	0.6	0.0	2.2	0.2	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.5	0.5	0.5	0.0	2.7	1.1	0.0	3.2	0.2	0.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	10.6	9.4	12.6	0.0	12.9	11.9	0.0	13.0	15.5	9.1	8.8
LnGrp LOS	B	B	A	B		B	B		B	B	A	A
Approach Vol, veh/h	433			461			636			274		
Approach Delay, s/veh	11.5			12.9			12.7			9.6		
Approach LOS	B			B			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	21.8			23.0			21.8			23.0		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	13.1			12.7			9.9			11.5		
Green Ext Time (p_c), s	3.7			2.2			4.9			6.4		
Intersection Summary												
HCM 7th Control Delay, s/veh				12.0								
HCM 7th LOS				B								

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	266	23	19	91	17
Future Volume (vph)	40	266	23	19	91	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-6%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1	1		2	2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	5%	5%	12%	12%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	9.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	266	23	19	91	17
Future Vol, veh/h	40	266	23	19	91	17
Conflicting Peds, #/hr	1	1	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-6	-	-	4
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	5	5	12	12
Mvmt Flow	48	317	27	23	108	20
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	279	42	0	0	52	0
Stage 1	41	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	7.23	6.63	-	-	4.22	-
Critical Hdwy Stg 1	6.23	-	-	-	-	-
Critical Hdwy Stg 2	6.23	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.308	-
Pot Cap-1 Maneuver	667	1022	-	-	1492	-
Stage 1	970	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	616	1019	-	-	1489	-
Mov Cap-2 Maneuver	616	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	11.25	0		6.41		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	939	1489	-	
HCM Lane V/C Ratio	-	-	0.388	0.073	-	
HCM Ctrl Dly (s/v)	-	-	11.2	7.6	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	1.9	0.2	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-AM-WPB] S Olympia St/W 45th Ave (2030 With
Project - AM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2030 With Project - AM Peak Hour
Roundabout
Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-AM-WPB] S Olympia St/W 45th Ave (2030 With Project - AM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
 Site Category: 2030 With Project - AM Peak Hour
 Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number Rate to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] ft				
			veh/h	%	veh/h	%	v/c	sec							mph
South: S Olympia St															
3	L2	All MCs	54	9.0	54	9.0	0.177	5.1	LOS A	0.8	20.5	0.37	0.21	0.37	31.9
8	T1	All MCs	108	9.0	108	9.0	0.177	5.1	LOS A	0.8	20.5	0.37	0.21	0.37	32.6
18	R2	All MCs	19	9.0	19	9.0	0.177	5.1	LOS A	0.8	20.5	0.37	0.21	0.37	32.3
Approach			181	9.0	181	9.0	0.177	5.1	LOS A	0.8	20.5	0.37	0.21	0.37	32.3
East: W 45th Ave															
1u	U	All MCs	1	5.0	1	5.0	0.404	7.7	LOS A	2.3	59.3	0.50	0.30	0.50	31.2
1	L2	All MCs	49	5.0	49	5.0	0.404	7.7	LOS A	2.3	59.3	0.50	0.30	0.50	31.2
6	T1	All MCs	194	5.0	194	5.0	0.404	7.7	LOS A	2.3	59.3	0.50	0.30	0.50	31.8
16	R2	All MCs	174	5.0	174	5.0	0.404	7.7	LOS A	2.3	59.3	0.50	0.30	0.50	31.6
Approach			419	5.0	419	5.0	0.404	7.7	LOS A	2.3	59.3	0.50	0.30	0.50	31.6
North: S Olympia St															
7	L2	All MCs	64	13.0	64	13.0	0.198	6.2	LOS A	0.8	22.0	0.47	0.32	0.47	31.2
4	T1	All MCs	91	13.0	91	13.0	0.198	6.2	LOS A	0.8	22.0	0.47	0.32	0.47	31.9
14	R2	All MCs	16	13.0	16	13.0	0.198	6.2	LOS A	0.8	22.0	0.47	0.32	0.47	31.6
Approach			171	13.0	171	13.0	0.198	6.2	LOS A	0.8	22.0	0.47	0.32	0.47	31.6
West: W 45th Ave															
5	L2	All MCs	45	8.0	45	8.0	0.154	5.0	LOS A	0.7	17.3	0.39	0.24	0.39	32.0
2	T1	All MCs	71	8.0	71	8.0	0.154	5.0	LOS A	0.7	17.3	0.39	0.24	0.39	32.7
12	R2	All MCs	39	8.0	39	8.0	0.154	5.0	LOS A	0.7	17.3	0.39	0.24	0.39	32.4
Approach			154	8.0	154	8.0	0.154	5.0	LOS A	0.7	17.3	0.39	0.24	0.39	32.4
All Vehicles			925	7.8	925	7.8	0.404	6.5	LOS A	2.3	59.3	0.45	0.28	0.45	31.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 11 | Copyright © 2000-2026 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: TENW | Licence: PLUS / 1PC | Processed: Wednesday, April 8, 2026 8:41:32 AM
 Project: T:\Active Projects\Pringle Project (Kennewick) - 2026-079\Planning\LOS\Pringle Project.sipx

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	87	33	1	222	84	1
Future Volume (vph)	87	33	1	222	84	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-5%	
Link Speed (mph)	40			40	25	
Link Distance (ft)	325			195	222	
Travel Time (s)	5.5			3.3	6.1	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	16%	4%	4%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	87	33	1	222	84	1
Future Vol, veh/h	87	33	1	222	84	1
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	-5	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	16	4	4	0	0
Mvmt Flow	97	37	1	247	93	1
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	137	0	368	119
Stage 1	-	-	-	-	119	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	-	-	4.14	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1434	-	705	954
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1429	-	701	950
Mov Cap-2 Maneuver	-	-	-	-	701	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	854	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.03		10.91		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	703	-	-	8	-	
HCM Lane V/C Ratio	0.134	-	-	0.001	-	
HCM Ctrl Dly (s/v)	10.9	-	-	7.5	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	47	41	8	67	0	139	0	29	1	0	3
Future Volume (vph)	1	47	41	8	67	0	139	0	29	1	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			30	
Link Distance (ft)		127			138			199			148	
Travel Time (s)		2.2			2.4			3.9			3.4	
Confl. Peds. (#/hr)	1		3	3		1			3	3		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	15%	15%	15%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	47	41	8	67	0	139	0	29	1	0	3
Future Vol, veh/h	1	47	41	8	67	0	139	0	29	1	0	3
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	15	15	15	8	8	8	3	3	3	2	2	2
Mvmt Flow	1	55	48	9	78	0	162	0	34	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	79	0	0	105	0	0	180	181	84	157	205	79
Stage 1	-	-	-	-	-	-	84	84	-	98	98	-
Stage 2	-	-	-	-	-	-	97	98	-	60	108	-
Critical Hdwy	4.25	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1441	-	-	1449	-	-	779	711	972	809	691	982
Stage 1	-	-	-	-	-	-	922	823	-	909	814	-
Stage 2	-	-	-	-	-	-	908	812	-	951	806	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1440	-	-	1445	-	-	768	703	966	771	683	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	768	703	-	771	683	-
Stage 1	-	-	-	-	-	-	918	820	-	902	808	-
Stage 2	-	-	-	-	-	-	898	806	-	915	803	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.08			0.8			10.98			8.94		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	796	19	-	-	192	-	-	918
HCM Lane V/C Ratio	0.245	0.001	-	-	0.006	-	-	0.005
HCM Ctrl Dly (s/v)	11	7.5	0	-	7.5	0	-	8.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	1	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	3	0	0	1	6	0	62	0	5	23	0
Future Volume (vph)	1	3	0	0	1	6	0	62	0	5	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			-4%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	40%	40%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 7.7
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	3	0	0	1	6	0	62	0	5	23	0
Future Vol, veh/h	1	3	0	0	1	6	0	62	0	5	23	0
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	40	40	40
Mvmt Flow	2	6	0	0	2	12	0	124	0	10	46	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.4	6.9	7.6	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	25%	0%	18%
Vol Thru, %	100%	75%	14%	82%
Vol Right, %	0%	0%	86%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	4	7	28
LT Vol	0	1	0	5
Through Vol	62	3	1	23
RT Vol	0	0	6	0
Lane Flow Rate	124	8	14	56
Geometry Grp	1	1	1	1
Degree of Util (X)	0.137	0.009	0.014	0.074
Departure Headway (Hd)	3.979	4.271	3.7	4.746
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	900	824	948	754
Service Time	2.007	2.37	1.799	2.777
HCM Lane V/C Ratio	0.138	0.01	0.015	0.074
HCM Control Delay, s/veh	7.6	7.4	6.9	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0	0	0.2

Lanes, Volumes, Timings
7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	3	1	143	45	2
Future Volume (vph)	11	3	1	143	45	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			323	124	
Travel Time (s)	5.0			6.3	2.4	
Confl. Peds. (#/hr)		2	4			4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	20%	20%	2%	2%	13%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	1	143	45	2
Future Vol, veh/h	11	3	1	143	45	2
Conflicting Peds, #/hr	0	2	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	20	20	2	2	13	13
Mvmt Flow	13	4	1	168	53	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	229	60	59	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.6	6.4	4.12	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.48	2.218	-	-	-
Pot Cap-1 Maneuver	721	957	1544	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	715	951	1539	-	-	-
Mov Cap-2 Maneuver	715	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	9.87	0.05		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	13	-	755	-	-	
HCM Lane V/C Ratio	0.001	-	0.022	-	-	
HCM Ctrl Dly (s/v)	7.3	0	9.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Exhibit 13

Lanes, Volumes, Timings

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	122	8	1	333	1	21	0	4	1	0	0
Future Volume (vph)	0	122	8	1	333	1	21	0	4	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		179			636			95			77	
Travel Time (s)		3.1			10.8			2.6			2.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	18%	18%	18%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	122	8	1	333	1	21	0	4	1	0	0
Future Vol, veh/h	0	122	8	1	333	1	21	0	4	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	18	18	18	5	5	5	3	3	3	0	0	0
Mvmt Flow	0	133	9	1	362	1	23	0	4	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	363	0	0	141	0	0	501	502	137	497	506	363
Stage 1	-	-	-	-	-	-	137	137	-	365	365	-
Stage 2	-	-	-	-	-	-	364	365	-	133	141	-
Critical Hdwy	4.28	-	-	4.15	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.362	-	-	2.245	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1112	-	-	1423	-	-	479	470	909	486	472	687
Stage 1	-	-	-	-	-	-	864	781	-	659	627	-
Stage 2	-	-	-	-	-	-	653	621	-	876	784	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1112	-	-	1423	-	-	478	469	909	484	471	687
Mov Cap-2 Maneuver	-	-	-	-	-	-	478	469	-	484	471	-
Stage 1	-	-	-	-	-	-	864	781	-	658	626	-
Stage 2	-	-	-	-	-	-	652	621	-	871	784	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.02			12.34			12.46		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	518	1112	-	-	5	-	-	484
HCM Lane V/C Ratio	0.053	-	-	-	0.001	-	-	0.002
HCM Ctrl Dly (s/v)	12.3	0	-	-	7.5	0	-	12.5
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings

9: East Site Access/S Kent St & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	114	10	2	299	0	28	0	4	1	0	8
Future Volume (vph)	3	114	10	2	299	0	28	0	4	1	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		636			325			81			90	
Travel Time (s)		10.8			5.5			2.2			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	18%	18%	18%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
9: East Site Access/S Kent St & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	114	10	2	299	0	28	0	4	1	0	8
Future Vol, veh/h	3	114	10	2	299	0	28	0	4	1	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	18	18	18	5	5	5	3	3	3	0	0	0
Mvmt Flow	3	124	11	2	325	0	30	0	4	1	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	325	0	0	135	0	0	465	465	129	460	471	325
Stage 1	-	-	-	-	-	-	136	136	-	329	329	-
Stage 2	-	-	-	-	-	-	329	329	-	130	141	-
Critical Hdwy	4.28	-	-	4.15	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.362	-	-	2.245	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1150	-	-	1431	-	-	506	493	918	515	494	721
Stage 1	-	-	-	-	-	-	865	782	-	688	650	-
Stage 2	-	-	-	-	-	-	682	644	-	878	784	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1150	-	-	1431	-	-	497	491	918	510	492	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	497	491	-	510	492	-
Stage 1	-	-	-	-	-	-	862	780	-	687	649	-
Stage 2	-	-	-	-	-	-	672	643	-	871	781	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.19			0.05			12.31			10.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	527	42	-	-	12	-	-	689
HCM Lane V/C Ratio	0.066	0.003	-	-	0.002	-	-	0.014
HCM Ctrl Dly (s/v)	12.3	8.1	0	-	7.5	0	-	10.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings

10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	0	0	0	0	19	0	86	0	5	28	15
Future Volume (vph)	39	0	0	0	0	19	0	86	0	5	28	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		130			112			817			323	
Travel Time (s)		3.5			3.1			15.9			6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	2%	2%	2%	22%	22%	22%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	0	0	0	0	19	0	86	0	5	28	15
Future Vol, veh/h	39	0	0	0	0	19	0	86	0	5	28	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	2	2	2	22	22	22
Mvmt Flow	42	0	0	0	0	21	0	93	0	5	30	16

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	143	143	39	135	151	93	47	0
Stage 1	49	49	-	93	93	-	-	-
Stage 2	93	93	-	41	58	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.7	7.1	6.5	4.12	-
Critical Hdwy Stg 1	6.13	5.53	-	6.7	6.1	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.7	6.1	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.218	-
Pot Cap-1 Maneuver	824	746	1030	823	726	962	1561	-
Stage 1	961	852	-	904	809	-	-	-
Stage 2	911	816	-	972	843	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	803	743	1030	819	723	962	1561	-
Mov Cap-2 Maneuver	803	743	-	819	723	-	-	-
Stage 1	957	848	-	904	809	-	-	-
Stage 2	891	816	-	968	839	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.73	8.83	0	0.79
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1561	-	-	803	962	175	-	-
HCM Lane V/C Ratio	-	-	-	0.053	0.021	0.004	-	-
HCM Ctrl Dly (s/v)	0	-	-	9.7	8.8	7.6	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Exhibit 13

Lanes, Volumes, Timings

11: S Garfield St & South Site Access/S Dayton St

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	0	0	1	0	13	0	35	1	7	7	14
Future Volume (vph)	38	0	0	1	0	13	0	35	1	7	7	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			5%			-3%			3%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		173			161			143			817	
Travel Time (s)		4.7			4.4			2.8			15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	31%	31%	31%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

11: S Garfield St & South Site Access/S Dayton St

04/08/2026

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	0	0	1	0	13	0	35	1	7	7	14
Future Vol, veh/h	38	0	0	1	0	13	0	35	1	7	7	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	5	-	-	-3	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	3	3	3	31	31	31
Mvmt Flow	41	0	0	1	0	14	0	38	1	8	8	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	68	70	15	61	77	39	23	0	0	39	0	0
Stage 1	30	30	-	39	39	-	-	-	-	-	-	-
Stage 2	38	39	-	23	38	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	8.1	7.5	6.7	4.13	-	-	4.41	-	-
Critical Hdwy Stg 1	6.13	5.53	-	7.1	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	7.1	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.227	-	-	2.479	-	-
Pot Cap-1 Maneuver	921	819	1061	923	800	1033	1586	-	-	1403	-	-
Stage 1	984	868	-	971	858	-	-	-	-	-	-	-
Stage 2	975	860	-	994	858	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	904	815	1061	918	796	1033	1586	-	-	1403	-	-
Mov Cap-2 Maneuver	904	815	-	918	796	-	-	-	-	-	-	-
Stage 1	978	863	-	971	858	-	-	-	-	-	-	-
Stage 2	961	860	-	989	853	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	9.17			8.57			0			1.89		
HCM LOS	A			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1586	-	-	904	1024	397	-	-
HCM Lane V/C Ratio	-	-	-	0.046	0.015	0.005	-	-
HCM Ctrl Dly (s/v)	0	-	-	9.2	8.6	7.6	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Exhibit 13

Lanes, Volumes, Timings

12: S Olympia St & W 47th St/South Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	2	10	0	21	4	105	4	8	138	2
Future Volume (vph)	4	0	2	10	0	21	4	105	4	8	138	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			-4%			3%	
Storage Length (ft)	0		0	0		0	50		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		271			207			220			297	
Travel Time (s)		7.4			5.6			3.8			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	10%	10%	10%	10%	10%	10%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	2	10	0	21	4	105	4	8	138	2
Future Vol, veh/h	4	0	2	10	0	21	4	105	4	8	138	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	0	-	-	-4	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	3	10	10	10	10	10	10
Mvmt Flow	4	0	2	11	0	23	4	114	4	9	150	2

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	291	296	151	292	295	116	152	0
Stage 1	168	168	-	125	125	-	-	-
Stage 2	123	127	-	167	170	-	-	-
Critical Hdwy	6.3	5.7	5.8	7.13	6.53	6.23	4.2	-
Critical Hdwy Stg 1	5.3	4.7	-	6.13	5.53	-	-	-
Critical Hdwy Stg 2	5.3	4.7	-	6.13	5.53	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4.027	3.327	2.29	-
Pot Cap-1 Maneuver	709	661	916	658	615	933	1381	-
Stage 1	870	792	-	877	791	-	-	-
Stage 2	911	817	-	832	756	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	686	655	916	650	609	933	1381	-
Mov Cap-2 Maneuver	710	662	-	682	627	-	-	-
Stage 1	865	787	-	874	788	-	-	-
Stage 2	886	815	-	825	752	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.73	9.5	0.27	0.41
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1381	-	-	768	834	1421	-	-
HCM Lane V/C Ratio	0.003	-	-	0.008	0.04	0.006	-	-
HCM Ctrl Dly (s/v)	7.6	-	-	9.7	9.5	7.5	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Exhibit 13

Lanes, Volumes, Timings

13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	0	5	0	23	3	125	2	8	143	1
Future Volume (vph)	4	0	0	5	0	23	3	125	2	8	143	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-3%			0%	
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		222			197			297			312	
Travel Time (s)		6.1			5.4			5.1			5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	10%	10%	10%	10%	10%	10%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	0	5	0	23	3	125	2	8	143	1
Future Vol, veh/h	4	0	0	5	0	23	3	125	2	8	143	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-3	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	3	10	10	10	10	10	10
Mvmt Flow	4	0	0	5	0	25	3	136	2	9	155	1

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	316	318	156	316	317	137	157	0
Stage 1	173	173	-	143	143	-	-	-
Stage 2	142	145	-	173	174	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.53	6.23	4.2	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.53	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.53	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4.027	3.327	2.29	-
Pot Cap-1 Maneuver	641	602	895	634	597	909	1376	-
Stage 1	833	759	-	857	776	-	-	-
Stage 2	865	781	-	827	753	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	617	596	895	629	592	909	1376	-
Mov Cap-2 Maneuver	617	596	-	668	616	-	-	-
Stage 1	828	754	-	855	774	-	-	-
Stage 2	840	779	-	821	748	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.87	9.37	0.18	0.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1376	-	-	617	854	95	-	-
HCM Lane V/C Ratio	0.002	-	-	0.007	0.036	0.006	-	-
HCM Ctrl Dly (s/v)	7.6	-	-	10.9	9.4	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

2030 With Project PM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/13/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	355	135	100	328	43	134	270	95	91	361	80
Future Volume (vph)	104	355	135	100	328	43	134	270	95	91	361	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 47.8

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

 Ø2	 Ø4
35 s	35 s
 Ø6	 Ø8
35 s	35 s

Exhibit 13

HCM 7th Signalized Intersection Summary 1: S Olympia St & W 27th Ave

04/13/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	355	135	100	328	43	134	270	95	91	361	80
Future Volume (veh/h)	104	355	135	100	328	43	134	270	95	91	361	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2003	2003	2003	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	105	359	136	101	331	43	135	273	96	92	365	81
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	401	779	660	380	631	82	397	537	189	404	760	642
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1080	2003	1695	902	1621	211	951	1331	468	1020	1885	1594
Grp Volume(v), veh/h	105	359	136	101	0	374	135	0	369	92	365	81
Grp Sat Flow(s),veh/h/ln	1080	2003	1695	902	0	1832	951	0	1800	1020	1885	1594
Q Serve(g_s), s	4.0	6.4	2.6	4.5	0.0	7.5	5.9	0.0	7.4	3.6	6.9	1.5
Cycle Q Clear(g_c), s	11.5	6.4	2.6	10.9	0.0	7.5	12.8	0.0	7.4	11.0	6.9	1.5
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	401	779	660	380	0	713	397	0	725	404	760	642
V/C Ratio(X)	0.26	0.46	0.21	0.27	0.00	0.52	0.34	0.00	0.51	0.23	0.48	0.13
Avail Cap(c_a), veh/h	654	1249	1057	592	0	1142	606	0	1122	629	1175	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	10.9	9.8	15.0	0.0	11.3	15.4	0.0	10.8	14.9	10.6	9.0
Incr Delay (d2), s/veh	0.7	0.9	0.3	0.8	0.0	1.3	1.1	0.0	1.2	0.6	1.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	0.8	0.9	0.0	2.6	1.2	0.0	2.5	0.8	2.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.4	11.8	10.1	15.8	0.0	12.6	16.4	0.0	12.0	15.5	11.6	9.2
LnGrp LOS	B	B	B	B		B	B		B	B	B	A
Approach Vol, veh/h	600				475				504			
Approach Delay, s/veh	12.3				13.2				13.2			
Approach LOS	B				B				B			
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	23.7			24.4			23.7			24.4		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	13.5			13.0			12.9			14.8		
Green Ext Time (p_c), s	5.2			4.9			4.6			4.6		
Intersection Summary												
HCM 7th Control Delay, s/veh	12.6											
HCM 7th LOS	B											

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	171	17	54	314	28
Future Volume (vph)	31	171	17	54	314	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-4%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	8.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	171	17	54	314	28
Future Vol, veh/h	31	171	17	54	314	28
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	33	184	18	58	338	30
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	754	47	0	0	76	0
Stage 1	47	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Critical Hdwy	7.21	6.61	-	-	4.11	-
Critical Hdwy Stg 1	6.21	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	320	1019	-	-	1529	-
Stage 1	967	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	249	1019	-	-	1529	-
Mov Cap-2 Maneuver	249	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	12.57	0		7.36		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	691	1529	-	
HCM Lane V/C Ratio	-	-	0.314	0.221	-	
HCM Ctrl Dly (s/v)	-	-	12.6	8	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	1.3	0.8	-	

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	282	92	2	149	53	2
Future Volume (vph)	282	92	2	149	53	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	40			40	25	
Link Distance (ft)	320			195	222	
Travel Time (s)	5.5			3.3	6.1	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	282	92	2	149	53	2
Future Vol, veh/h	282	92	2	149	53	2
Conflicting Peds, #/hr	0	2	2	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	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	310	101	2	164	58	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	413	0	531	362
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1151	-	513	687
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1149	-	511	686
Mov Cap-2 Maneuver	-	-	-	-	511	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	865	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.11		12.91		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	515	-	-	24	-	
HCM Lane V/C Ratio	0.117	-	-	0.002	-	
HCM Ctrl Dly (s/v)	12.9	-	-	8.1	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	113	159	28	63	0	80	0	17	0	0	0
Future Volume (vph)	1	113	159	28	63	0	80	0	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		127			138			199			177	
Travel Time (s)		2.2			2.4			3.9			4.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.92	0.89	0.92	0.89	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%	0%	2%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	113	159	28	63	0	80	0	17	0	0	0
Future Vol, veh/h	1	113	159	28	63	0	80	0	17	0	0	0
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	89	89	89	89	92	89	92	89	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2	0	2	0	2	2	2
Mvmt Flow	1	127	179	31	71	0	90	0	19	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	71	0	0	308	0	0	354	354	218	263	443	71
Stage 1	-	-	-	-	-	-	220	220	-	134	134	-
Stage 2	-	-	-	-	-	-	134	134	-	129	310	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1530	-	-	1253	-	-	605	571	827	690	509	992
Stage 1	-	-	-	-	-	-	787	721	-	870	786	-
Stage 2	-	-	-	-	-	-	875	786	-	875	659	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1530	-	-	1251	-	-	587	555	825	656	494	992
Mov Cap-2 Maneuver	-	-	-	-	-	-	587	555	-	656	494	-
Stage 1	-	-	-	-	-	-	784	719	-	847	765	-
Stage 2	-	-	-	-	-	-	852	765	-	854	657	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.03			2.45			12.06			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	618	6	-	-	554	-	-	-
HCM Lane V/C Ratio	0.176	0.001	-	-	0.025	-	-	-
HCM Ctrl Dly (s/v)	12.1	7.4	0	-	8	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	-

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	0	1	3	4	0	41	1	11	66	0
Future Volume (vph)	0	2	0	1	3	4	0	41	1	11	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 7.5
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	0	1	3	4	0	41	1	11	66	0
Future Vol, veh/h	0	2	0	1	3	4	0	41	1	11	66	0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	3	0	1	4	6	0	61	1	16	99	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.3	7.1	7.3	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	13%	14%
Vol Thru, %	98%	100%	38%	86%
Vol Right, %	2%	0%	50%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	2	8	77
LT Vol	0	0	1	11
Through Vol	41	2	3	66
RT Vol	1	0	4	0
Lane Flow Rate	63	3	12	115
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.003	0.013	0.128
Departure Headway (Hd)	3.999	4.216	3.933	4.003
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	896	838	898	898
Service Time	2.024	2.294	2.009	2.019
HCM Lane V/C Ratio	0.07	0.004	0.013	0.128
HCM Control Delay, s/veh	7.3	7.3	7.1	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0	0.4

Lanes, Volumes, Timings
 7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	3	1	87	164	7
Future Volume (vph)	2	3	1	87	164	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			327	124	
Travel Time (s)	5.0			6.4	2.4	
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	3	1	87	164	7
Future Vol, veh/h	2	3	1	87	164	7
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	2	4	1	105	198	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	310	202	206	0	-	0
Stage 1	202	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	687	844	1377	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	844	1377	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	9.69	0.09		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	20	-	773	-	-	
HCM Lane V/C Ratio	0.001	-	0.008	-	-	
HCM Ctrl Dly (s/v)	7.6	0	9.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Exhibit 13

Lanes, Volumes, Timings

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	410	22	4	218	1	14	0	2	0	0	0
Future Volume (vph)	2	410	22	4	218	1	14	0	2	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		178			642			107			81	
Travel Time (s)		3.0			10.9			2.9			2.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	410	22	4	218	1	14	0	2	0	0	0
Future Vol, veh/h	2	410	22	4	218	1	14	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	3	3	3	3	3	3	0	0	0
Mvmt Flow	2	446	24	4	237	1	15	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	470	0	0	708	709	458	696	720	238
Stage 1	-	-	-	-	-	-	462	462	-	246	246	-
Stage 2	-	-	-	-	-	-	246	247	-	450	474	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1335	-	-	1087	-	-	348	358	601	359	356	806
Stage 1	-	-	-	-	-	-	578	563	-	762	706	-
Stage 2	-	-	-	-	-	-	756	700	-	592	561	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1335	-	-	1087	-	-	346	356	601	355	354	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	346	356	-	355	354	-
Stage 1	-	-	-	-	-	-	577	562	-	759	703	-
Stage 2	-	-	-	-	-	-	752	697	-	589	560	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.04			0.15			15.34			0		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	365	8	-	-	32	-	-	-
HCM Lane V/C Ratio	0.048	0.002	-	-	0.004	-	-	-
HCM Ctrl Dly (s/v)	15.3	7.7	0	-	8.3	0	-	0
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-PM-WPB] S Olympia St/W 45th Ave (2030 With Project
- PM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2030 With Project - PM Peak Hour
Roundabout
Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-PM-WPB] S Olympia St/W 45th Ave (2030 With Project
- PM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
 Site Category: 2030 With Project - PM Peak Hour
 Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				mph
South: S Olympia St															
3	L2	All MCs	60	2.0	60	2.0	0.424	9.3	LOS A	2.4	62.0	0.65	0.53	0.72	30.6
8	T1	All MCs	232	2.0	232	2.0	0.424	9.3	LOS A	2.4	62.0	0.65	0.53	0.72	31.1
18	R2	All MCs	72	2.0	72	2.0	0.424	9.3	LOS A	2.4	62.0	0.65	0.53	0.72	30.9
Approach			363	2.0	363	2.0	0.424	9.3	LOS A	2.4	62.0	0.65	0.53	0.72	31.0
East: W 45th Ave															
1	L2	All MCs	32	3.0	32	3.0	0.270	6.5	LOS A	1.3	32.9	0.51	0.36	0.51	31.8
6	T1	All MCs	111	3.0	111	3.0	0.270	6.5	LOS A	1.3	32.9	0.51	0.36	0.51	32.4
16	R2	All MCs	113	3.0	113	3.0	0.270	6.5	LOS A	1.3	32.9	0.51	0.36	0.51	32.2
Approach			255	3.0	255	3.0	0.270	6.5	LOS A	1.3	32.9	0.51	0.36	0.51	32.2
North: S Olympia St															
7u	U	All MCs	1	0.0	1	0.0	0.309	6.1	LOS A	1.7	41.9	0.44	0.26	0.44	31.3
7	L2	All MCs	183	0.0	183	0.0	0.309	6.1	LOS A	1.7	41.9	0.44	0.26	0.44	31.3
4	T1	All MCs	112	0.0	112	0.0	0.309	6.1	LOS A	1.7	41.9	0.44	0.26	0.44	31.8
14	R2	All MCs	49	0.0	49	0.0	0.309	6.1	LOS A	1.7	41.9	0.44	0.26	0.44	31.6
Approach			345	0.0	345	0.0	0.309	6.1	LOS A	1.7	41.9	0.44	0.26	0.44	31.5
West: W 45th Ave															
5u	U	All MCs	1	1.0	1	1.0	0.329	7.1	LOS A	1.7	42.7	0.54	0.37	0.54	31.7
5	L2	All MCs	34	1.0	34	1.0	0.329	7.1	LOS A	1.7	42.7	0.54	0.37	0.54	31.7
2	T1	All MCs	220	1.0	220	1.0	0.329	7.1	LOS A	1.7	42.7	0.54	0.37	0.54	32.2
12	R2	All MCs	66	1.0	66	1.0	0.329	7.1	LOS A	1.7	42.7	0.54	0.37	0.54	32.0
Approach			321	1.0	321	1.0	0.329	7.1	LOS A	1.7	42.7	0.54	0.37	0.54	32.1
All Vehicles			1284	1.4	1284	1.4	0.424	7.3	LOS A	2.4	62.0	0.54	0.38	0.56	31.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c >1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Exhibit 13

Lanes, Volumes, Timings

9: East Site Access/S Kent St & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	374	30	4	202	0	18	0	3	1	0	3
Future Volume (vph)	8	374	30	4	202	0	18	0	3	1	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		642			320			121			181	
Travel Time (s)		10.9			5.5			3.3			4.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
9: East Site Access/S Kent St & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	374	30	4	202	0	18	0	3	1	0	3
Future Vol, veh/h	8	374	30	4	202	0	18	0	3	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	3	3	3	3	3	3	0	0	0
Mvmt Flow	9	407	33	4	220	0	20	0	3	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	220	0	0	439	0	0	668	668	423	652	685	220
Stage 1	-	-	-	-	-	-	440	440	-	228	228	-
Stage 2	-	-	-	-	-	-	228	228	-	424	457	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1356	-	-	1115	-	-	370	378	629	384	373	825
Stage 1	-	-	-	-	-	-	594	576	-	779	719	-
Stage 2	-	-	-	-	-	-	772	713	-	612	571	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1356	-	-	1115	-	-	364	373	629	377	368	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	373	-	377	368	-
Stage 1	-	-	-	-	-	-	589	571	-	776	716	-
Stage 2	-	-	-	-	-	-	766	710	-	604	566	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.15			0.16			14.88			10.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	34	-	-	35	-	-	636
HCM Lane V/C Ratio	0.059	0.006	-	-	0.004	-	-	0.007
HCM Ctrl Dly (s/v)	14.9	7.7	0	-	8.2	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings

10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	0	0	0	9	0	54	0	30	96	41
Future Volume (vph)	25	0	0	0	0	9	0	54	0	30	96	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		148			142			810			327	
Travel Time (s)		4.0			3.9			15.8			6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	0	0	0	9	0	54	0	30	96	41
Future Vol, veh/h	25	0	0	0	0	9	0	54	0	30	96	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	0	0	0	1	1	1
Mvmt Flow	27	0	0	0	0	10	0	59	0	33	104	45

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	251	251	127	228	273	59	149	0
Stage 1	192	192	-	59	59	-	-	-
Stage 2	59	59	-	170	214	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.7	7.1	6.5	4.1	-
Critical Hdwy Stg 1	6.13	5.53	-	6.7	6.1	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.7	6.1	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.2	-
Pot Cap-1 Maneuver	701	651	921	704	609	1008	1445	-
Stage 1	808	740	-	949	842	-	-	-
Stage 2	950	844	-	814	704	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	678	636	921	688	595	1008	1445	-
Mov Cap-2 Maneuver	678	636	-	688	595	-	-	-
Stage 1	789	723	-	949	842	-	-	-
Stage 2	941	844	-	795	687	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.53	8.61	0	1.32
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1445	-	-	678	1008	305	-	-
HCM Lane V/C Ratio	-	-	-	0.04	0.01	0.021	-	-
HCM Ctrl Dly (s/v)	0	-	-	10.5	8.6	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	-	-

Exhibit 13

Lanes, Volumes, Timings

11: S Garfield St & South Site Access/S Dayton St

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	0	0	0	2	0	27	0	21	34	41
Future Volume (vph)	25	0	0	0	0	2	0	27	0	21	34	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			5%			-3%			3%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		201			169			151			810	
Travel Time (s)		5.5			4.6			2.9			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
11: S Garfield St & South Site Access/S Dayton St

04/08/2026

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	25	0	0	0	0	2	0	27	0	21	34	41
Future Vol, veh/h	25	0	0	0	0	2	0	27	0	21	34	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	5	-	-	-3	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	0	0	0	2	2	2
Mvmt Flow	27	0	0	0	0	2	0	29	0	23	37	45

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	134	134	59	112	157	29	82	0
Stage 1	105	105	-	29	29	-	-	-
Stage 2	29	29	-	83	127	-	-	-
Critical Hdwy	7.13	6.53	6.23	8.1	7.5	6.7	4.1	-
Critical Hdwy Stg 1	6.13	5.53	-	7.1	6.5	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	7.1	6.5	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.2	-
Pot Cap-1 Maneuver	835	755	1004	844	708	1047	1529	-
Stage 1	898	806	-	985	868	-	-	-
Stage 2	985	869	-	909	767	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	821	743	1004	831	697	1047	1529	-
Mov Cap-2 Maneuver	821	743	-	831	697	-	-	-
Stage 1	885	794	-	985	868	-	-	-
Stage 2	983	869	-	896	755	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.54	8.45	0	1.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1529	-	-	821	1047	355	-	-
HCM Lane V/C Ratio	-	-	-	0.033	0.002	0.014	-	-
HCM Ctrl Dly (s/v)	0	-	-	9.5	8.4	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Exhibit 13

Lanes, Volumes, Timings

12: S Olympia St & W 47th St/South Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	3	6	0	14	2	306	11	22	140	3
Future Volume (vph)	1	0	3	6	0	14	2	306	11	22	140	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			-4%			3%	
Storage Length (ft)	0		0	0		0	50		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		175			176			204			301	
Travel Time (s)		4.8			4.8			3.5			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)										10%		
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
12: S Olympia St & W 47th St/South Site Access

04/08/2026

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	3	6	0	14	2	306	11	22	140	3
Future Vol, veh/h	1	0	3	6	0	14	2	306	11	22	140	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	0	-	-	-4	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	3	2	2	2	0	0	0
Mvmt Flow	1	0	3	7	0	15	2	333	12	24	152	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	539	551	154	543	546	339	155	0	0	345	0	0
Stage 1	202	202	-	343	343	-	-	-	-	-	-	-
Stage 2	337	349	-	200	203	-	-	-	-	-	-	-
Critical Hdwy	6.3	5.7	5.8	7.13	6.53	6.23	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	5.3	4.7	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	4.7	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4.027	3.327	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	515	503	913	449	444	701	1425	-	-	1226	-	-
Stage 1	842	772	-	670	636	-	-	-	-	-	-	-
Stage 2	734	688	-	800	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	493	493	913	438	434	701	1425	-	-	1226	-	-
Mov Cap-2 Maneuver	564	544	-	526	503	-	-	-	-	-	-	-
Stage 1	825	757	-	669	635	-	-	-	-	-	-	-
Stage 2	717	687	-	781	717	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	9.58			10.85			0.05			1.07		
HCM LOS	A			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1425	-	-	791	637	1226	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.034	0.02	-	-
HCM Ctrl Dly (s/v)	7.5	-	-	9.6	10.8	8	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Exhibit 13

Lanes, Volumes, Timings

13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	0	3	0	14	0	315	6	22	162	3
Future Volume (vph)	2	0	0	3	0	14	0	315	6	22	162	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-3%			0%	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		153			140			301			300	
Travel Time (s)		4.2			3.8			5.1			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	3	0	14	0	315	6	22	162	3
Future Vol, veh/h	2	0	0	3	0	14	0	315	6	22	162	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-3	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	2	0	0	3	0	15	0	342	7	24	176	3

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	568	574	178	570	573	346	179	0
Stage 1	226	226	-	346	346	-	-	-
Stage 2	342	349	-	224	227	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.13	6.53	6.23	4.12	-
Critical Hdwy Stg 1	6.12	5.52	-	6.13	5.53	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.13	5.53	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.527	4.027	3.327	2.218	-
Pot Cap-1 Maneuver	434	429	865	431	428	695	1396	-
Stage 1	777	717	-	668	634	-	-	-
Stage 2	673	634	-	776	714	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	415	419	865	422	419	695	1396	-
Mov Cap-2 Maneuver	415	419	-	515	493	-	-	-
Stage 1	760	701	-	668	634	-	-	-
Stage 2	658	634	-	759	698	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.72	10.66	0	0.95
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1396	-	-	415	655	211	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.028	0.02	-	-
HCM Ctrl Dly (s/v)	0	-	-	13.7	10.7	8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

2040 No Action AM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	274	83	66	385	38	146	302	107	30	135	102
Future Volume (vph)	95	274	83	66	385	38	146	302	107	30	135	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	2%	2%	2%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 54.9

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

 Ø2	 Ø4
35 s	35 s
 Ø6	 Ø8
35 s	35 s

Exhibit 13

HCM 7th Signalized Intersection Summary

1: S Olympia St & W 27th Ave

04/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	274	83	66	385	38	146	302	107	30	135	102
Future Volume (veh/h)	95	274	83	66	385	38	146	302	107	30	135	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2012	2012	2012	1826	1826	1826	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	108	311	94	75	438	43	166	343	122	34	153	116
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	5	5	5	2	2	2	6	6	6
Cap, veh/h	351	852	722	446	692	68	499	499	177	286	687	579
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	983	2012	1705	957	1636	161	1108	1316	468	897	1811	1529
Grp Volume(v), veh/h	108	311	94	75	0	481	166	0	465	34	153	116
Grp Sat Flow(s),veh/h/ln	983	2012	1705	957	0	1797	1108	0	1784	897	1811	1529
Q Serve(g_s), s	4.9	5.3	1.7	2.9	0.0	10.7	6.0	0.0	11.1	1.7	2.9	2.6
Cycle Q Clear(g_c), s	15.6	5.3	1.7	8.3	0.0	10.7	8.9	0.0	11.1	12.7	2.9	2.6
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	351	852	722	446	0	760	499	0	676	286	687	579
V/C Ratio(X)	0.31	0.37	0.13	0.17	0.00	0.63	0.33	0.00	0.69	0.12	0.22	0.20
Avail Cap(c_a), veh/h	518	1194	1012	609	0	1066	736	0	1058	478	1075	907
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	9.9	8.9	12.8	0.0	11.5	13.7	0.0	13.2	18.5	10.6	10.5
Incr Delay (d2), s/veh	1.0	0.6	0.2	0.4	0.0	1.9	0.8	0.0	2.7	0.4	0.3	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.0	0.5	0.6	0.0	3.7	1.4	0.0	4.0	0.3	1.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	10.5	9.1	13.1	0.0	13.4	14.5	0.0	15.8	18.9	11.0	10.9
LnGrp LOS	B	B	A	B		B	B		B	B	B	B
Approach Vol, veh/h	513			556			631			303		
Approach Delay, s/veh	12.0			13.3			15.5			11.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	26.4			24.2			26.4			24.2		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	17.6			14.7			12.7			13.1		
Green Ext Time (p_c), s	3.8			2.3			5.7			6.1		
Intersection Summary												
HCM 7th Control Delay, s/veh	13.4											
HCM 7th LOS	B											

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	199	28	24	65	21
Future Volume (vph)	49	199	28	24	65	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-6%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1	1		2	2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	5%	5%	12%	12%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	8.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	199	28	24	65	21
Future Vol, veh/h	49	199	28	24	65	21
Conflicting Peds, #/hr	1	1	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-6	-	-	4
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	5	5	12	12
Mvmt Flow	58	237	33	29	77	25
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	230	51	0	0	64	0
Stage 1	50	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	7.23	6.63	-	-	4.22	-
Critical Hdwy Stg 1	6.23	-	-	-	-	-
Critical Hdwy Stg 2	6.23	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.308	-
Pot Cap-1 Maneuver	718	1009	-	-	1477	-
Stage 1	960	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	678	1006	-	-	1474	-
Mov Cap-2 Maneuver	678	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	10.77	0		5.73		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	918	1474	-	
HCM Lane V/C Ratio	-	-	0.321	0.052	-	
HCM Ctrl Dly (s/v)	-	-	10.8	7.6	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-AM-NAH] S Olympia St/W 45th Ave (2040 No Action - AM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2040 No Action - AM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-AM-NAH] S Olympia St/W 45th Ave (2040 No Action - AM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2040 No Action - AM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] ft				mph
South: S Olympia St															
3	L2	All MCs	34	9.0	34	9.0	0.141	4.5	LOS A	0.6	16.1	0.31	0.16	0.31	32.3
8	T1	All MCs	101	9.0	101	9.0	0.141	4.5	LOS A	0.6	16.1	0.31	0.16	0.31	33.0
18	R2	All MCs	18	9.0	18	9.0	0.141	4.5	LOS A	0.6	16.1	0.31	0.16	0.31	32.7
Approach			153	9.0	153	9.0	0.141	4.5	LOS A	0.6	16.1	0.31	0.16	0.31	32.8
East: W 45th Ave															
1u	U	All MCs	1	5.0	1	5.0	0.249	5.7	LOS A	1.2	31.2	0.41	0.24	0.41	32.0
1	L2	All MCs	45	5.0	45	5.0	0.249	5.7	LOS A	1.2	31.2	0.41	0.24	0.41	32.0
6	T1	All MCs	121	5.0	121	5.0	0.249	5.7	LOS A	1.2	31.2	0.41	0.24	0.41	32.6
16	R2	All MCs	96	5.0	96	5.0	0.249	5.7	LOS A	1.2	31.2	0.41	0.24	0.41	32.4
Approach			264	5.0	264	5.0	0.249	5.7	LOS A	1.2	31.2	0.41	0.24	0.41	32.4
North: S Olympia St															
7	L2	All MCs	34	13.0	34	13.0	0.158	5.2	LOS A	0.6	17.7	0.38	0.22	0.38	31.9
4	T1	All MCs	99	13.0	99	13.0	0.158	5.2	LOS A	0.6	17.7	0.38	0.22	0.38	32.6
14	R2	All MCs	20	13.0	20	13.0	0.158	5.2	LOS A	0.6	17.7	0.38	0.22	0.38	32.3
Approach			153	13.0	153	13.0	0.158	5.2	LOS A	0.6	17.7	0.38	0.22	0.38	32.4
West: W 45th Ave															
5	L2	All MCs	54	8.0	54	8.0	0.129	4.6	LOS A	0.5	14.3	0.36	0.20	0.36	32.0
2	T1	All MCs	44	8.0	44	8.0	0.129	4.6	LOS A	0.5	14.3	0.36	0.20	0.36	32.6
12	R2	All MCs	35	8.0	35	8.0	0.129	4.6	LOS A	0.5	14.3	0.36	0.20	0.36	32.3
Approach			133	8.0	133	8.0	0.129	4.6	LOS A	0.5	14.3	0.36	0.20	0.36	32.3
All Vehicles			702	8.2	702	8.2	0.249	5.1	LOS A	1.2	31.2	0.37	0.21	0.37	32.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 11 | Copyright © 2000-2026 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: TENW | Licence: PLUS / 1PC | Processed: Wednesday, April 8, 2026 8:41:18 AM

Project: T:\Active Projects\Pringle Project (Kennewick) - 2026-079\Planning\LOS\Pringle Project.sipx

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	69	12	1	191	26	1
Future Volume (vph)	69	12	1	191	26	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-5%	
Link Speed (mph)	40			40	25	
Link Distance (ft)	143			195	222	
Travel Time (s)	2.4			3.3	6.1	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	16%	4%	4%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	69	12	1	191	26	1
Future Vol, veh/h	69	12	1	191	26	1
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	-5	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	16	4	4	0	0
Mvmt Flow	77	13	1	212	29	1
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	94	0	302	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	214	-
Critical Hdwy	-	-	4.14	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1488	-	755	989
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	877	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1482	-	751	985
Mov Cap-2 Maneuver	-	-	-	-	751	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	876	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.04		9.95		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	758	-	-	9	-	
HCM Lane V/C Ratio	0.04	-	-	0.001	-	
HCM Ctrl Dly (s/v)	9.9	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	48	22	1	78	0	93	0	13	1	0	4
Future Volume (vph)	1	48	22	1	78	0	93	0	13	1	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			30	
Link Distance (ft)		127			138			199			148	
Travel Time (s)		2.2			2.4			3.9			3.4	
Confl. Peds. (#/hr)	1		3	3		1			3	3		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	15%	15%	15%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	48	22	1	78	0	93	0	13	1	0	4
Future Vol, veh/h	1	48	22	1	78	0	93	0	13	1	0	4
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	15	15	15	8	8	8	3	3	3	2	2	2
Mvmt Flow	1	56	26	1	91	0	108	0	15	1	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	92	0	0	84	0	0	167	168	75	155	181	92
Stage 1	-	-	-	-	-	-	74	74	-	94	94	-
Stage 2	-	-	-	-	-	-	93	94	-	61	87	-
Critical Hdwy	4.25	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1425	-	-	1475	-	-	795	723	984	811	713	966
Stage 1	-	-	-	-	-	-	933	831	-	913	817	-
Stage 2	-	-	-	-	-	-	911	815	-	950	823	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1424	-	-	1471	-	-	788	719	979	794	709	965
Mov Cap-2 Maneuver	-	-	-	-	-	-	788	719	-	794	709	-
Stage 1	-	-	-	-	-	-	929	828	-	911	816	-
Stage 2	-	-	-	-	-	-	906	814	-	932	820	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.11			0.09			10.26			8.92		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	807	24	-	-	23	-	-	925
HCM Lane V/C Ratio	0.153	0.001	-	-	0.001	-	-	0.006
HCM Ctrl Dly (s/v)	10.3	7.5	0	-	7.4	0	-	8.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	8	0	0	0	7	0	0
Future Volume (vph)	1	0	0	0	0	8	0	0	0	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			-4%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	40%	40%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 7.1
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	0	0	0	8	0	0	0	7	0	0
Future Vol, veh/h	1	0	0	0	0	8	0	0	0	7	0	0
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	40	40	40
Mvmt Flow	2	0	0	0	0	16	0	0	0	14	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.2	6.4	0	7.9
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	0%	100%
Vol Thru, %	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	1	8	7
LT Vol	0	1	0	7
Through Vol	0	0	0	0
RT Vol	0	0	8	0
Lane Flow Rate	0	2	16	14
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.002	0.015	0.019
Departure Headway (Hd)	3.941	4.135	3.325	4.811
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	867	1078	748
Service Time	1.949	2.15	1.339	2.813
HCM Lane V/C Ratio	0	0.002	0.015	0.019
HCM Control Delay, s/veh	6.9	7.2	6.4	7.9
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0	0	0.1

Lanes, Volumes, Timings
7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	4	1	80	20	1
Future Volume (vph)	9	4	1	80	20	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			124	124	
Travel Time (s)	5.0			2.4	2.4	
Confl. Peds. (#/hr)		2	4			4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	20%	20%	2%	2%	13%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	4	1	80	20	1
Future Vol, veh/h	9	4	1	80	20	1
Conflicting Peds, #/hr	0	2	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	20	20	2	2	13	13
Mvmt Flow	11	5	1	94	24	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	125	30	29	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.6	6.4	4.12	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.48	2.218	-	-	-
Pot Cap-1 Maneuver	829	995	1585	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	822	989	1579	-	-	-
Mov Cap-2 Maneuver	822	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	9.23	0.09		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	22	-	867	-	-	
HCM Lane V/C Ratio	0.001	-	0.018	-	-	
HCM Ctrl Dly (s/v)	7.3	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

2040 No Action PM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	433	132	106	400	53	143	278	106	111	358	98
Future Volume (vph)	127	433	132	106	400	53	143	278	106	111	358	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 50.6

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

 Ø2	 Ø4
35 s	35 s
 Ø6	 Ø8
35 s	35 s

Exhibit 13

HCM 7th Signalized Intersection Summary 1: S Olympia St & W 27th Ave

04/08/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	433	132	106	400	53	143	278	106	111	358	98
Future Volume (veh/h)	127	433	132	106	400	53	143	278	106	111	358	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2003	2003	2003	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	128	437	133	107	404	54	144	281	107	112	362	99
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	365	855	724	354	690	92	363	512	195	356	742	627
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1000	2003	1695	842	1615	216	938	1300	495	1003	1885	1594
Grp Volume(v), veh/h	128	437	133	107	0	458	144	0	388	112	362	99
Grp Sat Flow(s),veh/h/ln	1000	2003	1695	842	0	1831	938	0	1795	1003	1885	1594
Q Serve(g_s), s	6.3	8.9	2.7	5.9	0.0	10.7	7.6	0.0	9.3	5.4	8.0	2.2
Cycle Q Clear(g_c), s	16.9	8.9	2.7	14.9	0.0	10.7	15.6	0.0	9.3	14.7	8.0	2.2
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	365	855	724	354	0	782	363	0	706	356	742	627
V/C Ratio(X)	0.35	0.51	0.18	0.30	0.00	0.59	0.40	0.00	0.55	0.31	0.49	0.16
Avail Cap(c_a), veh/h	476	1078	913	448	0	986	499	0	966	501	1015	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	11.7	9.9	17.2	0.0	12.2	18.5	0.0	13.1	18.8	12.7	10.9
Incr Delay (d2), s/veh	1.2	1.0	0.3	1.0	0.0	1.5	1.5	0.0	1.4	1.1	1.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.5	0.9	1.1	0.0	3.8	1.6	0.0	3.4	1.2	3.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.9	12.7	10.2	18.2	0.0	13.7	20.0	0.0	14.5	19.8	13.7	11.2
LnGrp LOS	B	B	B	B		B	C		B	B	B	B
Approach Vol, veh/h	698			565			532			573		
Approach Delay, s/veh	13.5			14.5			16.0			14.5		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	28.8			26.9			28.8			26.9		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	18.9			16.7			16.9			17.6		
Green Ext Time (p_c), s	4.9			4.5			4.9			4.3		
Intersection Summary												
HCM 7th Control Delay, s/veh	14.6											
HCM 7th LOS	B											

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	38	127	21	66	249	34
Future Volume (vph)	38	127	21	66	249	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-4%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	7.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	127	21	66	249	34
Future Vol, veh/h	38	127	21	66	249	34
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	41	137	23	71	268	37
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	631	58	0	0	94	0
Stage 1	58	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	7.21	6.61	-	-	4.11	-
Critical Hdwy Stg 1	6.21	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	388	1004	-	-	1507	-
Stage 1	955	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	319	1004	-	-	1507	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	12.27	0		6.95		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR WBLn1		SBL	SBT	
Capacity (veh/h)	-	-	672	1507	-	
HCM Lane V/C Ratio	-	-	0.264	0.178	-	
HCM Ctrl Dly (s/v)	-	-	12.3	7.9	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	1.1	0.6	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-PM-NAH] S Olympia St/W 45th Ave (2040 No Action - PM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2040 No Action - PM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-PM-NAH] S Olympia St/W 45th Ave (2040 No Action - PM Peak Hour)

Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2040 No Action - PM Peak Hour
Roundabout

Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]		Rate to Depart		mph
South: S Olympia St															
3	L2	All MCs	54	2.0	54	2.0	0.397	8.0	LOS A	2.2	55.6	0.56	0.38	0.56	31.2
8	T1	All MCs	264	2.0	264	2.0	0.397	8.0	LOS A	2.2	55.6	0.56	0.38	0.56	31.7
18	R2	All MCs	73	2.0	73	2.0	0.397	8.0	LOS A	2.2	55.6	0.56	0.38	0.56	31.5
Approach			391	2.0	391	2.0	0.397	8.0	LOS A	2.2	55.6	0.56	0.38	0.56	31.6
East: W 45th Ave															
1	L2	All MCs	28	3.0	28	3.0	0.175	5.6	LOS A	0.8	19.5	0.50	0.36	0.50	32.1
6	T1	All MCs	64	3.0	64	3.0	0.175	5.6	LOS A	0.8	19.5	0.50	0.36	0.50	32.7
16	R2	All MCs	67	3.0	67	3.0	0.175	5.6	LOS A	0.8	19.5	0.50	0.36	0.50	32.5
Approach			160	3.0	160	3.0	0.175	5.6	LOS A	0.8	19.5	0.50	0.36	0.50	32.5
North: S Olympia St															
7u	U	All MCs	1	0.0	1	0.0	0.234	5.1	LOS A	1.2	30.1	0.35	0.18	0.35	32.0
7	L2	All MCs	109	0.0	109	0.0	0.234	5.1	LOS A	1.2	30.1	0.35	0.18	0.35	32.0
4	T1	All MCs	108	0.0	108	0.0	0.234	5.1	LOS A	1.2	30.1	0.35	0.18	0.35	32.6
14	R2	All MCs	60	0.0	60	0.0	0.234	5.1	LOS A	1.2	30.1	0.35	0.18	0.35	32.3
Approach			277	0.0	277	0.0	0.234	5.1	LOS A	1.2	30.1	0.35	0.18	0.35	32.3
West: W 45th Ave															
5u	U	All MCs	1	1.0	1	1.0	0.233	5.5	LOS A	1.1	28.6	0.44	0.27	0.44	32.2
5	L2	All MCs	41	1.0	41	1.0	0.233	5.5	LOS A	1.1	28.6	0.44	0.27	0.44	32.2
2	T1	All MCs	152	1.0	152	1.0	0.233	5.5	LOS A	1.1	28.6	0.44	0.27	0.44	32.8
12	R2	All MCs	52	1.0	52	1.0	0.233	5.5	LOS A	1.1	28.6	0.44	0.27	0.44	32.6
Approach			247	1.0	247	1.0	0.233	5.5	LOS A	1.1	28.6	0.44	0.27	0.44	32.7
All Vehicles			1075	1.4	1075	1.4	0.397	6.3	LOS A	2.2	55.6	0.47	0.30	0.47	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c >1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	257	32	3	123	15	3
Future Volume (vph)	257	32	3	123	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	40			40	25	
Link Distance (ft)	143			195	222	
Travel Time (s)	2.4			3.3	6.1	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	257	32	3	123	15	3
Future Vol, veh/h	257	32	3	123	15	3
Conflicting Peds, #/hr	0	2	2	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	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	282	35	3	135	16	3
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	320	0	444	302
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1246	-	575	742
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1244	-	573	741
Mov Cap-2 Maneuver	-	-	-	-	573	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	888	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.19		11.26		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	595	-	-	43	-	
HCM Lane V/C Ratio	0.033	-	-	0.003	-	
HCM Ctrl Dly (s/v)	11.3	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	132	113	11	67	0	49	0	7	0	0	0
Future Volume (vph)	1	132	113	11	67	0	49	0	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		127			138			199			177	
Travel Time (s)		2.2			2.4			3.9			4.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.92	0.89	0.92	0.89	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%	0%	2%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	132	113	11	67	0	49	0	7	0	0	0
Future Vol, veh/h	1	132	113	11	67	0	49	0	7	0	0	0
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	89	89	89	89	92	89	92	89	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2	0	2	0	2	2	2
Mvmt Flow	1	148	127	12	75	0	55	0	8	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	277	0	0	316	316	214	250	379	75
Stage 1	-	-	-	-	-	-	216	216	-	100	100	-
Stage 2	-	-	-	-	-	-	100	100	-	150	279	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1524	-	-	1286	-	-	641	600	831	703	553	986
Stage 1	-	-	-	-	-	-	791	724	-	906	812	-
Stage 2	-	-	-	-	-	-	911	812	-	852	679	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1524	-	-	1283	-	-	632	592	830	689	546	986
Mov Cap-2 Maneuver	-	-	-	-	-	-	632	592	-	689	546	-
Stage 1	-	-	-	-	-	-	789	722	-	897	804	-
Stage 2	-	-	-	-	-	-	902	804	-	843	678	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.03			1.1			11.11			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	652	6	-	-	254	-	-	-
HCM Lane V/C Ratio	0.097	0.001	-	-	0.01	-	-	-
HCM Ctrl Dly (s/v)	11.1	7.4	0	-	7.8	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	0	5	0	0	1	13	0	0
Future Volume (vph)	0	0	0	1	0	5	0	0	1	13	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 6.9
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	5	0	0	1	13	0	0
Future Vol, veh/h	0	0	0	1	0	5	0	0	1	13	0	0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	1	0	7	0	0	1	19	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	0	6.5	6.3	7.2
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	17%	100%
Vol Thru, %	0%	100%	0%	0%
Vol Right, %	100%	0%	83%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	0	6	13
LT Vol	0	0	1	13
Through Vol	0	0	0	0
RT Vol	1	0	5	0
Lane Flow Rate	1	0	9	19
Geometry Grp	1	1	1	1
Degree of Util (X)	0.001	0	0.009	0.022
Departure Headway (Hd)	3.33	3.942	3.468	4.117
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	1079	0	1035	874
Service Time	1.336	1.953	1.478	2.119
HCM Lane V/C Ratio	0.001	0	0.009	0.022
HCM Control Delay, s/veh	6.3	7	6.5	7.2
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0	0	0	0.1

Lanes, Volumes, Timings
7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	4	1	45	100	5
Future Volume (vph)	0	4	1	45	100	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			124	124	
Travel Time (s)	5.0			2.4	2.4	
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	1	45	100	5
Future Vol, veh/h	0	4	1	45	100	5
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	0	5	1	54	120	6
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	181	123	127	0	-	0
Stage 1	123	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	813	933	1472	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	812	933	1472	-	-	-
Mov Cap-2 Maneuver	812	-	-	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	8.88	0.16		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	39	-	933	-	-	
HCM Lane V/C Ratio	0.001	-	0.005	-	-	
HCM Ctrl Dly (s/v)	7.4	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	



2040 With Project AM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/13/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	274	92	71	385	38	172	367	119	30	159	102
Future Volume (vph)	95	274	92	71	385	38	172	367	119	30	159	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	2%	2%	2%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 57.8

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

 Ø2	 Ø4
35 s	35 s
 Ø6	 Ø8
35 s	35 s

HCM 7th Signalized Intersection Summary
1: S Olympia St & W 27th Ave

04/13/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	274	92	71	385	38	172	367	119	30	159	102
Future Volume (veh/h)	95	274	92	71	385	38	172	367	119	30	159	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2012	2012	2012	1826	1826	1826	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	108	311	105	81	438	43	195	417	135	34	181	116
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	5	5	5	2	2	2	6	6	6
Cap, veh/h	321	828	702	416	673	66	501	555	180	251	744	628
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	983	2012	1705	947	1636	161	1080	1352	438	829	1811	1529
Grp Volume(v), veh/h	108	311	105	81	0	481	195	0	552	34	181	116
Grp Sat Flow(s),veh/h/ln	983	2012	1705	947	0	1797	1080	0	1790	829	1811	1529
Q Serve(g_s), s	5.6	6.0	2.2	3.7	0.0	12.1	8.1	0.0	14.8	2.0	3.7	2.7
Cycle Q Clear(g_c), s	17.7	6.0	2.2	9.7	0.0	12.1	11.8	0.0	14.8	16.8	3.7	2.7
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	321	828	702	416	0	739	501	0	735	251	744	628
V/C Ratio(X)	0.34	0.38	0.15	0.19	0.00	0.65	0.39	0.00	0.75	0.14	0.24	0.18
Avail Cap(c_a), veh/h	442	1075	911	532	0	960	634	0	956	353	967	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	11.5	10.4	14.9	0.0	13.3	14.7	0.0	14.1	21.3	10.8	10.6
Incr Delay (d2), s/veh	1.3	0.6	0.2	0.5	0.0	2.1	1.1	0.0	3.9	0.5	0.4	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.4	0.7	0.7	0.0	4.4	1.8	0.0	5.7	0.4	1.3	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.7	12.1	10.6	15.4	0.0	15.4	15.8	0.0	18.0	21.8	11.2	10.9
LnGrp LOS	C	B	B	B		B	B		B	C	B	B
Approach Vol, veh/h	524			562			747			331		
Approach Delay, s/veh	13.8			15.4			17.4			12.2		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	28.1			28.1			28.1			28.1		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	19.7			18.8			14.1			16.8		
Green Ext Time (p_c), s	3.5			2.2			5.5			6.3		
Intersection Summary												
HCM 7th Control Delay, s/veh				15.2								
HCM 7th LOS				B								

Lanes, Volumes, Timings
2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	302	28	24	103	21
Future Volume (vph)	49	302	28	24	103	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-6%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1	1		2	2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	3%	5%	5%	12%	12%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	9.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	302	28	24	103	21
Future Vol, veh/h	49	302	28	24	103	21
Conflicting Peds, #/hr	1	1	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-6	-	-	4
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	3	5	5	12	12
Mvmt Flow	58	360	33	29	123	25
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	321	51	0	0	64	0
Stage 1	50	-	-	-	-	-
Stage 2	271	-	-	-	-	-
Critical Hdwy	7.23	6.63	-	-	4.22	-
Critical Hdwy Stg 1	6.23	-	-	-	-	-
Critical Hdwy Stg 2	6.23	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.308	-
Pot Cap-1 Maneuver	624	1009	-	-	1477	-
Stage 1	960	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	571	1006	-	-	1474	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	12.28	0		6.37		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	909	1474	-	
HCM Lane V/C Ratio	-	-	0.46	0.083	-	
HCM Ctrl Dly (s/v)	-	-	12.3	7.7	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	2.5	0.3	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-AM-WPH] S Olympia St/W 45th Ave (2040 With
Project- AM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2040 With Project - AM Peak Hour
Roundabout
Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-AM-WPH] S Olympia St/W 45th Ave (2040 With Project- AM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
 Site Category: 2040 With Project - AM Peak Hour
 Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	Dist] ft				mph
South: S Olympia St															
3	L2	All MCs	60	9.0	60	9.0	0.210	5.6	LOS A	0.9	24.9	0.41	0.24	0.41	31.7
8	T1	All MCs	127	9.0	127	9.0	0.210	5.6	LOS A	0.9	24.9	0.41	0.24	0.41	32.4
18	R2	All MCs	22	9.0	22	9.0	0.210	5.6	LOS A	0.9	24.9	0.41	0.24	0.41	32.1
Approach			209	9.0	209	9.0	0.210	5.6	LOS A	0.9	24.9	0.41	0.24	0.41	32.2
East: W 45th Ave															
1u	U	All MCs	1	5.0	1	5.0	0.469	9.0	LOS A	2.8	72.3	0.58	0.37	0.58	30.7
1	L2	All MCs	58	5.0	58	5.0	0.469	9.0	LOS A	2.8	72.3	0.58	0.37	0.58	30.7
6	T1	All MCs	216	5.0	216	5.0	0.469	9.0	LOS A	2.8	72.3	0.58	0.37	0.58	31.3
16	R2	All MCs	192	5.0	192	5.0	0.469	9.0	LOS A	2.8	72.3	0.58	0.37	0.58	31.0
Approach			467	5.0	467	5.0	0.469	9.0	LOS A	2.8	72.3	0.58	0.37	0.58	31.1
North: S Olympia St															
7	L2	All MCs	69	13.0	69	13.0	0.240	6.9	LOS A	1.0	27.1	0.51	0.36	0.51	30.9
4	T1	All MCs	108	13.0	108	13.0	0.240	6.9	LOS A	1.0	27.1	0.51	0.36	0.51	31.6
14	R2	All MCs	20	13.0	20	13.0	0.240	6.9	LOS A	1.0	27.1	0.51	0.36	0.51	31.3
Approach			198	13.0	198	13.0	0.240	6.9	LOS A	1.0	27.1	0.51	0.36	0.51	31.3
West: W 45th Ave															
5	L2	All MCs	54	8.0	54	8.0	0.184	5.5	LOS A	0.8	21.0	0.43	0.27	0.43	31.8
2	T1	All MCs	79	8.0	79	8.0	0.184	5.5	LOS A	0.8	21.0	0.43	0.27	0.43	32.4
12	R2	All MCs	45	8.0	45	8.0	0.184	5.5	LOS A	0.8	21.0	0.43	0.27	0.43	32.1
Approach			178	8.0	178	8.0	0.184	5.5	LOS A	0.8	21.0	0.43	0.27	0.43	32.1
All Vehicles			1052	7.8	1052	7.8	0.469	7.3	LOS A	2.8	72.3	0.51	0.33	0.51	31.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 11 | Copyright © 2000-2026 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: TENW | Licence: PLUS / 1PC | Processed: Wednesday, April 8, 2026 8:41:33 AM
 Project: T:\Active Projects\Pringle Project (Kennewick) - 2026-079\Planning\LOS\Pringle Project.sipx

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	100	35	1	256	88	1
Future Volume (vph)	100	35	1	256	88	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	-5%	
Link Speed (mph)	40			40	25	
Link Distance (ft)	325			195	222	
Travel Time (s)	5.5			3.3	6.1	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	16%	4%	4%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	35	1	256	88	1
Future Vol, veh/h	100	35	1	256	88	1
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	-5	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	16	4	4	0	0
Mvmt Flow	111	39	1	284	98	1
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	154	0	421	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	287	-
Critical Hdwy	-	-	4.14	-	5.4	5.7
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1414	-	666	937
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	830	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1409	-	663	934
Mov Cap-2 Maneuver	-	-	-	-	663	-
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	829	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.03		11.35		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	665	-	-	7	-	
HCM Lane V/C Ratio	0.149	-	-	0.001	-	
HCM Ctrl Dly (s/v)	11.4	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	56	45	8	81	0	155	0	31	1	0	4
Future Volume (vph)	1	56	45	8	81	0	155	0	31	1	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			30	
Link Distance (ft)		127			138			199			148	
Travel Time (s)		2.2			2.4			3.9			3.4	
Confl. Peds. (#/hr)	1		3	3		1			3	3		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	15%	15%	15%	8%	8%	8%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	56	45	8	81	0	155	0	31	1	0	4
Future Vol, veh/h	1	56	45	8	81	0	155	0	31	1	0	4
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	15	15	15	8	8	8	3	3	3	2	2	2
Mvmt Flow	1	65	52	9	94	0	180	0	36	1	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	95	0	0	120	0	0	209	210	97	184	237	95
Stage 1	-	-	-	-	-	-	97	97	-	114	114	-
Stage 2	-	-	-	-	-	-	113	114	-	70	123	-
Critical Hdwy	4.25	-	-	4.18	-	-	7.13	6.53	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.272	-	-	3.527	4.027	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1421	-	-	1431	-	-	746	685	956	777	664	961
Stage 1	-	-	-	-	-	-	908	813	-	891	801	-
Stage 2	-	-	-	-	-	-	890	799	-	939	794	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1420	-	-	1427	-	-	734	677	951	739	657	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	734	677	-	739	657	-
Stage 1	-	-	-	-	-	-	904	810	-	884	795	-
Stage 2	-	-	-	-	-	-	879	793	-	900	791	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.07			0.68			11.57			9		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	763	16	-	-	162	-	-	906
HCM Lane V/C Ratio	0.283	0.001	-	-	0.007	-	-	0.006
HCM Ctrl Dly (s/v)	11.6	7.5	0	-	7.5	0	-	9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	3	0	0	1	8	0	62	0	7	23	0
Future Volume (vph)	1	3	0	0	1	8	0	62	0	7	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			-4%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	40%	40%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 7.8
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	3	0	0	1	8	0	62	0	7	23	0
Future Vol, veh/h	1	3	0	0	1	8	0	62	0	7	23	0
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	40	40	40
Mvmt Flow	2	6	0	0	2	16	0	124	0	14	46	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.4	6.9	7.7	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	25%	0%	23%
Vol Thru, %	100%	75%	11%	77%
Vol Right, %	0%	0%	89%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	4	9	30
LT Vol	0	1	0	7
Through Vol	62	3	1	23
RT Vol	0	0	8	0
Lane Flow Rate	124	8	18	60
Geometry Grp	1	1	1	1
Degree of Util (X)	0.137	0.01	0.019	0.079
Departure Headway (Hd)	3.99	4.383	3.79	4.765
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	897	821	950	751
Service Time	2.023	2.384	1.79	2.8
HCM Lane V/C Ratio	0.138	0.01	0.019	0.08
HCM Control Delay, s/veh	7.7	7.4	6.9	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0	0.1	0.3

Lanes, Volumes, Timings
 7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	4	1	157	49	2
Future Volume (vph)	12	4	1	157	49	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			323	124	
Travel Time (s)	5.0			6.3	2.4	
Confl. Peds. (#/hr)		2	4			4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	20%	20%	2%	2%	13%	13%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	4	1	157	49	2
Future Vol, veh/h	12	4	1	157	49	2
Conflicting Peds, #/hr	0	2	4	0	0	4
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	20	20	2	2	13	13
Mvmt Flow	14	5	1	185	58	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	250	65	64	0	-	0
Stage 1	63	-	-	-	-	-
Stage 2	187	-	-	-	-	-
Critical Hdwy	6.6	6.4	4.12	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.48	2.218	-	-	-
Pot Cap-1 Maneuver	701	951	1538	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	695	946	1533	-	-	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	9.96	0.05		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	11	-	744	-	-	
HCM Lane V/C Ratio	0.001	-	0.025	-	-	
HCM Ctrl Dly (s/v)	7.4	0	10	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Exhibit 13

Lanes, Volumes, Timings

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	137	8	1	374	1	21	0	4	1	0	0
Future Volume (vph)	0	137	8	1	374	1	21	0	4	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		179			636			95			77	
Travel Time (s)		3.1			10.8			2.6			2.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	18%	18%	18%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	137	8	1	374	1	21	0	4	1	0	0
Future Vol, veh/h	0	137	8	1	374	1	21	0	4	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	18	18	18	5	5	5	3	3	3	0	0	0
Mvmt Flow	0	149	9	1	407	1	23	0	4	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	158	0	0	562	563	153	558	567	407
Stage 1	-	-	-	-	-	-	153	153	-	409	409	-
Stage 2	-	-	-	-	-	-	409	410	-	149	158	-
Critical Hdwy	4.28	-	-	4.15	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.362	-	-	2.245	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1070	-	-	1404	-	-	436	434	890	443	436	648
Stage 1	-	-	-	-	-	-	847	769	-	623	599	-
Stage 2	-	-	-	-	-	-	618	594	-	858	771	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1070	-	-	1404	-	-	436	433	890	441	435	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	433	-	441	435	-
Stage 1	-	-	-	-	-	-	847	769	-	623	599	-
Stage 2	-	-	-	-	-	-	617	593	-	854	771	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.02			13.05			13.19		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	474	1070	-	-	5	-	-	441
HCM Lane V/C Ratio	0.057	-	-	-	0.001	-	-	0.002
HCM Ctrl Dly (s/v)	13	0	-	-	7.6	0	-	13.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings

9: East Site Access/S Kent St & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	129	10	2	340	0	28	0	4	1	0	8
Future Volume (vph)	3	129	10	2	340	0	28	0	4	1	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		636			325			81			90	
Travel Time (s)		10.8			5.5			2.2			2.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	18%	18%	18%	5%	5%	5%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
9: East Site Access/S Kent St & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	129	10	2	340	0	28	0	4	1	0	8
Future Vol, veh/h	3	129	10	2	340	0	28	0	4	1	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	18	18	18	5	5	5	3	3	3	0	0	0
Mvmt Flow	3	140	11	2	370	0	30	0	4	1	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	370	0	0	151	0	0	526	526	146	521	532	370
Stage 1	-	-	-	-	-	-	152	152	-	374	374	-
Stage 2	-	-	-	-	-	-	374	374	-	147	158	-
Critical Hdwy	4.28	-	-	4.15	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.362	-	-	2.245	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1106	-	-	1412	-	-	461	455	899	469	456	681
Stage 1	-	-	-	-	-	-	848	770	-	651	621	-
Stage 2	-	-	-	-	-	-	645	616	-	861	771	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1106	-	-	1412	-	-	453	453	899	465	454	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	453	453	-	465	454	-
Stage 1	-	-	-	-	-	-	845	767	-	650	620	-
Stage 2	-	-	-	-	-	-	635	615	-	854	769	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.17			0.04			13.04			10.65		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	483	37	-	-	11	-	-	647
HCM Lane V/C Ratio	0.072	0.003	-	-	0.002	-	-	0.015
HCM Ctrl Dly (s/v)	13	8.3	0	-	7.6	0	-	10.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings

10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	0	0	0	0	19	0	100	0	5	33	15
Future Volume (vph)	39	0	0	0	0	19	0	100	0	5	33	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		130			112			817			323	
Travel Time (s)		3.5			3.1			15.9			6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	2%	2%	2%	22%	22%	22%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	0	0	0	0	19	0	100	0	5	33	15
Future Vol, veh/h	39	0	0	0	0	19	0	100	0	5	33	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	2	2	2	22	22	22
Mvmt Flow	42	0	0	0	0	21	0	109	0	5	36	16

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	164	164	44	155	172	109	52	0
Stage 1	55	55	-	109	109	-	-	-
Stage 2	109	109	-	47	63	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.7	7.1	6.5	4.12	-
Critical Hdwy Stg 1	6.13	5.53	-	6.7	6.1	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.7	6.1	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.218	-
Pot Cap-1 Maneuver	799	727	1023	795	705	942	1554	-
Stage 1	955	847	-	885	795	-	-	-
Stage 2	894	803	-	964	837	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	778	724	1023	792	702	942	1554	-
Mov Cap-2 Maneuver	778	724	-	792	702	-	-	-
Stage 1	951	844	-	885	795	-	-	-
Stage 2	875	803	-	961	834	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.89	8.91	0	0.72
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1554	-	-	778	942	160	-	-
HCM Lane V/C Ratio	-	-	-	0.054	0.022	0.004	-	-
HCM Ctrl Dly (s/v)	0	-	-	9.9	8.9	7.6	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Exhibit 13

Lanes, Volumes, Timings

11: S Garfield St & South Site Access/S Dayton St

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	0	0	1	0	13	0	49	1	7	12	14
Future Volume (vph)	38	0	0	1	0	13	0	49	1	7	12	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			5%			-3%			3%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		173			161			143			817	
Travel Time (s)		4.7			4.4			2.8			15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	31%	31%	31%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
11: S Garfield St & South Site Access/S Dayton St

04/08/2026

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	0	0	1	0	13	0	49	1	7	12	14
Future Vol, veh/h	38	0	0	1	0	13	0	49	1	7	12	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	5	-	-	-3	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	3	3	3	31	31	31
Mvmt Flow	41	0	0	1	0	14	0	53	1	8	13	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	89	90	21	82	97	54	28	0	0	54	0	0
Stage 1	36	36	-	54	54	-	-	-	-	-	-	-
Stage 2	53	54	-	28	43	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	8.1	7.5	6.7	4.13	-	-	4.41	-	-
Critical Hdwy Stg 1	6.13	5.53	-	7.1	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	7.1	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.227	-	-	2.479	-	-
Pot Cap-1 Maneuver	893	798	1054	890	775	1012	1579	-	-	1384	-	-
Stage 1	977	863	-	949	841	-	-	-	-	-	-	-
Stage 2	957	848	-	986	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	876	793	1054	885	771	1012	1579	-	-	1384	-	-
Mov Cap-2 Maneuver	876	793	-	885	771	-	-	-	-	-	-	-
Stage 1	972	858	-	949	841	-	-	-	-	-	-	-
Stage 2	943	848	-	981	848	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	9.31			8.65			0			1.62		
HCM LOS	A			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1579	-	-	876	1001	345	-	-
HCM Lane V/C Ratio	-	-	-	0.047	0.015	0.005	-	-
HCM Ctrl Dly (s/v)	0	-	-	9.3	8.7	7.6	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Exhibit 13

Lanes, Volumes, Timings

12: S Olympia St & W 47th St/South Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	2	10	0	21	4	129	4	8	165	2
Future Volume (vph)	4	0	2	10	0	21	4	129	4	8	165	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			-4%			3%	
Storage Length (ft)	0		0	0		0	50		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		271			207			220			297	
Travel Time (s)		7.4			5.6			3.8			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	10%	10%	10%	10%	10%	10%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
12: S Olympia St & W 47th St/South Site Access

04/08/2026

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	2	10	0	21	4	129	4	8	165	2
Future Vol, veh/h	4	0	2	10	0	21	4	129	4	8	165	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	0	-	-	-4	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	3	10	10	10	10	10	10
Mvmt Flow	4	0	2	11	0	23	4	140	4	9	179	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	347	351	180	348	350	142	182	0	0	145	0	0
Stage 1	198	198	-	151	151	-	-	-	-	-	-	-
Stage 2	149	153	-	197	199	-	-	-	-	-	-	-
Critical Hdwy	6.3	5.7	5.8	7.13	6.53	6.23	4.2	-	-	4.2	-	-
Critical Hdwy Stg 1	5.3	4.7	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	4.7	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4.027	3.327	2.29	-	-	2.29	-	-
Pot Cap-1 Maneuver	660	623	885	605	573	903	1347	-	-	1390	-	-
Stage 1	845	774	-	849	770	-	-	-	-	-	-	-
Stage 2	887	801	-	803	735	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	638	618	885	598	567	903	1347	-	-	1390	-	-
Mov Cap-2 Maneuver	677	637	-	645	599	-	-	-	-	-	-	-
Stage 1	840	769	-	846	768	-	-	-	-	-	-	-
Stage 2	862	799	-	796	730	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	9.94			9.7		0.22				0.35		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1347	-	-	735	800	1390	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.009	0.042	0.006	-	-				
HCM Ctrl Dly (s/v)	7.7	-	-	9.9	9.7	7.6	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

Exhibit 13

Lanes, Volumes, Timings

13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	0	5	0	23	3	149	2	8	170	1
Future Volume (vph)	4	0	0	5	0	23	3	149	2	8	170	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-3%			0%	
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		222			197			297			312	
Travel Time (s)		6.1			5.4			5.1			5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	10%	10%	10%	10%	10%	10%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	0	5	0	23	3	149	2	8	170	1
Future Vol, veh/h	4	0	0	5	0	23	3	149	2	8	170	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-3	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	3	10	10	10	10	10	10
Mvmt Flow	4	0	0	5	0	25	3	162	2	9	185	1

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	371	373	185	372	373	163	186	0
Stage 1	203	203	-	170	170	-	-	-
Stage 2	168	171	-	202	203	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.53	6.23	4.2	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.53	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.53	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4.027	3.327	2.29	-
Pot Cap-1 Maneuver	589	560	862	583	556	879	1342	-
Stage 1	804	737	-	830	756	-	-	-
Stage 2	838	761	-	797	731	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	567	555	862	578	551	879	1342	-
Mov Cap-2 Maneuver	567	555	-	632	588	-	-	-
Stage 1	798	732	-	828	755	-	-	-
Stage 2	812	759	-	792	726	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.4	9.55	0.15	0.34
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1342	-	-	567	822	80	-	-
HCM Lane V/C Ratio	0.002	-	-	0.008	0.037	0.006	-	-
HCM Ctrl Dly (s/v)	7.7	-	-	11.4	9.6	7.7	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-



2040 With Project PM Peak Hour

Exhibit 13

Lanes, Volumes, Timings

1: S Olympia St & W 27th Ave

04/13/2026

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	433	159	119	400	53	160	320	114	111	426	98
Future Volume (vph)	127	433	159	119	400	53	160	320	114	111	426	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	250		230	200		0	150		0	215		170
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		362			444			268			324	
Travel Time (s)		7.1			8.6			5.2			6.3	
Confl. Peds. (#/hr)	1		1	1		1	2					2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		20.0	20.0	20.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6		3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.4	1.4	1.4	1.4	1.4		1.4	1.4		1.4	1.4	1.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 53.7

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: S Olympia St & W 27th Ave

	Ø2		Ø4
35 s		35 s	
	Ø6		Ø8
35 s		35 s	

HCM 7th Signalized Intersection Summary
1: S Olympia St & W 27th Ave

04/13/2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	433	159	119	400	53	160	320	114	111	426	98
Future Volume (veh/h)	127	433	159	119	400	53	160	320	114	111	426	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2003	2003	2003	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	128	437	161	120	404	54	162	323	115	112	430	99
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	334	827	700	321	667	89	341	563	201	346	800	677
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1000	2003	1695	820	1615	216	881	1327	472	958	1885	1594
Grp Volume(v), veh/h	128	437	161	120	0	458	162	0	438	112	430	99
Grp Sat Flow(s),veh/h/ln	1000	2003	1695	820	0	1831	881	0	1799	958	1885	1594
Q Serve(g_s), s	7.1	10.1	3.8	7.9	0.0	12.1	10.3	0.0	11.4	6.2	10.5	2.3
Cycle Q Clear(g_c), s	19.1	10.1	3.8	18.0	0.0	12.1	20.8	0.0	11.4	17.6	10.5	2.3
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	334	827	700	321	0	756	341	0	764	346	800	677
V/C Ratio(X)	0.38	0.53	0.23	0.37	0.00	0.61	0.47	0.00	0.57	0.32	0.54	0.15
Avail Cap(c_a), veh/h	409	976	827	382	0	893	397	0	877	407	919	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	13.6	11.7	20.3	0.0	14.1	20.9	0.0	13.5	20.2	13.2	10.9
Incr Delay (d2), s/veh	1.5	1.1	0.4	1.5	0.0	1.7	2.2	0.0	1.5	1.1	1.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.1	1.3	1.5	0.0	4.6	2.1	0.0	4.2	1.4	4.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.2	14.7	12.1	21.9	0.0	15.9	23.1	0.0	14.9	21.3	14.4	11.1
LnGrp LOS	C	B	B	C		B	C		B	C	B	B
Approach Vol, veh/h	726			578			600			641		
Approach Delay, s/veh	15.6			17.1			17.1			15.1		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	30.4			31.1			30.4			31.1		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	30.0			30.0			30.0			30.0		
Max Q Clear Time (g_c+I1), s	21.1			19.6			20.0			22.8		
Green Ext Time (p_c), s	4.3			4.4			4.2			3.3		
Intersection Summary												
HCM 7th Control Delay, s/veh	16.2											
HCM 7th LOS	B											

Lanes, Volumes, Timings

2: S Ely St & W 45th Ave

04/08/2026

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	38	194	21	66	358	34
Future Volume (vph)	38	194	21	66	358	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	4%		-4%			4%
Storage Length (ft)	0	0		0	270	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	40		40			40
Link Distance (ft)	453		266			630
Travel Time (s)	7.7		4.5			10.7
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: S Ely St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	194	21	66	358	34
Future Vol, veh/h	38	194	21	66	358	34
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	270	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	41	209	23	71	385	37
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	866	58	0	0	94	0
Stage 1	58	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Critical Hdwy	7.21	6.61	-	-	4.11	-
Critical Hdwy Stg 1	6.21	-	-	-	-	-
Critical Hdwy Stg 2	6.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	268	1004	-	-	1507	-
Stage 1	955	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	200	1004	-	-	1507	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	15.07	0		7.49		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	605	1507	-	
HCM Lane V/C Ratio	-	-	0.412	0.255	-	
HCM Ctrl Dly (s/v)	-	-	15.1	8.2	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	2	1	-	

LANE LEVEL OF SERVICE

Lane Level of Service

Site: [3-PM-WPH] S Olympia St/W 45th Ave (2040 With Project - PM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
Site Category: 2040 With Project - PM Peak Hour
Roundabout
Site Scenario: 1 | Local Volumes

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	A	A	A

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c >1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

MOVEMENT SUMMARY

Site: [3-PM-WPH] S Olympia St/W 45th Ave (2040 With Project - PM Peak Hour)
Output produced by SIDRA INTERSECTION Version: 11.0.2

S Olympia St/W 45th Ave
 Site Category: 2040 With Project - PM Peak Hour
 Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist ft]				mph
South: S Olympia St															
3	L2	All MCs	70	2.0	70	2.0	0.536	12.0	LOS B	4.1	104.4	0.74	0.70	1.04	29.5
8	T1	All MCs	279	2.0	279	2.0	0.536	12.0	LOS B	4.1	104.4	0.74	0.70	1.04	30.0
18	R2	All MCs	85	2.0	85	2.0	0.536	12.0	LOS B	4.1	104.4	0.74	0.70	1.04	29.8
Approach			434	2.0	434	2.0	0.536	12.0	LOS B	4.1	104.4	0.74	0.70	1.04	29.9
East: W 45th Ave															
1	L2	All MCs	36	3.0	36	3.0	0.320	7.5	LOS A	1.5	39.5	0.58	0.43	0.58	31.4
6	T1	All MCs	122	3.0	122	3.0	0.320	7.5	LOS A	1.5	39.5	0.58	0.43	0.58	31.9
16	R2	All MCs	125	3.0	125	3.0	0.320	7.5	LOS A	1.5	39.5	0.58	0.43	0.58	31.7
Approach			283	3.0	283	3.0	0.320	7.5	LOS A	1.5	39.5	0.58	0.43	0.58	31.8
North: S Olympia St															
7u	U	All MCs	1	0.0	1	0.0	0.363	6.9	LOS A	2.1	51.5	0.49	0.30	0.49	31.0
7	L2	All MCs	202	0.0	202	0.0	0.363	6.9	LOS A	2.1	51.5	0.49	0.30	0.49	31.0
4	T1	All MCs	132	0.0	132	0.0	0.363	6.9	LOS A	2.1	51.5	0.49	0.30	0.49	31.5
14	R2	All MCs	60	0.0	60	0.0	0.363	6.9	LOS A	2.1	51.5	0.49	0.30	0.49	31.3
Approach			395	0.0	395	0.0	0.363	6.9	LOS A	2.1	51.5	0.49	0.30	0.49	31.2
West: W 45th Ave															
5u	U	All MCs	1	1.0	1	1.0	0.392	8.2	LOS A	2.1	52.8	0.60	0.43	0.60	31.2
5	L2	All MCs	41	1.0	41	1.0	0.392	8.2	LOS A	2.1	52.8	0.60	0.43	0.60	31.2
2	T1	All MCs	247	1.0	247	1.0	0.392	8.2	LOS A	2.1	52.8	0.60	0.43	0.60	31.7
12	R2	All MCs	76	1.0	76	1.0	0.392	8.2	LOS A	2.1	52.8	0.60	0.43	0.60	31.5
Approach			365	1.0	365	1.0	0.392	8.2	LOS A	2.1	52.8	0.60	0.43	0.60	31.6
All Vehicles			1476	1.4	1476	1.4	0.536	8.9	LOS A	4.1	104.4	0.60	0.47	0.69	31.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c >1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Lanes, Volumes, Timings
4: S Kent St & W 45th Ave

04/08/2026

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Volume (vph)	328	98	3	171	56	3
Future Volume (vph)	328	98	3	171	56	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	40			40	25	
Link Distance (ft)	320			195	222	
Travel Time (s)	5.5			3.3	6.1	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
4: S Kent St & W 45th Ave

04/08/2026

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	328	98	3	171	56	3
Future Vol, veh/h	328	98	3	171	56	3
Conflicting Peds, #/hr	0	2	2	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	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	360	108	3	188	62	3
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	470	0	611	416
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1097	-	461	641
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1095	-	458	639
Mov Cap-2 Maneuver	-	-	-	-	458	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	840	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0.14		14		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	465	-	-	31	-	
HCM Lane V/C Ratio	0.139	-	-	0.003	-	
HCM Ctrl Dly (s/v)	14	-	-	8.3	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

Exhibit 13

Lanes, Volumes, Timings

5: S Garfield St/Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	137	179	30	75	0	89	0	19	0	0	0
Future Volume (vph)	1	137	179	30	75	0	89	0	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			35			25	
Link Distance (ft)		127			138			199			177	
Travel Time (s)		2.2			2.4			3.9			4.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.92	0.89	0.89	0.89	0.89	0.92	0.89	0.92	0.89	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%	0%	2%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
5: S Garfield St/Driveway & W 45th Ave

04/08/2026

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	1	137	179	30	75	0	89	0	19	0	0	0
Future Vol, veh/h	1	137	179	30	75	0	89	0	19	0	0	0
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	89	89	89	89	92	89	92	89	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2	0	2	0	2	2	2
Mvmt Flow	1	154	201	34	84	0	100	0	21	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	84	0	0	357	0	0	410	410	256	308	511	84
Stage 1	-	-	-	-	-	-	259	259	-	152	152	-
Stage 2	-	-	-	-	-	-	152	152	-	156	359	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.52	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4.018	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1512	-	-	1202	-	-	555	531	787	645	466	975
Stage 1	-	-	-	-	-	-	750	694	-	851	772	-
Stage 2	-	-	-	-	-	-	856	772	-	846	627	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1512	-	-	1199	-	-	537	514	786	608	451	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	537	514	-	608	451	-
Stage 1	-	-	-	-	-	-	748	692	-	826	749	-
Stage 2	-	-	-	-	-	-	830	749	-	822	625	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.02			2.31			13.03			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	569	5	-	-	514	-	-	-
HCM Lane V/C Ratio	0.213	0.001	-	-	0.028	-	-	-
HCM Ctrl Dly (s/v)	13	7.4	0	-	8.1	0	-	0
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	-

Exhibit 13

Lanes, Volumes, Timings
6: S Kent St & W 49th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	0	1	3	5	0	41	1	13	66	0
Future Volume (vph)	0	2	0	1	3	5	0	41	1	13	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		102			170			126			182	
Travel Time (s)		2.8			4.6			3.4			5.0	
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th AWSC
6: S Kent St & W 49th Ave

04/08/2026

Intersection

Intersection Delay, s/veh 7.5
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	0	1	3	5	0	41	1	13	66	0
Future Vol, veh/h	0	2	0	1	3	5	0	41	1	13	66	0
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	3	0	1	4	7	0	61	1	19	99	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.3	7	7.3	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	11%	16%
Vol Thru, %	98%	100%	33%	84%
Vol Right, %	2%	0%	56%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	2	9	79
LT Vol	0	0	1	13
Through Vol	41	2	3	66
RT Vol	1	0	5	0
Lane Flow Rate	63	3	13	118
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.004	0.015	0.131
Departure Headway (Hd)	4.003	4.222	3.902	4.009
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	893	837	905	895
Service Time	2.033	2.302	1.979	2.029
HCM Lane V/C Ratio	0.071	0.004	0.014	0.132
HCM Control Delay, s/veh	7.3	7.3	7	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0	0.5

Lanes, Volumes, Timings
 7: S Garfield St & W 49th Ave

04/08/2026



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	4	1	95	182	8
Future Volume (vph)	2	4	1	95	182	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			35	35	
Link Distance (ft)	183			327	124	
Travel Time (s)	5.0			6.4	2.4	
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 7th TWSC
7: S Garfield St & W 49th Ave

04/08/2026

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	1	95	182	8
Future Vol, veh/h	2	4	1	95	182	8
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	2	5	1	114	219	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	342	224	229	0	-	0
Stage 1	224	-	-	-	-	-
Stage 2	118	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	658	820	1351	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	658	820	1351	-	-	-
Mov Cap-2 Maneuver	658	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	9.8	0.08		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	19	-	758	-	-	
HCM Lane V/C Ratio	0.001	-	0.01	-	-	
HCM Ctrl Dly (s/v)	7.7	0	9.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Exhibit 13

Lanes, Volumes, Timings

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	465	22	4	243	1	14	0	2	0	0	0
Future Volume (vph)	2	465	22	4	243	1	14	0	2	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		178			642			107			81	
Travel Time (s)		3.0			10.9			2.9			2.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

8: West Site Access/East Church Driveway & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	465	22	4	243	1	14	0	2	0	0	0
Future Vol, veh/h	2	465	22	4	243	1	14	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	3	3	3	3	3	3	0	0	0
Mvmt Flow	2	505	24	4	264	1	15	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	265	0	0	529	0	0	795	796	517	783	807	265
Stage 1	-	-	-	-	-	-	522	522	-	273	273	-
Stage 2	-	-	-	-	-	-	273	274	-	510	534	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1305	-	-	1033	-	-	304	319	556	314	317	779
Stage 1	-	-	-	-	-	-	536	529	-	737	687	-
Stage 2	-	-	-	-	-	-	731	681	-	550	528	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1305	-	-	1033	-	-	302	317	556	310	315	779
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	317	-	310	315	-
Stage 1	-	-	-	-	-	-	535	528	-	733	684	-
Stage 2	-	-	-	-	-	-	727	678	-	546	527	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.03			0.14			16.87			0		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	321	7	-	-	29	-	-	-
HCM Lane V/C Ratio	0.054	0.002	-	-	0.004	-	-	-
HCM Ctrl Dly (s/v)	16.9	7.8	0	-	8.5	0	-	0
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Exhibit 13

Lanes, Volumes, Timings

9: East Site Access/S Kent St & W 45th Ave

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	429	30	4	227	0	18	0	3	1	0	3
Future Volume (vph)	8	429	30	4	227	0	18	0	3	1	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		642			320			121			181	
Travel Time (s)		10.9			5.5			3.3			4.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
9: East Site Access/S Kent St & W 45th Ave

04/08/2026

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	429	30	4	227	0	18	0	3	1	0	3
Future Vol, veh/h	8	429	30	4	227	0	18	0	3	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	3	3	3	3	3	3	0	0	0
Mvmt Flow	9	466	33	4	247	0	20	0	3	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	499	0	0	755	755	483	739	772	247
Stage 1	-	-	-	-	-	-	500	500	-	255	255	-
Stage 2	-	-	-	-	-	-	255	255	-	484	516	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.13	6.53	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.527	4.027	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1325	-	-	1060	-	-	324	336	582	336	333	797
Stage 1	-	-	-	-	-	-	551	541	-	753	700	-
Stage 2	-	-	-	-	-	-	747	694	-	568	537	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1325	-	-	1060	-	-	318	332	582	329	328	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	318	332	-	329	328	-
Stage 1	-	-	-	-	-	-	546	537	-	750	696	-
Stage 2	-	-	-	-	-	-	740	691	-	560	533	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.13			0.15			16.36			11.17		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	340	30	-	-	31	-	-	588
HCM Lane V/C Ratio	0.067	0.007	-	-	0.004	-	-	0.007
HCM Ctrl Dly (s/v)	16.4	7.7	0	-	8.4	0	-	11.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Exhibit 13

Lanes, Volumes, Timings

10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	0	0	0	9	0	62	0	30	115	41
Future Volume (vph)	25	0	0	0	0	9	0	62	0	30	115	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			0%			0%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		148			142			810			327	
Travel Time (s)		4.0			3.9			15.8			6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
10: S Garfield St & North Site Access/W 50th Ct

04/08/2026

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	0	0	0	9	0	62	0	30	115	41
Future Vol, veh/h	25	0	0	0	0	9	0	62	0	30	115	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	0	0	0	1	1	1
Mvmt Flow	27	0	0	0	0	10	0	67	0	33	125	45

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	280	280	147	258	302	67	170	0
Stage 1	213	213	-	67	67	-	-	-
Stage 2	67	67	-	190	235	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.7	7.1	6.5	4.1	-
Critical Hdwy Stg 1	6.13	5.53	-	6.7	6.1	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.7	6.1	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.2	-
Pot Cap-1 Maneuver	670	627	897	670	584	996	1420	-
Stage 1	787	725	-	937	833	-	-	-
Stage 2	940	837	-	791	687	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	648	612	897	654	570	996	1420	-
Mov Cap-2 Maneuver	648	612	-	654	570	-	-	-
Stage 1	769	708	-	937	833	-	-	-
Stage 2	931	837	-	772	671	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.8	8.65	0	1.19
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1420	-	-	648	996	276	-	-
HCM Lane V/C Ratio	-	-	-	0.042	0.01	0.021	-	-
HCM Ctrl Dly (s/v)	0	-	-	10.8	8.7	7.4	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	-	-

Exhibit 13

Lanes, Volumes, Timings

11: S Garfield St & South Site Access/S Dayton St

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	0	0	0	2	0	35	0	21	53	41
Future Volume (vph)	25	0	0	0	0	2	0	35	0	21	53	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			5%			-3%			3%	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		201			169			151			810	
Travel Time (s)		5.5			4.6			2.9			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	0%	0%	2%	2%	2%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

11: S Garfield St & South Site Access/S Dayton St

04/08/2026

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	0	0	0	2	0	35	0	21	53	41
Future Vol, veh/h	25	0	0	0	0	2	0	35	0	21	53	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	5	-	-	-3	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	0	0	0	0	0	0	2	2	2
Mvmt Flow	27	0	0	0	0	2	0	38	0	23	58	45

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	164	164	80	141	186	38	102	0
Stage 1	126	126	-	38	38	-	-	-
Stage 2	38	38	-	103	148	-	-	-
Critical Hdwy	7.13	6.53	6.23	8.1	7.5	6.7	4.1	-
Critical Hdwy Stg 1	6.13	5.53	-	7.1	6.5	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	7.1	6.5	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.5	4	3.3	2.2	-
Pot Cap-1 Maneuver	799	727	978	801	676	1034	1503	-
Stage 1	876	790	-	972	858	-	-	-
Stage 2	975	861	-	882	747	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	785	716	978	789	666	1034	1503	-
Mov Cap-2 Maneuver	785	716	-	789	666	-	-	-
Stage 1	862	778	-	972	858	-	-	-
Stage 2	973	861	-	868	736	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.75	8.49	0	1.34
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1503	-	-	785	1034	302	-	-
HCM Lane V/C Ratio	-	-	-	0.035	0.002	0.015	-	-
HCM Ctrl Dly (s/v)	0	-	-	9.8	8.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Exhibit 13

Lanes, Volumes, Timings

12: S Olympia St & W 47th St/South Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	3	6	0	14	2	371	11	22	171	3
Future Volume (vph)	1	0	3	6	0	14	2	371	11	22	171	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-4%			0%			-4%			3%	
Storage Length (ft)	0		0	0		0	50		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		175			181			204			301	
Travel Time (s)		4.8			4.9			3.5			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)										10%		
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC
12: S Olympia St & W 47th St/South Site Access

04/08/2026

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	3	6	0	14	2	371	11	22	171	3
Future Vol, veh/h	1	0	3	6	0	14	2	371	11	22	171	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	0	-	-	-4	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	3	2	2	2	0	0	0
Mvmt Flow	1	0	3	7	0	15	2	403	12	24	186	3

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	643	655	187	647	651	409	189	0
Stage 1	235	235	-	414	414	-	-	-
Stage 2	408	420	-	234	237	-	-	-
Critical Hdwy	6.3	5.7	5.8	7.13	6.53	6.23	4.12	-
Critical Hdwy Stg 1	5.3	4.7	-	6.13	5.53	-	-	-
Critical Hdwy Stg 2	5.3	4.7	-	6.13	5.53	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4.027	3.327	2.218	-
Pot Cap-1 Maneuver	449	449	878	382	387	640	1385	-
Stage 1	814	752	-	614	592	-	-	-
Stage 2	684	651	-	767	707	-	-	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	429	439	878	373	378	640	1385	-
Mov Cap-2 Maneuver	515	506	-	474	461	-	-	-
Stage 1	797	737	-	613	591	-	-	-
Stage 2	666	650	-	748	693	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.85	11.46	0.04	0.92
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1385	-	-	746	579	1155	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.038	0.021	-	-
HCM Ctrl Dly (s/v)	7.6	-	-	9.9	11.5	8.2	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Exhibit 13

Lanes, Volumes, Timings

13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	0	3	0	14	0	380	6	22	193	3
Future Volume (vph)	2	0	0	3	0	14	0	380	6	22	193	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-3%			0%	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		153			140			301			300	
Travel Time (s)		4.2			3.8			5.1			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

13: S Olympia St & W 46th Ave/North Site Access

04/08/2026

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	3	0	14	0	380	6	22	193	3
Future Vol, veh/h	2	0	0	3	0	14	0	380	6	22	193	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-3	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	3	3	2	2	2	0	0	0
Mvmt Flow	2	0	0	3	0	15	0	413	7	24	210	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	672	679	211	674	677	416	213	0	0	420	0	0
Stage 1	259	259	-	416	416	-	-	-	-	-	-	-
Stage 2	413	420	-	258	261	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.53	6.23	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4.027	3.327	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	372	376	834	367	373	634	1357	-	-	1150	-	-
Stage 1	750	697	-	612	590	-	-	-	-	-	-	-
Stage 2	620	593	-	745	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	355	367	834	358	364	634	1357	-	-	1150	-	-
Mov Cap-2 Maneuver	355	367	-	464	452	-	-	-	-	-	-	-
Stage 1	732	681	-	612	590	-	-	-	-	-	-	-
Stage 2	605	593	-	727	674	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	15.22			11.24			0			0.83		
HCM LOS	C			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1357	-	-	355	596	181	-	-
HCM Lane V/C Ratio	-	-	-	0.006	0.031	0.021	-	-
HCM Ctrl Dly (s/v)	0	-	-	15.2	11.2	8.2	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-



Appendix D

WSDOT Crash History

Exhibit 13

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	147
--------------	--------	------	-----------------------	-----------------	----------------------------	------------------------------------	-------------------------------------	-------------------------	----------	------------------	------	------	-------------------------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----



Appendix E

Trip Generation Calculations

Pringle Project (Kennewick)
Weekday Trip Generation Summary

Land Use	Size/Units ¹	ITE LUC ²	Trip Rate or Equation ²	Directional Distribution		Trips Generated		
				In	Out	In	Out	Total
DAILY								
<i>Proposed Use:</i>								
Single Family Detached Housing	520 DU	210	T = 8.07(X) + 265.45	50%	50%	2,231	2,231	4,462
New Daily Trips =						2,231	2,231	4,462
AM PEAK HOUR								
<i>Proposed Use:</i>								
Single Family Detached Housing	520 DU	210	T = 0.67(X) + 5.59	27%	73%	96	258	354
New AM Peak Hour Trips =						96	258	354
PM PEAK HOUR								
<i>Proposed Use:</i>								
Single Family Detached Housing	520 DU	210	Ln(T) = 0.92 Ln(X) + 0.33	62%	38%	272	167	439
New PM Peak Hour Trips =						272	167	439

Notes:¹ DU = Dwelling Units.² Based on Institute of Transportation Engineers (ITE) *Trip Generation* Manual, 12th Edition, 2025.

Appendix F

Federal Highway Administration (FHWA)

Guide for Improving Pedestrian Safety at Uncontrolled Locations, 2018

Table 1

Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

Table 1 provides initial countermeasure options for various roadway conditions. Each matrix cell indicates possibilities that may be appropriate for designated pedestrian crossings. Not all of the countermeasures listed in the matrix cell should necessarily be installed at a crossing.

For multi-lane roadway crossings with vehicle AADTs exceeding 10,000, a marked crosswalk alone is typically insufficient (Zegeer, 2005). Under such conditions, more substantial crossing improvements (such as the refuge island, PHB, and RRFB) are also needed to prevent an increase in pedestrian crash potential.

Table 1. Application of pedestrian crash countermeasures by roadway feature.

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6 7 9	① 5 6 7 9	① 5 6 ⑨
3 lanes with raised median (1 lane in each direction)	① 2 3 4 5	① ③ 5 7 9	① ③ 5 ⑦ ⑨	① 3 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑦ ⑨	① ③ 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑨
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 ⑨	① 3 4 5 6 7 9	① ③ 5 6 ⑦ ⑨	① ③ 5 6 ⑨	① ③ 4 5 6 7 9	① ③ 5 6 ⑨	① ③ 5 6 ⑨
4+ lanes with raised median (2 or more lanes in each direction)	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 ⑨	① ③ 5 7 8 9	① ③ 5 ⑦ 8 ⑨	① ③ 5 8 ⑨	① ③ 5 ⑦ 8 ⑨	① ③ 5 8 ⑨	① ③ 5 8 ⑨
4+ lanes w/o raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ ⑦ 8 ⑨	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ ⑦ 8 ⑨	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 8 ⑨
Given the set of conditions in a cell, # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location. ● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location. ○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.* The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.									
1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs 2 Raised crosswalk 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line 4 In-Street Pedestrian Crossing sign 5 Curb extension 6 Pedestrian refuge island 7 Rectangular Rapid-Flashing Beacon (RRFB)** 8 Road Diet 9 Pedestrian Hybrid Beacon (PHB)**									

*Refer to Chapter 4, "Using Table 1 and Table 2 to Select Countermeasures," for more information about using multiple countermeasures.

**It should be noted that the PHB and RRFB are not both installed at the same crossing location.

This table was developed using information from: Zegeer, C.V., J.R. Stewart, H.H. Huang, P.A. Lagerwey, J. Feaganes, and B.J. Campbell. (2005). Safety effects of marked versus unmarked crosswalks at uncontrolled locations: Final report and recommended guidelines. FHWA, No. FHWA-HRT-04-100, Washington, D.C.; FHWA. Manual on Uniform Traffic Control Devices, 2009 Edition. (revised 2012). Chapter 4F, Pedestrian Hybrid Beacons. FHWA, Washington, D.C.; FHWA. Crash Modification Factors (CMF) Clearinghouse. <http://www.cmfclearinghouse.org/>; FHWA. Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE). <http://www.pedbikesafe.org/PEDSAFE/>; Zegeer, C., R. Srinivasan, B. Lan, D. Carter, S. Smith, C. Sundstrom, N.J. Thirsk, J. Zegeer, C. Lyon, E. Ferguson, and R. Van Houten. (2017). NCHRP Report 841: Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments. Transportation Research Board, Washington, D.C.; Thomas, Thirsk, and Zegeer. (2016). NCHRP Synthesis 498: Application of Pedestrian Crossing Treatments for Streets and Highways. Transportation Research Board, Washington, D.C.; and personal interviews with selected pedestrian safety practitioners.

Select Countermeasure(s)

16