

West Bayview Landing Senior Living Apartments

Olympia, WA

Traffic Impact Analysis
December 8, 2023

Prepared for:
*West Bayview Landing
Development Associates, LLC*



12/08/2023

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FINDINGS/CONCLUSIONS

This traffic impact analysis (TIA) has been prepared for the proposed *West Bayview Landing Senior Living Apartments* in the City of Olympia, WA. The TIA was completed based on discussions with City of Olympia staff during a Scoping Meeting held on November 9, 2021.

Project Proposal. The proposed *West Bayview Landing Senior Living Apartments* site is located along the east side of West Bay Drive NW in the vicinity of Schneider Hill Road NW. The proposed project will include the development of up to 263 attached senior housing dwelling units within four (4) buildings. The existing site is predominantly undeveloped land with exception to a 1,540 square feet (SF) warehouse which will be removed with the proposed project.

Vehicular access to/from the site is proposed via four (4) site access driveways along the east side of West Bay Drive NW. Three (3) proposed full access driveways would be located north of the Schneider Hill Road NW intersection towards the West Bay Marina, and one (1) proposed full access driveway would be located south of Schneider Hill Road NW.

Trip Generation. The proposed *West Bayview Landing Senior Living Apartments* project is estimated to generate 852 new weekday daily trips, with 53 new trips (18 in, 35 out) occurring during the AM peak hour and 74 new trips (43 in, 31 out) occurring during the PM peak hour.

Intersection Level of Service (LOS). Weekday PM peak hour LOS analyses were conducted at three (3) off-site study intersections in the vicinity of the proposed project. Each of the off-site study intersections currently operates at LOS A during the weekday PM peak hour. All study intersections are anticipated to continue to operate at LOS A in 2026 during the weekday PM peak hour without or with the proposed *West Bayview Landing Senior Living Apartments* project.

Site Access Evaluation. Vehicular access to/from the site is proposed via four (4) site access driveways along the east side of West Bay Drive NW. The results of the LOS analyses indicate that all site access locations are anticipated to operate at LOS B or better with minimal queuing during the weekday PM peak hour with buildout of the *West Bayview Landing Senior Living Apartments* project in 2026.

Non-Motorized Impacts. While the proposed project is not expected to have a significant impact on existing bicycle, pedestrian, or transit facilities in the immediate site vicinity, improvements to pedestrian and bicycle facilities along the project frontage on West Bay Drive NW are anticipated to improve pedestrian and bicycle operations and safety in the project vicinity. These improvements will generally include those described below. Based on discussions with City staff, a formal EDDS deviation request will be submitted separately for these proposed project frontage improvements.

From Schneider Hill Road NW to the northern property line:

- 10-foot pedestrian/bicycle path along the east side of West Bay Drive NW.
- 10-foot multimodal path along the waterfront which would connect with the multimodal path proposed by the West Bay Yards project and eventually with the West Bay Park located south of the project site. Potential connection to a future path to the north of the project site toward the West Bay Marina would also be provided.

From Schneider Hill Road NW/ West Bay Drive NW south to the southern property line:

- 6-foot sidewalk along the east side of West Bay Drive NW to complement the existing 6-foot sidewalk along the west side of West Bay Drive NW.

- 5-foot bicycle lane along the east side of West Bay Drive NW to complement the existing 5-foot bicycle lane along the west side of West Bay Drive NW.
- 10-foot multimodal path along the waterfront.

Traffic Calming Measures. Traffic calming measures along West Bay Drive NW are proposed, including:

- Compact Roundabout at West Bay Drive NW/Schneider Hill Road NW: A compact roundabout is proposed at the intersection of West Bay Drive NW/Schneider Hill Road NW. The roundabout is anticipated to serve as a traffic calming measure and also improve overall operations and safety at the intersection through providing improved sight distances.
- Alternating Curves along West Bay Drive NW north of Schneider Hill Road NW: A series of alternating curves, accompanied with appropriate signage, is proposed along West Bay Drive NW north of the West Bay Drive NW/Schneider Hill Road NW intersection. The general location of these curves will be near the vicinity of the northern most site access driveway which serves Tower 4. This feature will provide a chicane-like effect on the road to reduce vehicle speeds and calm traffic traveling on West Bay Drive NW between the marina and Schneider Hill Road NW.

Mitigation. The following measures have been identified to mitigate transportation impacts of the proposed *West Bayview Landing Senior Living Apartments* project:

- City of Olympia Transportation Impact Fees: To offset the additional demand created by the *West Bayview Landing Senior Living Apartments* development on public streets and roads, the developer would pay its proportionate share of new public facilities cost through the payment of a traffic impact fee. Per the City's *Transportation Impact Fee Rate Schedule* effective January 1, 2023, the impact fee rates are \$1,196 per senior housing dwelling unit and \$0.60 per square foot of warehousing (existing use to be removed). These rates are subject to change and will be finalized based on the effective impact fee schedule on the date a complete building permit is submitted. Fees are collected at the time of building permit issuance.
- Compact Roundabout at West Bay Drive NW/Schneider Hill Road NW to serve as a traffic calming measure and also improve overall operations and safety at the intersection through providing improved sight distances.
- Alternating Curves along West Bay Drive NW north of Schneider Hill Road NW to provide a chicane-like effect on the road to reduce vehicle speeds and calm traffic traveling on West Bay Drive NW between the marina and Schneider Hill Road NW.
- Improvements to Pedestrian and Bicycle Facilities along Project Frontage: Improvements will generally include a 10-foot pedestrian/bicycle path along the east side of West Bay Drive NW north of Schneider Hill Road NW, a 6-foot sidewalk and a 5-foot bike lane along the east side of West Bay Drive NW south of Schneider Hill Road, and a 10-foot multimodal path along the waterfront. These improvements are anticipated to improve pedestrian and bicycle operations and safety in the project vicinity.

INTRODUCTION

This Traffic Impact Analysis (TIA) documents traffic impacts associated with the proposed *West Bayview Landing Senior Living Apartments* project, located along the east side of West Bay Drive NW in the vicinity of Schneider Hill Road NW in the City of Olympia. A site vicinity map is provided in **Figure 1**.

Project Description

The proposed *West Bayview Landing Senior Living Apartments* project includes the development of up to 263 attached senior housing dwelling units within four (4) buildings. The existing site is predominantly undeveloped land with exception of a 1,540-square-foot (SF) warehouse which will be removed with the proposed project.

Vehicular access to/from the site is proposed via four (4) site access driveways along the east side of West Bay Drive NW. Three (3) proposed full access driveways would be located north of the Schneider Hill Road NW intersection towards the West Bay Marina, and one (1) proposed full access driveway would be located south of Schneider Hill Road NW. A preliminary site plan is provided in **Appendix A**. Project buildout and occupancy are expected by 2026.

Traffic Scoping and Study Area

The scope of work for this Traffic Impact Analysis was established in coordination with transportation staff from the City of Olympia. Based on the Traffic Scoping Meeting held with City staff on November 9, 2021, the following three (3) off-site study intersections were identified for evaluation in this traffic impact analysis during weekday PM peak hour conditions. In addition, all site access driveway locations were also identified for evaluation during weekday PM peak hour conditions in 2026 (future buildout year). The Traffic Scoping Worksheet is included in **Appendix B**.

1. West Bay Drive NW/Schneider Hill Road NW
2. West Bay Drive NW/Brawne Ave NW
3. Olympic Way (West Bay Drive NW)/Harrison Ave

Project Approach

To analyze the traffic impacts of the proposed *West Bayview Landing Senior Living Apartments* 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, including existing traffic volumes, level of service, collision history, public transportation, and non-motorized facilities.
- Documented the City's planned transportation improvements in the site vicinity.
- Estimated weekday vehicular AM peak hour, PM peak hour, and daily trips generated by the development.
- Documented trip distribution and assignment of project-generated traffic.

- Documented traffic volume forecasts and assumptions for year 2026 conditions without and with the proposed development.
- Conducted future year 2026 PM peak hour level of service (LOS) analyses at 3 off-site study intersections in Olympia.
- Evaluated future year 2026 weekday PM peak hour operations of the proposed site access locations, including LOS, queuing and potential traffic calming measures.
- Estimated transportation impact fees to offset potential transportation impacts.

Primary Data and Information Sources

- 2023 weekday PM peak hour traffic counts, All Traffic Data.
- 2020 - 2022 Crash Data, City of Olympia.
- City of Olympia, *Multimodal Transportation Impact Fee Rate Study*, December 2020.
- City of Olympia, *Transportation Impact Fee Rate Schedule* (effective January 1, 2023).
- City of Olympia, *Transportation Master Plan*, 2021.
- City of Olympia, *Street Safety Plan*, 2020.
- City of Olympia, *West Bay Park Recreation, Trail & Restoration Analysis Report*, 2019.
- City of Olympia, *Capital Facilities Plan 2023-2028*.
- Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.
- Transportation Research Board, *Highway Capacity Manual (7th Edition)*, 2020.
- Thurston Regional Planning Council, *2023-2026 Regional Transportation Improvement Program*.

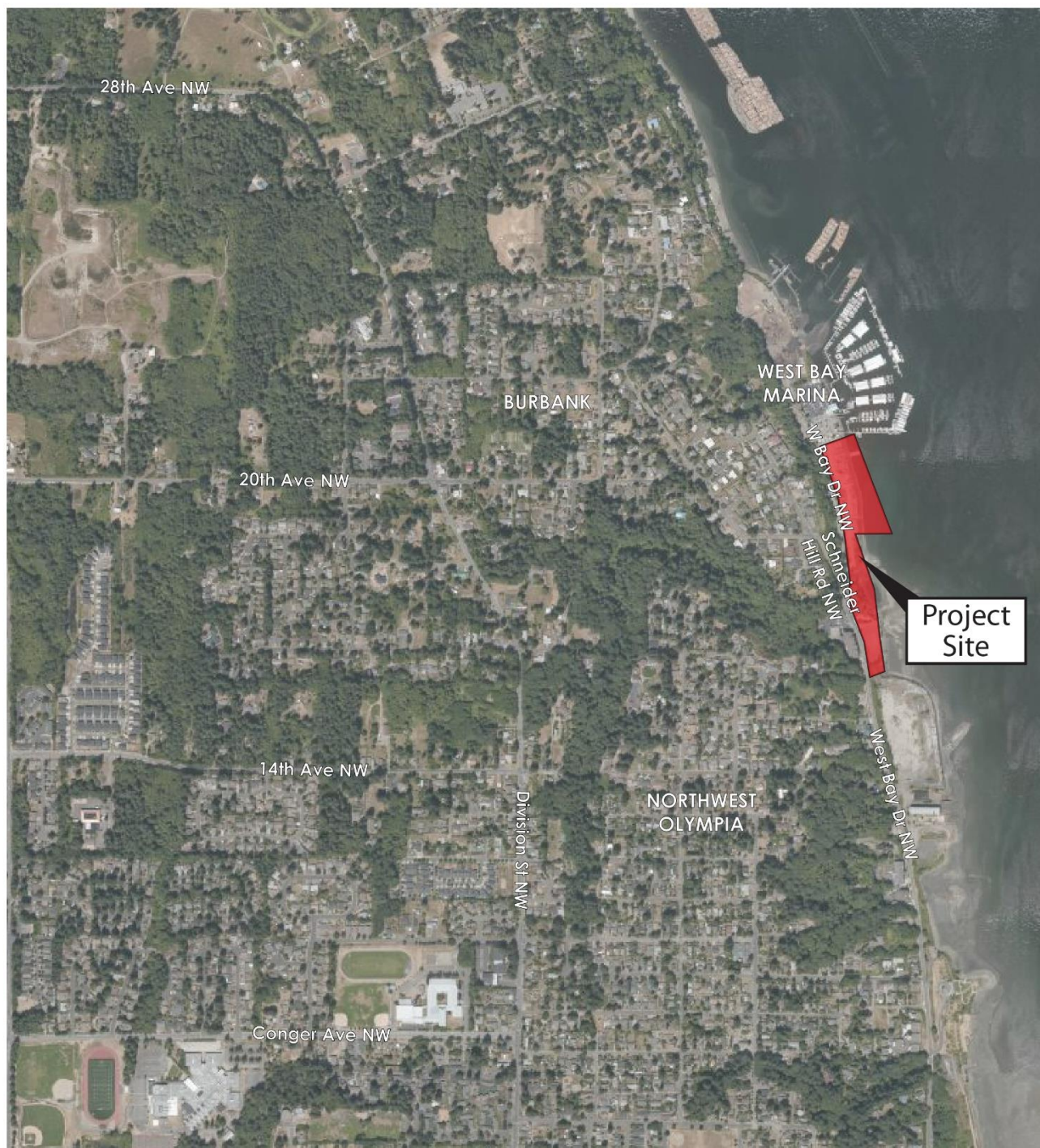
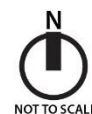


Figure 1: Project Site Vicinity



EXISTING CONDITIONS

This section describes existing transportation system conditions in the study area. Existing conditions described include an inventory of existing roadways, existing traffic volumes, intersection levels of service (LOS), public transportation services, and non-motorized transportation facilities.

Roadway Network

The existing street characteristics in the vicinity of the proposed West Bayview Landing Senior Living Apartments development are described below in Table 1.

Table 1
Existing Roadway Network Summary – Project Site Vicinity

Roadway	Orientation	Classification	Speed Limit (mph)	# of Travel Lanes	Street Parking	Sidewalks	Bicycle Facilities
West Bay Drive NW (s/o Schneider Hill Rd)	N-S	Major Collector	25/30	2	None	West Side	West Side
West Bay Drive NW (n/o Schneider Hill Rd)	N-S	Commercial Collector	25	2	None	None	None
Schneider Hill Road	NW-SW	Major Collector	25	2	None	West Side	None

Transit Service

The immediate site vicinity is not currently served by public transit. The closest bus stops are located approximately 0.75 miles west at the intersection of Division Street NW and Elliot Ave NW. These bus stops serve Intercity Transit Route 41. Additionally, there are also bus stops located approximately one (1) mile south along Harrison Ave at Foote Street. These stops serve Intercity Transit Route 41, Route 45, and Route 48.

Route 41 provides weekday and weekend transit service between The Evergreen State College and Downtown Olympia. The current weekday and weekend schedules for Route 41 include 30-minute headways.

Route 45 provides weekday and weekend transit service between Capital Mall, Conger, and Downtown Olympia. The current weekday and weekend schedules for Route 45 include 60-minute headways.

Route 48 provides weekday and weekend transit service between The Evergreen State College, Capital Mall, and Downtown Olympia. The current weekday and weekend schedules for Route 48 include 30-minute headways.

Non-Motorized Transportation Facilities

Sidewalks exist along the west side of Schneider Hill Road NW as well as along the west side of West Bay Drive NW south of Schneider Hill Road NW. In addition, there is also a southbound bike lane along the west side of West Bay Drive NW south of Schneider Hill Road NW. There are currently no sidewalks or bicycle facilities on West Bay Drive NW north of Schneider Hill Road NW.

Crash History

Crash history at the study intersections were analyzed for the most recent three-year period from 2020 to 2022. Crash data was provided by the City of Olympia. Summaries of the total and annual average crashes during this period are provided in **Table 2**.

Table 2
Crash Data Summary By Year, January 1, 2020 to December 31, 2022

Location	2020	2021	2022	Three- Year Total Crashes	Average Annual Crashes	Crashes per MEV ¹
<u>Intersections:</u>						
1. West Bay Drive NW / Schneider Hill Road NW	0	0	0	0	0.00	0.00
2. West Bay Drive NW / Brawne Ave NW	0	0	1	1	0.33	0.15
3. Olympic Way / West Bay Drive NW / Harrison Ave NW	3	1	4	8	2.67	0.28

Source: City of Olympia (1/1/2020 – 12/31/2022)

1. MEV = Million Entering Vehicles.

Existing Traffic Volumes

Figure 2 illustrates the 2023 weekday PM peak hour traffic counts at the three (3) off-site study intersections and average daily traffic (ADT) on the streets in the project vicinity. Existing weekday PM peak hour traffic volumes at the study intersections were based on turning movement counts collected by All Traffic Data in August 2023. The weekday PM peak hour traffic volumes represent a two-hour average volume of vehicles passing through an intersection on a typical weekday between 4:00 and 6:00 PM. ADTs were estimated using a K-factor = 0.10. The detailed peak hour turning movement count sheets are included in **Appendix C**.



Figure 2: 2023 Existing Weekday PM Peak Hour and Daily Traffic Volumes

Existing Levels of Service

Existing weekday PM peak hour level of service (LOS) analyses were conducted at the three (3) off-site study intersections based on scoping comments received from the City of Olympia. Level of service calculations were based on the use of *Synchro 12* traffic analysis software for stop-controlled intersections and *Sidra 9.1* traffic analysis software for roundabouts. The LOS methodology is included in **Appendix D**.

The City of Olympia has adopted the use of a weighted-average method to calculate LOS at unsignalized intersections. The City methodology takes into account the delay experienced by all vehicles entering the intersection, including through vehicles on the major roadway.

The 2023 existing weekday PM peak hour LOS analysis results for the study intersections are summarized in **Table 3**. Detailed LOS summary worksheets are provided in **Appendix D**.

Table 3
Existing 2023 PM Peak Hour Level of Service Summary

Study Intersection	LOS ¹	Delay (sec)
<u>Stop-Controlled:</u>		
1. West Bay Drive NW / Schneider Hill Road NW	A	0.9
2. West Bay Drive NW / Brawne Ave NW	A	2.0
<u>Roundabout:</u>		
3. Olympic Way / West Bay Drive NW / Harrison Ave NW	A	4.2

1. LOS = Level of Service, reported as intersection average for roundabout and weighted average at stop-controlled intersections.

As shown in **Table 3**, all study intersections currently operate at LOS A during the weekday PM peak hour. The City of Olympia intersection LOS standard is LOS D in the study area.

FUTURE CONDITIONS

The following section of the report describes the traffic impacts of the proposed *West Bayview Landing Senior Living Apartments* development on the surrounding arterial network and identified study intersections in the project vicinity.

The analysis of traffic impacts includes non-project related traffic forecasts, trip generation, distribution and assignment of project trips, and LOS evaluation at study intersections and site access driveways. The analysis was conducted during the weekday PM peak hour which represents the period with the highest traffic volumes in the study area.

Project Trip Generation

The weekday PM peak hour trip generation estimates for the proposed project were based on trip rates documented in the City of Olympia's *Multimodal Transportation Impact Fee Rate Study* (December 2020) as part of the City's Impact Fee Program. The weekday daily and AM peak hour trip generation estimates were based on methodology documented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition (2021) for Land Use Code (LUC) 252 (Senior Adult Housing - Multifamily). No trip credits were applied for the existing 1,540-SF warehouse to be removed with the proposed project which provides a more conservative analysis.

Table 4 summarizes the new weekday daily, AM peak hour, and PM peak hour trip generation estimates. Detailed trip generation estimates are provided in **Appendix E**.

Table 4
Trip Generation Summary

Weekday Time Period	New Trips Generated		
	In	Out	Total
Daily	426	426	852
AM Peak Hour	18	35	53
PM Peak Hour	43	31	74

Project Trip Distribution and Assignment

The distribution of project-generated trips during the weekday PM peak hour was estimated based on traffic model distribution (TAZ 457) as provided by the Thurston Regional Planning Council (TRPC). The TRPC model distribution is included in **Appendix F**.

The model distribution was used to assign the 43 inbound and 31 outbound weekday PM peak hour trips generated by the *West Bayview Landing Senior Living Apartments* project to the adjacent street network. The trip assignment at each nearby intersection was developed by factoring the model distribution (219 total trips) to the project trip generation (74 total PM peak hour trips). Local adjustments were made to account for the proposed project's multiple site access points along West Bay Drive NW.

The resulting assignment of the new weekday PM peak hour project trips through the study intersections and site access driveways is shown in **Figure 3**.

Future Traffic Volumes

Future year 2026 No Action (without project) PM peak hour traffic volumes were estimated by applying a 1% annual growth rate to the existing 2023 traffic volumes based on guidance from City of Olympia staff during the scoping process. In addition to the background growth rate, trips from the following pipeline project was provided by the City and included to estimate future baseline traffic volumes:

- **West Bay Yards** – A mixed-use development including 478 apartments, 11,700 sq ft of restaurant space located south of the project site, along the east side of West Bay Drive NW.

The resulting future 2026 No Action (without project) PM peak hour traffic volumes at the study intersections are shown in **Figure 4**. The 2026 With Project traffic volumes were determined by adding the trip assignment from the proposed development (shown in **Figure 3**) to the future 2026 No Action (without project) traffic volumes (shown in **Figure 4**). The 2026 With Project traffic volumes are shown in **Figure 5**.

Future Planned Improvements

Based on review of the City of Olympia's *Transportation Master Plan (2021)*, *Street Safety Plan (2020)*, *West Bay Park Recreation, Trail & Restoration Analysis Report (2019)*, *Capital Facilities Plan 2023-2028*, and Thurston Regional Planning Council's *2023-2026 Regional Transportation Improvement Program (RTIP)*, the following are the known transportation improvements in the study area:

- **Division Street and Elliot Avenue Intersection Improvements** – This project will implement intersection safety improvements including the installation of a compact roundabout and sidewalk modifications. This project is listed in the City's *Transportation Master Plan (2021)* and *Capital Facilities Plan 2023-2028*, as well as TRPC's *2023-2026 Regional Transportation Improvement Plan*. The project's preliminary engineering phase is expected in 2023.
- **West Bay Trail** – This project will design and construct a multi-use trail between 5th Avenue and West Bay Park. This project is listed in TRPC's *2023-2026 Regional Transportation Improvement Plan* with project construction expected in 2025. This project is also part of the West Bay Park Restoration Plan which describes a multi-use trail along Olympic Way and West Bay Drive NW, starting from Deschutes Parkway SW and eventually connecting back into West Bay Drive NW at the existing West Bay Park. The multi-use trail would be a 12' wide asphalt trail with 1' crushed rock shoulders and will be well-defined, ADA accessible, accommodates families, and encourages slow wandering, water-viewing, and bicycle use. The routing of the multi-use trail is planned to either be alongside the Port lagoon within the former rail right-of-way, or on an elevated structure north of the 4th Avenue Bridge and continues along West Bay Drive NW. The Parks Department would be responsible for half street frontage improvements on the east side of West Bay Drive, adjacent to West Bay Park, consistent with the City's Engineering Design and Development Standards for the West Bay Drive Corridor.

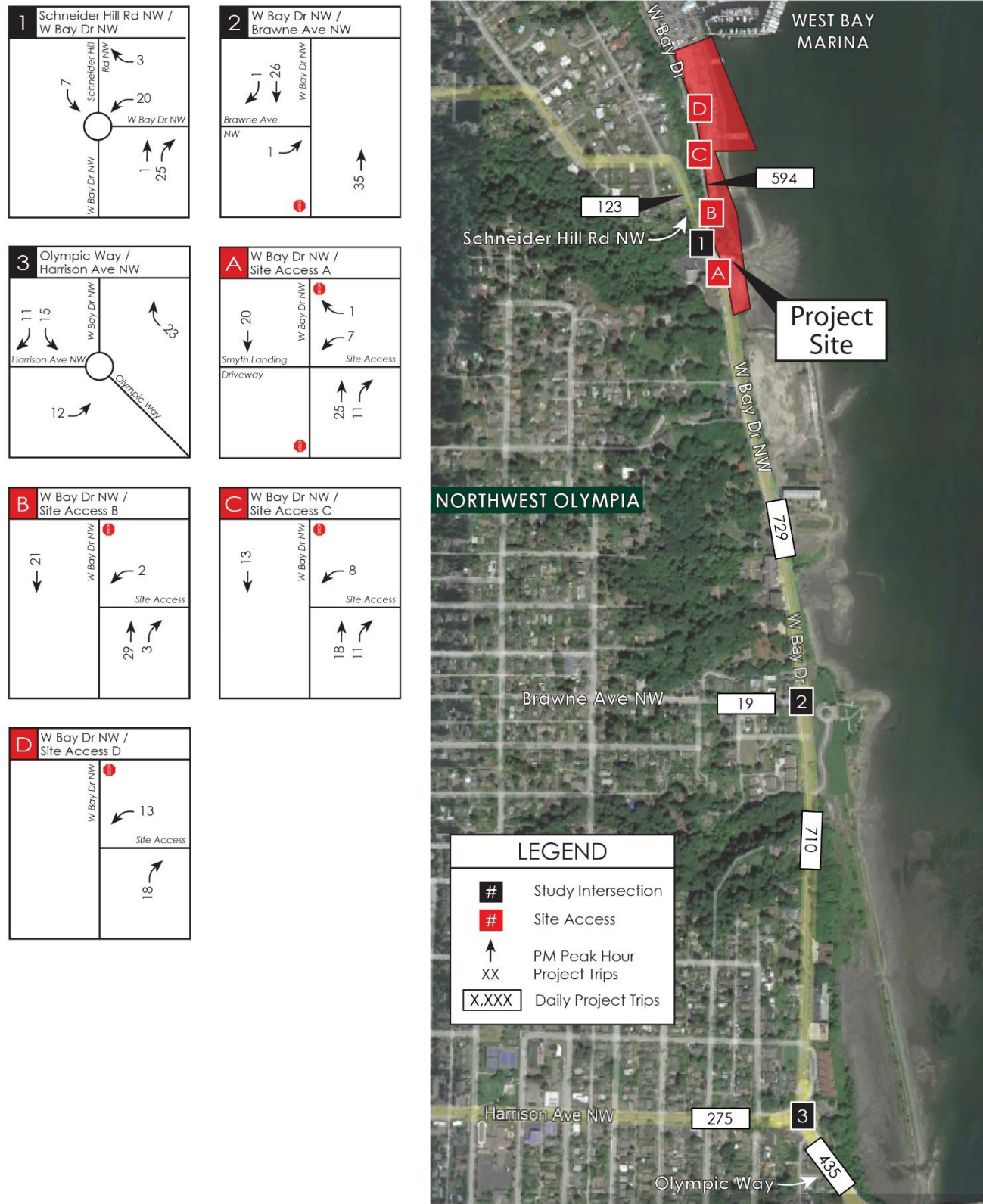


Figure 3: Weekday PM Peak Hour and Daily Project Trip Assignment





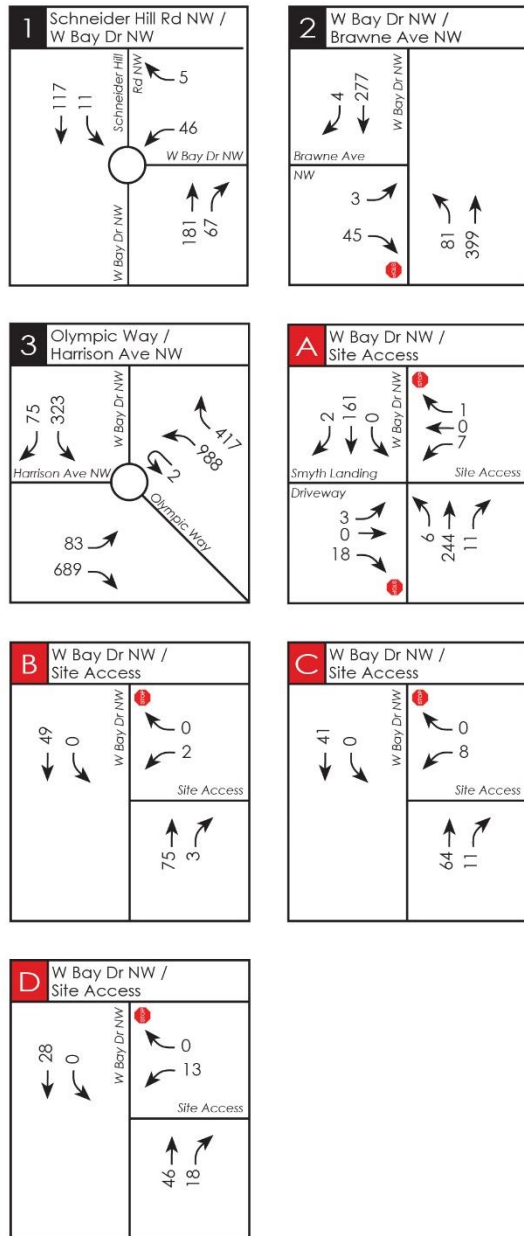


Figure 5: 2026 With Project Weekday PM Peak Hour and Daily Traffic Volumes



Future Levels of Service

Weekday PM peak hour level of service (LOS) analyses were conducted for future year 2026 conditions at the three (3) off-site study intersections. The roadway network assumed in the year 2026 With Project LOS analysis includes a proposed compact roundabout improvement at the West Bay Drive NW/Schneider Hill Road NW intersection which has been identified as a potential traffic calming measure through coordination with City of Olympia staff as documented in the traffic scoping worksheet provided in **Appendix B**.

The LOS results at the study intersections without and with the proposed project results are summarized in **Table 5**. Detailed LOS worksheets are provided in **Appendix D**.

Table 5
Future 2026 Weekday PM Peak Hour LOS Summary

Study Intersection	2026 No Action		2026 With Project	
	LOS ¹	Delay (sec)	LOS ¹	Delay (sec)
<u>Stop-Controlled:</u>				
1. West Bay Drive NW / Schneider Hill Road NW	A	0.9	-	-
2. West Bay Drive NW / Brawne Ave NW	A	1.5	A	1.4
<u>Roundabout:</u>				
3. Olympic Way / West Bay Drive NW / Harrison Ave NW	A	4.7	A	4.9
1. West Bay Drive NW / Schneider Hill Road NW	-	-	A	3.7

1. LOS = Level of Service, reported as intersection average for roundabout and weighted average at stop-controlled intersections.

As shown in **Table 5**, all study intersections are expected to operate at LOS A in 2026 during the PM peak hour without or with the proposed project. The City of Olympia's adopted LOS standard in the study area is LOS D.

Site Access Analysis

Vehicular access to/from the site is proposed via four (4) site access driveways along the east side of West Bay Drive NW. Three (3) proposed full access driveways would be located north of the Schneider Hill Road NW intersection towards the West Bay Marina, and one (1) proposed full access driveway would be located south of Schneider Hill Road NW.

To assess operations at the site access locations, LOS and queuing were analyzed during the weekday PM peak hour for future year 2026 conditions using *Synchro 12* traffic analysis software. The reported queues for the individual movements at each of the proposed site access locations are 95th-percentile queues, which are only exceeded five (5) percent of the time. The 2026 weekday PM peak hour traffic volumes at the proposed site access locations were shown previously in **Figure 5**.

The results of the weekday PM peak hour site access analyses for future year 2026 conditions are summarized below in **Table 6**. Detailed LOS worksheets are included in **Appendix D**.

Table 6
Weekday PM Peak Hour Site Access LOS and Queue Summary

Site Access Location	2026 With Project		
	LOS ¹	Delay	95 th Percentile Queue (ft)
A. West Bay Drive NW / Site Access A / Smyth Landing Dwy	A	0.8	-
Northbound Left-Turn	A	7.6	0'
Eastbound Approach	A	9.6	< 25'
Westbound Approach	B	11.7	0'
Southbound Left-Turn	A	0.0	0'
B. West Bay Drive NW / Site Access B	A	0.1	-
Westbound Approach	A	9.2	0'
Southbound Left-Turn	A	0	0'
C. West Bay Drive NW / Site Access C	A	0.6	-
Westbound Approach	A	9.2	0'
Southbound Left-Turn	A	0	0'
D. West Bay Drive NW / Site Access D	A	1.1	-
Westbound Approach	A	9.0	0'
Southbound Left-Turn	A	0	0'

1. LOS = Level of Service, reported as overall weighted average and per movement for stop-controlled intersections.

As shown in **Table 6**, the individual movements entering and exiting the site at the proposed stop-controlled site access locations are expected to operate at LOS B or better during the weekday PM peak hour in 2026 with minimal queuing (less than 25 feet).

Non-Motorized Transportation Impacts

Based on traffic count data collected at the study intersections, there is currently minimal non-motorized (pedestrian and bicycle) traffic in the project vicinity. In addition, the proposed *West Bayview Landing Senior Living Apartments* development is not expected to have a significant impact on current pedestrian and bicycle traffic in the vicinity of the site.

While a significant impact on pedestrian and bicycle traffic is not expected by the proposed project, improved pedestrian and bicycle facilities along the project frontage on West Bay Drive NW are proposed with project consistent with the City's *Engineering Design and Development Standards* (EDDS) for the West Bay Drive Corridor (i.e. Standard Drawing #s 4-2G5, 4-2G7 and 4-2G7A), the City's *West Bay Park Restoration Plan*, and TRPC's *2023-2026 Regional Transportation Improvement Plan*. These improvements are anticipated to improve pedestrian and bicycle operations and safety in the project vicinity and would generally include those described next. Based on discussions with City staff, a formal EDDS deviation request will be submitted separately for the proposed project frontage improvements below.

From Schneider Hill Road NW to the northern property line:

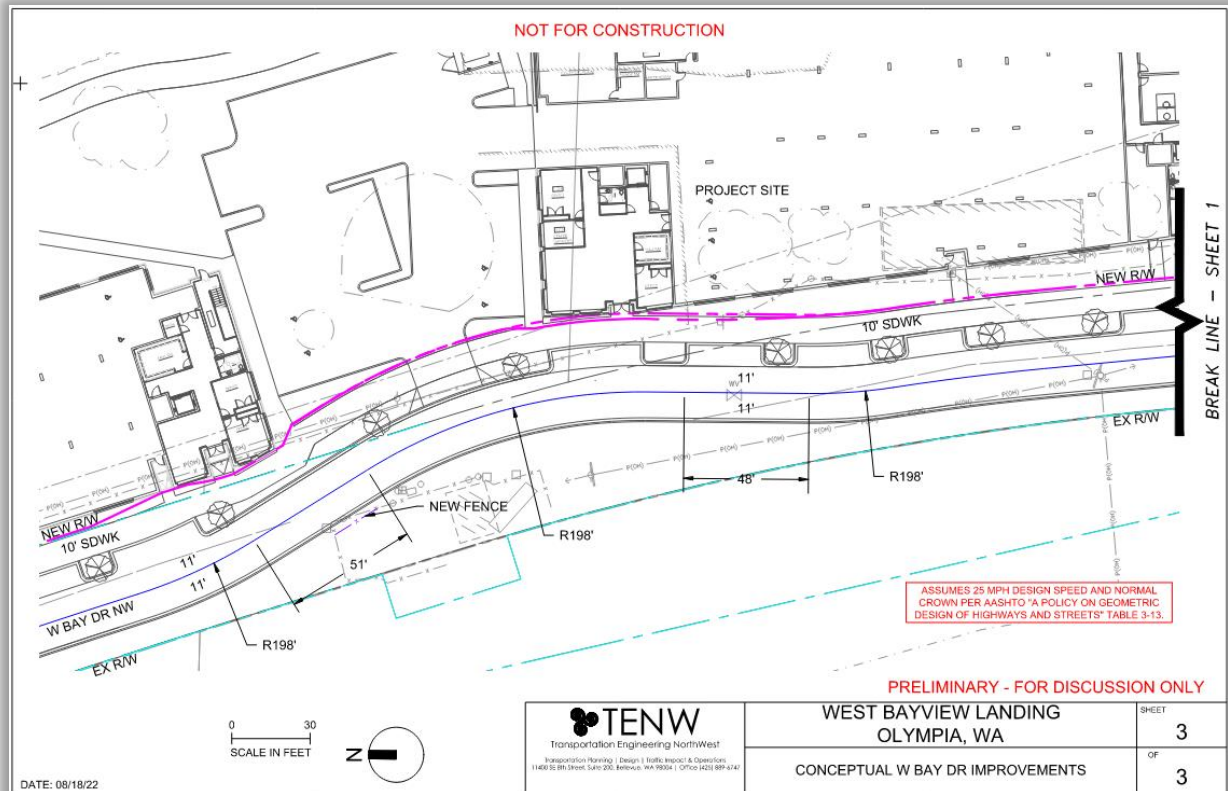
- 10-foot pedestrian/bicycle path along the east side of West Bay Drive NW.
- 10-foot multimodal path along the waterfront which would connect with the multimodal path proposed by the West Bay Yards project and eventually with the West Bay Park located south of the project site. Potential connection to a future path to the north of the project site toward the West Bay Marina would also be provided.

- 6-foot sidewalk along the east side of West Bay Drive NW to complement the existing 6-foot sidewalk along the west side of West Bay Drive NW.
- 5-foot bicycle lane along the east side of West Bay Drive NW to complement the existing 5-foot bicycle lane along the west side of West Bay Drive NW.
- 10-foot multimodal path along the waterfront.

The following traffic calming measures along West Bay Drive NW are proposed:

[illegible]

Alternating Curves along West Bay Drive NW north of Schneider Hill Road: A series of alternating curves, accompanied with appropriate signage, is proposed along West Bay Drive NW north of the West Bay Drive NW/Schneider Hill Road NW intersection. The general location of these curves will be near the vicinity of the northern most site access driveway which serves Tower 4. This feature will provide a chicane-like effect on the road to reduce vehicle speeds and calm traffic traveling on West Bay Drive NW between the marina and Schneider Hill Road NW. A preliminary concept of the proposed improvement is shown below.



MITIGATION

The following summarizes the measures proposed to mitigate the transportation impacts of the proposed *West Bayview Landing Senior Living Apartments* development.

City of Olympia Transportation Impact Fees. To offset the additional demand created by the *West Bayview Landing Senior Living Apartments* development on public streets and roads, the developer would pay its proportionate share of new public facilities cost through the payment of a traffic impact fee. Per the City's *Transportation Impact Fee Rate Schedule* effective January 1, 2023, the impact fee rates are \$1,196 per senior housing dwelling unit and \$0.60 per square foot of warehousing (existing use to be removed). These rates are subject to change and will be finalized based on the effective impact fee schedule on the date a complete building permit is submitted. Fees are collected at the time of building permit issuance.

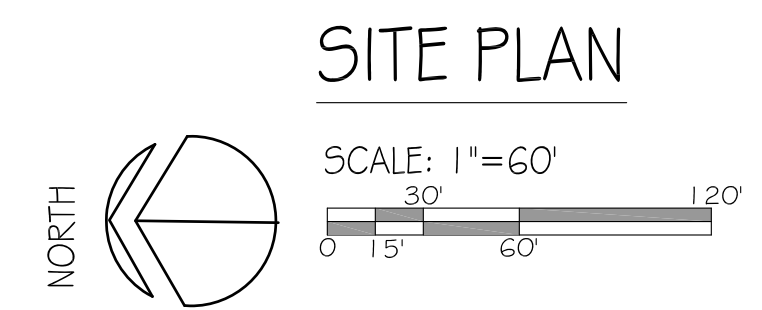
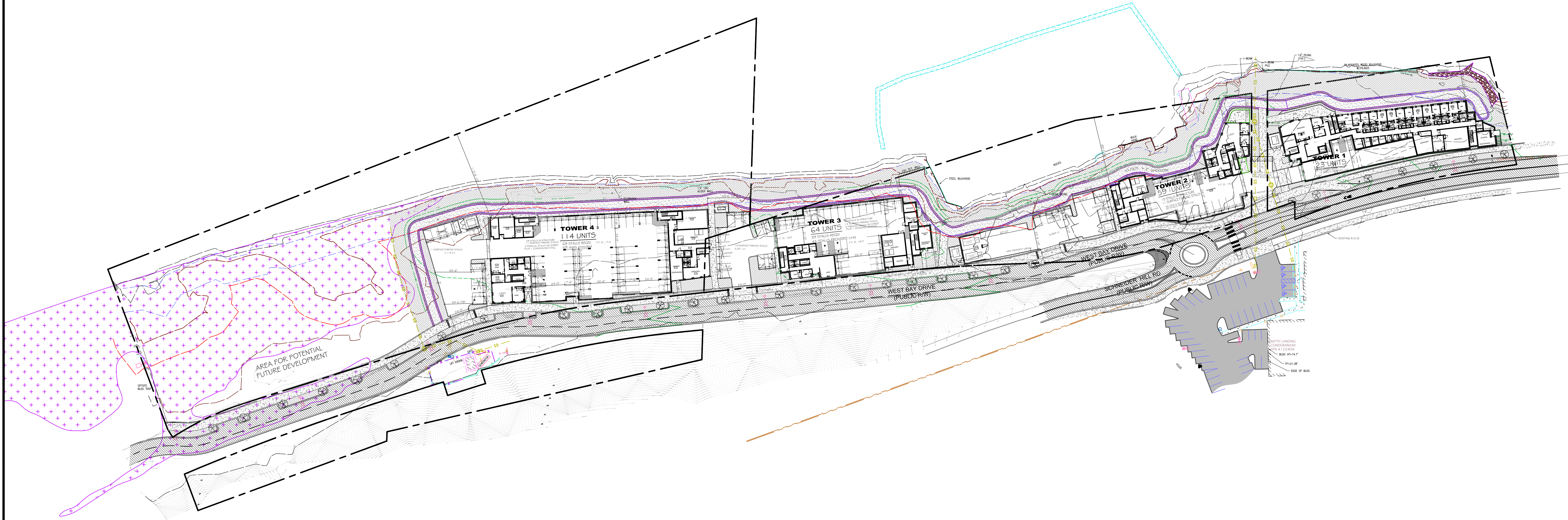
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Alternating Curves along West Bay Drive NW north of Schneider Hill Road: A series of alternating curves, accompanied with appropriate signage, is proposed along West Bay Drive NW north of the West Bay Drive NW/Schneider Hill Road NW intersection. This feature is intended to provide a chicane-like effect on the road to reduce vehicle speeds and calm traffic traveling on West Bay Drive NW between the marina and Schneider Hill Road NW.

Improvements to Pedestrian and Bicycle Facilities along Project Frontage: Improvements will generally include a 10-foot pedestrian/bicycle path along the east side of West Bay Drive NW north of Schneider Hill Road NW, a 6-foot sidewalk and a 5-foot bike lane along the east side of West Bay Drive NW south of Schneider Hill Road, and a 10-foot multimodal path along the waterfront. These improvements are anticipated to improve pedestrian and bicycle operations and safety in the project vicinity.

Appendix A

Preliminary Site Plan



MORGAN DESIGN GROUP LLC
Architecture & Building Envelope Consulting

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Seattle, WA 98133
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Fax: 866-847-6420
www.morgan-design.net

Corporate Member of A.I.A.

JOB: 2020005

WEST BAYVIEW LANDING SENIOR LIVING
2000 WEST BAY DRIVE NW
OLYMPIA, WA 98502



SHEET TITLE:
ARCHITECTURAL SITE PLAN

DATE	REVISION

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DATE: 11/08/2023
SCALE: 1"=60'-0"
DRAWN: JM
DESIGN: JM
APPROVED: JPY/JM

SHEET #
A-O.1

DESIGN REVIEW

Appendix B

Traffic Scoping Worksheet

Date: November 9, 2021

**CITY OF OLYMPIA
TRAFFIC IMPACT ANALYSIS SCOPING SHEET**

PROJECT INFORMATION

Proposed Use/Size : West Bayview Landing Senior Living
409 dwelling units of Attached Senior Housing

Location: 1824 West Bay Drive NW
Access: West side of West Bay Dr NW

<u>Geographic Distribution</u>	Olympia Trip Generation Table: Senior Housing (LUC 251/252)
North 15%	PM trip rate: 0.28 (58%/42%)
South 85%	_____
East	Pass-By/Capture Rate: 0%
West	(Show Internal Capture Calc)
Use TRPC Model	Year of Occupancy: 2024
TAZ 457	Ambient Growth: 1% annual
	Related Projects: West Bay Yards

CRITICAL INTERSECTIONS

- 1 All Site Access
- 2 West Bay & Schneider Hill
- 3 West Bay & Brawne Ave.
- 4 Olympic Way & Harrison Ave. (Roundabout)

Note: This analysis must follow City of Olympia guidelines for a Traffic Impact Analysis.
Use two hour LOS and unsignalized intersection LOS is determined by the Weighted Average of each approach.
Need to account for compact roundabout at West Bay & Schneider Hill for potential traffic calming.
If not, where speed limit is greater than 25 mph (South of Schneider Hill) without traffic calming, left-turn lane is needed at site access points for safety or potentially access consolidation.

Developer: Bryan Park
Phone: _____

Traffic Consultant: Popa Pratyaksa, TENW
Phone: [425-471-6335](tel:425-471-6335) / popa@tenw.com

cc: Impacted jurisdictions - None

Appendix C

Traffic Counts



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

Location: 1 W BAY DR NW & SCHNEIDER HILL RD NW PM

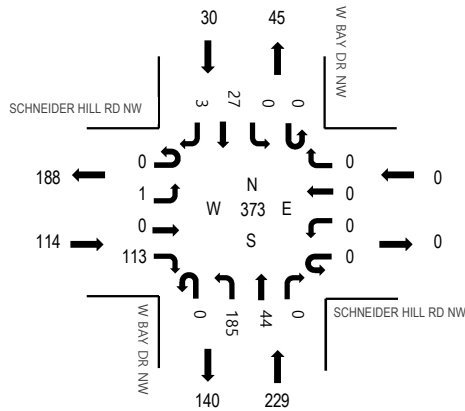
Date: Thursday, August 24, 2023

Peak Hour: 04:30 PM - 05:30 PM

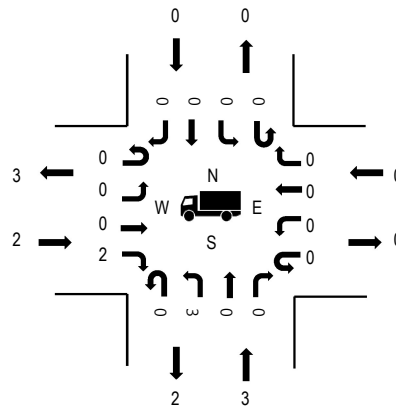
EXHIBIT 6

Peak Hour

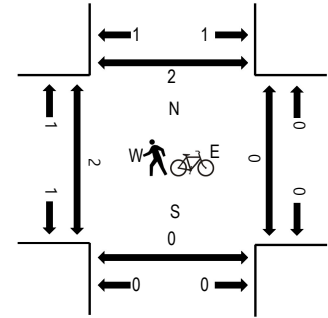
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.8%	0.89
WB	0.0%	0.00
NB	1.3%	0.97
SB	0.0%	0.68
All	1.3%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	SCHNEIDER HILL RD NW Eastbound				SCHNEIDER HILL RD NW Westbound				W BAY DR NW Northbound				W BAY DR NW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	23	0	0	0	0	0	38	6	0	0	0	6	0	73	329
4:15 PM	0	1	0	22	0	0	0	0	0	36	6	0	0	0	4	0	69	352
4:30 PM	0	0	0	29	0	0	0	0	0	48	9	0	0	0	3	0	89	373
4:45 PM	0	1	0	31	0	0	0	0	0	43	12	0	0	0	10	1	98	363
5:00 PM	0	0	0	29	0	0	0	0	0	46	13	0	0	0	8	0	96	366
5:15 PM	0	0	0	24	0	0	0	0	0	48	10	0	0	0	6	2	90	
5:30 PM	0	1	0	22	0	0	0	0	0	35	15	0	0	0	6	0	79	
5:45 PM	0	5	0	34	0	0	0	0	0	48	9	0	0	0	5	0	101	
Count Total	0	8	0	214	0	0	0	0	0	342	80	0	0	0	48	3	695	
Peak Hour	0	1	0	113	0	0	0	0	0	185	44	0	0	0	27	3	373	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	1	0	0	1	4:00 PM	0	1	1	0	2
4:15 PM	0	0	0	0	0	4:15 PM	0	1	1	1	3
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	0	2	0	0	2	5:00 PM	1	0	0	2	3
5:15 PM	2	1	0	0	3	5:15 PM	1	0	0	0	1
5:30 PM	1	0	0	0	1	5:30 PM	1	0	0	0	1
5:45 PM	0	1	0	0	1	5:45 PM	0	0	0	0	0
Count Total	3	5	0	0	8	Count Total	3	2	2	3	10
Peak Hour	2	3	0	0	5	Peak Hour	2	0	0	2	4



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

Location: 2 W BAY DR NW & BRAWNE AVE NW PM

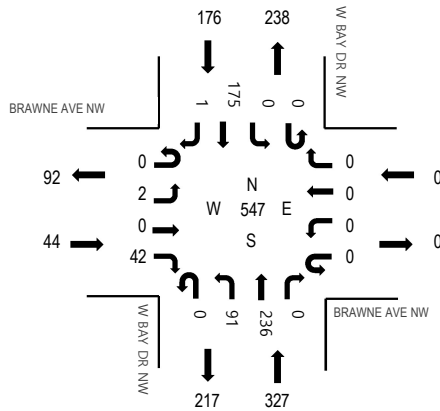
Date: Thursday, August 24, 2023

Peak Hour: 04:30 PM - 05:30 PM

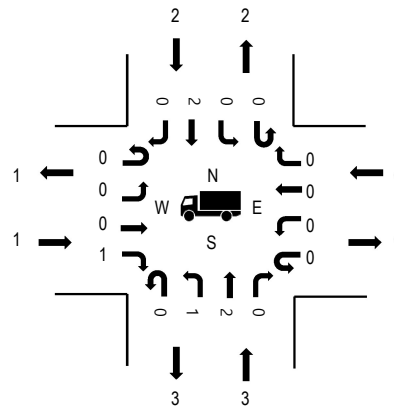
EXHIBIT 6

Peak Hour

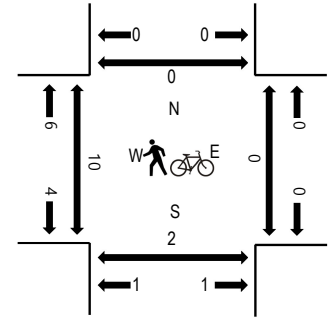
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.3%	0.85
WB	0.0%	0.00
NB	0.9%	0.97
SB	1.1%	0.77
All	1.1%	0.89

Traffic Counts - Motorized Vehicles

Interval Start Time	BRAWNE AVE NW Eastbound				BRAWNE AVE NW Westbound				W BAY DR NW Northbound				W BAY DR NW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	8	0	0	0	0	0	20	46	0	0	0	38	2	114	485
4:15 PM	0	1	0	8	0	0	0	0	0	17	48	0	0	0	30	0	104	524
4:30 PM	0	0	0	13	0	0	0	0	0	23	61	0	0	0	36	0	133	547
4:45 PM	0	1	0	10	0	0	0	0	0	23	52	0	0	0	48	0	134	538
5:00 PM	0	1	0	11	0	0	0	0	0	22	62	0	0	0	57	0	153	523
5:15 PM	0	0	0	8	0	0	0	0	0	23	61	0	0	0	34	1	127	
5:30 PM	0	1	0	17	0	0	0	0	0	16	51	0	0	0	38	1	124	
5:45 PM	0	0	0	13	0	0	0	0	0	14	52	0	0	0	39	1	119	
Count Total	0	4	0	88	0	0	0	0	0	158	433	0	0	0	320	5	1,008	
Peak Hour	0	2	0	42	0	0	0	0	0	91	236	0	0	0	175	1	547	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	1	0	0	1	4:00 PM	5	0	0	0	5
4:15 PM	0	0	0	0	0	4:15 PM	1	0	0	0	1
4:30 PM	1	1	0	0	2	4:30 PM	3	0	0	0	3
4:45 PM	0	0	0	0	0	4:45 PM	3	0	0	0	3
5:00 PM	0	1	0	0	1	5:00 PM	0	0	0	0	0
5:15 PM	0	1	0	2	3	5:15 PM	4	2	0	0	6
5:30 PM	1	1	0	1	3	5:30 PM	5	0	0	0	5
5:45 PM	0	0	0	0	0	5:45 PM	1	0	0	0	1
Count Total	2	5	0	3	10	Count Total	22	2	0	0	24
Peak Hour	1	3	0	2	6	Peak Hour	10	2	0	0	12



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

Location: 3 OLYMPIC WAY & HARRISON AVE PM

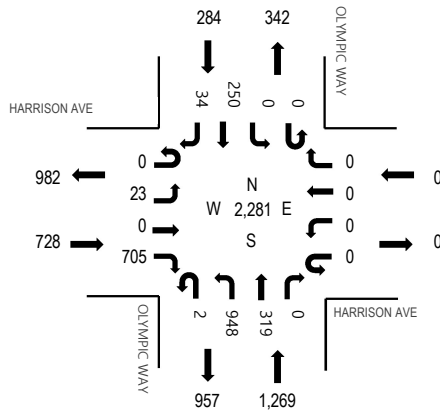
Date: Thursday, August 24, 2023

Peak Hour: 04:30 PM - 05:30 PM

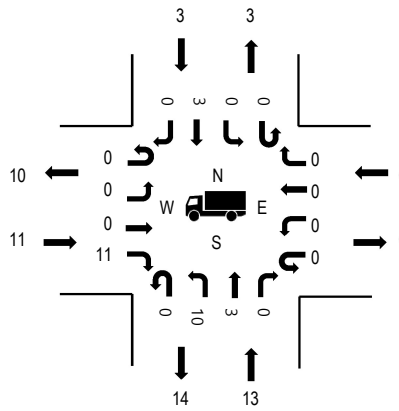
EXHIBIT 6

Peak Hour

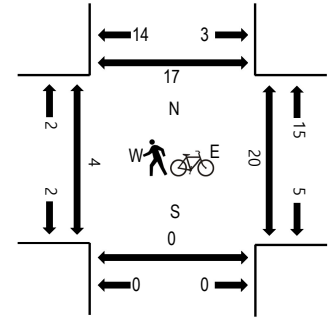
Motorized Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.5%	0.91
WB	0.0%	0.00
NB	1.0%	0.96
SB	1.1%	0.90
All	1.2%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	HARRISON AVE Eastbound				HARRISON AVE Westbound				OLYMPIC WAY Northbound				OLYMPIC WAY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	6	0	167	0	0	0	0	1	284	61	0	0	0	51	16	586	2,271
4:15 PM	0	7	0	158	0	0	0	0	0	280	61	0	0	0	61	7	574	2,269
4:30 PM	0	4	0	169	0	0	0	0	1	244	87	0	0	0	61	6	572	2,281
4:45 PM	0	8	0	161	0	0	0	0	1	221	71	0	0	0	69	8	539	2,236
5:00 PM	0	4	0	183	0	0	0	0	0	242	76	0	0	0	69	10	584	2,172
5:15 PM	0	7	0	192	0	0	0	0	0	241	85	0	0	0	51	10	586	
5:30 PM	0	6	0	159	0	0	0	0	0	224	66	0	0	0	65	7	527	
5:45 PM	0	9	0	149	0	0	0	0	0	182	71	0	0	0	57	7	475	
Count Total	0	51	0	1,338	0	0	0	0	3	1,918	578	0	0	0	484	71	4,443	
Peak Hour	0	23	0	705	0	0	0	0	2	948	319	0	0	0	250	34	2,281	

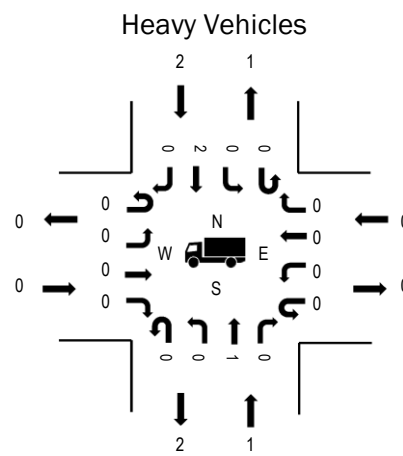
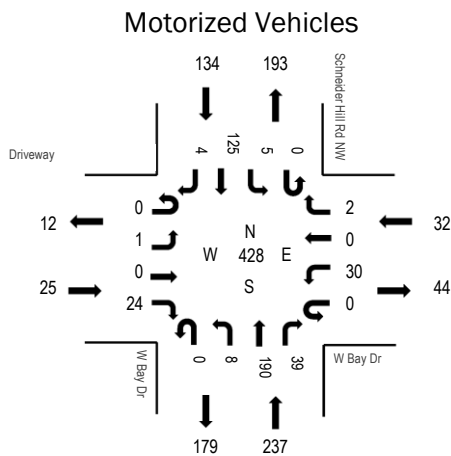
Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	6	4	0	0	10	4:00 PM	1	0	3	0	4
4:15 PM	3	2	0	0	5	4:15 PM	0	0	2	0	2
4:30 PM	3	3	0	0	6	4:30 PM	1	0	5	3	9
4:45 PM	4	3	0	1	8	4:45 PM	0	0	4	3	7
5:00 PM	1	3	0	0	4	5:00 PM	0	0	7	7	14
5:15 PM	3	4	0	2	9	5:15 PM	3	0	4	4	11
5:30 PM	2	5	0	2	9	5:30 PM	0	0	3	1	4
5:45 PM	1	3	0	0	4	5:45 PM	0	0	6	4	10
Count Total	23	27	0	5	55	Count Total	5	0	34	22	61
Peak Hour	11	13	0	3	27	Peak Hour	4	0	20	17	41

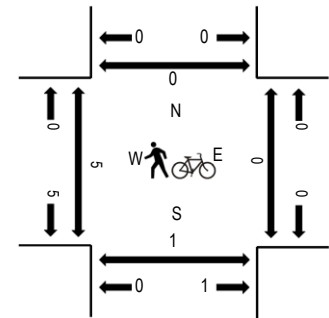
Date: Tuesday, September 21, 2021

Peak Hour: 04:15 PM - 05:15 PM

Peak Hour



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.89
WB	0.0%	0.73
NB	0.4%	0.94
SB	1.5%	0.73
All	0.7%	0.95

Traffic Counts - Motorized Vehicles

Interval Start Time	Driveway Eastbound				W Bay Dr Westbound				W Bay Dr Northbound				Schneider Hill Rd NW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	1	0	3	0	8	0	0	0	2	39	11	0	1	25	0	90	407
4:15 PM	0	0	0	6	0	10	0	0	0	3	51	9	0	2	23	0	104	428
4:30 PM	0	0	0	6	0	5	0	0	0	2	46	8	0	1	44	1	113	420
4:45 PM	0	1	0	6	0	5	0	1	0	0	48	11	0	1	26	1	100	392
5:00 PM	0	0	0	6	0	10	0	1	0	3	45	11	0	1	32	2	111	365
5:15 PM	0	1	0	2	0	9	0	1	0	1	41	10	0	0	31	0	96	
5:30 PM	0	0	0	2	0	4	0	0	0	0	39	12	0	1	27	0	85	
5:45 PM	0	2	0	3	0	7	0	0	0	1	35	9	0	1	15	0	73	
Count Total	0	5	0	34	0	58	0	3	0	12	344	81	0	8	223	4	772	
Peak Hour	0	1	0	24	0	30	0	2	0	8	190	39	0	5	125	4	428	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	2	0	0	2	4:00 PM	0	0	0	1	1	4:00 PM	2	0	0	0	2
4:15 PM	0	0	0	1	1	4:15 PM	0	0	0	0	0	4:15 PM	1	0	0	0	1
4:30 PM	0	1	0	1	2	4:30 PM	0	1	0	1	2	4:30 PM	1	0	0	0	1
4:45 PM	0	0	0	0	0	4:45 PM	0	0	1	1	2	4:45 PM	1	1	0	0	2
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	2	0	0	0	2
5:15 PM	0	2	0	0	2	5:15 PM	0	1	0	1	2	5:15 PM	1	0	0	0	1
5:30 PM	0	0	0	0	0	5:30 PM	0	1	0	1	2	5:30 PM	1	0	0	0	1
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	3	3	5:45 PM	0	0	0	0	0
Count Total	0	5	0	2	7	Count Total	0	3	1	8	12	Count Total	9	1	0	0	10
Peak Hour	0	1	0	2	3	Peak Hour	0	1	1	2	4	Peak Hour	5	1	0	0	6

Appendix D

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.

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.

2023 Existing

Lanes, Volumes, Timings

1: West Bay Dr NW & Schneider Hill Rd NW

12/04/2023

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	2	171	40	4	107
Future Volume (vph)	24	2	171	40	4	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-14%
Link Speed (mph)	25		25			25
Link Distance (ft)	1410		75			1590
Travel Time (s)	38.5		2.0			43.4
Confl. Peds. (#/hr)	1	2		1	1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC

1: West Bay Dr NW & Schneider Hill Rd NW

12/04/2023

Intersection

Int Delay, s/veh 0.9

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations 

Traffic Vol, veh/h 24 2 171 40 4 107

Future Vol, veh/h 24 2 171 40 4 107

Conflicting Peds, #/hr 1 2 0 1 1 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 - - -14

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 3 3 1 1 2 2

Mvmt Flow 24 2 171 40 4 107

Major/Minor Minor1 Major1 Major2

Conflicting Flow All 308 194 0 0 212 0

Stage 1 192 - - - - -

Stage 2 116 - - - - -

Critical Hdwy 6.43 6.23 - - 4.12 -

Critical Hdwy Stg 1 5.43 - - - - -

Critical Hdwy Stg 2 5.43 - - - - -

Follow-up Hdwy 3.527 3.327 - - 2.218 -

Pot Cap-1 Maneuver 682 845 - - 1358 -

Stage 1 838 - - - - -

Stage 2 906 - - - - -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 679 842 - - 1357 -

Mov Cap-2 Maneuver 679 - - - - -

Stage 1 837 - - - - -

Stage 2 903 - - - - -

Approach WB NB SB

HCM Control Delay, s/veh 0.43 0 0.28

HCM LOS B

Minor Lane/Major Mvmt NBT NBR/WBLn1 SBL SBT

Capacity (veh/h) - - 689 65 -

HCM Lane V/C Ratio - - 0.038 0.003 -

HCM Control Delay (s/veh) - - 10.4 7.7 0

HCM Lane LOS - - B A A

HCM 95th %tile Q(veh) - - 0.1 0 -

Lanes, Volumes, Timings

2: West Bay Dr NW & Brawne Ave NW

12/04/2023

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	44	79	217	160	3
Future Volume (vph)	2	44	79	217	160	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-15%			0%	0%	
Link Speed (mph)	25			30	30	
Link Distance (ft)	687			137	2717	
Travel Time (s)	18.7			3.1	61.8	
Confl. Peds. (#/hr)		1	11			11
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC

2: West Bay Dr NW & Brawne Ave NW

12/04/2023

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	44	79	217	160	3
Future Vol, veh/h	2	44	79	217	160	3
Conflicting Peds, #/hr	0	1	11	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-15	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	2	44	79	217	160	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	548	174	174	0	-	0
Stage 1	173	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	3.42	4.72	4.11	-	-	-
Critical Hdwy Stg 1	2.42	-	-	-	-	-
Critical Hdwy Stg 2	2.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	785	935	1409	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	720	925	1394	-	-	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/veh	9.15	2.07		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	480	-	913	-	-	
HCM Lane V/C Ratio	0.057	-	0.05	-	-	
HCM Control Delay (s/veh)	7.7	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	

LANE LEVEL OF SERVICE

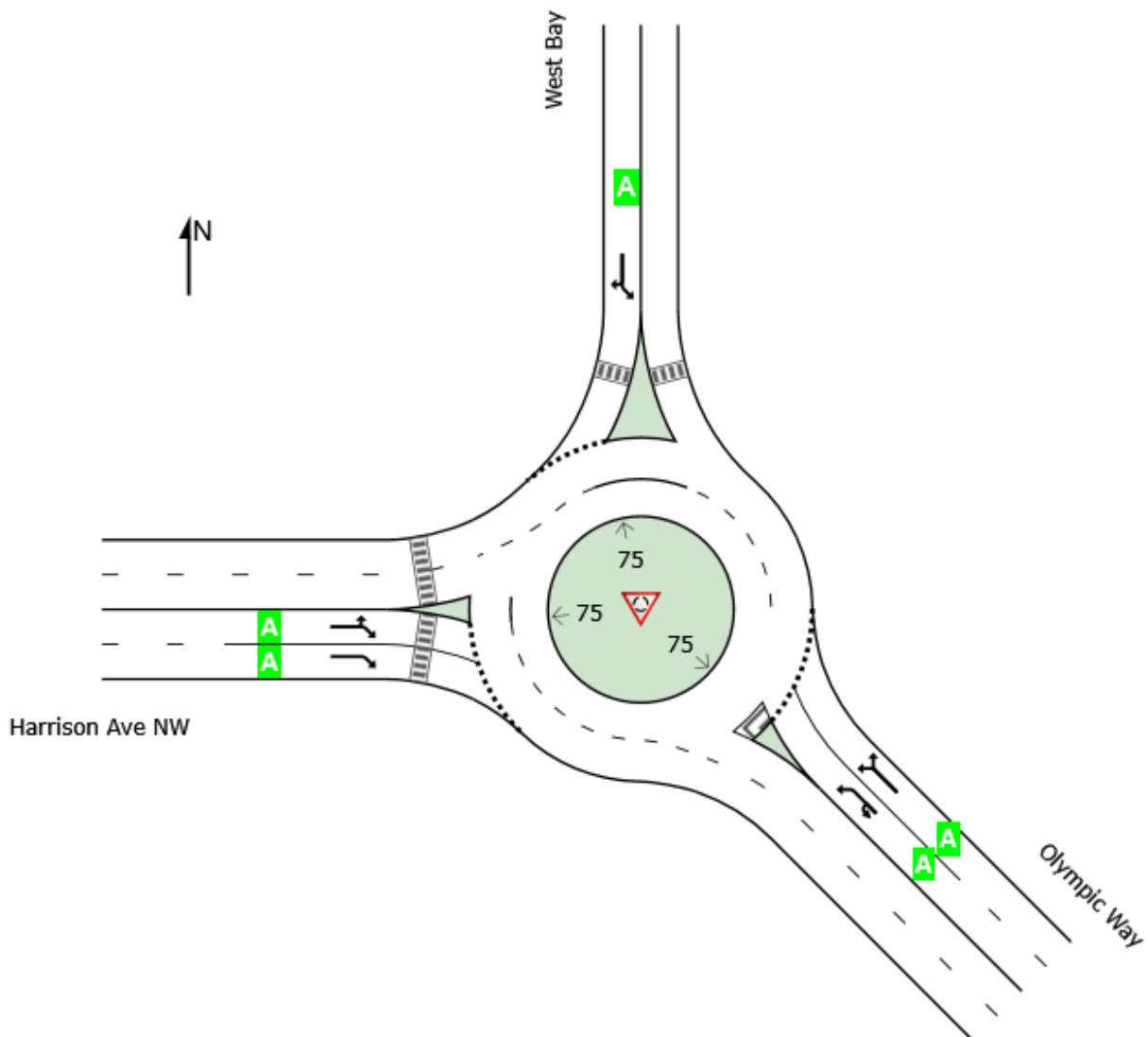
Lane Level of Service

 Site: 3 [West Bay Dr /Olympic Way/ Harrison Ave NW (Site Folder: 2023 Existing - PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

West Bayview Landing Senior Living Apartments (Olympia)
Site Category: 2023 Existing - PM Peak Hour
Roundabout

	Approaches			Intersection
	Southeast	North	West	
LOS	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 [West Bay Dr /Olympic Way/ Harrison Ave NW (Site Folder: 2023 Existing - PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

West Bayview Landing Senior Living Apartments (Olympia)

Site Category: 2023 Existing - PM Peak Hour

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				mph
SouthEast: Olympic Way															
3ux	U	All MCs	1	1.0	1	1.0	0.225	4.1	LOS A	1.1	27.8	0.08	0.02	0.08	31.7
3ax	L1	All MCs	480	1.0	480	1.0	0.225	4.1	LOS A	1.1	27.8	0.08	0.02	0.08	31.9
18ax	R1	All MCs	145	1.0	145	1.0	0.225	4.1	LOS A	1.1	27.8	0.08	0.02	0.08	33.1
Approach			625	1.0	625	1.0	0.225	4.1	LOS A	1.1	27.8	0.08	0.02	0.08	32.2
North: West Bay															
7a	L1	All MCs	121	1.0	121	1.0	0.151	5.3	LOS A	0.6	14.3	0.48	0.38	0.48	31.3
14	R2	All MCs	18	1.0	18	1.0	0.151	5.3	LOS A	0.6	14.3	0.48	0.38	0.48	31.6
Approach			139	1.0	139	1.0	0.151	5.3	LOS A	0.6	14.3	0.48	0.38	0.48	31.4
West: Harrison Ave NW															
5	L2	All MCs	13	2.0	13	2.0	0.143	4.2	LOS A	0.6	14.9	0.25	0.12	0.25	33.2
12a	R1	All MCs	335	2.0	335	2.0	0.143	4.1	LOS A	0.6	14.9	0.25	0.12	0.25	34.1
Approach			348	2.0	348	2.0	0.143	4.1	LOS A	0.6	14.9	0.25	0.12	0.25	34.0
All Vehicles			1112	1.3	1112	1.3	0.225	4.2	LOS A	1.1	27.8	0.18	0.09	0.18	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.

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Project: T:\Active Projects\West Bayview Landing (Olympia) - 2021-208\Planning\LOS\PM Peak Hour.sip9

2026 No Action

Lanes, Volumes, Timings

1: West Bay Dr NW & Schneider Hill Rd NW

12/04/2023

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	2	180	42	4	117
Future Volume (vph)	26	2	180	42	4	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-14%
Link Speed (mph)	25		25			25
Link Distance (ft)	1410		75			1590
Travel Time (s)	38.5		2.0			43.4
Confl. Peds. (#/hr)	1	2		1	1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC

1: West Bay Dr NW & Schneider Hill Rd NW

12/04/2023

Intersection

Int Delay, s/veh 0.9

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations 

Traffic Vol, veh/h 26 2 180 42 4 117

Future Vol, veh/h 26 2 180 42 4 117

Conflicting Peds, #/hr 1 2 0 1 1 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 - - -14

Peak Hour Factor 100 100 100 100 100 100

Heavy Vehicles, % 3 3 1 1 2 2

Mvmt Flow 26 2 180 42 4 117

Major/Minor Minor1 Major1 Major2

Conflicting Flow All 328 204 0 0 223 0

Stage 1 202 - - - - -

Stage 2 126 - - - - -

Critical Hdwy 6.43 6.23 - - 4.12 -

Critical Hdwy Stg 1 5.43 - - - - -

Critical Hdwy Stg 2 5.43 - - - - -

Follow-up Hdwy 3.527 3.327 - - 2.218 -

Pot Cap-1 Maneuver 664 834 - - 1346 -

Stage 1 830 - - - - -

Stage 2 897 - - - - -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 661 832 - - 1345 -

Mov Cap-2 Maneuver 661 - - - - -

Stage 1 829 - - - - -

Stage 2 893 - - - - -

Approach WB NB SB

HCM Control Delay, s/veh 0.6 0 0.25

HCM LOS B

Minor Lane/Major Mvmt NBT NBR/WBLn1 SBL SBT

Capacity (veh/h) - - 671 60 -

HCM Lane V/C Ratio - - 0.042 0.003 -

HCM Control Delay (s/veh) - - 10.6 7.7 0

HCM Lane LOS - - B A A

HCM 95th %tile Q(veh) - - 0.1 0 -

Lanes, Volumes, Timings

2: West Bay Dr NW & Brawne Ave NW

12/04/2023

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	45	81	364	251	3
Future Volume (vph)	2	45	81	364	251	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-15%			0%	0%	
Link Speed (mph)	25			30	30	
Link Distance (ft)	687			137	2717	
Travel Time (s)	18.7			3.1	61.8	
Confl. Peds. (#/hr)		1	11			11
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
2: West Bay Dr NW & Brawne Ave NW

12/04/2023

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	45	81	364	251	3
Future Vol, veh/h	2	45	81	364	251	3
Conflicting Peds, #/hr	0	1	11	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-15	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	2	45	81	364	251	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	790	265	265	0	-	0
Stage 1	264	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Critical Hdwy	3.42	4.72	4.11	-	-	-
Critical Hdwy Stg 1	2.42	-	-	-	-	-
Critical Hdwy Stg 2	2.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	694	864	1305	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	626	854	1291	-	-	-
Mov Cap-2 Maneuver	626	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/veh	9.53	1.45		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	328	-	841	-	-	
HCM Lane V/C Ratio	0.063	-	0.056	-	-	
HCM Control Delay (s/veh)	8	0	9.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	

LANE LEVEL OF SERVICE

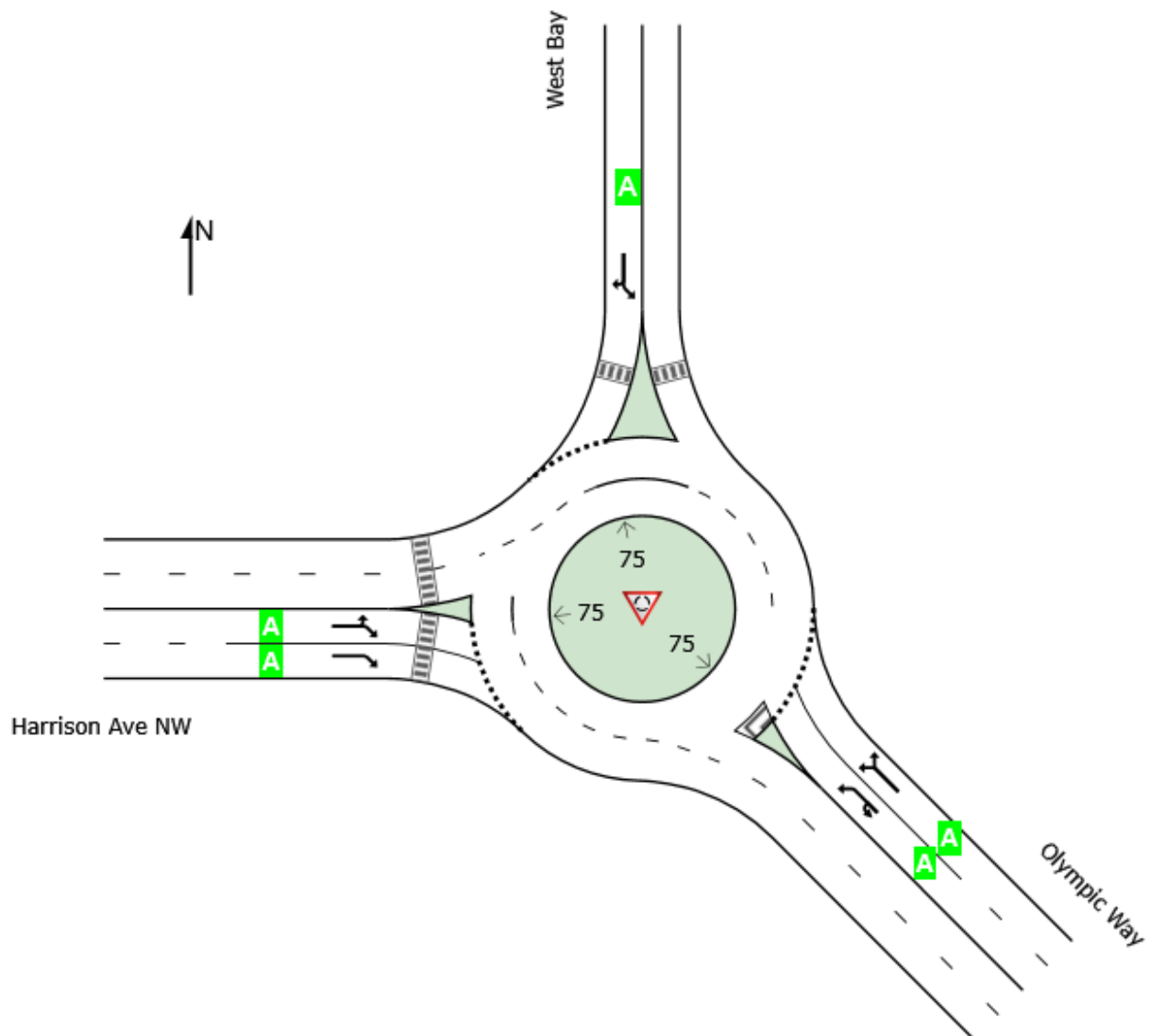
Lane Level of Service

 **Site: 3 [West Bay Dr /Olympic Way/ Harrison Ave NW (Site Folder: 2026 No Action - PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

West Bayview Landing Senior Living Apartments (Olympia)
 Site Category: 2026 No Action - PM Peak Hour
 Roundabout

	Approaches			Intersection
	Southeast	North	West	
LOS	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 [West Bay Dr /Olympic Way/ Harrison Ave NW (Site Folder: 2026 No Action - PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

West Bayview Landing Senior Living Apartments (Olympia)

Site Category: 2026 No Action - PM Peak Hour

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Dist	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	ft				mph
SouthEast: Olympic Way															
3ux	U	All MCs	1	1.0	1	1.0	0.254	4.6	LOS A	1.3	32.3	0.15	0.04	0.15	31.4
3ax	L1	All MCs	494	1.0	494	1.0	0.254	4.6	LOS A	1.3	32.3	0.15	0.04	0.15	31.7
18ax	R1	All MCs	197	1.0	197	1.0	0.254	4.6	LOS A	1.3	32.3	0.15	0.04	0.15	33.0
Approach			692	1.0	692	1.0	0.254	4.6	LOS A	1.3	32.3	0.15	0.04	0.15	32.1
North: West Bay															
7a	L1	All MCs	154	1.0	154	1.0	0.204	6.0	LOS A	0.8	20.1	0.50	0.40	0.50	31.1
14	R2	All MCs	32	1.0	32	1.0	0.204	6.0	LOS A	0.8	20.1	0.50	0.40	0.50	31.4
Approach			186	1.0	186	1.0	0.204	6.0	LOS A	0.8	20.1	0.50	0.40	0.50	31.2
West: Harrison Ave NW															
5	L2	All MCs	36	2.0	36	2.0	0.161	4.5	LOS A	0.7	17.0	0.29	0.16	0.29	32.8
12a	R1	All MCs	345	2.0	345	2.0	0.161	4.4	LOS A	0.7	17.0	0.29	0.15	0.29	33.8
Approach			380	2.0	380	2.0	0.161	4.4	LOS A	0.7	17.0	0.29	0.15	0.29	33.7
All Vehicles			1258	1.3	1258	1.3	0.254	4.7	LOS A	1.3	32.3	0.24	0.13	0.24	32.4

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.

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Project: T:\Active Projects\West Bayview Landing (Olympia) - 2021-208\Planning\LOS\PM Peak Hour.sip9

2026 With Project

LANE LEVEL OF SERVICE

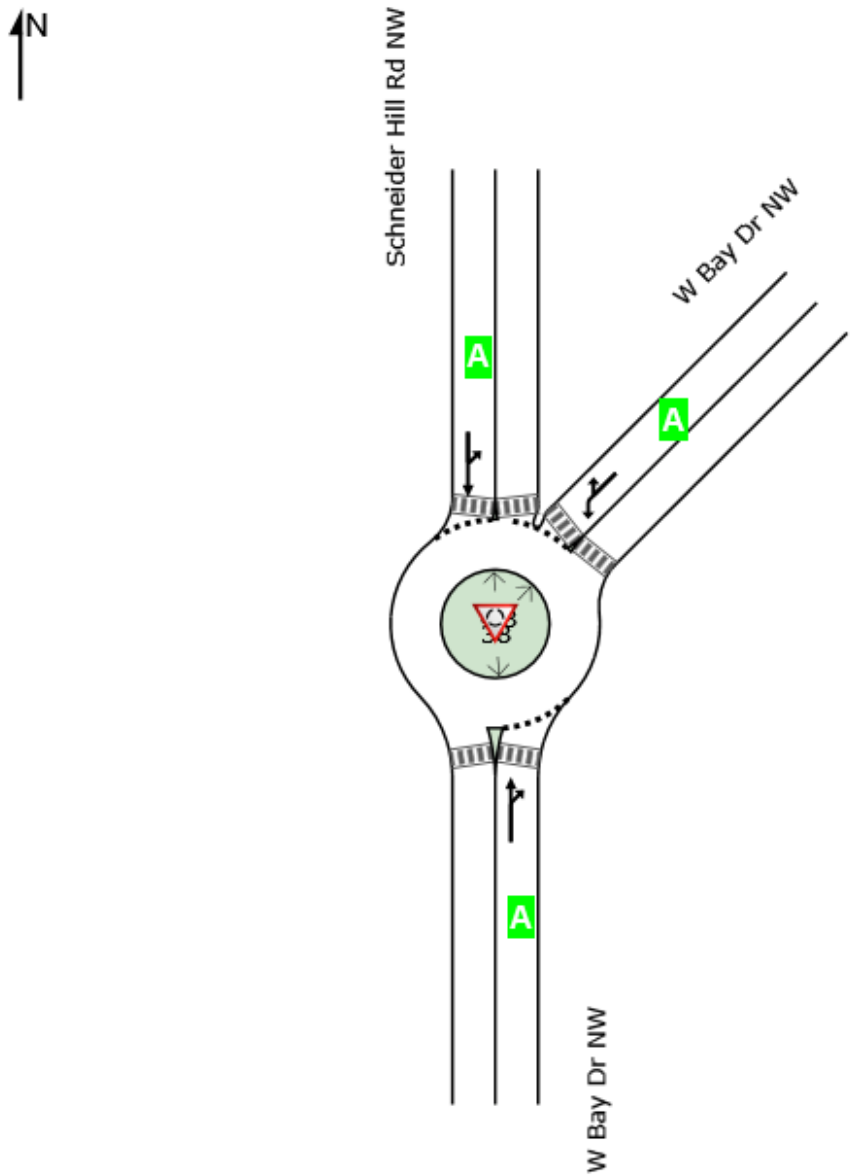
Lane Level of Service

 Site: 1 [Schneider Hill Rd NW / W Bay Dr NW (Site Folder: 2026 With Project - PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

West Bayview Landing Senior Living Apartments (Olympia)
Site Category: 2026 With Project - PM Peak Hour
Roundabout

	Approaches			Intersection
	South	Northeast	North	
LOS	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: 1 [Schneider Hill Rd NW / W Bay Dr NW (Site Folder: 2026 With Project - PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

West Bayview Landing Senior Living Apartments (Olympia)

Site Category: 2026 With Project - PM Peak Hour

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				
South: W Bay Dr NW															
8	T1	All MCs	181	1.0	181	1.0	0.183	3.8	LOS A	0.9	23.5	0.07	0.01	0.07	33.4
18a	R1	All MCs	67	1.0	67	1.0	0.183	3.8	LOS A	0.9	23.5	0.07	0.01	0.07	33.5
Approach			248	1.0	248	1.0	0.183	3.8	LOS A	0.9	23.5	0.07	0.01	0.07	33.4
NorthEast: W Bay Dr NW															
1ax	L1	All MCs	46	3.0	46	3.0	0.046	3.6	LOS A	0.2	4.8	0.32	0.17	0.32	31.8
16bx	R3	All MCs	5	3.0	5	3.0	0.046	3.6	LOS A	0.2	4.8	0.32	0.17	0.32	31.8
Approach			51	3.0	51	3.0	0.046	3.6	LOS A	0.2	4.8	0.32	0.17	0.32	31.8
North: Schneider Hill Rd NW															
7b	L3	All MCs	11	2.0	11	2.0	0.099	3.5	LOS A	0.4	11.4	0.16	0.05	0.16	32.8
4	T1	All MCs	117	2.0	117	2.0	0.099	3.5	LOS A	0.4	11.4	0.16	0.05	0.16	33.3
Approach			128	2.0	128	2.0	0.099	3.5	LOS A	0.4	11.4	0.16	0.05	0.16	33.3
All Vehicles			427	1.5	427	1.5	0.183	3.7	LOS A	0.9	23.5	0.13	0.04	0.13	33.2

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.

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Project: T:\Active Projects\West Bayview Landing (Olympia) - 2021-208\Planning\LOS\PM Peak Hour.sip9

Lanes, Volumes, Timings

2: West Bay Dr NW & Brawne Ave NW

12/04/2023

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	45	81	399	277	4
Future Volume (vph)	3	45	81	399	277	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-15%			0%	0%	
Link Speed (mph)	25			30	30	
Link Distance (ft)	687			137	2669	
Travel Time (s)	18.7			3.1	57.5	
Confl. Peds. (#/hr)		1	11			11
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC

2: West Bay Dr NW & Brawne Ave NW

12/04/2023

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	45	81	399	277	4
Future Vol, veh/h	3	45	81	399	277	4
Conflicting Peds, #/hr	0	1	11	0	0	11
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-15	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	3	45	81	399	277	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	851	291	292	0	-	0
Stage 1	290	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	3.42	4.72	4.11	-	-	-
Critical Hdwy Stg 1	2.42	-	-	-	-	-
Critical Hdwy Stg 2	2.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	671	845	1275	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	603	835	1262	-	-	-
Mov Cap-2 Maneuver	603	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/veh	9.69	1.36		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	304	-	815	-	-	
HCM Lane V/C Ratio	0.064	-	0.059	-	-	
HCM Control Delay (s/veh)	8	0	9.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	

LANE LEVEL OF SERVICE

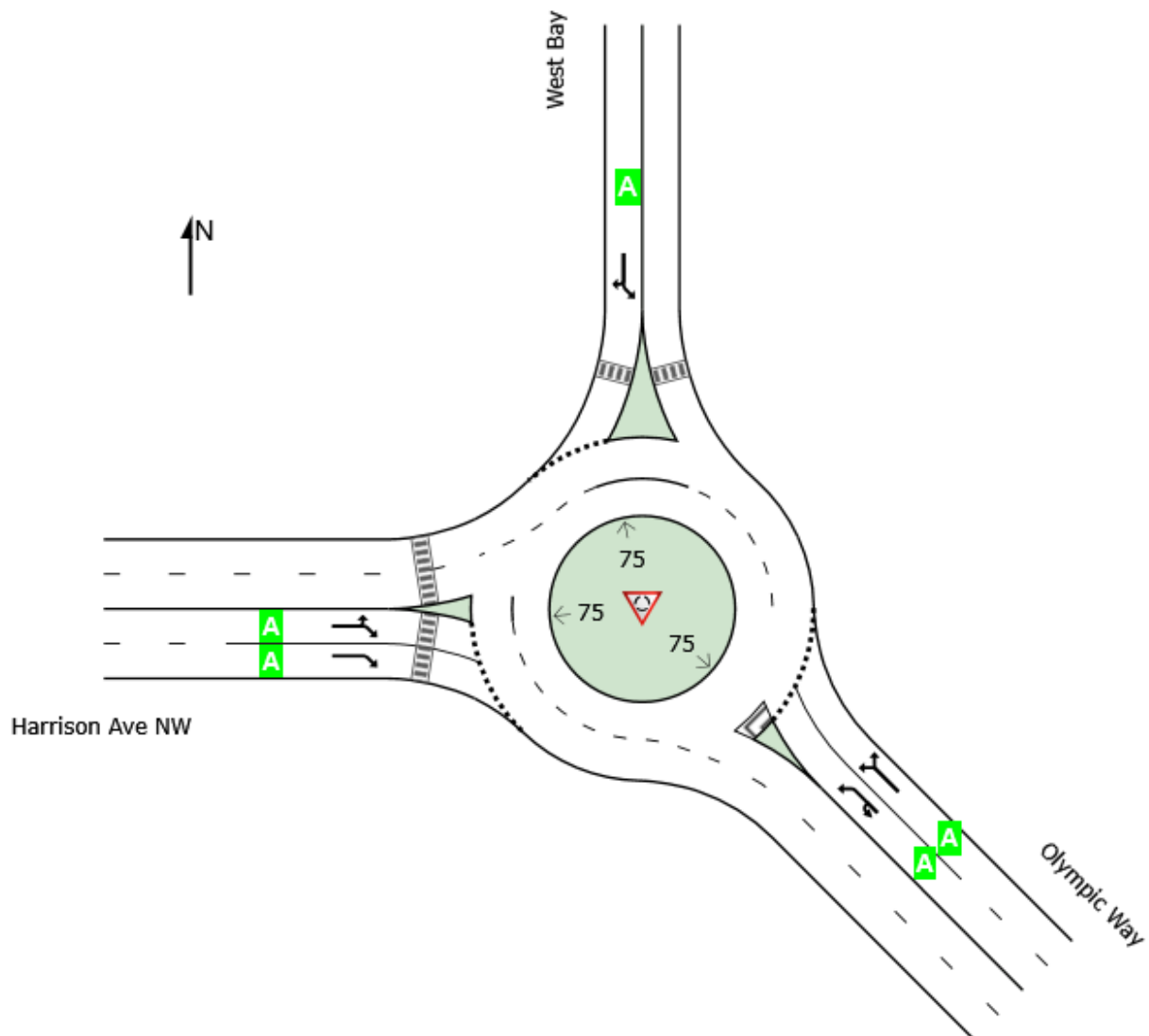
Lane Level of Service

 **Site: 3 [West Bay Dr /Olympic Way/ Harrison Ave NW (Site Folder: 2026 With Project - PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

West Bayview Landing Senior Living Apartments (Olympia)
 Site Category: 2026 With Project - PM Peak Hour
 Roundabout

	Approaches			Intersection
	Southeast	North	West	
LOS	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 [West Bay Dr /Olympic Way/ Harrison Ave NW (Site Folder: 2026 With Project - PM Peak Hour)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

West Bayview Landing Senior Living Apartments (Olympia)

Site Category: 2026 With Project - PM Peak Hour

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] ft				mph
SouthEast: Olympic Way															
3ux	U	All MCs	1	1.0	1	1.0	0.260	4.7	LOS A	1.3	33.2	0.16	0.05	0.16	31.4
3ax	L1	All MCs	494	1.0	494	1.0	0.260	4.7	LOS A	1.3	33.2	0.16	0.05	0.16	31.7
18ax	R1	All MCs	209	1.0	209	1.0	0.260	4.7	LOS A	1.3	33.2	0.16	0.05	0.16	33.0
Approach			704	1.0	704	1.0	0.260	4.7	LOS A	1.3	33.2	0.16	0.05	0.16	32.1
North: West Bay															
7a	L1	All MCs	162	1.0	162	1.0	0.218	6.1	LOS A	0.9	21.7	0.51	0.40	0.51	31.1
14	R2	All MCs	38	1.0	38	1.0	0.218	6.1	LOS A	0.9	21.7	0.51	0.40	0.51	31.4
Approach			199	1.0	199	1.0	0.218	6.1	LOS A	0.9	21.7	0.51	0.40	0.51	31.1
West: Harrison Ave NW															
5	L2	All MCs	42	2.0	42	2.0	0.165	4.6	LOS A	0.7	17.4	0.30	0.16	0.30	32.7
12a	R1	All MCs	345	2.0	345	2.0	0.165	4.5	LOS A	0.7	17.4	0.29	0.16	0.29	33.7
Approach			386	2.0	386	2.0	0.165	4.5	LOS A	0.7	17.4	0.30	0.16	0.30	33.6
All Vehicles			1289	1.3	1289	1.3	0.260	4.9	LOS A	1.3	33.2	0.26	0.14	0.26	32.4

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.

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Project: T:\Active Projects\West Bayview Landing (Olympia) - 2021-208\Planning\LOS\PM Peak Hour.sip9

Lanes, Volumes, Timings

4: West Bay Dr NW & Smyth Landing Dwy/Site Access A

12/04/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	18	7	0	1	6	244	11	0	161	2
Future Volume (vph)	3	0	18	7	0	1	6	244	11	0	161	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		107			160			2669			137	
Travel Time (s)		0.0			3.5			69.0			4.8	
Confl. Peds. (#/hr)			1	1			5					5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 7th TWSC

4: West Bay Dr NW & Smyth Landing Dwy/Site Access A

12/04/2023

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	3	0	18	7	0	1	6	244	11	0	161	2
Future Vol, veh/h	3	0	18	7	0	1	6	244	11	0	161	2
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	3	3	3	1	1	1	1	1	1
Mvmt Flow	3	0	18	7	0	1	6	244	11	0	161	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	423	434	168	424	430	250	168	0	0	255	0	0
Stage 1	167	167	-	262	262	-	-	-	-	-	-	-
Stage 2	256	267	-	162	168	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.53	6.23	4.11	-	-	4.11	-	-
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	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	545	518	881	539	517	787	1416	-	-	1316	-	-
Stage 1	840	764	-	741	690	-	-	-	-	-	-	-
Stage 2	753	692	-	838	758	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	539	513	876	525	512	787	1409	-	-	1316	-	-
Mov Cap-2 Maneuver	539	513	-	525	512	-	-	-	-	-	-	-
Stage 1	836	760	-	738	687	-	-	-	-	-	-	-
Stage 2	748	688	-	820	754	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v9.6			11.67		0.17		0					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	41	-	-	804	548	1316	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.026	0.015	-	-	-				
HCM Control Delay (s/veh)	7.6	0	-	9.6	11.7	0	-	-				
HCM Lane LOS	A	A	-	A	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-				

Lanes, Volumes, Timings
5: West Bay Dr NW & Site Access B

12/04/2023

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	0	75	3	0	49
Future Volume (vph)	2	0	75	3	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	128		314			303
Travel Time (s)	3.5		9.2			8.3
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	0.92
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC

5: West Bay Dr NW & Site Access B

12/04/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	T	T
Traffic Vol, veh/h	2	0	75	3	0	49
Future Vol, veh/h	2	0	75	3	0	49
Conflicting Peds, #/hr	0	0	0	5	5	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	100	100	100	100	100	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	2	0	75	3	0	53
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	135	82	0	0	83	0
Stage 1	82	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	856	976	-	-	1508	-
Stage 1	939	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	852	971	-	-	1501	-
Mov Cap-2 Maneuver	852	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/veh	9.23	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT		
Capacity (veh/h)	-	-	852	1501	-	
HCM Lane V/C Ratio	-	-	0.002	-	-	
HCM Control Delay (s/veh)	-	-	9.2	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
6: West Bay Dr NW & Site Access C

12/04/2023

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	0	64	11	0	41
Future Volume (vph)	8	0	64	11	0	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	175		303			318
Travel Time (s)	6.0		8.3			8.7
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
6: West Bay Dr NW & Site Access C

12/04/2023

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	8	0	64	11	0	41
Future Vol, veh/h	8	0	64	11	0	41
Conflicting Peds, #/hr	0	0	0	5	5	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	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	8	0	64	11	0	41
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	116	75	0	0	80	0
Stage 1	75	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	878	984	-	-	1512	-
Stage 1	946	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	874	980	-	-	1504	-
Mov Cap-2 Maneuver	874	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/veh	9.16	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT		
Capacity (veh/h)	-	-	874	1504	-	
HCM Lane V/C Ratio	-	-	0.009	-	-	
HCM Control Delay (s/veh)	-	-	9.2	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
7: West Bay Dr NW & Site Access D

12/04/2023

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	0	46	18	0	28
Future Volume (vph)	13	0	46	18	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	119		318			260
Travel Time (s)	4.1		8.7			7.1
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 7th TWSC
7: West Bay Dr NW & Site Access D

12/04/2023

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	13	0	46	18	0	28
Future Vol, veh/h	13	0	46	18	0	28
Conflicting Peds, #/hr	0	0	0	5	5	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	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	0	46	18	0	28
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	88	60	0	0	69	0
Stage 1	60	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	910	1003	-	-	1526	-
Stage 1	960	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	906	998	-	-	1518	-
Mov Cap-2 Maneuver	906	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/veh	9.03	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT		
Capacity (veh/h)	-	-	906	1518	-	
HCM Lane V/C Ratio	-	-	0.014	-	-	
HCM Control Delay (s/veh)	-	-	9	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Appendix E

Trip Generation Calculations

West Bayview Landing Senior Living Apartments (Olympia, WA)
Trip Generation Summary

Land Use	Units ¹	ITE LUC	Directional Distribution ^{2,3}		Trip Rate ^{2,3}	Trips Generated		
			In	Out		In	Out	Total
DAILY								
<u>Proposed Use:</u>								
Senior Housing	263 DU	252	50%	50%	3.24	426	426	852
New Daily Trips Generated =						426	426	852
AM PEAK HOUR								
<u>Proposed Use:</u>								
Senior Housing	263 DU	252	34%	66%	0.20	18	35	53
New AM Peak Hour Trips Generated =						18	35	53
PM PEAK HOUR								
<u>Proposed Use:</u>								
Senior Housing	263 DU	251/252	58%	42%	0.28	43	31	74
New PM Peak Hour Trips Generated =						43	31	74

Notes:

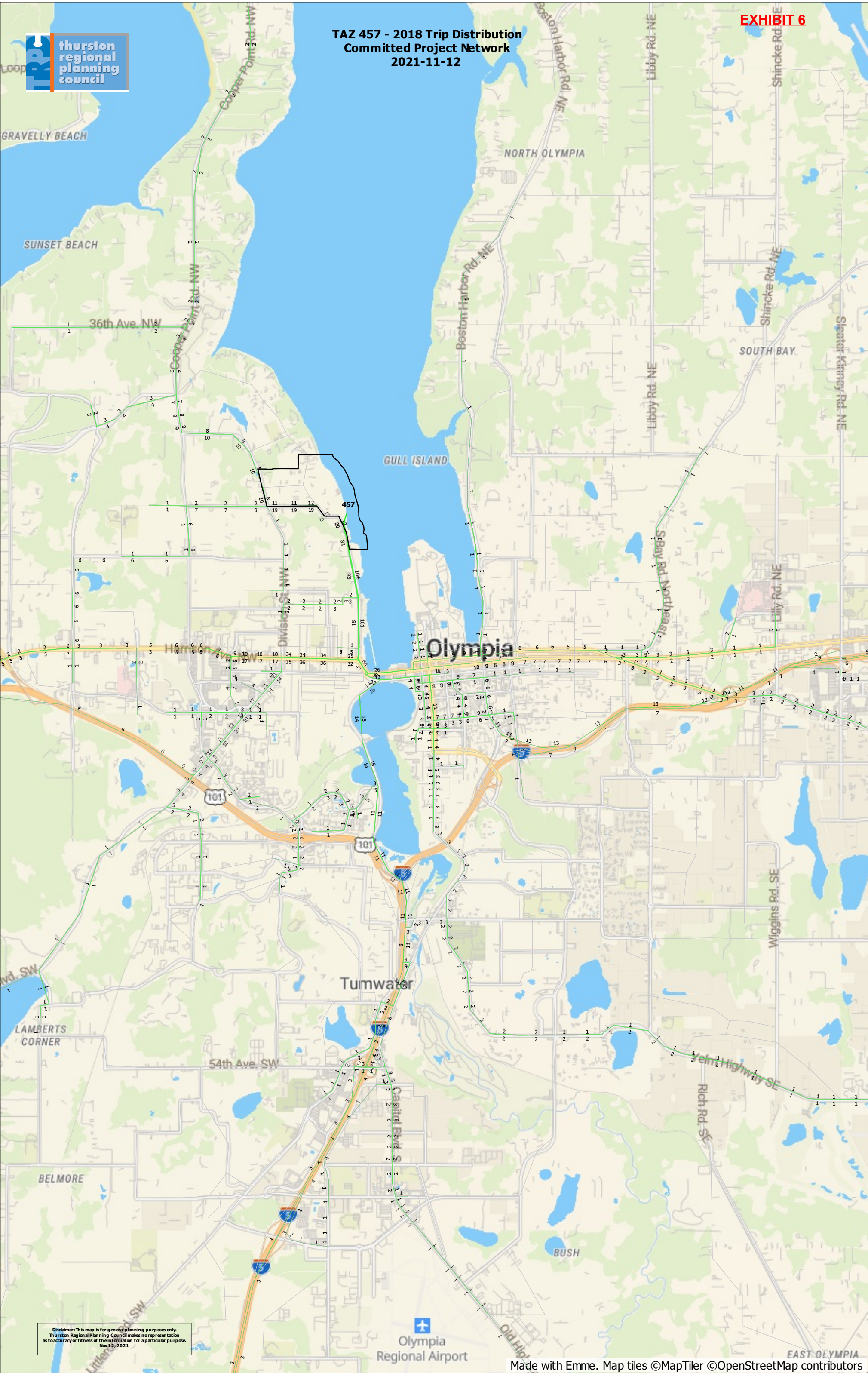
¹ DU = Dwelling Units.

² Daily and AM peak hour trip rates and directional splits are based on Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition, 2021 Land Use Code 252 (Senior Adult Housing - Multifamily).

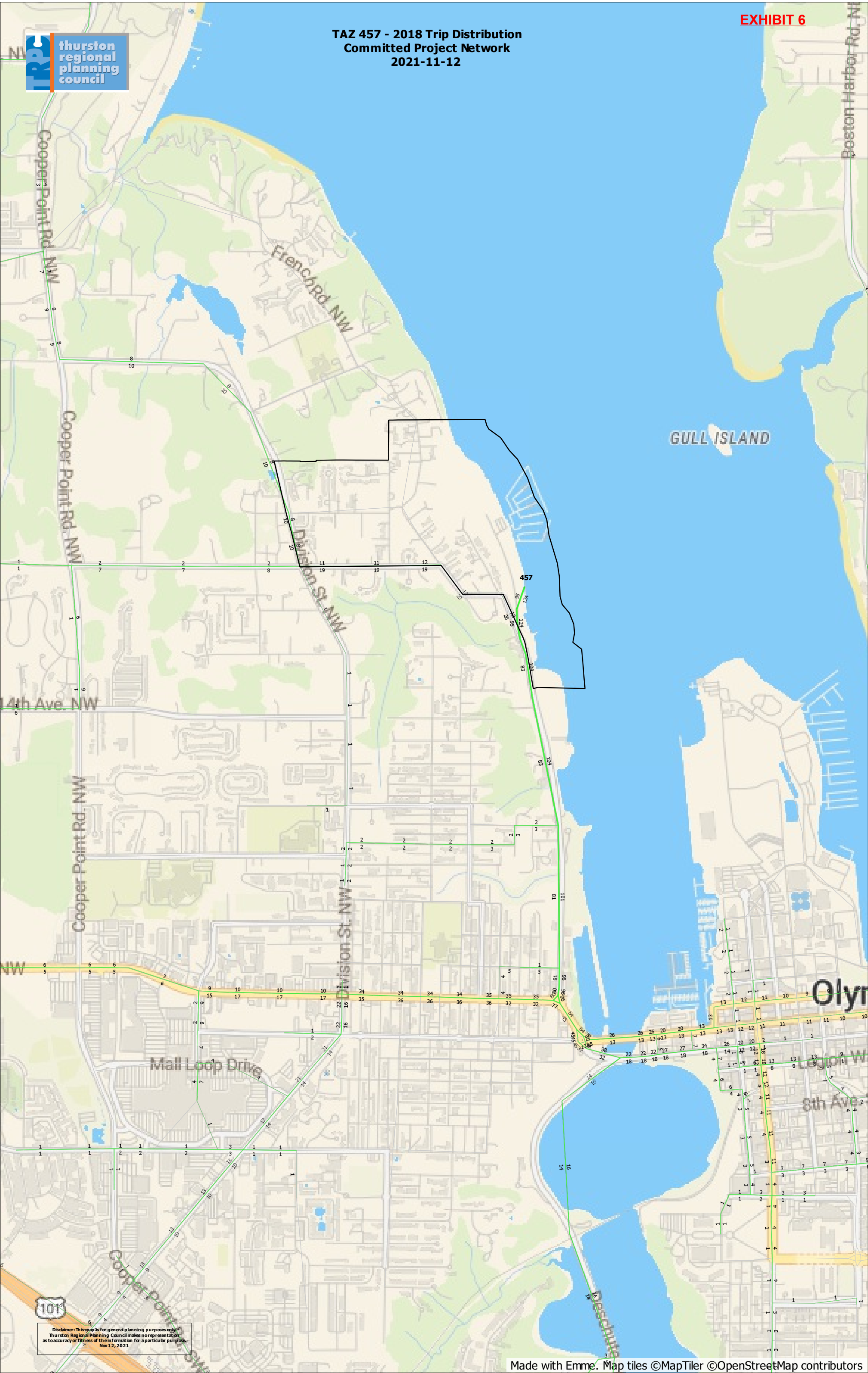
³ PM trip rates based on City of Olympia Impact Fee Program. PM land use codes and directional splits are based on ITE, *Trip Generation Manual*, 10th Edition (2017) consistent with City of Olympia Impact Fee Program.

Appendix F

TRPC Traffic Model Distribution



TAZ 457 - 2018 Trip Distribution
Committed Project Network
2021-11-12



Disclaimer: This map is for general planning purposes only. The Thurston Regional Planning Council makes no representation as to accuracy or fitness of the information for a particular purpose. Nov 12, 2021