Appendix H

Transportation Technical Report

TRANSPORTATION TECHNICAL REPORT

for

Fort Lawton Army Reserve Center Redevelopment Update

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1. INTRODUCTION

This report presents the transportation impact analyses for the Fort Lawton Army Reserve Center Redevelopment Update project. It is intended to serve as the Transportation appendix to the Draft Supplemental Environmental Impact Statement (SEIS) and addresses potential impacts to the roadway system, intersection operations, traffic safety, transit facilities, and non-motorized facilities. It evaluates the Updated Preferred Action (Alternative 1) and No Action (Alternative 2).

1.1. Project Description

The applicant, Seattle Office of Housing (SOH), is proposing a redevelopment option that includes housing and park uses for the Fort Lawton U.S. Army Reserve Center site (Fort Lawton site), located in the Magnolia neighborhood in northwest Seattle. The current proposal has been updated from the plans analyzed in the *2018 Fort Lawton Army Reserve Center Redevelopment EIS* (referred to as the *2018 EIS*) for the same site.[1] The Fort Lawton Army Reserve Center Update is proposed, among other things, to increase the number of affordable housing units on the site consistent with existing zoning, and to increase the infrastructure cost efficiency compared to the alternatives analyzed in the *2018 EIS*. It is expected that full buildout of the Fort Lawton Project would occur by 2032. However, actual buildout could depend on specific economic and market conditions. The redevelopment alternative evaluated in this report refers to the Fort Lawton site as described below.

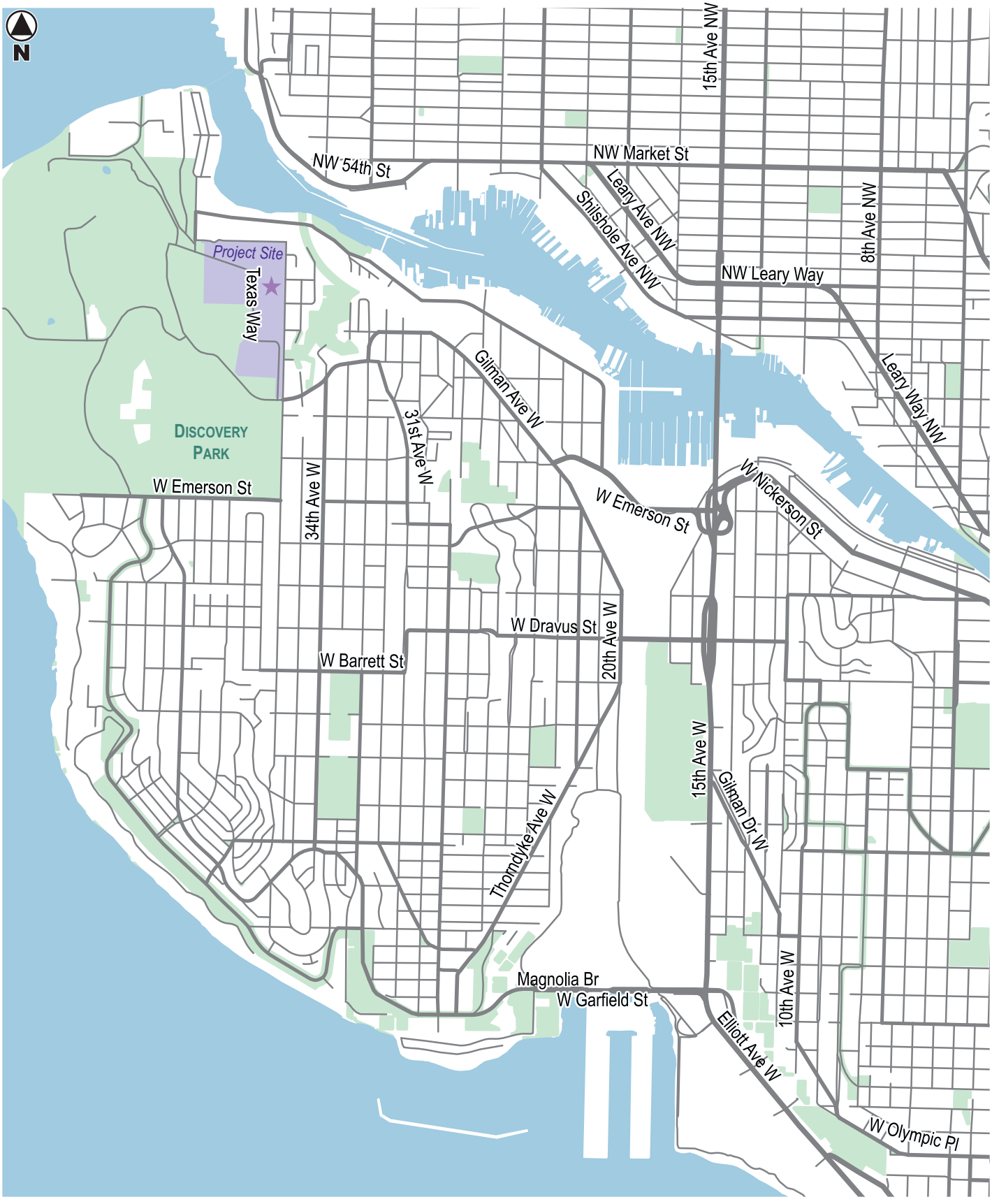
1.1.1. Existing Fort Lawton Site

The Fort Lawton site consists of approximately 34 acres within the Magnolia neighborhood in northwest Seattle. The site is bordered by W Lawton Street to the north, 36th Avenue W to the east, W Government Way to the south, and Discovery Park to the west.

In 1968, the Army transferred most of the former Fort Lawton Army Base to the City of Seattle, which subsequently became Discovery Park, the City's largest park (534 acres). A 20-acre portion of the site was turned over to Native Americans to create the Daybreak Star Cultural Center. An area of approximately 46 acres was retained by the U.S. Army and used as a Reserve Center. In 2000, the Army built the Fort Lawton Army Reserve Complex (FLARC) building at the Reserve Center, which was transferred to the Veterans Administration (VA) in 2011. The Federal Government plans to retain the portion of the Army Reserve Center site that contains FLARC, together with supporting parking and the military cemetery. The remaining approximately 34 acres of the Army Reserve Center, and the subject site of this EIS, is currently closed and vacant and is leased by the City of Seattle.

Primary vehicular access to the site is provided by Texas Way, which connects to Discovery Park Boulevard to the south and 40th Avenue W to the north. The site currently has five off-street parking lots supporting six existing structures, which are not currently in use. Only one parking lot—located between the existing maintenance facility and the structures to the south—is open to the public and can be accessed from Texas Way. There are a total of five driveways along the east side of Texas Way (only one is active) and two driveways on the west side of Texas Way that currently serve the VA and its parking lot. There are also three driveways to 36th Avenue W, all of which are closed. Figure 1 shows the site location and vicinity.

[1] City of Seattle, Fort Lawton Redevelopment Final Environmental Impact Statement, published March 29, 2018.



Fort Lawton Army Reserve Center Redevelopment

Figure 1

Site Vicinity

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1.1.2. Redevelopment Alternatives

Alternative 1– Updated Proposed Action

The Updated Proposed Action (Alternative 1) includes a mix of affordable housing with the following proposed elements:

- **Senior/Veteran Supportive Housing** – Subsidized rental housing for senior citizens (55 years of age and older), including veterans, who were formerly homeless and have income at or below 30% of the area median income (AMI);[2]
- **Affordable Homeownership** – Housing available for sale to households with an income at or below 80% of the AMI; and
- **Affordable Rental** – Housing available for rent to households with an income at or below 60% of the AMI.

In total, the proposed development would provide up to 500 residential units while preserving the existing forested areas in the north, west, and south portions of the site. Public park uses totaling about 21 acres would also be created. Table 1 lists housing unit types and public park open space elements proposed by the project.

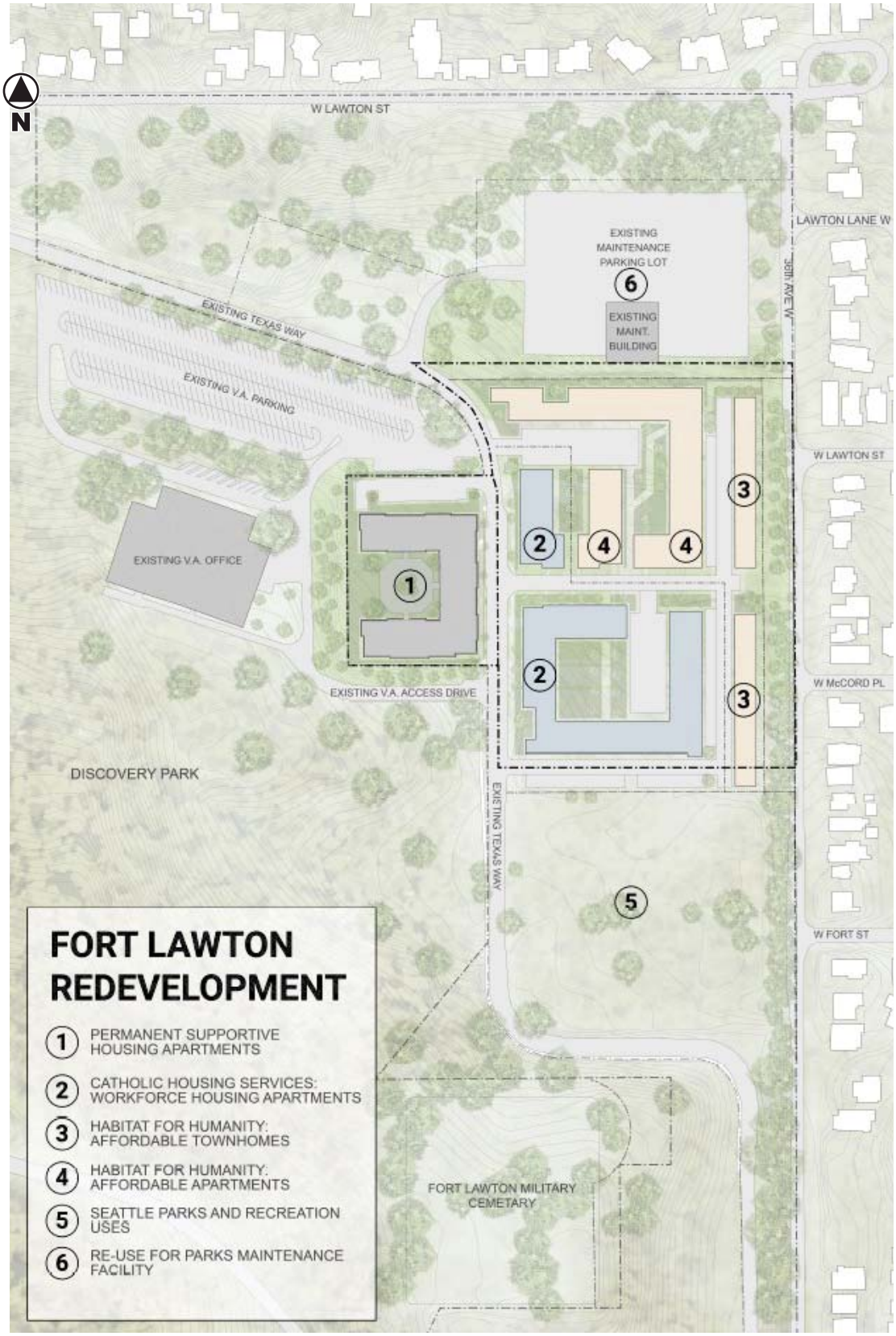
Table 1. Updated Proposed Action (Alternative 1) – Development Summary

HOUSING ELEMENTS	NUMBER (units)
Senior / Veteran Supportive Housing Units (55 and older / formerly homeless veterans)	100
Affordable Homeownership Townhouse Units (for sale with income limits)	45
Affordable Multi-Family Units (for rent or for sale units with income limits)	355
TOTAL HOUSING UNITS	**500**
PUBLIC PARK & OPEN SPACE ELEMENTS	**SIZE (acres)**
Grass Multi-Purpose Field	5.1
Passive Open Space	13.0
Landscape Area	2.6
TOTAL PUBLIC PARK	**20.7**

Source: Seattle Office of Housing, December 2024.

The existing Organizational Maintenance Shop (OMS) – Building 245 and the associated surface parking and driveway in the north part of the site would be retained for parks maintenance purposes by Seattle Parks and Recreation (SPR). The project proposes 375 parking stalls for the residential units with one vehicular access at the north, and one to the south. Sidewalks in and around the site would be improved. Figure 2 shows the conceptual site plan for the Updated Proposed Action (Alternative 1).

[2] Seattle Office of Housing, *FY 2024 Income and Rent Limits*, Effective date: 4/22/2024.



Note: This figure is not to scale

Project Site

Source: Seattle Office of Housing, 2025.

Fort Lawton Army Reserve Center Redevelopment

Figure 2
Updated Proposed Action (Alternative 1) Site Plan

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As shown, Texas Way would continue to serve as the primary vehicular access street for the site, and no vehicular access would be provided from 36th Avenue W. The senior / veteran supportive housing and its parking would be located on the west side of Texas Way while the affordable ownership and rental units along with their parking would be located on the east side of Texas Way. Pedestrian facilities would be provided within the residential development and upgraded along Texas Way as required by the City of Seattle. The existing King County Metro bus stops would be retained on both sides of Texas Way.

No Action (Alternative 2)

No redevelopment would occur, and the Fort Lawton site would remain in its existing vacant condition. The property would not be conveyed by the U.S. Army to the City of Seattle per the Base Realignment and Closure (BRAC) process. The City would terminate its lease of the property, and the Army would resume maintenance of the site and facilities. The site could be conveyed to the City or conveyed or sold to another entity in the future and could be developed in accordance with the uses allowed by the site's current zoning.

2. AFFECTED ENVIRONMENT

This chapter discusses the existing and future "No Action" conditions at and near the site. The future conditions reflected for No Action provide the baseline against which the project alternative is compared in Chapter 3. All future analyses were performed for the year 2032, the estimated year of completion and occupancy of the Updated Proposed Action.

Preliminary project traffic generation estimates were provided to Seattle Department of Construction and Inspections (SDCI) transportation review staff.[3] Based on those estimates, vehicular travel routes expected to be used to access and egress the site, and follow-on correspondence with SDCI staff, the 12 intersections listed below were identified for analysis for AM and PM peak hours. The traffic control for each is noted. Note that the intersection numbers listed below are used in report tables and graphics.

1. Texas Way / 40th Avenue W *(one-way-stop control)*
2. Texas Way / Discovery Park Boulevard *(one-way-stop control)*
3. W Government Way / 36th Avenue W *(all-way-stop control)*
4. W Government Way / 34th Avenue W *(all-way-stop control)*
5. W Government Way / 32nd Avenue W *(one-way-stop control)*
6. W Emerson Place / Gilman Avenue W *(all-way-stop control)*
7. 21st Avenue W / W Emerson Place (*signalized*)
8. W Emerson Street / W Nickerson Street *(all-way-stop control)*
9. W Nickerson Street / 15th Avenue W Ramps *(all-way-stop control)*
10. 15th Avenue W (Southbound [SB] Ramps) / W Dravus Street (*signalized*)
11. 15th Avenue W (Northbound [NB] Ramps) / W Dravus Street (*signalized*)
12. W Garfield Street / 15th Avenue W (*signalized*)

The following sections describe the existing and anticipated future No Action study area roadway network, traffic volumes, traffic operations (in terms of levels of service), parking, traffic safety, transit facilities, and non-motorized facilities.

2.1. Roadway Network

2.1.1. Existing Conditions

The immediate area surrounding the site predominantly consists of single-family residences to the east and north, and Discovery Park is to the south and west. Discovery Park provides a variety of passive and active recreational and educational facilities to the public. Further east and southeast of the site, uses transition from single-family residences along Gilman Avenue W to industrial and maritime uses within the Interbay neighborhood. East and northeast of the site, uses transition from residential along W Commodore Way to industrial and maritime east of the Ballard Locks.

Table 2 lists key characteristics of the streets serving as primary access routes to and from the Fort Lawton site. Roadway classifications are based on the City's Street Classification Map.[4] Speed limits are 25 miles per hour (mph) on arterials and 20 mph on local access streets, unless otherwise posted.

[3] Email communications, A. Spang, SDCI, April 1, 2024.
[4] Seattle Department of Transportation (SDOT), Interactive Street Classification Maps, accessed October 2024.

Table 2. Existing Vicinity Roadways

Street / *Speed Limit*	Classification / Street Type	Lanes / Parking	Non-Motorized and Transit Characteristics
Texas Way *Speed Limit: 20 miles per hour (mph).*	Unclassified local access	One travel lane in each direction. No parking on either side.	Curb and gutter on both sides; sidewalk on the west side only. Sheltered bus stop on the west side, and unsheltered stop on the east side.
Discovery Park Boulevard *Speed limit: 20 mph.*	Unclassified local access / Neighborhood Yield Street	One travel lane in each direction. No parking on either side.	Curb and gutter on both sides; sidewalk on the south side.
W Government Way *Speed limit: 25 mph.*	Minor Arterial / Neighborhood Corridor	Divided street with one travel lane in each direction. Center turn-lane (32nd to 34th Avenues W), and raised center median (34th to 36th Avenues W. On-street parking lane on both sides.	Curb, gutter, and sidewalk on both sides. Narrow, painted bike lane on both sides. Bus stops on both sides, with sheltered stops for eastbound buses, east of 36th Avenue W.
36th Avenue W *Speed limit: 20 mph.*	Unclassified, local access / Neighborhood Yield Street	One travel lane in each direction with speed humps. On-street parking is allowed on both sides; on the east side the planting strip is used for parking.	Intermittent curb, gutter, and sidewalk on both sides.
34th Avenue W *Speed limit: 25 mph.*	Unclassified local access / Neighborhood Yield Street (north of W Government Way) Minor Arterial / Neighborhood Corridor (south of W Government Way)	One travel lane in each direction. On-street parking lane on both sides.	Curb, gutter, and sidewalk on both sides. Bus stops on both sides, with both sheltered and unsheltered stops.
40th Avenue W *Speed limit: 20 mph, (25 mph south of W Commodore Way).*	Unclassified Neighborhood Yield Street Collector Arterial / Neighborhood Corridor (W Commodore Way to W Lawton Street)	One travel lane in each direction. No parking on either side.	Near site, curb and gutter on both sides; sidewalk on the east side.

Table 2. Existing Vicinity Roadways

Street / *Speed Limit*	Classification / Street Type	Lanes / Parking	Non-Motorized and Transit Characteristics
W Commodore Way *Speed limit: 25 mph*	Collector Arterial Neighborhood Corridor / (west of 31st Ave W) Industrial Freight Route (east of 31st Ave W)	One travel lane in each direction. On-street parking allowed on the north side.	Near the site, curb, gutter, and sidewalk on both sides.
W Emerson Place *Speed limit: 25 mph.*	Principal Arterial / Industrial Access Minor Transit Route Minor Freight Route	One travel lane in each direction west of 21st Ave W. Two travel lanes in each direction east of 21st Ave W. No parking on either side.	Curb, gutter, and sidewalk on the north side. Protected bike path on the south side (west of 21st Ave W), transitions to Ship Canal Trail (east of 21st Ave W). Bus stop near 21st Ave W for westbound direction.
W Nickerson Street *Speed limit: 25 mph.*	Principal Arterial / Urban Center Connector Industrial Access (12th to 13th Ave W) Major Transit Route Major Freight Route	One travel lane in each direction. Parking intermittently on the north side, and not allowed on the south side.	Curb, gutter and sidewalks on both sides west of about the 2800 block, and none to the east. Bus stops on both sides, with both sheltered and unsheltered stops.
Gilman Avenue W *Speed limit: 25 mph.*	Minor Arterial / Industrial Access Minor Transit Route (north of W Emerson St) Minor Freight Route (south of W Emerson Pl)	One travel lane in each direction. Center- two-way-left-turn lane (from just north of W Ruffner St). Parking lane on south side west of W Ruffner St and both sides east of W Ruffner St.	Curb, gutter, and sidewalk on both sides. Separated dual-direction bike lane on the north side. Bus stops on both sides, with both sheltered and unsheltered stops.
21st Avenue W *Speed limit: 25 mph.*	Collector Arterial / Industrial Access Industrial Freight Route	One travel lane in each direction. Wide shoulders used for parking on east side. On-street parking on west side south of W Emerson St.	Short intermittent sections of curb, gutter, and sidewalk on west side, none on the east.

Table 2. Existing Vicinity Roadways

Street / *Speed Limit*	Classification / Street Type	Lanes / Parking	Non-Motorized and Transit Characteristics
15th Avenue W *Speed limit: 30 mph.*	Principal Arterial / Urban Center Connector (Industrial Access from W Ruffner St to W Boston St) Major Transit Route Major Freight Route	Two travel lanes in each direction across Ballard Bridge. Lanes separated by a median south of W Emerson St, along with additional third lanes (time-restricted bus-only lane) in each direction (7-9 A.M.; southbound; 3-7 P.M. northbound). Center-two-way-left-turn lane south of about W Barrett St. No parking on either side.	Curb, gutter, and sidewalk on both sides. Bus stops with both shelter and unsheltered stops. Serves RapidRide D Line.
W Dravus Street *Speed limit: 20 mph. (25 mph between 20th Ave W and 15th Ave W).*	Minor Arterial / Neighborhood Corridor Principal Arterial / Industrial Access / Urban Center Corridor Minor Transit Route and Minor Freight Route (20th to 15th Ave W)	One travel lane in each direction west of 20th Ave W, and east of 14th Ave W, with two travel lanes in each direction between 20th and 15th Ave W (one eastbound lane between 15th and 14th Ave W.). No parking on either side for most of the street. Short sections of on-street parking intermittently	Curb, gutter, and sidewalk on both sides. Painted bike lane in eastbound direction, and sharrow markings in westbound direction, between 15th and 14th Ave W.
W Garfield Street *Speed limit: 20 mph*	Minor Arterial / Industrial Access Major Transit Route Industrial Freight Route	One travel lane westbound and two travel lanes eastbound near 15th Ave W. No parking on either side.	Curb and gutter on both sides, and sidewalks on south side west of 15th Ave W. Curb, gutter, and sidewalks on north side, east of 15th Ave W.

Sources: City of Seattle, Seattle Street Type Interactive Maps – www.seattle.gov/transportation/permits-and-services/interactive-maps, Arterial, Transit, and Freight Network (Accessed, September 2024).

2.1.2. Planned Improvements

The proposed Fort Lawton project is scheduled to be complete and occupied by 2032. The following City plans and programs were reviewed to determine if there are any transportation improvements planned for the study area that could affect roadways and intersections near the Fort Lawton site:

City of Seattle's Adopted 2024-2029 and ***Proposed 2025-2030 Capital Improvement Programs (CIP)*** [5] – No specific improvements to the transportation network were identified in the site vicinity within either the adopted or proposed CIP documents.

[5] City of Seattle, online access October and December 2024.

Seattle's Neighborhood Greenway Network[6] – Neighborhood greenway information published by SDOT indicates no additional greenways currently in design or planning stages in the site vicinity.

City of Seattle Transportation Plan (STP) – Pedestrian Element – The *STP* identifies several missing sidewalks, deficient sidewalks, and intersections lacking enhanced crossings in the near-site study area as part of the Priority Investment Network, which ranks potential projects in priority from Tier 1 to Tier 5. Specifically, the north side of Gilman Avenue W between 28th Place W and 22nd Avenue W is listed as a Tier 1 missing sidewalk. The south side of Gilman Avenue W between 26th Avenue W and W Elmore Street, and the north side of W Emerson Place between Gilman Avenue W and 21st Avenue W are listed as Tier 1 deficient sidewalks.[7] There are several other segments of missing and deficient sidewalks, and intersections lacking enhanced crossings in the near-site study area listed in the Tier 3 to Tier 5 project range.

City of Seattle Transportation Plan – Bicycle and E-Mobility Element[8] – The *STP* identifies several locations in the study area that are in the City's proposed Bike+ network which consists of bikeways suitable for people of all ages and abilities (AAA), including protected bike lanes, Neighborhood Greenways, Healthy Streets, and bike lanes where vehicle speeds and volumes are sufficiently low. Most notably, Texas Way is listed as a proposed Bike+ project, as well as 36th Avenue W, 34th Avenue W, 32nd Avenue W, and W Government Way between 36th Avenue W and 31st Avenue W. Additionally, there are multiple catalyst (high priority) projects in Interbay.

City of Seattle Transportation Plan – Transit Element – No specific improvements to the transportation network were identified in the site vicinity in the report.

2024 Seattle Transportation Levy[9] – This levy, approved by voters in November 2024, is an eight-year $1.55 billion levy to maintain and modernize the City's transportation infrastructure. The levy does identify bridge structural repairs and upgrades for the Ballard Bridge and seismic improvements for the Magnolia Bridge and W Dravus Street bridge. It also includes additional studies of Magnolia Bridge replacement options. The levy has $111 million for city-wide sidewalk improvements and anticipates constructing new sidewalk on Gilman Avenue W from W Manor Place to 28th Avenue W.

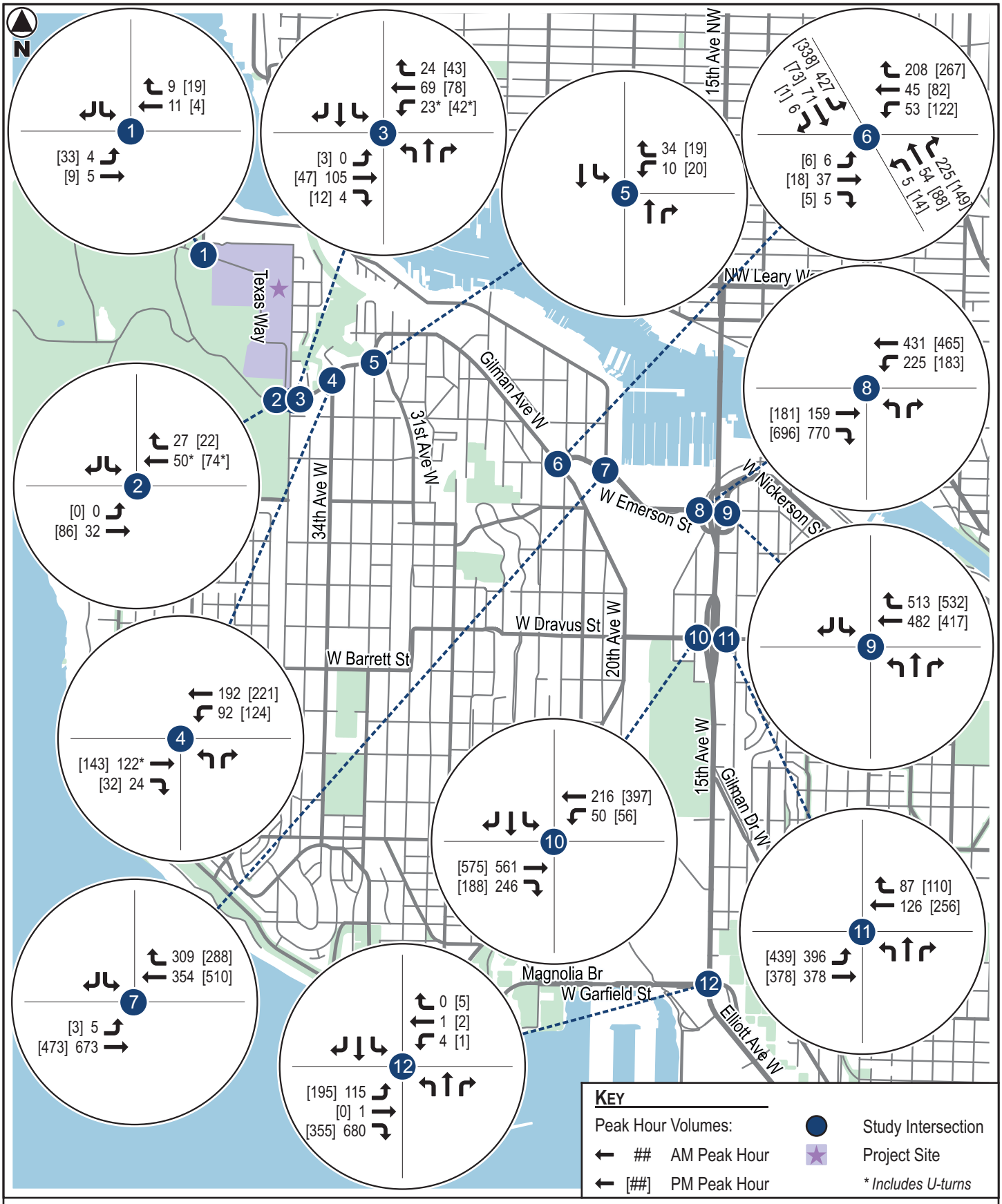
Based on review of the above documents, no specific funded projects were identified that would affect the roadway network or intersection capacity within the study area by 2032; therefore, the future conditions analysis assumes that roadway and intersection geometry would remain the same as existing.

2.2. Traffic Volumes

2.2.1. Existing Conditions

Peak period turning movement counts at all but two of the study area intersections were conducted by Idax Data Solutions on Thursday, September 26, 2024. PM peak period turning movement counts at the 15th Avenue W SB Ramps / W Dravus Street and 15th Ave W NB Ramps / W Dravus Street intersections were conducted Thursday, April 18, 2024; AM peak period counts at these two intersections conducted Thursday, August 29, 2019 were also compiled for use in the analysis. The count data indicate that the study-area AM peak hour typically begins at 7:45 or 8:00 A.M.; the study-area PM peak hour begins between 4:00 and 5:00 P.M. Figure 3 shows the existing AM and PM peak hour traffic volumes.

6 City of Seattle, online access, accessed October 2024.
7 City of Seattle, online access, (https://streetwork.seattle.gov/map), accessed December 2024.
8 SDOT. May 2024.
9 Seattle Department of Transportation, *2024 Seattle Transportation Levy,* August 2024.



Fort Lawton Army Reserve Center Redevelopment

Figure 3
Existing (2024) Traffic Volumes
AM and PM Peak Hours

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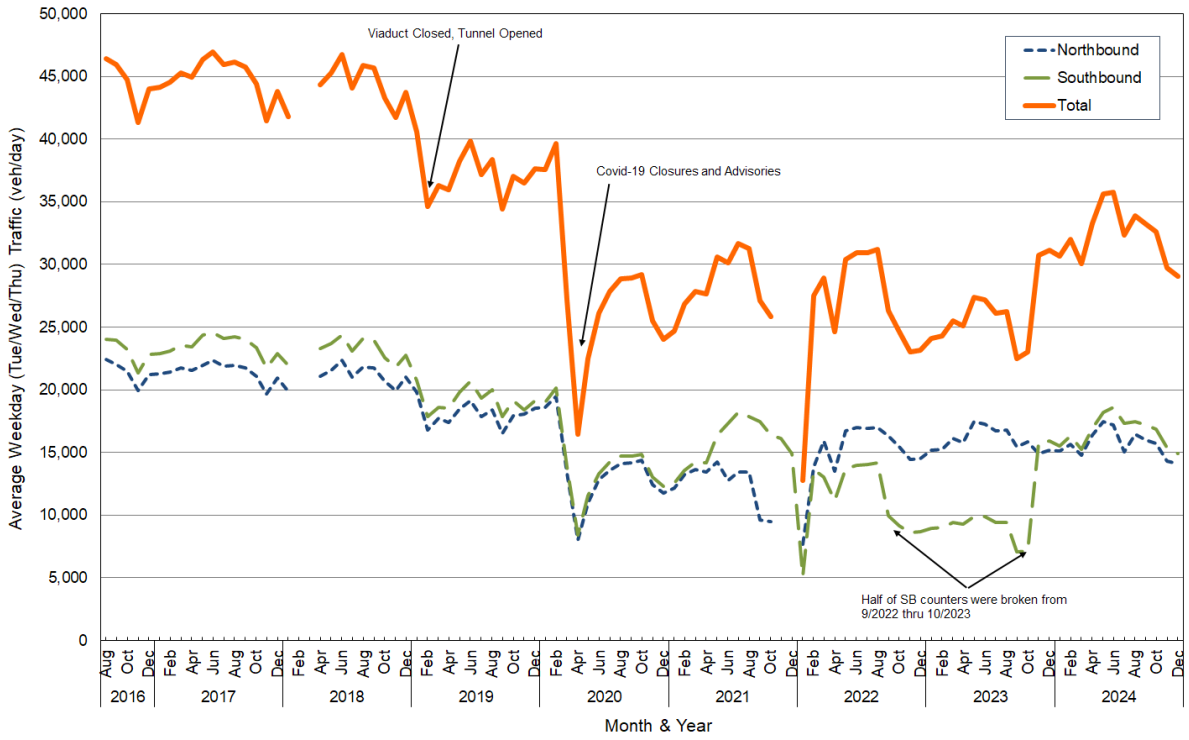
2.2.2. Historical Traffic Volumes

A review of area-wide historical traffic trends was conducted in order to determine a reasonable approach to forecasting 2032 No Action traffic volumes for study-area intersections. Historical traffic counts conducted by SDOT in the study area along 34th Avenue W indicated that, prior to the COVID-19 pandemic, both daily and peak hour volumes were on a slightly declining trend. SDOT has not performed post-pandemic counts on that street. SDOT also previously collected robust traffic data on the Ballard Bridge with monthly traffic counts performed in most years. However, the counting equipment failed in 2019 and has not yet been replaced due to ongoing construction on the bridge. Some counts are still available, but not enough to illustrate how various external factors have affected traffic in the corridor.

SDOT did install a new permanent traffic counting location on Elliott Avenue W at W Mercer Place for which volumes have been collected since mid-2016. These volumes were compiled to understand how traffic volumes have changed in recent years, including during the COVID-19 pandemic.

Figure 4 shows that Average Weekday Daily Traffic (AWDT) volumes in the corridor decreased in February 2019 after the State Route (SR) 99 tunnel under downtown Seattle opened and the Alaskan Way Viaduct closed. The former Viaduct had direct access ramps to Elliott and Western Avenues north of the Pike Place Market that were eliminated by the tunnel. Removal of those ramps likely diverted traffic that previously traveled this corridor to northern access points along SR 99. The next large reduction in traffic occurred in March 2020 at the start of the COVID-19 pandemic. Traffic volumes have rebounded and by summer 2024 were within 5% to 10% of the volumes in 2019.

Figure 4. Average Weekday Traffic Volumes – Elliott Avenue W at W Mercer Place



Source: Data obtained from SDOT, January 2025. SDOT collects northbound volumes north of W Mercer Place and southbound volumes south of W Mercer Place.

Traffic volumes are expected to grow in the future, and continue to rebound from the pandemic. Growth rates were developed using historical traffic volumes on the Ballard Bridge and Elliott Avenue W from 1990 through 2024, a 35-year period. AM peak period volumes were examined since those are less constrained by capacity than the PM peak hour volumes. During the full 35-year period, AM peak hour traffic experienced a slight decline (-0.1% per year). In addition, four interim pre-pandemic periods were examined—1990 to 2017, 2000 to 2015, 1999 to 2009, and 2009-2017. Based on this review, the highest annual growth rate observed for peak hour traffic was 0.6% per year. During those same periods, changes in PM peak hour traffic ranged from -0.9% to 0.4% annually.

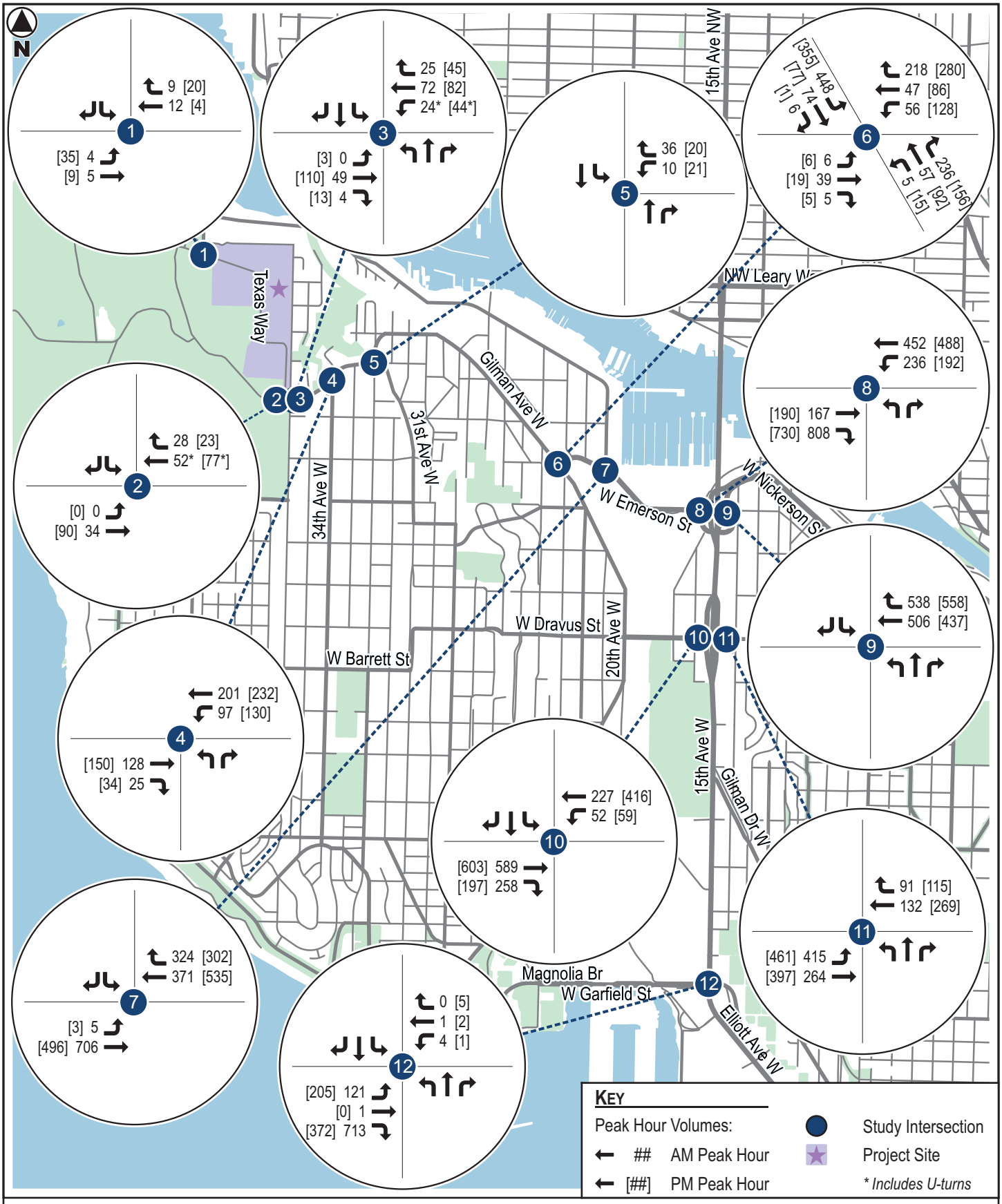
2.2.3. Forecast 2032 Conditions

Development permit activity in the areas surrounding the site was also reviewed using SDCI's Property and Building Activity portal.[10] This review did not identify any major development projects planned or in process in the area that would contribute noticeable increases in traffic at study-area intersections by year 2032. This tool shows that nearly all permits in the immediate site vicinity are for added accessory dwelling units, small townhome developments (e.g., 1 to 4 units), and remodels, expansion, or replacements of single-family residences. These projects would not noticeably increase traffic beyond what would be reflected by the selected annual growth rate.

Based on the historical traffic growth data, the highest observed growth rate was selected for application to forecast year 2032 traffic volumes—0.6% compounded annually from 2024 to 2032. This growth rate is intended to account for the most recent post-pandemic changes in the Seattle area traffic, including Amazon's return-to-office five days per week beginning in early January 2025. Based on the review of the City's permit portal, no additional pipeline development traffic was added to the 2032 forecasts. As discussed later in Section 2.6, the analysis horizon year would precede major transportation infrastructure changes associated with Sound Transit's Ballard Link Extension that could further temper traffic volume growth in the corridor and surrounding roadways.

The selected 0.6% forecast growth rate was compared to forecasts derived for the Ballard Bridge in the City's *Industrial & Maritime Strategy FEIS, Appendix I*.[11] The forecast PM peak hour traffic growth between 2019 and year 2040 for the No Action and Preferred Alternatives indicate compound annual growth rates of 0.3% and 0.4%, respectively. The models for both alternatives incorporate planned transportation facilities into the network, such as Sound Transit's Ballard Link Extension, which could affect the modal choice and account for rates lower than the 0.6% selected for this analysis. Based on this review, the growth rate selected for the Fort Lawton 2032 horizon year provides a conservatively high estimate of expected growth. Figure 5 shows the forecast-2032-without-project AM and PM peak hour traffic volumes.

[10] SDCI, https://web.seattle.gov/SDCI/ShapingSeattle/buildings, accessed 2024.
[11] City of Seattle, Industrial & Maritime Strategy FEIS, September 2022



Fort Lawton Army Reserve Center Redevelopment

Figure 5
Forecast-2032-Without-Project Traffic Volumes
AM and PM Peak Hours

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2.3. Traffic Operations

Level of service (LOS) is a qualitative measure used to characterize traffic operating conditions. Six letter designations, "A" through "F," are used to define level of service. LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays. The City of Seattle does not have adopted intersection level of service standards; however, project-related intersection delay that causes a signalized intersection to operate at LOS E or F, or increases delay at a signalized intersection that is projected to operate at LOS E or F without the project, may be considered a significant adverse impact, if increases are greater than 5 seconds. The City may tolerate LOS E or F conditions for automobiles at signalized intersections where physical constraints limit opportunities for widening or where it has established priority for other modes such as transit, pedestrian, or bicycle movements. The City may also tolerate delays in the LOS E or F range at unsignalized intersections where changes such as conversion to all-way-stop-control or signalization are not applicable or desirable.

Levels of service for the study area intersections were determined based on methodologies established in the *Highway Capacity Manual (HCM), 6th Edition*[12] using the *Synchro 11* analysis software. Appendix A summarizes level of service thresholds and definitions for signalized and unsignalized intersections.

The modeling assumptions for existing conditions, including signal timing and phase splits for study-area intersections were provided by SDOT.[13] For the 2032-without-project-conditions analysis of signalized intersections, no changes to signal timing were assumed. It is noted that the non-conventional W Emerson Street / W Nickerson Street all-way-stop controlled intersection (#8) cannot be modelled as it exists. Therefore, it was evaluated as two intersections in order to reflect operations of southbound movements' yield to the east-to-south right-turning movements.

Table 3 summarizes existing and forecast 2032-without-project levels of service at the study-area intersections for morning and commuter PM peak hours. As shown, the four signalized intersections currently operate at LOS C or better during both peak hours, and are anticipated to operate at LOS C or better in year 2032 without the proposed project. The unsignalized intersections currently operate at LOS D or better overall, except at two intersections: W Emerson Street / W Nickerson Street (intersection ID #8) and W Nickerson Street / 15th Avenue W Ramps (#9). At the W Emerson Street / W Nickerson Street intersection, traffic that turns left from westbound W Emerson Street onto the W Nickerson Street structure must then yield to traffic that turns right from eastbound Emerson Street onto the same structure. That yield point is forecast to operate at LOS F during the AM peak hour in 2032. Similarly, the W Nickerson Street / 15th Avenue W Ramps all-way-stop intersection is anticipated to degrade from an existing LOS D to LOS E in 2032 during the AM peak hour, and from LOS E to LOS F during the PM peak hour due to assumed background traffic growth.

[12] Transportation Research Board 2016.
[13] Email communication, L. Wojcicki, SDOT, October 1, 2024.

Table 3. Level of Service for Existing and Forecast-2032-No-Action Conditions

Int. #	Intersection / Control Type	AM Peak Hour				PM Peak Hour			
		Existing (2024)		2032 No Action		Existing (2024)		2032 No Action	
	Signalized	**LOS** [1]	**Delay** [2]	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
7	21st Ave W / W Emerson Pl	B	17.2	B	17.9	C	21.1	C	22.1
10	15th Ave W (SB Ramps) / W Dravus St	A	0.0	B	18.1	A	0.0	C	27.2
11	15th Ave W (NB Ramps) / W Dravus St	A	0.0	B	17.5	A	0.0	C	33.5
12	W Garfield St / 15th Ave W	A	9.8	B	10.2	B	14.1	B	15.0
	All-Way Stop-Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
3	W Government Wy / 36th Ave W	A	8.1	A	8.1	A	8.4	A	8.5
4	W Government Way / 34th Ave W	B	11.1	B	11.6	B	11.0	B	11.5
6	W Emerson Pl / Gilman Ave W	D	27.1	D	33.6	D	27.2	D	33.5
8	W Emerson St / W Nickerson St [3]	B	13.9	B	14.7	C	17.0	C	18.8
9	W Nickerson St / 15th Ave W Ramps	D	34.2	E	42.2	E	41.6	F	50.9
	Side-Street Stop-Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
1	Texas Wy / 40th Ave W (overall)	A	4.4	A	4.5	A	3.3	A	3.3
	Westbound Approach	A	8.9	A	9.0	A	8.9	A	9.0
	Southbound Left-turn	A	7.3	A	7.3	A	7.4	A	7.4
2	Texas Way / Discovery Pk Blvd (overall)	A	1.3	A	1.3	A	1.5	A	1.5
	Eastbound Left-turn	A	0.0	A	0.0	A	0.0	A	0.0
	Southbound Approach	A	9.5	A	9.5	A	9.9	A	10.0
5	W Government Way / 32nd Ave W (overall)	A	1.1	A	1.1	A	1.1	A	1.1
	Northwest Approach	B	12.9	B	13.3	B	13.6	B	14.0
	Southbound Left-turn	A	8.5	A	8.6	A	8.4	A	8.4
	Yield-Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
8	W Emerson St / W Nickerson St [3] (overall)	A	8.0	B	10.5	A	4.0	A	4.7
	Southbound – Yield to EBR	E	43.5	F	56.9	D	26.6	D	30.8

Source: Heffron Transportation, Inc., October 2024.

1. *Level of service.*
2. *Average seconds of delay per vehicle.*
3. *Location evaluated as two separate intersections to reflect operations of all movements. EBR = Eastbound Right.*

2.4. Parking

There is one publicly-accessible parking lot on the existing site, between the maintenance facility and the structures to the south, with 73 parking spaces. Three other parking lots on the site are closed to the public and have an unknown number of parking spaces.

2.5. Traffic Safety

Collision data for the study-area intersections and roadway segments along the project site frontages were obtained from SDOT's Open Data Portal and WSDOT's crash data portal. An extended period was examined, between September 11, 2019, and the most recent records available at the time—September

11, 2024—5.0 years. Table 4 summarizes the data examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project. Unsignalized intersections with five or more collisions per year and signalized intersections with ten or more collisions per year are considered high collision locations by the City of Seattle.

Table 4. Study Area Collision Summary

Int. #	Intersections	Rear-End	Side-Swipe	Left Turn	Angles	Ped / Cycle	Other [a]	Total for 5 Years	Average/ Year
Signalized Intersections									
7	21st Ave W / W Emerson Pl	1	0	0	3	0	0	4	0.8
10	15th Ave W (SB Ramps) / W Dravus St	0	0	0	0	0	0	0	0.0
11	15th Ave W (NB Ramps) / W Dravus St	0	0	0	0	0	1	1	0.2
12	W Garfield St / 15th Ave W	1	1	1	1	0	4 [b]	8	1.6
Unsignalized Intersections									
1	Texas Wy / 40th Ave W [c]	0	0	0	0	0	0	0	0.0
2	Texas Wy / Discovery Pk Blvd	0	1	0	0	0	0	1	0.2
3	W Government Wy / 36th Ave W	0	0	0	0	0	1	1	0.2
4	W Government Way / 34th Ave W	0	0	0	0	0	0	0	0.0
5	W Government Way / 32nd Ave W	0	0	0	0	0	0	0	0.0
6	W Emerson Pl / Gilman Ave W	0	0	0	0	2	0	2	0.4
8	W Emerson St / W Nickerson St	1	0	0	1	0	0	2	0.4
9	W Nickerson St / 15th Ave W Ramps	0	0	0	1	0	0	1	0.2
	Roadway Segment	**Rear-End**	**Side-Swipe**	**Left Turn**	**Angles**	**Ped / Cycle**	**Other [a]**	**Total for 5 Years**	**Average/ Year**
	Texas Way: Discovery Park Blvd to 40th Ave W [c]	0	0	0	0	0	0	0	0.0
	W Commodore Way: 40th Ave W to 33rd Ave W	0	0	0	1	0	2	3	0.6
	W Government Way: 36th Ave W to 35th Ave W	0	0	0	0	0	1	1	0.2
	W Government Way: 35th Ave W to 34th Ave W	0	0	0	0	0	1	1	0.2
	Gilman Ave W: 24th Ave W to W Emerson Pl	0	0	0	0	0	2	2	0.4

Source: City of Seattle, September 11, 2019 through September 11, 2024, https://data-seattlecitygis.opendata.arcgis.com/datasets/SeattleCityGIS::sdot-collisions-all-years/, Accessed September 11, 2024.

a. Other' collisions included five collisions involving parked cars, one collision with not enough information, and all other collisions involving fixed objects.

b. Includes fatality collision (July 17, 2020) involving a vehicle travelling at a high rate of speed and striking a bridge pillar.

c. Source: WSDOT, https://remoteapps.wsdot.wa.gov/highwaysafety/collision/data/portal/public/

As shown, there were 27 collisions reported within the overall study area (20 at study-area intersections and 7 along the five roadway segments) during the data period. Of the 20 intersection collisions, 8 occurred at the 15th Avenue W / W Garfield Street signalized intersection, which reflects a collision rate of 1.6 per year. None of the studied intersections met the criteria for a high-collision location for the period evaluated. There was one collision involving a fatality at the signalized 15th Avenue W / W Garfield Street intersection on July 17, 2020, involving a vehicle striking a bridge pillar while travelling at a high rate of speed. Overall, these data do not indicate any unusual traffic safety conditions for the study area.

2.6. Transit Facilities and Service

King County Metro (Metro) Route 33 provides two-way bus service along Texas Way through the Fort Lawton site. Within a half mile of the site, Metro Route 24 provides service with stops in both directions along 34th Avenue W. Table 5 summarizes the transit service provided within one-half mile of the site.

Table 5. Existing Transit Service within One-Half Mile of the Project Site

Route	Closest Stops	Areas Served	Number of Peak Period Buses	
			Weekday AM Commute Period [a]	Weekday PM Commute Period [b]
24	34th Ave W & W Elmore St	Magnolia, Seattle Center, Downtown Seattle	To Downtown: 6 To Magnolia: 6	To Downtown: 6 To Magnolia: 6
33	Texas Way, adjacent to site	Discovery Park, Magnolia, Seattle Center, Downtown Seattle	To Downtown: 6 To Magnolia: 6	To Downtown: 6 To Magnolia: 6

Sources: King County Metro Transit online schedules and route information, September 2024.

a. AM commute service provided between ~6:00 A.M. and 9:00 A.M.

b. PM commute service provided between ~3:00 P.M. and 6:00 P.M.

King County Metro's *Long-Range Plan*[14] indicates that the existing level of bus service is planned to remain through its interim network, which is targeted for delivery before Sound Transit's Ballard Link Extension (BLE) in 2039. It also identifies that upon completion of the BLE, "frequent" bus service (defined as headways of 5-15 minutes) would be along a route that includes W Government Way and 34th Avenue W. This bus service is expected to provide a direct transfer to the Link.

Sound Transit is currently evaluating three possible alignments for the BLE project through the Interbay neighborhood. Figure 6 shows the three alignments being studied as part of the *Environmental Impact Statement (EIS)*.[15] The current BLE Preferred Alternative would be in a tunnel near Emerson Street. Although the project is not expected to be completed until 2039, beyond the horizon year of this analysis, construction is currently scheduled to occur from 2027 through 2039, and there could be temporary lane or roadway closures to support construction. Those construction impacts are being evaluated in the Sound Transit EIS. This study assumes the existing lane configuration for all study intersections.

[14] King County Metro, Metro Connects: Long-Range Plan, Adopted November 17, 2021.
[15] Sound Transit, https://www.soundtransit.org/system-expansion/ballard-link-extension, January 2025.

Figure 6. Sound Transit Ballard Link Extension Alternatives

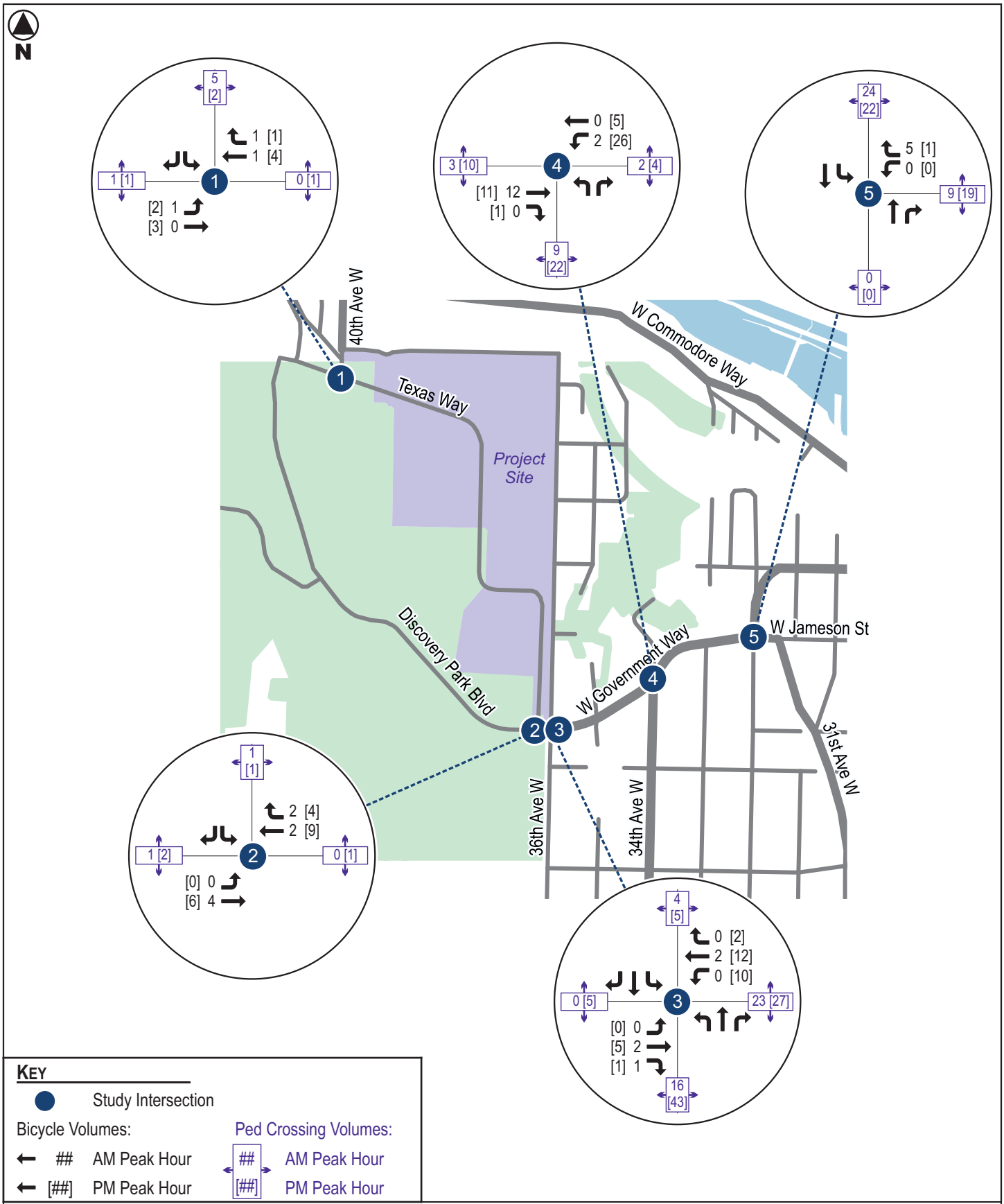
Source: Sound Transit, https://www.soundtransit.org/system-expansion/ballard-link-extension, accessed January 2025. The map shows alternatives being studied as part of the EIS. Excludes the southern part of the BLE, which extends south to the SODO station.

2.7. Non-Motorized Transportation Facilities

The facilities supporting walking, biking, and other non-motorized transportation on key roadways within the study area were documented in Section 2.1. Near the site, there is a continuous four-foot-wide sidewalk on the park side of Texas Way between Discovery Park Boulevard and the north gate to Fort Lawton; about 200 feet between the gate and 40th Avenue W has no sidewalk or shoulders. There are no sidewalks on either side of Texas Way between 40th Avenue W and the Discovery Park North Parking Lot. There are no sidewalks on either side of 40th Avenue W between Texas Way and W Lawton Street.

There is a multi-use path on the south side of Discovery Park Boulevard west of 36th Avenue W, and no sidewalk or walkway on the north side of that street. There is a curb ramp on the northwest corner of the Texas Way / Discovery Park Boulevard intersection, but there is not an accessible (Americans with Disabilities Act (ADA) compliant) connection to the multi-use path on the south side. Sidewalks are present on both sides of the street along W Government Way and 34th Avenue W, and are intermittent along 36th Avenue W. There is an extensive non-motorized trail system within Discovery Park just west of the site. The trail system can be accessed from Discovery Park Boulevard and Texas Way.

Pedestrian and bicycle counts were performed for this study at the same time the vehicle counts were performed. Figure 7 shows the pedestrian and bicycle counts at intersections near the Fort Lawton site. The counts indicated that almost all pedestrians who cross the 36th Avenue W / Discovery Park Boulevard intersection do so across the east and south legs.



Fort Lawton Army Reserve Center Redevelopment

Figure 7
Existing Pedestrian and Bicycle Volumes
AM and PM Peak Hours

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3. TRANSPORTATION IMPACTS

This chapter describes the conditions forecasted to exist with the Updated Proposed Action (Alternative 1) at build-out. It includes detailed trip generation estimates, and assesses how increased vehicular traffic, transit ridership, and non-motorized (pedestrian and bicycle) activity would affect the transportation system. All impact analysis was performed for year 2032 conditions.

3.1. Roadway Network

With Alternative 1, Texas Way would continue to serve as the primary vehicular access street for the site, and no vehicular access would be provided from 36th Avenue W. The senior / veteran supportive housing and its parking would be located on the west side of Texas Way while the affordable ownership and rental units along with their parking would be located on the east side of Texas Way. Pedestrian facilities would be provided within the residential development and upgraded along Texas Way as required by the City of Seattle. The existing King County Metro bus stops would be retained on both sides of Texas Way, approximately in their current locations.

3.2. Traffic Volumes

3.2.1. Trip Generation

Trip generation estimates for Alternative 1 were derived using equations published in the current edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual.*[16] The assumptions for each land use type are described in the following sections.

Affordable Housing – Townhomes

Up to 45 affordable ownership housing units are proposed as townhouses. Trip generation estimates for this component were determined using ITE's trip equations for *Single-Family Attached Housing* (Land Use Code 215[17]) as summarized in Table 6.

Affordable Housing – Multi-Family Mid-Rise

Up to 355 units of affordable housing (assumed to include 130 ownership units and 225 rental units) are proposed in multi-family buildings anticipated to be four-stories tall. Trip generation estimates for this component were determined using ITE's equations for *Multi-Family (Mid Rise) Not Close to Rail Transit* in a "General Urban/Suburban" setting (Land Use Code 221).[18] This land use results in comparable AM peak hour trip estimates and slightly higher daily and PM peak hour trip estimates when compared to results using rates published for *Affordable Housing (Income Limits)* (Land Use Code 223[19]). The selected equations are summarized in Table 6. It is noted that these rates for uses located in a General Urban/Suburban setting reflect limited use of transit compared to other settings. No further adjustments for potential transit use or work-from-home were applied; therefore, the analysis results in a conservatively high estimate of vehicle trips.

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16 Institute of Transportation Engineers, 11th Edition, September 2021.

17 Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space. The database for this land use includes duplexes (defined as a single structure with two distinct dwelling units, typically joined side-by-side and each with at least one outside entrance) and townhouses/rowhouses (defined as a single structure with three or more distinct dwelling units, joined side-by-side in a row and each with an outside entrance).

18 Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space.

19 Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age.

Senior / Veteran Supportive Housing

Up to 100 housing units for senior citizens (55 years of age and older), including veterans, who were formerly homeless are proposed and assumed within four-story multi-family buildings. ITE's *Trip Generation Manual* does not provide a land use category that is directly applicable to this type of housing. Therefore, ITE's equations for *Senior Adult Housing – Multi-Family* (Land Use Code 252[20]) were applied and are summarized in Table 6.

For comparison, analysis performed for the *Ballard Senior Housing Project*[21] was reviewed to confirm the selected equations would provide conservatively-high worst-case trip estimates. The referenced analysis included interviews of administrative staff at five existing low-income senior housing facilities in the Seattle area (Cabrini First Hill, Cascade Senior, Providence Elizabeth, Providence Gamelin, and Providence Vincent). These interviews determined that very few senior housing residents own vehicles. On average, fewer than 14% of the residents owned a vehicle, and very few used their vehicles daily or during peak commute periods. Most trips generated by low-income senior housing projects are generated by staff, caregivers, and visitors. Staff and support trips are typically highest on weekdays and correspond to typical workday hours; visitor trips are highest on weekends. Based on the five surveyed low-income facilities, it is assumed that the senior housing would generate 1 peak hour trip for every 10 residential units (a rate of 0.10 trips per unit). For comparison, the selected ITE equations result in 0.20 trips per unit during the AM peak hour and 0.25 trips during the PM peak hour. The selected equations result in slightly higher trip estimates than rates published for *Affordable Housing (Senior)* (Land Use 223), which are based on very limited data. Therefore, given the low vehicle-ownership rate for low-income and formerly homeless seniors, the selected equations provide conservatively-high vehicle trip estimates for the proposed use.

Public Park and Open Space

Public park uses totaling about 21 acres are proposed, including 5.1 acres for a grass multi-purpose field, 13 acres of passive open space, and 2.6 acres of landscape area. ITE's rates for *Public Park* (Land Use Code 411[22]) were applied and are summarized in Table 6. The planned public park and open space amenities are proposed adjacent to an existing regional park facility and are anticipated to be used by residents of the proposed Fort Lawton Housing project as well as existing local Magnolia residents. Most trips generated are expected to occur by foot or by bicycle to and from those residences or near-park neighborhoods. It is also likely that trips to this open space would be diverted from trips to other areas of Discovery Park, so the trips would occur with or without the proposed project. Therefore, the published average rates provide reasonable estimates of net new vehicle trips.

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20 Senior adult housing–multifamily sites are independent living developments that are called various names including retirement communities, age-restricted housing, and active adult communities. The development has a specific age restriction for its residents, typically a minimum of 55 years of age for at least one resident of the household.

21 Heffron Transportation, Inc., *Ballard Senior Housing Project Parking Needs Assessment*, July 25, 2012.

22 Public parks are owned and operated by a municipal, county, state, or federal agency. The parks surveyed vary widely as to location, type, and number of facilities, including boating or swimming facilities, beaches, hiking trails, ball fields, soccer fields, campsites, and picnic facilities. Seasonal use of the individual sites differs widely as a result of the varying facilities and local conditions, such as weather.

Table 6. Trip Generation Equations Applied for Alternative 1 Proposed Residential Uses

Proposed Housing Types ITE Land Use (Land Use Code)	Daily Trips (In / Out)	AM Peak Hour			PM Peak Hour		
		In	Out	Equation	In	Out	Equation
Affordable Townhomes Single-Family Attached (215)	T = 7.62(X) - 50.48 (50% / 50%)	25%	75%	T = 0.52(X) - 5.70	59%	41%	T = 0.60(X) -3.93
Affordable Multi-Family Multi-Family (Mid-Rise) (221) [a]	T = 4.77(X) - 46.46 (50% / 50%)	23%	77%	T = 0.44(X) + 11.61	61%	39%	T = 0.39(X) + 0.34
Senior/Veteran Supportive Senior Adult – Multi-Family (252)	T = 2.89(X) + 24.82 (50% / 50%)	34%	66%	T = 0.19(X) + 0.90	56%	44%	T = 0.25(X) + 0.07
Multi-Purpose Field / Open Space Public Park (411)	0.78 trips / acre (50% / 50%)	59%	41%	0.02 trips / acre	55%	45%	0.11 trips / acre

Source: ITE, Trip Generation Manual*, 11th Edition, 2021.*

a. Rates for a Multifamily Housing (Mid-Rise) Not Close to Rail Transit in a General Urban/Suburban setting were applied.

Combined Trip Generation for Fort Lawton Site Proposed Action

The trip generation equations presented above were applied to the proposed redevelopment alternative at Fort Lawton. Table 7 shows the results for each housing component and the combined total. As shown, the Proposed Action alternative is estimated to generate 2,266 vehicle trips per day (1,133 in, 1,133 out), 183 AM peak hour vehicle trips (44 in, 139 out), and 189 PM peak hour vehicle trips (114 in, 75 out).

Table 7. Vehicle Trip Estimates for Fort Lawton Redevelopment – Proposed Action

Proposed Housing Types	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Workforce – Townhomes	45 units	290	4	14	18	14	9	23
Workforce – Multi-Family	355 units	1,650	33	112	145	85	54	139
Formerly Homeless Seniors	100 units	310	7	13	20	14	11	25
Park and Open Space	20.7 acres	16	0	0	0	1	1	2
Total Vehicle Trips		**2,266**	**44**	**139**	**183**	**114**	**75**	**189**

Source: Heffron Transportation, Inc., December 2024.

Trips by Other Modes

Trip by non-automobile modes were estimated using a combination of mode-of-travel survey data from the *2022 American Community Survey (ACS)*[23] and person trip estimates derived for the proposed action. Using published average vehicle occupancy (AVO) rates for residential (apartment) land uses in ITE's *Trip Generation Handbook*,[24] the total numbers of daily, AM peak hour, and PM peak hour person trips were estimated. Then mode-of-travel factors from the 2022 five-year ACS data for Census tract 57 (the tract that includes the Fort Lawton site and immediate surrounding area) were applied. These indicated

[23] US Census Bureau, *2022 ACS 5-Year Estimates Detailed Tables Workers 16 years and over, Data for King County Census Tract 57,* obtained September 2027.

[24] ITE, 3rd Edition, September 2017, Tables B.1 (AM) and B.2 (PM); Daily AVO rates were estimated by Heffron Transportation, Inc.

that, over the prior five years, about 5.6% commuted by transit, 1% walked, and 4.8% biked. Based on these combined factors, proposed residential uses are forecast to generate about 146 transit trips per day, and about 6 transit trips during the AM and PM peak hours. The residential elements of the proposal are forecast to generate about 28 walk trips per day and about 125 bicycle trips per day with 1 walk trip and 5 bicycle trips during each of the AM and PM peak hours. It is noted that each transit trip would include a walk or bicycle component. As described previously, the grass field and open space are not expected to generate net new pedestrian or bicycle trips in the vicinity, but rather attract trips that would otherwise be made to and from Discovery Park.

3.2.2. Trip Distribution and Assignment

Trip distribution patterns for the trips to and from the project site were based the U.S. Census Bureau's *OnTheMap* tool,[25] and *Google Maps'* predictive travel-route and travel-time mapping resource. Data for four census tracts in Magnolia near the site were used. The expected travel routes to the various destinations were then assessed using *Google Maps.* Figure 8 shows the resulting trip distribution pattern.

The project trips were distributed to the road network. Figure 9 shows the AM and PM peak hour trips generated by the proposed Fort Lawton project at the study intersections.

3.2.3. Forecast-2032-With-Project Traffic Volumes

The AM and PM peak hour trips generated by the proposed Fort Lawton project were combined with the forecast-2032-without-project traffic volumes to reflect future conditions with the Updated Proposed Action (Alternative 1). Figure 10 shows the resulting forecast-2032-with-project AM and PM peak hour traffic volumes.

[25] U.S. Census Bureau. (2024). LEHD Origin-Destination Employment Statistics (2002-2021) [computer file]. Washington, DC: U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program [distributor], accessed on September 26, 2024, at https://onthemap.ces.census.gov . LODES 8.1 [version]

Fort Lawton Army Reserve Center Redevelopment

Figure 8
Project Trip Distribution Patterns
AM and PM Peak Hours

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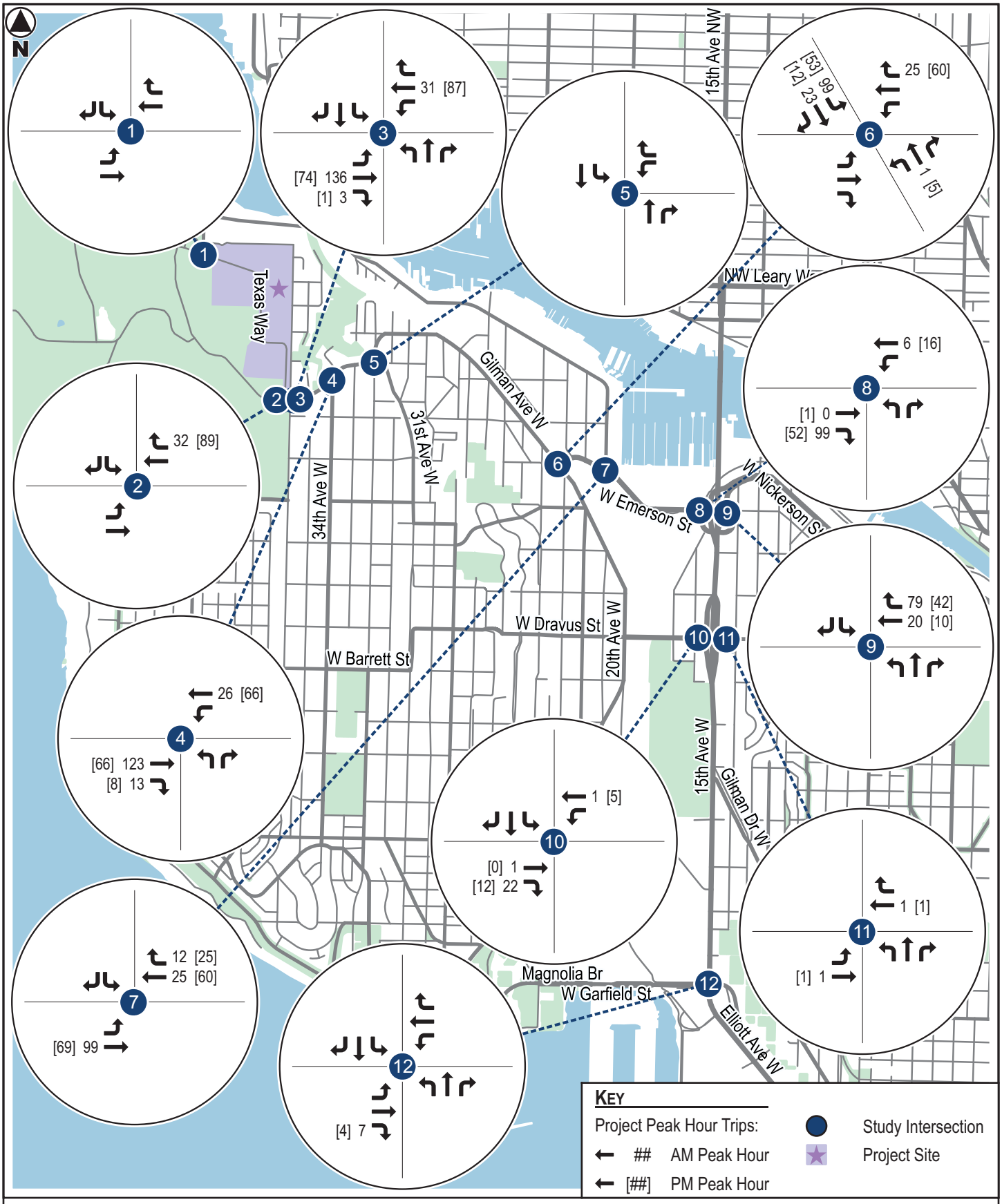

Fort Lawton Army Reserve Center Redevelopment

Figure 9
Project Trip Assignments
AM and PM Peak Hours

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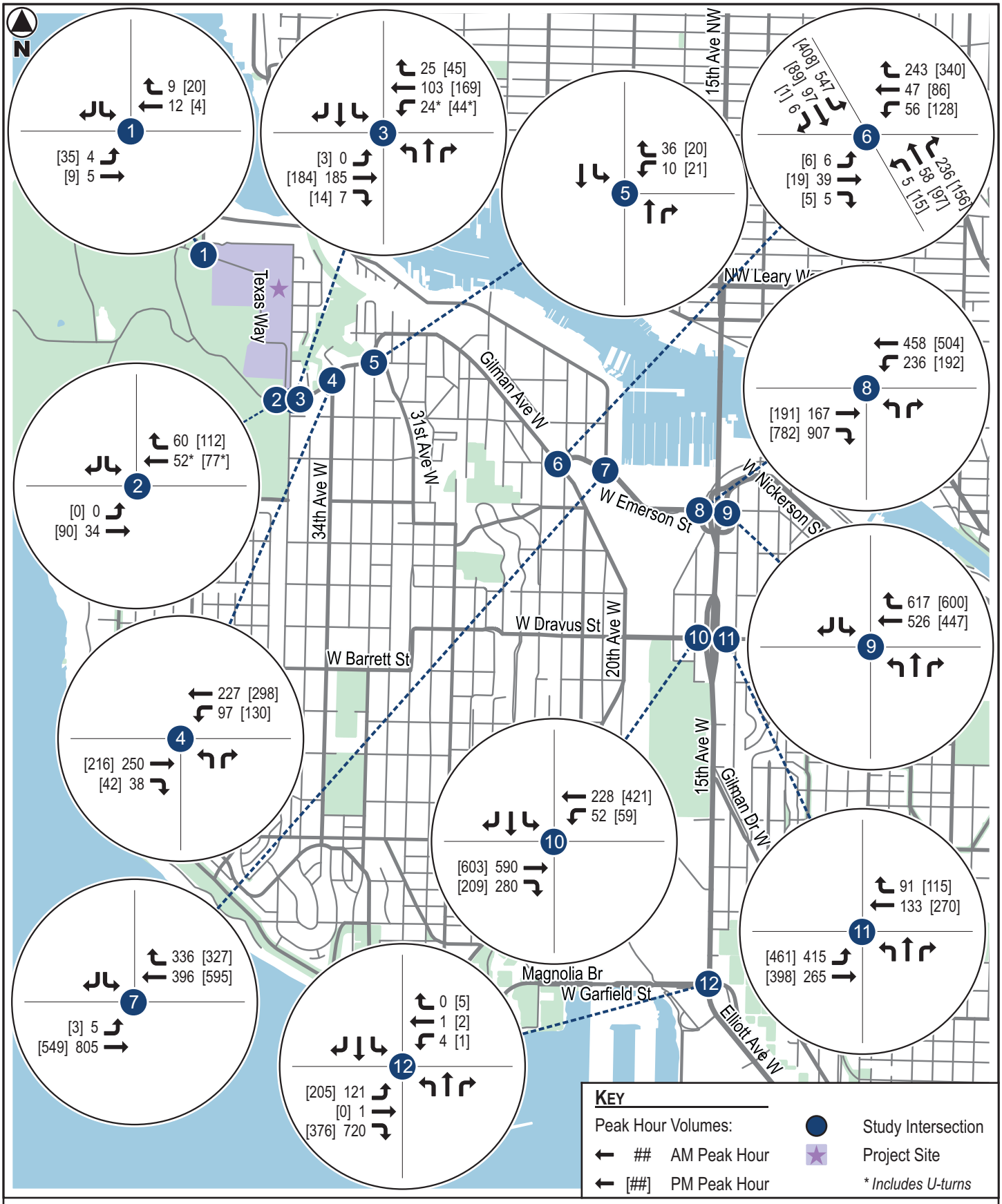

Fort Lawton Army Reserve Center Redevelopment

Figure 10
Forecast-2032-With-Project Traffic Volumes
AM and PM Peak Hours

heffron transportation inc

3.3. Traffic Operations

Traffic operations with Alternative 1 were evaluated to show the potential impacts associated with the project. Table 8 shows the results and are compared to the No Action (Alternative 2) condition.

Table 8. Level of Service – 2032 Conditions

Int. #	Intersection / Control Type	AM Peak Hour				PM Peak Hour			
		No Action		With-Project		No Action		With-Project	
	Signalized	**LOS [1]**	**Delay [2]**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
7	21st Ave W / W Emerson Pl	B	17.9	B	18.2	C	21.1	C	21.6
10	15th Ave W (SB Ramps) / W Dravus St	B	18.1	B	18.1	C	27.2	C	27.2
11	15th Ave W (NB Ramps) / W Dravus St	B	17.5	B	17.6	C	33.5	C	33.8
12	W Garfield St / 15th Ave W	B	10.2	B	10.2	B	15.0	B	15.1
	All-Way Stop-Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
3	W Government Wy / 36th Ave W	A	8.1	A	9.3	A	8.5	A	9.8
4	W Government Way / 34th Ave W	B	11.6	C	15.2	B	11.5	B	13.8
6	W Emerson Pl / Gilman Ave W	D	33.6	F	64.6	D	33.5	F	56.1
8	W Emerson St / W Nickerson St [3]	B	14.7	C	15.8	C	18.8	D	27.4
9	W Nickerson St / 15th Ave W Ramps	E	42.2	F	62.4	F	50.9	F	64.7
	Side-Street Stop-Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
1	Texas Wy / 40th Ave W (overall)	A	4.5	A	5.0	A	3.3	A	3.9
	Westbound Approach	A	9.0	A	9.1	A	9.0	A	9.1
	Southbound Left-turn	A	7.3	A	7.3	A	7.4	A	7.4
2	Texas Way / Discovery Pk Blvd (overall)	A	1.3	A	5.4	A	1.5	A	3.1
	Eastbound Left-turn	A	0.0	A	0.0	A	0.0	A	0.0
	Southbound Approach	A	9.5	B	11.0	A	10.0	B	11.2
5	W Government Way / 32nd Ave W (overall)	A	1.1	A	1.1	A	1.1	A	1.1
	Northwest Approach	B	13.3	C	15.3	B	14.0	C	15.2
	Southbound Left-turn	A	8.6	A	9.1	A	8.4	A	8.7
	Yield-Controlled	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
8	W Emerson St / W Nickerson St [3] (overall)	B	10.5	C	15.4	A	4.7	A	5.0
	Southbound – Yield to EBR	E	56.9	F	91.2	D	30.8	E	36.3

Source: Heffron Transportation, Inc., January 2025.

1. *Level of service.*
2. *Average seconds of delay per vehicle.*
3. *Location evaluated as two separate intersections to reflect operations of all movements. EBR = Eastbound Right.*

As shown, all study area signalized intersections would continue to operate at LOS C or better with slight increases in delay associated with Alternative 1. Most of the unsignalized intersections would continue to operate at similar levels of service (LOS C or better) with Alternative 1.

Three unsignalized intersections are forecast to operate at LOS E or F with the project. The W Emerson Place / Gilman Avenue W all-way-stop intersection is anticipated to degrade from LOS D to LOS F during both the AM and PM peak hours with the project. The W Nickerson Street / 15th Avenue W Ramps all-way-stop intersection, is anticipated to operate at LOS F during both peak hours. Operations at both intersections could be improved if signalized (LOS E or better at Emerson / Gilman and LOS B at 15th/Nickerson). However, there are physical constraints, closely-spaced-intersection considerations, and modal preferences (e.g., bicycle and pedestrian flows) for which SDOT may not support signalization and would prefer to tolerate the poor operations for vehicle traffic in favor of non-motorized modes. However, the City may consider the vehicular delay impacts to these locations as significant adverse impacts.

At the W Emerson Street / W Nickerson Street intersection, the south-bound yield to the east-to-south right-turning movement is anticipated to operate at LOS F during the AM peak hour and LOS E during the PM peak hour with the project. Due to the location of these movements, their proximity to the other stop-controlled movements, and their location on bridge structural elements, there is likely limited opportunity to make physical changes to address the poor operations, including traffic signalization. In the long-term, the *Ballard Bridge Planning Study*[26] included options that could reconstruct the W Nickerson Street / 15th Avenue E interchange and eliminate the all-way-stop intersections.

Since traffic volumes in the immediate site vicinity could be influenced by seasonal or event-related use of Discovery Park, a separate sensitivity analysis was completed to understand how traffic fluctuations around the site could influence intersection operations with the proposed Fort Lawton Housing project. The three intersections nearest the site—Texas Way / 40th Avenue W, Texas Way / Discovery Park Boulevard, and W Government Way / 36th Avenue W—were evaluated to determine how they would operate with higher than anticipated growth. Sensitivity analysis was performed assuming incremental growth up to 50% more traffic than the forecast-2032-with-project conditions. Even with a 50% increase in traffic, all movements at the three near-site study intersections would continue to operate at LOS B or better during both the AM and PM peak hours. Therefore, the intersections near the site are shown to have substantial vehicle-traffic volume capacity available and peak season resiliency, even during peak park activity in the summer months.

3.4. Parking

Based on the City's Land Use Code, no parking is required for the project.[27] However, the project would provide 0.75 stalls per residential unit for a total of up to 375 parking stalls. No parking is proposed for the multi-purpose field.

3.5. Traffic Safety

The project would increase traffic at the study-area intersections and statistically, the number of collisions could increase as traffic increases. However, historical collision data do not indicate unusual existing traffic safety issues in the site vicinity. Alternative 1 would not change the roadway network, although new site access driveways would connect the residential parking areas to Texas Way. The volumes at these intersections are expected to be relatively low and operate similar to other intersections in the residential neighborhood. The project is not expected to result in new adverse impacts to traffic safety conditions in the neighborhood.

[26] SDOT,
[27] Seattle Land Use Code; Chapter 23.54.015, version February 12, 2025; https://library.municode.com/wa/seattle/codes/municipal_code?nodeId=TIT23LAUSCO.

3.6. Transit Facilities and Service

Alternative 1 is expected to generate about 146 transit trips per day, and about 6 transit trips during the AM and PM peak hours (see trip estimates in Section 3.2). The existing bus service would be adequate to serve this demand; therefore, no adverse transit impacts are expected from the proposed Alternative 1.

3.7. Non-Motorized Transportation

For Alternative 1, Texas Way W would be improved to add a sidewalk or walkway on the east side of the street adjacent to new development areas. In addition, the existing sidewalk on the west side of the street would be maintained.

Several new pedestrian crosswalks are proposed to connect with housing clusters and transit stops. All new crosswalk locations would be required to provide adequate sight lines for motorists and pedestrians, and would be designed to meet *Manual on Uniform Traffic Control Devices* (MUTCD) *for Streets and Highways*[28] ladder stripe standards (existing crosswalks are now painted in non-standard yellow). ADA curb ramps and landings would be provided on both sides of the street at new and retained existing crosswalk locations.

The project would provide the code-required number of bicycle parking spaces.

3.8. Construction Impacts

Alternative 1 would generate construction truck and employee traffic associated with demolition, excavation, infrastructure construction, building construction, and landscaping. Internal roadways would be upgraded and replaced. The highest number of truck trips per day would likely be generated during excavation activities when large quantities of materials can be stockpiled on site and then hauled off in a compressed schedule. Based upon typical construction shifts, it is anticipated that construction workers would arrive at the construction site before the morning peak traffic period on local area streets and depart the site prior to the evening commute peak period. The number of workers at the project site at any one time would vary depending upon the construction element being implemented. Construction worker trips typically peak during building construction when many trades can be working simultaneously at the site.

For all these construction activities, it is unlikely that the site would generate more trips per hour than evaluated for the completed with-project condition. Therefore, the vicinity roadway systems would be able to accommodate construction traffic generated by the site. All truck staging and contractor parking are planned to be accommodated on site.

Prior to commencing construction, the selected contractor(s) would prepare a Construction Management Plan. This plan would include information related to truck haul routes, staging areas, sidewalk and street detours, and employee parking. Details that should be included in the plan are described in the *Mitigation* section (Section 4).

[28] US Department of Transportation – Federal Highway Administration, 11th Edition, December 2023. (Sign-design details update on December 20, 2024.)

4. MITIGATION

The following describes recommended measures to reduce or eliminate potential transportation impacts of the Proposed Action (Alternative 1). No mitigation would be required with No Action (Alternative 2).

4.1. Short-Term – Construction

Although no significant adverse impacts are anticipated from construction of Alternative 1, the following are recommended to minimize or avoid impacts. Prior to commencing construction of Alternative 1, the selected contractor(s) should be required to prepare a Construction Transportation Management Plan (CTMP) that documents the following:

- Truck haul routes to and from the site;
- Truck staging areas (e.g., locations where empty or full dump trucks would wait or stage prior to loading or unloading);
- Construction employee parking areas;
- Road or lane closures that may be needed during utility or street construction;
- Sidewalk, bike lane, and/or bus stop closures and relocations; and
- Mechanism for notifying the community if street, sidewalk, bike lane, or bus stop closures would be required.

4.2. Long-Term – Operations

The Fort Lawton Housing Updated Proposed Action (Alternative 1) is not expected to adversely impact intersections near the site. However, traffic operations at three all-way-stop-control intersections further from the site could be degraded to LOS F due to increased vehicle delay during the AM and/or PM peak hours. These poor operating conditions could be improved if the intersections were signalized (e.g., LOS E or better at Emerson / Gilman and LOS B at 15th/Nickerson). However, there are physical constraints, closely-spaced-intersection considerations, and modal preferences (e.g., bicycle and pedestrian flows) for which SDOT may not support signalization and would prefer to tolerate the poor operations for vehicle traffic in favor of better operations for non-motorized modes. In the long-term, the *Ballard Bridge Planning Study* included options that could reconstruct the W Nickerson Street / 15th Avenue E interchange and eliminate the affected all-way-stop intersections as part of a future Ballard Bridge Replacement project.

Alternatively, trip reduction strategies are proposed as part of a Transportation Management Plan (TMP). Potential elements of this plan are detailed below.

4.2.1. Transportation Management Plan

The SOH would prepare a TMP consistent with the City of Seattle's Director's Rule (SCDI Director's Rule 05-2021 / SDOT Director's Rule 01-2021). It would define the trip reduction goal and strategies.

TMP Goal

The trip generation used in this analysis did **not** account for any reductions in vehicle trips to account for increases in transit, walk, or bike modes of travel. Therefore, policies and programs that reduce vehicle trips could be effective at reducing impacts to area intersections. Seattle Municipal Code (SMC) *Chapter 23.52* outlines requirements for transportation concurrency and transportation impact mitigation. Developments with more than 30 dwelling units must contribute to achieving the single-occupancy vehicle (SOV) trips percentage targets shown on Map A for §23.52.004. The SOV goal for the Magnolia

neighborhood is 38% by the year 2035. This means that 62% of the trips would need to use non-SOV modes of travel. For comparison, the SOV rate reflected by the standard ITE rates and equations used for this analysis ranges from 75% to 85%.[29]

TMP Strategies

The following are strategies that have been used in other residential projects and are recommended for inclusion in a TMP for the proposed action.

1. SOH should designate a Transportation Coordinator for the site to manage program elements.

2. SOH should provide prospective tenants with a comprehensive package of information about transit, walking, biking, rideshare, and good-neighbor parking practices. This should include information about public transit services and tools to assist with forming carpools.

3. SOH should charge tenants for parking as a separate cost from the rent (unbundled). The monthly parking charge should be set at a rate that would discourage vehicle ownership but not push residents onto nearby residential streets.

4. SOH should require vehicle-type and license information for all resident vehicles for the purpose of parking permit enforcement.

5. SOH should actively support residents' access to public transportation with on-site staff that will directly assist residents in completing their Orca card applications, including applications for the following free and reduced fare options:

    a. Families living at the development with incomes of less than 30% area median income (AMI) would qualify for discounted fare Orca LIFT cards;

    b. All those age 18 and under are eligible for free Orca cards and ride free; and

    c. Residents with disabilities who could qualify for the Sound Transit Reduced Fare Permit and Access vans.

6. SOH should provide secure and covered bike racks throughout the site as well as a bike maintenance facility for residents in a secure area.

7. SOH should support micro-mobility transportation services (e.g., Lime Bike and Scooter) and designate suitable end-of-trip parking station(s) at the site.

[29] The baseline ITE vehicle trip generation rates and equations used for this analysis are based on surveys of sites in general suburban locations and do not reflect any transit use. They account for minimal walk, bike and carpool use.

5. SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

The Fort Lawton Housing Redevelopment Updated Proposed Action (Alternative 1) may result in vehicular delay impacts to the following three unsignalized (all-way-stop-controlled) intersections that degrade operations to LOS F:

- W Emerson Place / Gilman Avenue W
- W Nickerson Street / 15th Avenue W Ramps
- W Emerson Street / W Nickerson Street (southbound yield to east-to-south right-turns)

Operations could be improved if signalized; however, there are physical constraints, closely-spaced-intersection considerations, and modal preferences (e.g., bicycle and pedestrian flows) for which SDOT may not support signalization and would prefer to tolerate the poor operations for vehicle traffic in favor of non-motorized modes. Therefore, the City may consider the vehicular delay impacts to these locations as significant adverse impacts. The recommended TMP measures to reduce vehicle trip generation may not fully mitigate these delay impacts. Therefore, the project could result in significant unavoidable adverse impacts at these locations during both the AM and PM peak hours.

APPENDIX A
Level of Service Definitions

Levels of service (LOS) are qualitative descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which is indicative of good operating conditions with little or no delay, to LOS F, which is indicative of stop-and-go conditions with frequent and lengthy delays. Levels of service for this analysis were developed using procedures presented in the *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2016).

Signalized Intersections

Level of service for signalized intersections is defined in terms of average delay for all vehicles that travel through the intersection. Delay can be a cause of driver discomfort, frustration, inefficient fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average delay per vehicle in seconds. Delay is a complex measure and is dependent on a number of variables including: number and type of vehicles by movement, intersection lane geometry, signal phasing, the amount of green time allocated to each phase, transit stops and parking maneuvers. Table A-1 shows the level of service criteria for signalized intersections from the *Highway Capacity Manual, 6th Edition.*

Table A-1. Level of Service for Signalized Intersections

Level of Service	Average Control Delay Per Vehicle
A	≤ 10 seconds
B	> 10 – 20 seconds
C	> 20 – 35 seconds
D	> 35 – 55 seconds
E	> 55 – 80 seconds
F	> 80 seconds

Source: Transportation Research Board, Highway Capacity Manual 6th Edition, 2022, Exhibit 19-8.

Stop-Controlled (Unsignalized) Intersections

For unsignalized intersections, level of service is based on the average delay per vehicle for each turning movement. The level of service for all-way stop or roundabout-controlled intersections is based upon the average delay for all vehicles that travel through the intersection. The level of service for a one- or two-way, stop-controlled intersection, delay is related to the availability of gaps in the main street's traffic flow, and the ability of a driver to enter or pass through those gaps. Table A-2 shows the level of service criteria for unsignalized intersections from the *Highway Capacity Manual, 6th Edition*.

Table A-2. Level of Service Criteria for Stop-Controlled (Unsignalized) Intersections

Level of Service	Average Control Delay per Vehicle
A	0 – 10 seconds
B	> 10 – 15 seconds
C	> 15 – 25 seconds
D	> 25 – 35 seconds
E	> 35 – 50 seconds
F	> 50 seconds

Source: Transportation Research Board, Highway Capacity Manual 6th Edition, Exhibit 20.2, 2016.