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APPENDIX A. INVENTORY OF EXISTING TRANSPORTATION SYSTEM AND CONDITIONS

CITY OF SEATAC TRANSPORTATION MASTER PLAN



INVENTORY OF EXISTING TRANSPORTATION SYSTEM AND CONDITIONS

CITY OF SEATAC TRANSPORTATION MASTER PLAN

JANUARY 2024

PREPARED FOR:

CITY OF SEATAC



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DOCUMENT DESCRIPTION

CLIENT	City of SeaTac
DKS Project / Proposal Number	24089-000
Project / Proposal Name	City of SeaTac 2024 Transportation Master Plan Update
Related Task / WBS Number	
Document Name	Existing Conditions Summary Memo
File Path	\\dks-sea-ad1\Company\1) PROJECTS - 24000 EFF 5.15.23\24000\000s\24089-000 SeaTac Transportation Master Plan\02 Delivery\01 Deliverables\Task 4 Existing Conditions\Existing Conditions Report\20231116_Existing Conditions.docx
Date Document Issued	January 8, 2024

VERSION CONTROL

VERSION NUMBER	DATE	DESCRIPTION OF CHANGE	AUTHOR
0-1	11/07/2023	Initial Document/Admin Draft	CT+others
1-0	11/17/2023	Final Draft	CT+others
2-0	01/08/2024	Revised to incorporate SeaTac comments on maps (Note map pages to be replaced by PDFS)	EEV
3-0	09/13/2024	Public Review Draft (updated to include KCM Metro Flex)	DKS Associates

PREPARED FOR CITY OF SEATAC



PREPARED BY DKS ASSOCIATES



TOOLE DESIGN



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INTRODUCTION

This Existing Conditions report contains information and analysis of the City of SeaTac's transportation system as it exists in 2023. By cataloging and summarizing the existing transportation system and its operations, this report sets the stage for future conditions analysis, multimodal needs identification and project list development, and will serve as a chapter of the Transportation Master Plan. The area of study is shown in Figure 1.

The report is divided into eight main sections:

- Roadway System,
- Traffic Safety,
- Freight Transportation System,
- Seattle-Tacoma (Sea-Tac) International Airport,
- Active Transportation Systems
- Transit Service and Use
- Transportation Demand Management, and
- Parking.

EXISTING MODE SHARE

Considering the multimodal nature of the city's transportation system, this section summarizes key travel patterns to provide additional context. These patterns of trip making show how the transportation system in SeaTac is currently being utilized. The data source for this section is the Replica travel demand model¹ representing Fall 2022 weekday conditions. The trips summarized include all daily person trips that start within the City of SeaTac.

As shown in Figure 2, the dominant commute to work mode is the private automobile (auto driver or passenger). Walking is the third highest commute mode following automobile use and suggests a sizeable population that lives near their place of work.

Total mode share reflects the same trends, although there is slightly less private auto usage and more transit, biking, and walking. Private automobiles are still the top mode followed by being an auto passenger and then walking (Figure 3).

Most trips made in SeaTac are to home or for shopping, with work trips on par with social trip making. The work commute is not the dominant trip made in SeaTac and peak periods of travel do not entirely follow typical patterns (Figure 4).

As shown in Figure 5, the transportation network in SeaTac experiences more sustained use throughout the day and has less exaggerated peaks and valleys in the AM and PM.

¹ Replica provides modeled data about activity in the built environment. The Replica data cited in this report references the Places travel model for the Northwest region of the United States, representing a typical Thursday in the Fall of 2022. For more information, please visit <https://www.replicahq.com/>.

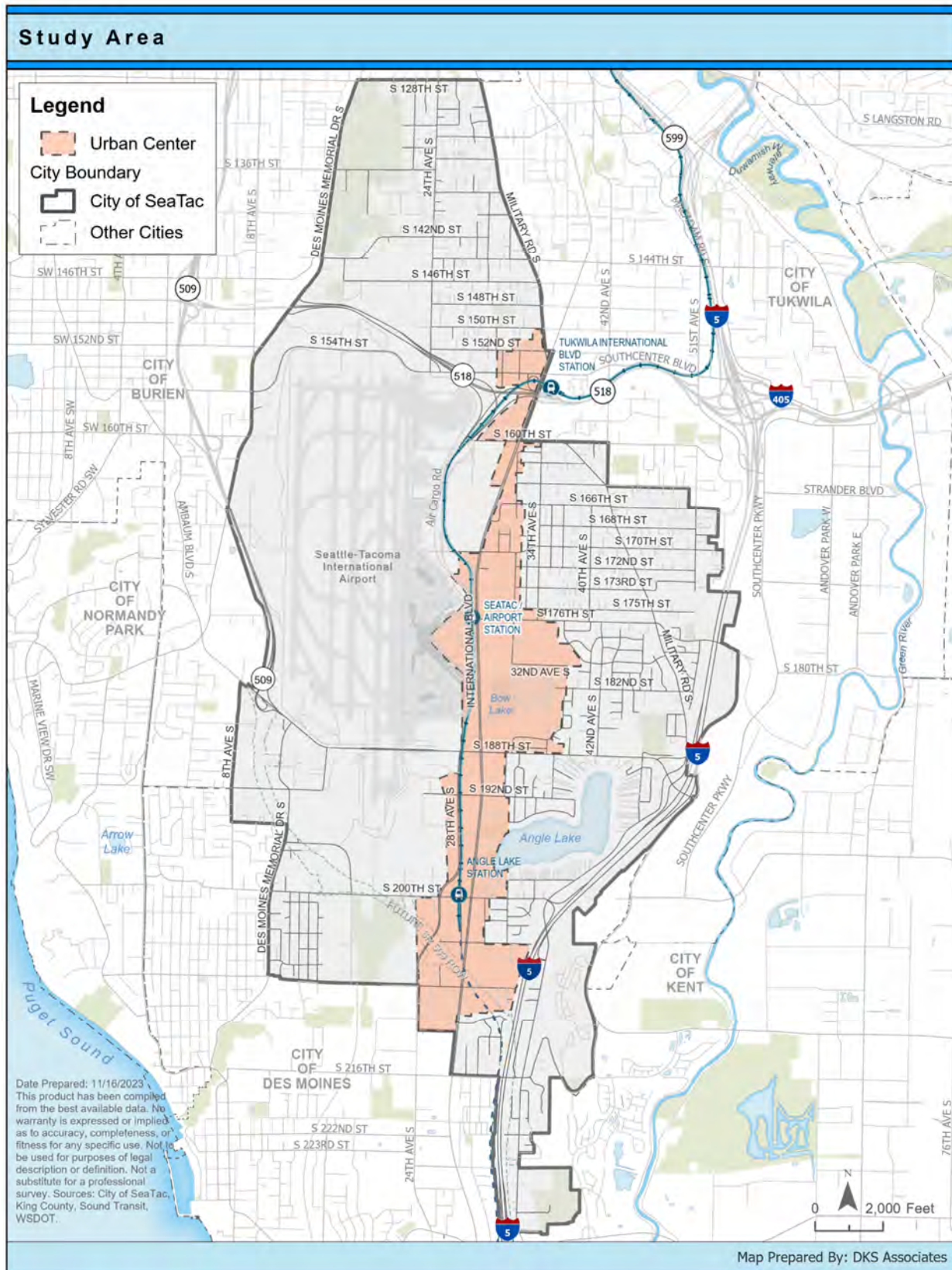


FIGURE 1: STUDY AREA

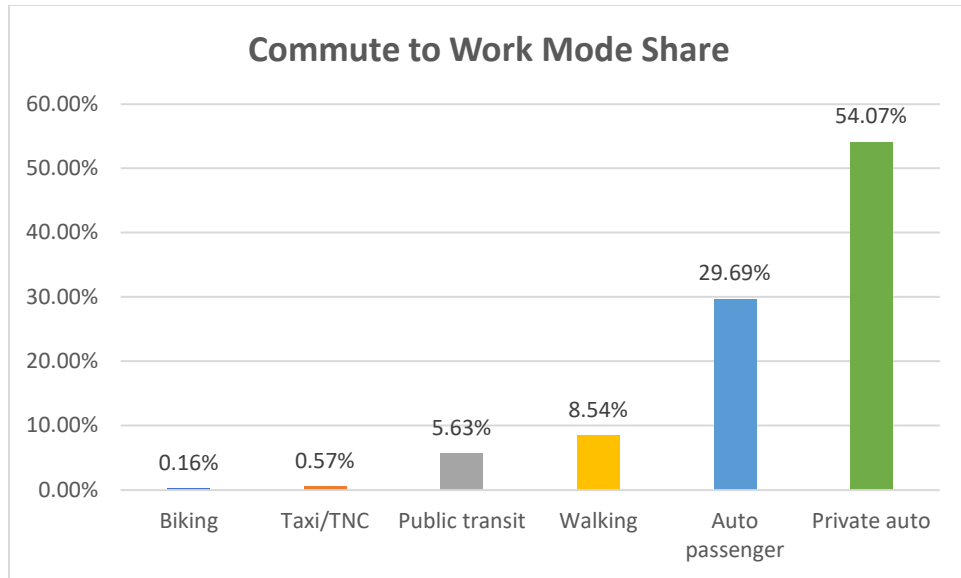


FIGURE 2. COMMUTE TO WORK MODE SHARE, 2022 FALL THURSDAY, REPLICA

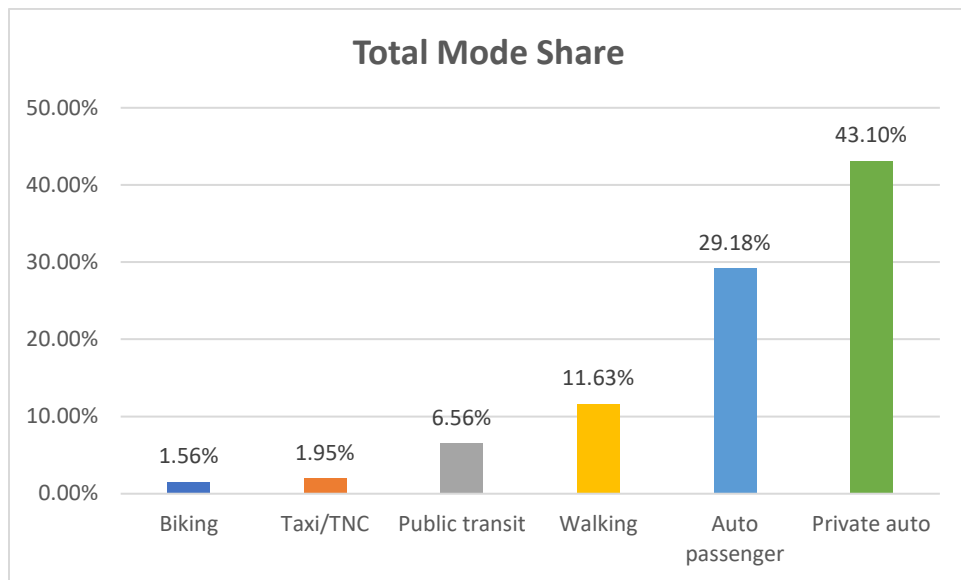


FIGURE 3. TOTAL MODE SHARE, 2022 FALL THURSDAY, REPLICA

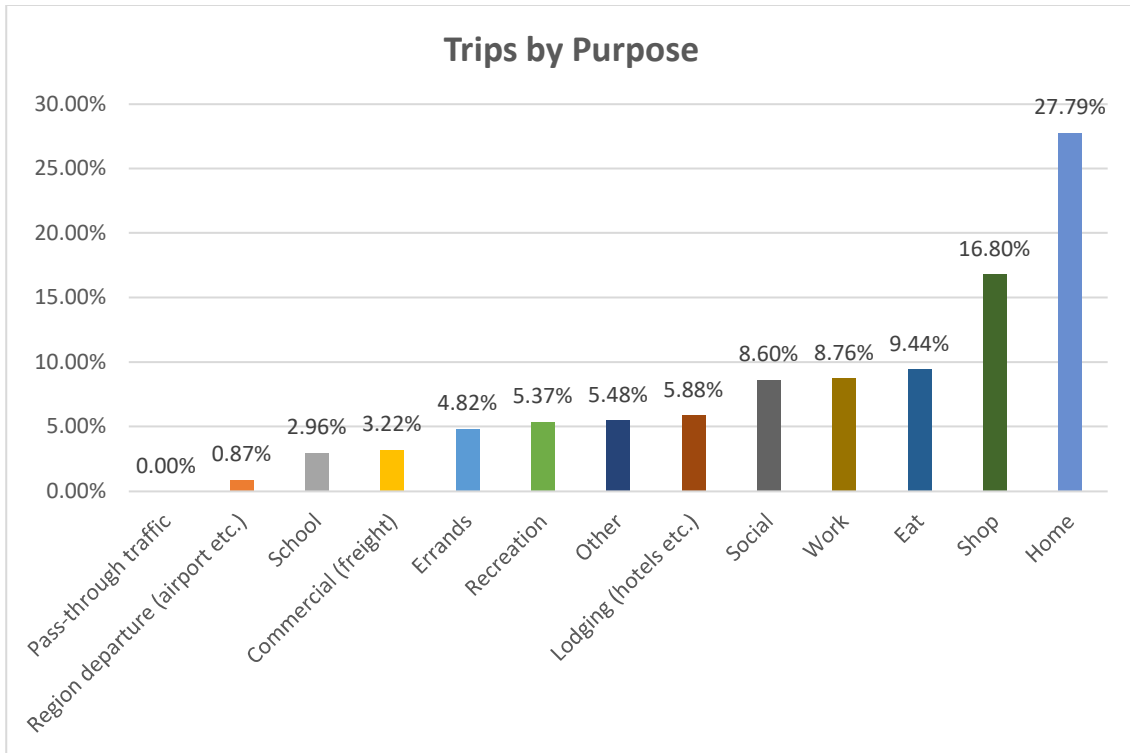


FIGURE 4. TOTAL TRIPS BY PURPOSE, 2022 FALL THURSDAY, REPLICA

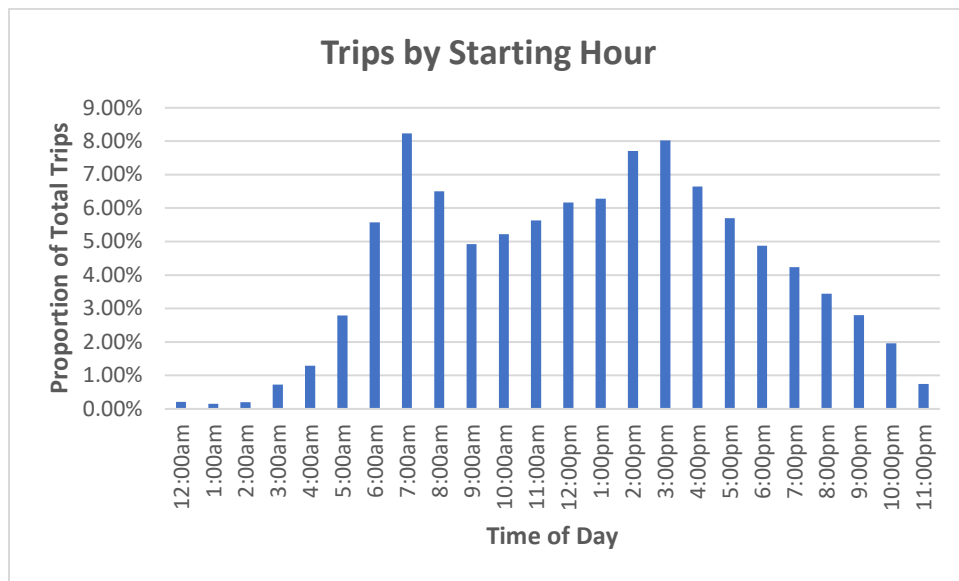


FIGURE 5. TOTAL TRIPS BY STARTING HOUR, 2022 FALL THURSDAY, REPLICA

ROADWAY SYSTEM

Travel within and around the City of SeaTac is accomplished using the city's roadway system. Cars, freight, pedestrians, bicyclists, and transit vehicles all use the roadway system. Roadways are classified based on their intended purpose for the full range of travel modes. Roadway classifications vary in the degree of access provided, the amount of through versus local traffic carried, design speeds, and modes served. The City of SeaTac and other entities such as the Washington State Department of Transportation (WSDOT) maintain geometric design standards for each roadway classification.

As shown in Table 1, local streets primarily provide access to individual properties via numerous driveways, are designed for lower speeds, and both motorized and non-motorized modes (i.e., bicycles) share the same right-of-way. Large amounts of motorized through traffic are generally considered undesirable on local streets. At the other end of the spectrum are freeways which can be accessed only at interchanges, are designed for higher speeds, carry a high proportion of long-distance and through traffic, and are limited to use by motor vehicles.

The following section describes the key arterial and freeway facilities in SeaTac. A map of the current roadway facilities by classification is shown in Figure 6.

TABLE 1: ROADWAY FUNCTIONAL CLASSIFICATIONS

FUNCTIONAL CLASSIFICATION	ACCESS	TRAFFIC	EXAMPLE
LOCAL STREETS	Unrestricted	Little through traffic	S 194 th St
COLLECTORS	More use of street for access but also parking and loading	More through traffic	24 th Ave S
MINOR ARTERIALS	Increasing degree of access control	Increasing through traffic and decreasing local traffic	Military Rd S
PRINCIPAL ARTERIALS			International Blvd
FREEWAYS	Full access control	Little local traffic	Interstate 5 (I-5)

STREETS AND HIGHWAYS

FREEWAYS

- **Interstate 5 (I-5)** is a primary north-south freeway within the eastern portion of the SeaTac study area. I-5 is a limited access freeway under the jurisdiction of WSDOT. I-5 has four general purpose lanes and one high occupancy vehicle (HOV) lane in the northbound direction. In the southbound direction, there are five general purpose lanes and one HOV lane. The city's two interchanges with I-5 are located at South 188th Street/Orilla Road and Military Road South/South 200th Street. The speed limit along I-5 is 60 miles per hour (mph). The I-5 freeway connects north to Seattle and south to Tacoma.
- **State Route 509 (SR 509)** is another primary north-south freeway located in the western SeaTac study area. SR 509 is a limited access freeway north of South 188th Street with two general purpose lanes operating in both the northbound and southbound directions. South of South 188th Street, the SR 509 designation follows 1st Avenue South through Des Moines as a two-to-four lane arterial roadway. SR 509 is maintained by WSDOT, and construction began in 2020 to extend the limited access freeway from South 188th Street to I-5 in SeaTac. Stage 1a of the SR 509 extension project was completed in 2022 which saw the opening of a new State Route 99 (SR 99) bridge near South 208th Street². South 188th Street is the end of the limited access portion of SR 509 and is the only interchange within the City of SeaTac. The speed limit on the freeway section of SR 509 is 60 mph.
- **State Route 518 (SR 518)** is one of the primary east-west routes within the northern portion of the SeaTac study area. SR 518 is a limited access state highway with two-to-three travel lanes in each direction and auxiliary lanes near interchanges. There are four interchanges that serve the SeaTac community located on Des Moines Memorial Drive South, South 154th Street, North Airport Expressway (NAE), and International Boulevard. SR 518 connects west to Burien and east to I-5 and Interstate 405 (I-405) in Tukwila. The speed limit on SR 518 is 60 mph.
- **North Airport Expressway (NAE)** is a short north-south limited access freeway in the northern portion of the SeaTac study area east of Sea-Tac International Airport. The NAE is under the jurisdiction of Port of Seattle and has a speed limit that ranges from 20 to 40 mph depending on the segment. This facility connects I-5 and SR 518 to Sea-Tac International Airport and generally has three-to-five general purpose lanes in each direction. The NAE connects to Airport arrival and departure terminals, parking garages, cell phone lots, and the on-ramp from South 160th Street.

NORTH-SOUTH ARTERIALS

- **International Boulevard (SR 99)** is a primary north-south arterial that runs through the center of the SeaTac study area. SR 99 runs parallel to I-5 along the eastern boundary of Sea-Tac International Airport and along the full length of the city's PSRC-designated Regional Center. SR 99 generally has two general purpose travel lanes in the northbound direction and two general purpose travel lanes with one High Occupancy Vehicle (HOV) lane in the southbound direction. Additional left and right turn lanes are provided at major intersections and right turns are permitted from the southbound HOV lane. Medians divide much of SR 99 and the speed limit

² More information on the SR 509 Completion Project may be found online at <https://wsdot.wa.gov/construction-planning/search-projects/sr-509-completion-project>.

is 40 mph. Sidewalks and crosswalks are provided along both sides of SR 99 (except for a gap on the west side between South 171st Street and South 182nd Street) along with a pedestrian bridge across International Boulevard near South 176th Street connecting to the Sea-Tac International Airport Light Rail Station. SR 99 provides access to Sea-Tac International Airport, hotels, park-and-ride services, and rental car agencies.

- **Des Moines Memorial Drive South** is a minor north-south arterial in the western section of the SeaTac study area. The speed limit is 35 mph and there are generally one northbound and one southbound travel lane. Left and right turn lanes are provided at major intersections and the roadway is generally undivided within the study area. Access to SR 518 is provided as a partial interchange with a westbound off-ramp to Des Moines Memorial Drive South, an eastbound off-ramp to Des Moines Memorial Drive South, and an eastbound on-ramp to SR 518. Sidewalks are generally provided along one side of the road within SeaTac city limits. A wide biking/walking path extends from the southern city limits on the east side of the roadway to SR 518. Crosswalks are provided at most intersections and the corridor has very wide shoulders.
- **Military Road South** is a minor north-south arterial in the eastern section of the SeaTac study area. Military Road South has one travel lane in each direction and a posted speed limit of 35 mph. The corridor serves residential properties with commercial areas near South 152nd Street and South 160th Street. There are two access points to I-5 at South 200th Street and near South 208th Street. Sidewalks and bike lanes are provided intermittently along Military Road South and wide shoulders are generally available. Crosswalks are provided at the major intersections along the corridor.
- **28th Avenue South** is a principal arterial in the southern section of the SeaTac study area. This roadway has two travel lanes in each direction and runs parallel to SR 99 connecting South 188th Street to South 200th Street and South 208th Street near the southern city limits. The speed limit is 35 mph and sidewalks are provided along both sides of the roadway. Crosswalks are provided at major intersections and the roadway is generally divided by a center median. A shared bike/pedestrian path is provided from South 200th Street to South 208th Street. 28th Avenue South provides access to hotels, airport parking services, and commercial developments.

EAST-WEST ARTERIALS

- **South 188th Street** is one of the primary east-west principal arterials in the central section of the SeaTac study area just south of Sea-Tac International Airport. This roadway is the primary connection between SR 509 to the west and I-5 to the east. There are two travel lanes in each direction with a two-way left-turn median separating the directions of travel. The two-way left-turn median is not provided from Des Moines Memorial Drive South to Alaska Service Road. South 188th Street has a speed limit of 40 mph west of International Boulevard and 35 mph east of International Boulevard. Sidewalks are provided along both sides of South 188th Street (except for a gap on the north side from 16th Avenue South to the western terminus at Des Moines Memorial Drive South and a gap on both sides from Military Road South to its eastern terminus at Orillia Road South) with crosswalks at major intersections. South 188th Street provides a full interchange with I-5 near Military Road South. There is also a full interchange with the limited access portion of SR 509 near Des Moines Memorial Drive South.
- **South 200th Street** is a principal east-west arterial in the southern section of the SeaTac study area running parallel to South 188th Street. There is one travel lane in each direction west of 26th Avenue South and two travel lanes in each direction east of 26th Avenue South. This

roadway is generally undivided with right- and left-turn lanes present near major intersections. Sidewalks are not provided west of 26th Avenue South but are provided along both sides of the roadway east of 26th Avenue South. West of International Boulevard, a mix of protected and unprotected bicycle lanes are provided, but east of International Boulevard, bike lanes are not present. The east end of South 200th Street connects with I-5 near Military Road South. The speed limit is 35 mph west of International Boulevard and 25 mph east of International Boulevard. South 200th Street also provides access to the Angle Lake Light Rail Station, the City of Des Moines, residential developments, commercial developments, and vacant properties for the SR 509 extension construction.

- **South 128th Street** is a minor east-west arterial located in the northern portion of the SeaTac study area. There is one travel lane in each direction east of Des Moines Memorial Drive South and two travel lanes in each direction west of Des Moines Memorial Drive South. Right and left turn lanes are provided near intersections and the speed limit is 35 mph. Sidewalks are provided along both sides of the streets and crosswalks are provided at major intersections. South 128th Street mainly connects neighborhoods and local streets to the greater transportation network.
- **South 156th Way/South 154th Street** is a minor east-west arterial located on the north side of the Sea-Tac International Airport. Generally, one travel lane runs in each direction and the speed limit is 35 mph. Sidewalks are provided on the north side of the road and bike lanes are provided on both sides of the road. Crosswalks are provided at each intersection along with left or right turn lanes where necessary.
- **South 160th Street** is a minor east-west arterial in the central portion of the SeaTac study area. This roadway connects Air Cargo Road on the east side of Sea-Tac International Airport with Military Road South to the east of International Boulevard. There are two travel lanes in each direction with sidewalks provided intermittently along both sides of the roadway. The speed limit is 35 mph and crosswalks are provided at each intersection. South 160th Street provides an on-ramp to the NAE near Host Road which eventually provides access to SR 518. This minor arterial provides access to hotels, park-and-fly lots, and access to the SeaTac Rental Car Facility.
- **South 170th Street** is a minor arterial/collector roadway in the central section of the SeaTac study area. West of International Boulevard, South 170th Street is designated as a minor arterial with two lanes running in each direction and a speed limit of 35 mph. This portion of the roadway connects to the NAE, Air Cargo Road, the cell phone lot, and airport parking. Between International Boulevard and Military Road South, South 170th Street is designated as a collector arterial serving mostly residential property. Here, the roadway has one lane in each direction and a speed limit of 30 mph. East of Military Road, South 170th Street is again designated a minor arterial with one lane in each direction and a speed limit of 30 mph. Sidewalks and bike lanes are provided east of International Boulevard. West of International Boulevard, sidewalks are provided on the north side of the street and no bike lanes are provided. Crosswalks are provided at all major intersections.
- **South 176th Street/South 178th Street** is a minor east-west arterial in the central section of the SeaTac study area. This roadway connects International Boulevard near the Airport to Military Road South and Tukwila. There is one travel lane in each direction with a two-way left turn lane east of the airport. East of Military Road South, the corridor becomes South 178th Street. The speed limit is 30 mph west of Military Road South and 35 mph east of Military Road South. Sidewalks are provided on both sides of the street to the east of International Boulevard with crosswalks at major intersections.

- **South 208th Street** is a minor east-west arterial and local roadway located along the southern section of the SeaTac study area. This roadway has one travel lane in each direction, the speed limit is 25 mph, and sidewalks are limited to newer developments near International Boulevard. West of 24th Avenue South and east of International Boulevard, South 208th Street is classified as a local roadway.
- **South 216th Street** is a minor east-west arterial located along the south city limits of SeaTac in Des Moines. This roadway connects International Boulevard with Military Road South in SeaTac including an overcrossing of I-5. There is one travel lane in each direction with a speed limit of 35 mph and a two way left turn lane west of I-5. Sidewalks and bicycle lanes are provided on both sides of the road west of I-5 with wide shoulders provided east of I-5.

TRAFFIC VOLUMES

DAILY VOLUMES

Average Daily Traffic (ADT) is the amount of motorized traffic on a roadway segment over a 24-hour period. To provide a relative overview of daily traffic volumes, data from the Replica travel demand model representing Fall 2022 conditions are mapped in Figure 7³. As shown, the highest-volume corridors for private automobiles are I-5, SR 518, SR 509, International Boulevard (SR 99), and the Airport Expressway. These are followed by South 188th Street, South 200th Street, South 176th Street, Des Moines Memorial Drive South, Military Road South, South 216th Street, and South 170th Street.

³ Note that new primary ADT data will be collected at 43 locations using pneumatic tubes and video cameras which capture volume, speed, vehicle classification, and travel direction. This new data collection will primarily support calibration of a new travel demand model for the City of SeaTac and the Port of Seattle.

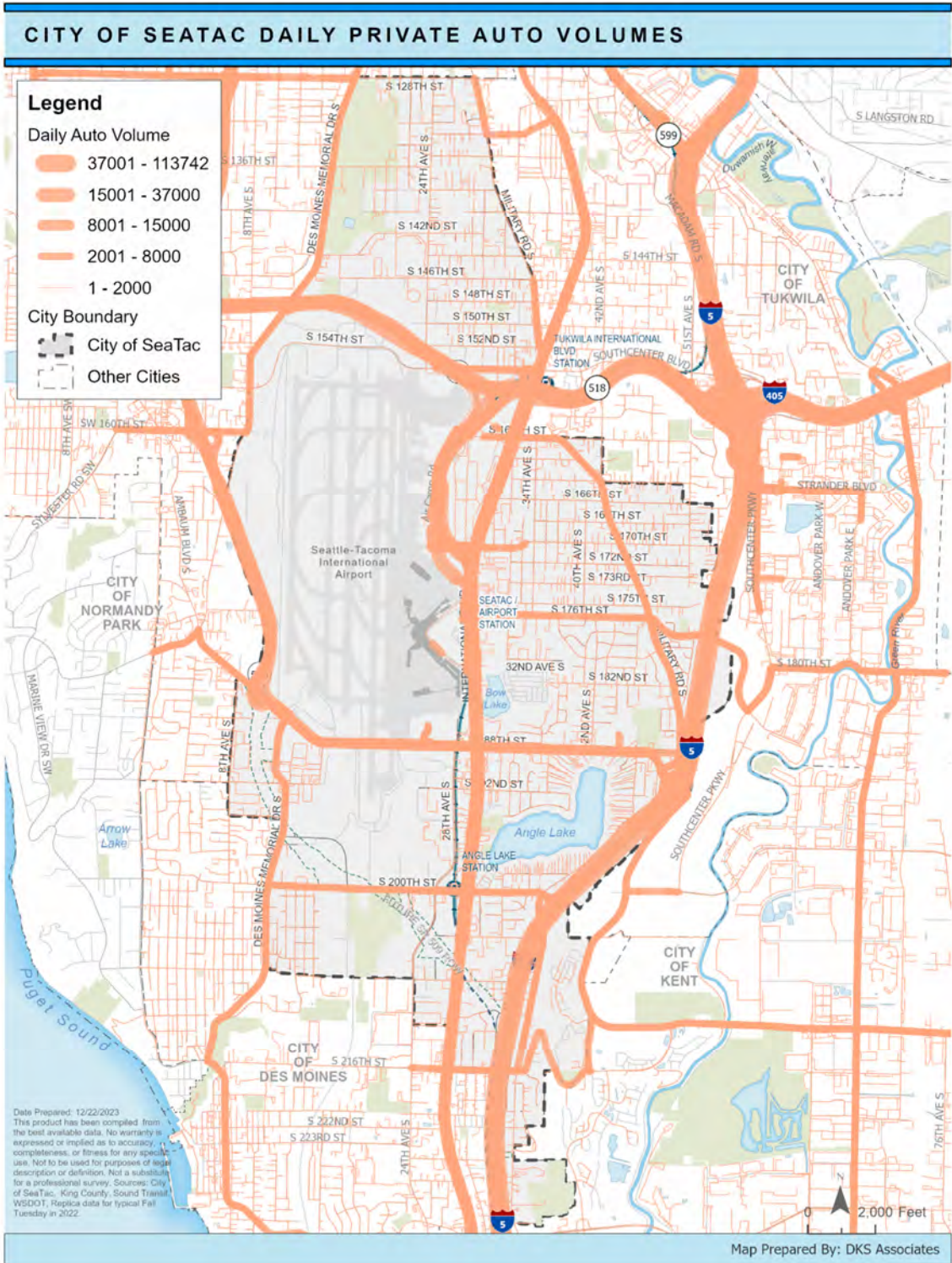


FIGURE 7: ESTIMATED DAILY TRAFFIC VOLUMES

AFTERNOON PEAK HOUR VOLUMES

The afternoon peak hour is typically the highest volume period that the transportation network will experience. The afternoon peak hour usually occurs between 4 PM and 6 PM on a typical Tuesday, Wednesday, or Thursday when schools are in session. The maximum demand during this period is typically used to determine the needed size of roadway facilities and intersections, as well as the need for traffic signals.

As described under Traffic Operations, peak hour intersection turning movements are also used to measure the intersection's performance and assess the adequacy of the intersection's capacity. For this purpose, weekday afternoon peak period turning movement counts were collected at 44 study intersections throughout the SeaTac study area in October 2023. Figure 8 depicts these study intersections and illustrates the total approach volumes at each location.

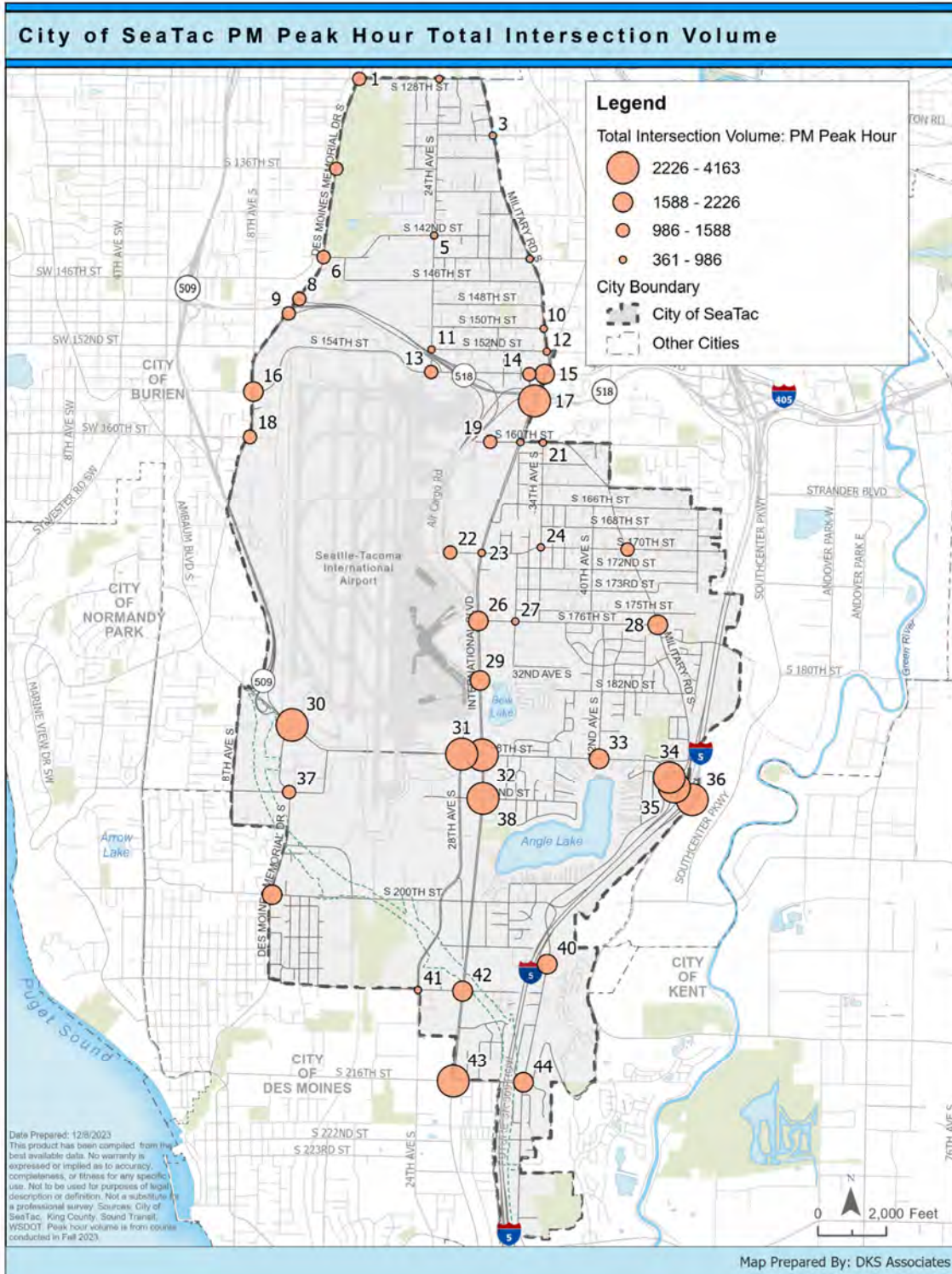


FIGURE 8: PM PEAK HOUR APPROACH VOLUMES

TRAFFIC OPERATIONS

Traffic operations analyses provide valuable insight into current and predicted levels of vehicular congestion on the arterial roadway network. This traffic operational analysis is based on recently collected turning movement counts, existing lane channelization, and current traffic signal timings as of Fall 2023. These inputs provide both a clear snapshot of the current traffic congestion conditions and a baseline for analysis of future conditions. This traffic operations section focuses on the afternoon peak hour; the study intersections are listed in Table 3.

LEVEL OF SERVICE

While the City does not currently maintain a performance standard limiting vehicle delay at intersections, intersection delay has a direct relation to average speeds over arterial corridors and provides a snapshot of an intersection’s overall operation. Intersection Level of Service (LOS) is a performance measure commonly used to provide an overview of how each intersection is operating overall as well as diagnosing the operations of individual turning movements. The LOS provides a “report card” rating of letters A through F based on average vehicle delay through the intersection. LOS A indicates free flow conditions with minimal delay traveling through an intersection while LOS F indicates excessive vehicle delay and demand greater than capacity. LOS thresholds for signalized and unsignalized intersections are specified in the Highway Capacity Manual and are shown in Table 2. LOS and delay is reported for the overall intersection at signalized intersections, for the worst major and minor approaches (critical movements) at two-way stop-controlled (TWSC) intersections, and for the worst approach (critical movement) at all-way stop-control (AWSC) intersections.

TABLE 2: INTERSECTION CONTROL DELAY AND LEVEL OF SERVICE

LEVEL OF SERVICE	AVERAGE CONTROL DELAY FOR UNSIGNALIZED INTERSECTIONS (SECONDS/VEHICLE)	AVERAGE CONTROL DELAY FOR SIGNALIZED INTERSECTIONS (SECONDS/VEHICLE)
A	0-10	0-10
B	10-15	10-20
C	15-25	20-35
D	25-35	35-55
E	35-50	55-80
F	>50	>80

Source: Highway Capacity Manual 7th Edition.

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WSDOT's adopted LOS standard for Highways of Statewide Significance (e.g., I-5, SR 518, and SR 509) in urban areas and Tier 2 Highways of Regional Significance (e.g., SR 99 in Des Moines) is LOS "D".⁵ Intersections covered by the WSDOT policy include:

- Des Moines Memorial Drive & SR 518 Off Ramp (#8)
- Des Moines Memorial Drive & SR 518 Off-Ramp/SR 518 On-Ramp (#9)
- SR 518 Off-Ramp & South 154th Street (#14)
- International Boulevard & SR 518 On-Ramp (#17)
- I-5 On-Ramp/I-5 Off-Ramp & South 188th Street (#35)
- I-5 Off-Ramp/I-5 On-Ramp & South 188th Street (#36)
- Military Road South & I-5 NB Off/On-Ramp (#40)
- Pacific Highway South & South 216th Street (#43)

WSDOT intersections on International Boulevard, north of South 216th Street and south of SR 518, are classified as Tier 1 Highway of Regional Significance and have a LOS standard of E-Mitigated (improved to greatest feasible extent).

STUDY INTERSECTIONS AND EXISTING OPERATIONS

Signalized intersections report LOS based on the intersection average delay. For two-way stop controlled (TWSC) intersections, LOS and delay are reported for the worst major roadway lane and worst minor roadway lane, in that order. For all-way stop controlled (AWSC) intersections, the worst performing lane's LOS and delay is reported. The existing afternoon peak hour intersection levels of service are shown in Figure 9 and Table 3. The detailed operational analysis reports may be found in the Appendix, Section 3.

⁵ <https://www.psrc.org/our-work/adopted-level-service-standards-regionally-significant-state-highways>, Accessed 9/6/2024.

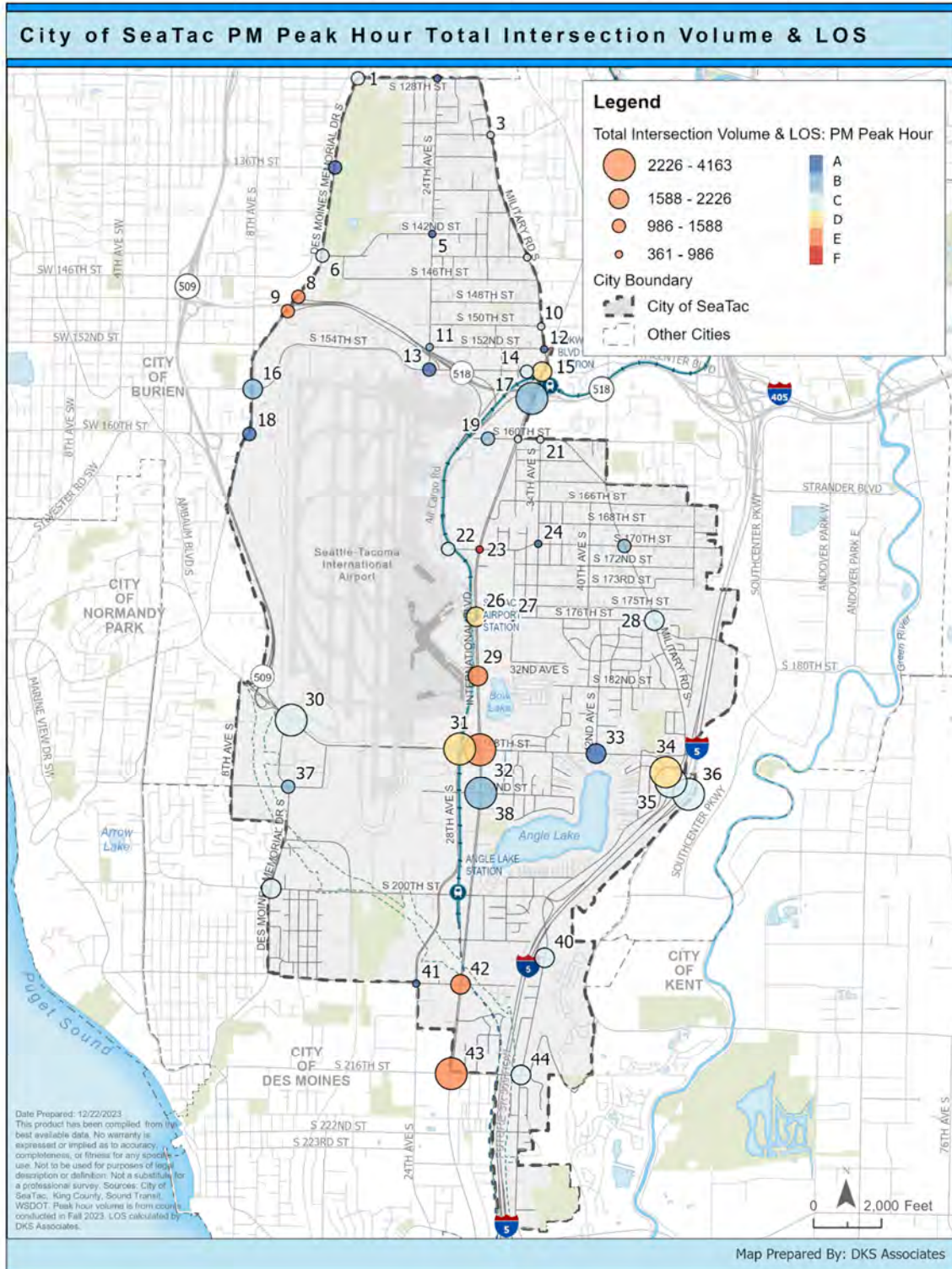


FIGURE 9: PM PEAK HOUR LEVEL OF SERVICE (FALL 2023)

TABLE 3: EXISTING PM PEAK HOUR INTERSECTION LEVEL OF SERVICE (FALL 2023)

	INTERSECTION	CONTROL TYPE	LOS ^a	DELAY ^a	CRITICAL MOVEMENT
1	DES MOINES MEMORIAL DR & S 128TH ST	Signal	C	22	N/A
2	24TH AVE S & S 128TH ST	Signal	A	6	N/A
3	MILITARY RD S & S 133RD ST	TWSC	A/C	8/19	NB/WB
4	DES MOINES MEMORIAL DR & S 136TH ST	Signal	A	9	N/A
5	24TH AVE S & S 142ND ST	AWSC	A	10	SB
6	DES MOINES MEMORIAL DR & S 144TH ST	Signal	C	30	N/A
7	MILITARY RD S & S 144TH ST	AWSC	C	17	SB
8	DES MOINES MEMORIAL DR & SR 518 OFF-RAMP	TWSC	A/E	0/45	NB/WB
9	DES MOINES MEMORIAL DR & SR 518 OFF-RAMP/SR 518 ON-RAMP	TWSC	A/E	9/43	SB/EB
10	MILITARY RD S & S 150TH ST	TWSC	A/C	8/18	NB/WB
11	24TH AVE S & S 152ND ST	TWSC	A/B	8/12	SB/WB
12	MILITARY RD S & S 152ND ST	Signal	A	8	N/A
13	AIR CARGO RD/24TH AVE S & S 154TH ST	Signal	A	9	N/A
14	SR 518 OFF RAMP & S 154TH ST	TWSC	A/C	0/18	SB/NB
15	INTERNATIONAL BLVD & S 154TH ST	Signal	D	35	N/A
16	DES MOINES MEMORIAL DR & S 156TH ST	Signal	B	17	N/A
17	INTERNATIONAL BLVD & SR 518 ON-RAMP	Signal	B	11	N/A
18	DES MOINES MEMORIAL DR & S 160TH ST	Signal	A	8	N/A
19	RENTAL CAR FACILITY/PORT GROUND LOT & S 160TH ST	Signal	B	13	N/A

	INTERSECTION	CONTROL TYPE	LOS ^a	DELAY ^a	CRITICAL MOVEMENT
20	INTERNATIONAL BLVD & S 160TH ST	Signal	C	34	N/A
21	34TH AVE S & S 160TH ST	TWSC	A/C	8/17	WB/NB
22	PORT CELL LOT/AIRPORT EXP SB OFF-RAMP & S 170TH ST	Signal	C	28	N/A
23	INTERNATIONAL BLVD & S 170TH ST	Signal	F	83	N/A
24	34TH AVE S & S 170TH ST	AWSC	A	9	EB
25	MILITARY RD S & S 170TH ST	Signal	B	11	N/A
26	INTERNATIONAL BLVD & S 176TH ST	Signal	D	44	N/A
27	34TH AVE S & S 176TH ST	TWSC	A/B	8/13	WB/SB
28	MILITARY RD S & S 176TH ST	Signal	C	23	N/A
29	INTERNATIONAL BLVD & S 182ND ST	Signal	E	60	N/A
30	DES MOINES MEMORIAL DR S/STARLING DR & S 188TH ST	Signal	C	21	N/A
31	28TH AVE S & S 188TH ST	Signal	D	40	N/A
32	INTERNATIONAL BLVD & S 188TH ST	Signal	E	72	N/A
33	S 188TH ST & 42ND AVE S	Signal	A	9	N/A
34	MILITARY RD S & S 188TH ST	Signal	D	46	N/A
35	I-5 ON RAMP/I-5 OFF-RAMP & S 188TH ST	Signal	C	26	N/A
36	I-5 OFF RAMP/I-5 ON-RAMP & S 188TH ST	Signal	C	26	N/A
37	DES MOINES MEMORIAL DR S & S 192ND ST	Signal	B	17	N/A
38	INTERNATIONAL BLVD & S 192ND ST	Signal	B	15	N/A
39	DES MOINES MEMORIAL DR & S 200TH ST	Signal	C	28	N/A

INTERSECTION	CONTROL TYPE	LOS ^a	DELAY ^a	CRITICAL MOVEMENT
40 MILITARY RD S & I-5 NB OFF/ON-RAMP	Signal	C	27	N/A
41 24TH AVE S & S 208TH ST	Signal	A	9	N/A
42 INTERNATIONAL BLVD & S 208TH ST	Signal	B	16	N/A
43 PACIFIC HWY S & S 216TH ST	Signal	E	56	N/A
44 MILITARY RD S & S 216TH ST	Signal	C	29	N/A

^a Delay and LOS exceeding the performance target are listed in bold and red.

Source: DKS Associates, 2023.

As shown, two intersections are currently operating below the performance standard:

- Des Moines Memorial Drive & SR 518 Off Ramp (#8)
- Des Moines Memorial Drive & SR 518 Off Ramp/SR 518 On Ramp (#9)

Both intersections are under WSDOT jurisdiction with a LOS D standard, currently operating at LOS E on the off-ramp approach.

QUEUING IMPACTS

Measurement and simulation of queues at intersections can provide critical information about the intersection's performance. Excess queueing can have negative safety and operational implications. For example, queues of vehicles waiting to make a particular movement may block access to turning lanes or driveways and may back up to the previous intersection, impacting operations at that location as well. For these reasons, analysis was conducted to assess potential queuing impacts⁸ (detailed queuing reports may be found in the Appendix, Section 3).

The longest queues reported were on International Boulevard, typically in the southbound direction, at South 170th Street, South 182nd Street, and South 188th Street. The longest queue was 1,425 feet on the southbound approach of International Boulevard at South 188th Street. Excessive queuing was also found for the eastbound direction of South 182nd Street (Arrivals Drive) at International Boulevard due to high demand for the eastbound right turn. The eastbound queues on South 188th Street at 28th Avenue South also exceed available storage, due mostly to the lack of a dedicated eastbound right turn lane. No queues spilling onto freeway mainlines were reported.

⁸ Technical note: Queuing analysis was performed using SimTraffic version 11. Queuing behavior was simulated using the same set of inputs as the Highway Capacity Manual analysis described in the previous section. The southbound HOV lane on International Boulevard was typically modeled with a 400-foot pocket to avoid turn lane starvation when the through movement queues extend upstream.

TRAFFIC SAFETY

Crash data was evaluated on roadways within the City of SeaTac to identify existing safety conditions. Collision data was retrieved from the Washington Department of Transportation (WSDOT) Public Disclosure Request Center⁹ for a five-year period from 2018 to 2022 for all crashes within the city boundary. WSDOT's crash data and attributes are sourced from Police Traffic Collision Reports. Crash records provide data collected by the reporting officer, including crash event information (jurisdiction, location, date, time), description of involved parties (age, sobriety, safety equipment usage), environmental elements (lighting, weather, road surface), and crash details (type of collision, contributing circumstance, vehicle type, resulting injury severity).

Crash data was mapped in ArcGIS and then a subset of the study streets were identified similar the roadways in the 2022 City of SeaTac Local Road Safety Plan (LRSP).¹⁰ Roadways that were excluded from the analysis include Interstate 5 (I-5), State Route 518, State Route 509, and the Airport Expressway, similar to the 2022 City of SeaTac LRSP.

The study team highlighted the following safety conditions findings:

- Between 2018 and 2022, there were a total of 3,232 reported crashes, including 18 fatal crashes and 73 suspected serious injury crashes.
- Approximately 58% of collisions were identified as intersection related.¹¹
- 24% of pedestrian related reported crashes resulted in a fatality or serious injury.
- 32% of motorcycle related reported crashes resulted in a fatality or serious injury.
- Of the 18 fatal crashes, eight involved a pedestrian and six involved speeding.¹²

CRASHES BY SEVERITY

Collision severity is defined in the WSDOT Safety Analysis Guide¹³ as follows:

1. **Fatal injury (K):** A collision that results in the death of a person within 30 days of the collision.
2. **Suspected serious injury (serious injury or SI):** A collision that results in broken bones, dislocation, severe lacerations, or unconsciousness, but not death.
3. **Suspected minor injury (minor injury):** A collision that results in other visible injuries, including minor lacerations, bruising, and rashes.
4. **Possible injury:** A collision that results in the complaint of non-visible pain/injury, such as confusion, limping, and soreness. No wounds or injuries are readily evident.

⁹ WSDOT Crash data portal: <https://wsdot.wa.gov/about/transportation-data/crash-data>

¹⁰ City of SeaTac Local Road Safety Plan:
<https://www.seatacwa.gov/home/showpublisheddocument/32435/637818965530470000>

¹¹ Intersection related crashes include crashes noted under junction relationship as "At intersection and related", "At driveway within major intersection", "Intersection related by not at intersection", and "Traffic calming circle".

¹² Speeding related crashes include crashes noted as "Exceeding stated speed limit" or "Exceeding Reasonable Safe Speed" under contributing circumstance for any vehicles involved.

¹³ WSDOT Safety Analysis Guide Source: <https://wsdot.wa.gov/publications/fulltext/design/ASDE/Safety-Analysis-Guide.pdf>

5. **No Apparent Injury or Property damage only (PDO):** A collision without injury or complaint of pain but resulting in property damage to a vehicle or other object. There is no physical evidence of injury.

The most severe crashes are commonly characterized as KSI (Killed or Seriously Injured). The severity of collisions is summarized by year in Table 4 and in Figure 10. Total crashes by severity are mapped in Figure 11.

TABLE 4: COLLISIONS ON SEATAC ROADWAYS BY SEVERITY AND YEAR (2018-2022)

YEAR	FATAL	SERIOUS INJURY	MINOR INJURY	POSSIBLE INJURY	NO APPARENT INJURY	UNKNOWN	TOTAL
2018	4	10	42	199	494	14	763
2019	3	17	31	189	442	13	695
2020	3	10	42	110	310	10	485
2021	3	16	76	123	353	20	591
2022	5	20	79	135	437	22	698

Source: WSDOT Public Disclosure Request Center and DKS Associates.

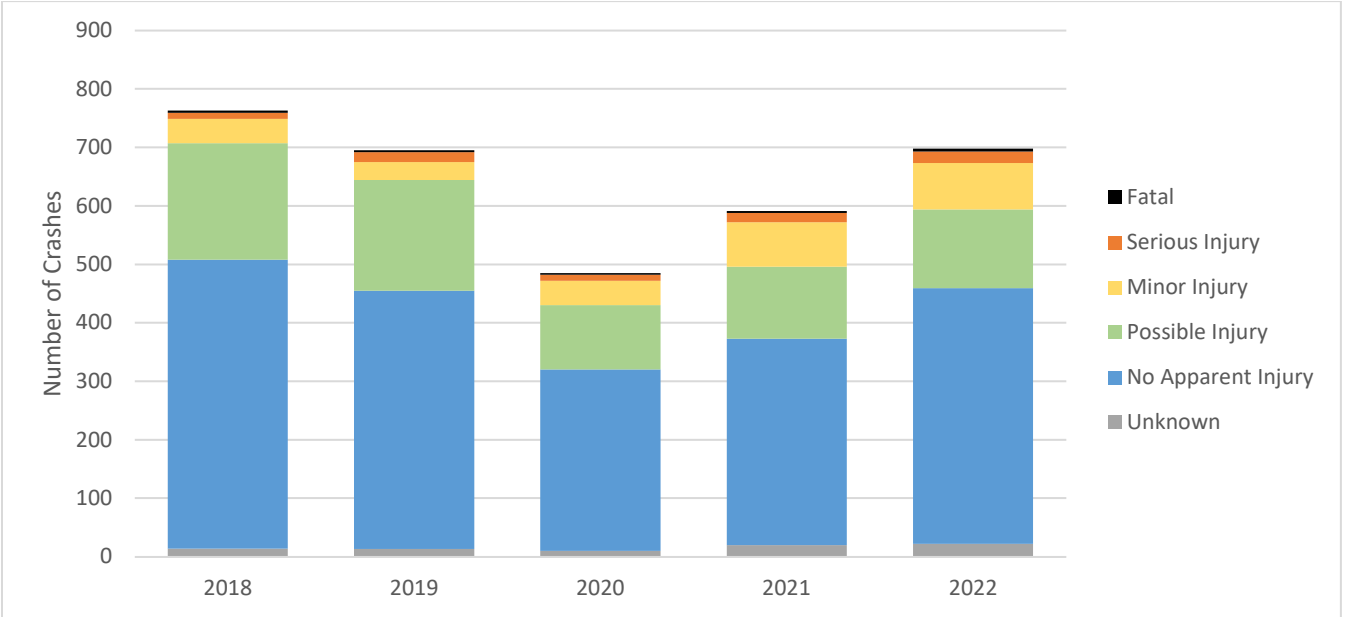


FIGURE 10: ANNUAL COLLISION FREQUENCY AND SEVERITY (2018-2022)

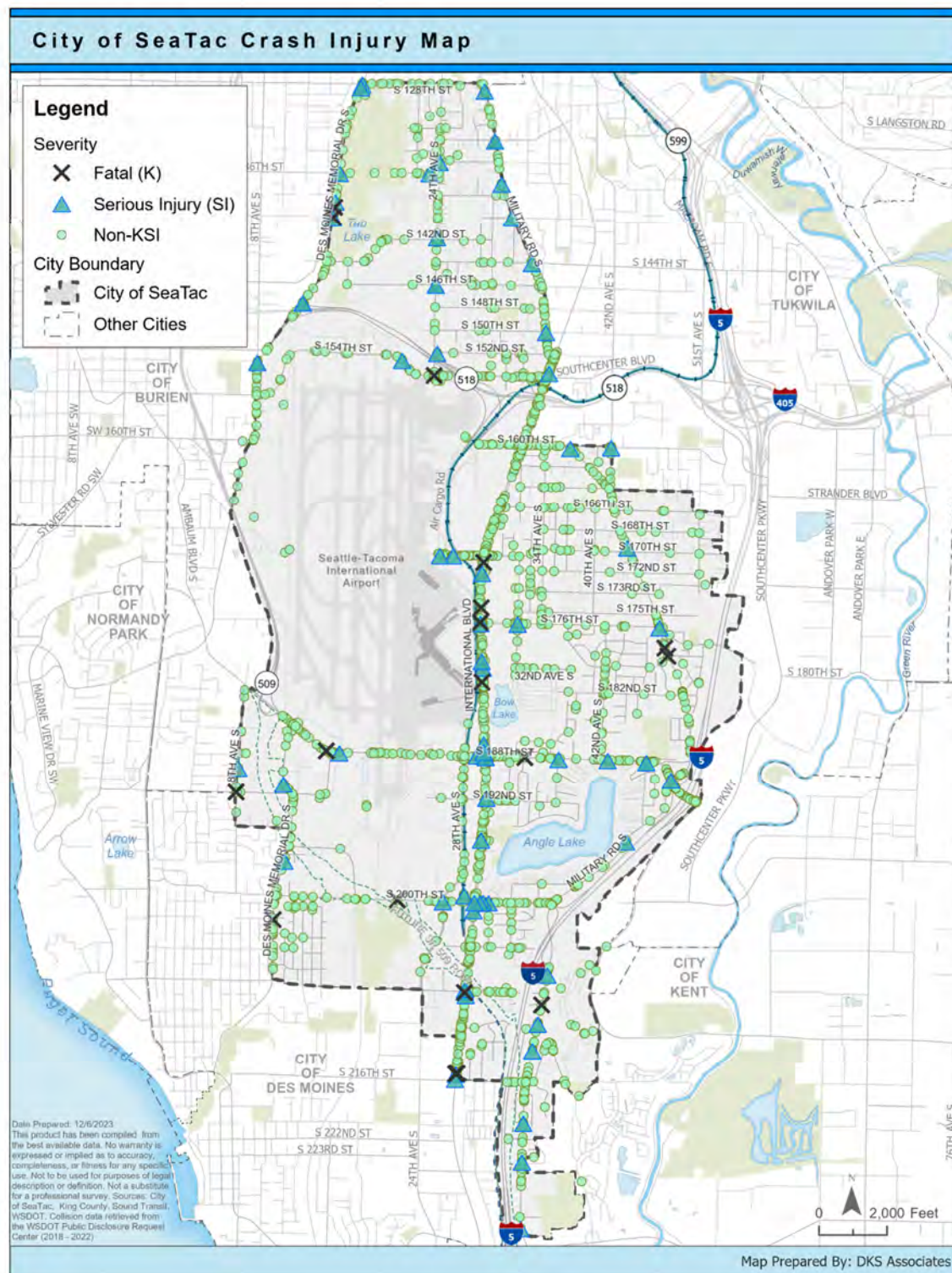


FIGURE 11: CRASH LOCATIONS BY SEVERITY (2018-2022)

Between 2018 and 2020, the annual number of crashes decreased by 38%, from 763 crashes in 2018 to 485 crashes in 2020. The significant drop in fatal crashes could be explained by the impact of COVID-19 in 2020, where there were significant declines in traffic exposure. On March 24, 2020, Governor Inslee enacted the “Stay Home, Stay Healthy” order that required every Washingtonian to stay home unless for needed essential activity and closed all businesses except essential businesses. Based on the 2020 Washington Annual Traffic Safety Report,¹⁴ the highway traffic volumes were reduced to 60% of the 2019 volume.

From 2020 to 2022, the annual number of crashes increased by 31%, almost returning to 2018 levels. The highest number of fatal crashes occurred in 2022, where three of the five fatal crashes involved speeding that year.

Fatal and Suspected Serious Injury Crashes (KSI)

During the five-year study period, there were 18 reported fatal crashes and 73 suspected serious injury crashes. Figure 11 highlights fatal and severe crashes (KSI) within the study area. The area with the highest number of KSI crashes is located along International Boulevard (SR 99). In particular, the areas surrounding four intersections along SR 99 including South 188th Street, South 200th Street, South 208th Street and South 216th Street, experienced 24% of all KSI crashes.

Table 5 provides a summary of crash data attributes for fatal and serious injury crashes. The three most common attributes for fatal crashes include dark/dusk/dawn lighting conditions, intersection-related and pedestrian involved. Similarly, the most common attributes for serious injury crashes involved dark/dusk/dawn lighting conditions, intersection-related and drivers between the age of 16 and 25. Overall, the attributes that resulted with the highest proportion of KSI crashes were pedestrian-involved (28 of 118 pedestrian crashes or 24%) and motorcycle-involved (10 of 31 motorcycle-involved or 32%).

¹⁴ 2020 Washington Annual Report: https://wtsc.wa.gov/wp-content/uploads/dlm_uploads/2020/08/FFY2020WashingtonAnnualReport12.17.20.pdf

TABLE 5: SUMMARY OF FATAL AND SERIOUS INJURY CRASH DATA (2018-2022)

ATTRIBUTE	ALL CRASHES	FATAL CRASHES		SERIOUS INJURY CRASHES	
		NUMBER OF FATAL CRASHES	% OF ALL FATAL CRASHES	NUMBER OF SERIOUS INJURY CRASHES	% OF ALL SERIOUS INJURIES
TOTAL	3232	18		73	
LIGHTING CONDITIONS (DARK, DUSK, DAWN)	1274	12	67%	42	58%
INTERSECTION RELATED ¹⁵	1881	8	44%	35	48%
PEDESTRIAN INVOLVED	118	8	44%	20	27%
SPEEDING	300	6	33%	11	15%
LANE DEPARTURE	479	6	33%	16	22%
UNRESTRAINED	82	5	28%	8	11%
DRIVERS BETWEEN AGES 16 AND 25	959	4	22%	24	33%
DRIVERS AGED 65+	434	4	22%	3	4%
DISTRACTED DRIVER	848	3	17%	17	23%
ALCOHOL OR DRUG IMPAIRED	154	3	17%	13	18%
HIT AND RUN	760	2	11%	11	15%
MOTORCYCLE	31	2	11%	8	11%
CYCLIST INVOLVED	14	0	0%	2	3%

Source: WSDOT Public Disclosure Request Center and DKS Associates.

¹⁵ Intersection related crashes include crashes noted under junction relationship as "At intersection and related", "At driveway within major intersection", "Intersection related by not at intersection", and "Traffic calming circle".

PEDESTRIAN AND BICYCLE INVOLVED CRASHES

Table 6 summarizes the crash frequencies for each mode of transportation. Motor vehicle crashes accounted for the largest share of all crashes (96%). However, pedestrian crashes accounted for the largest share of KSI crashes (24%), but only 4% of all-severity crashes. This imbalance of overall crashes to KSI crashes emphasizes the vulnerability of pedestrians when involved in a crash. On average, 24% of pedestrian crashes resulted in a KSI crash and 14% of bike crashes resulted in KSI crashes. Almost 60% of all pedestrian and bicycle related crashes were reported at intersections and 29% involved a distracted driver.

TABLE 6: COLLISIONS BY MODE (2018-2022)

	NUMBER OF CRASHES	% OF TOTAL CRASHES	NUMBER OF KSI CRASHES	% OF CRASHES RESULTING IN KSI
PEDESTRIAN INVOLVED	118	4%	28	24%
BIKE INVOLVED	14	0%	2	14%
MOTORCYCLE	31	1%	10	32%
OTHER MOTOR VEHICLES	3,069	95%	61	2%

Source: WSDOT Public Disclosure Request Center and DKS Associates.

Bicycle and pedestrian crash locations are mapped in Figure 12, showing that 56% of crashes occurred along SR 99. Des Moines Memorial Drive South and South 188th Street are two other corridors with a high occurrence of pedestrian- and bicyclist-involved crashes.

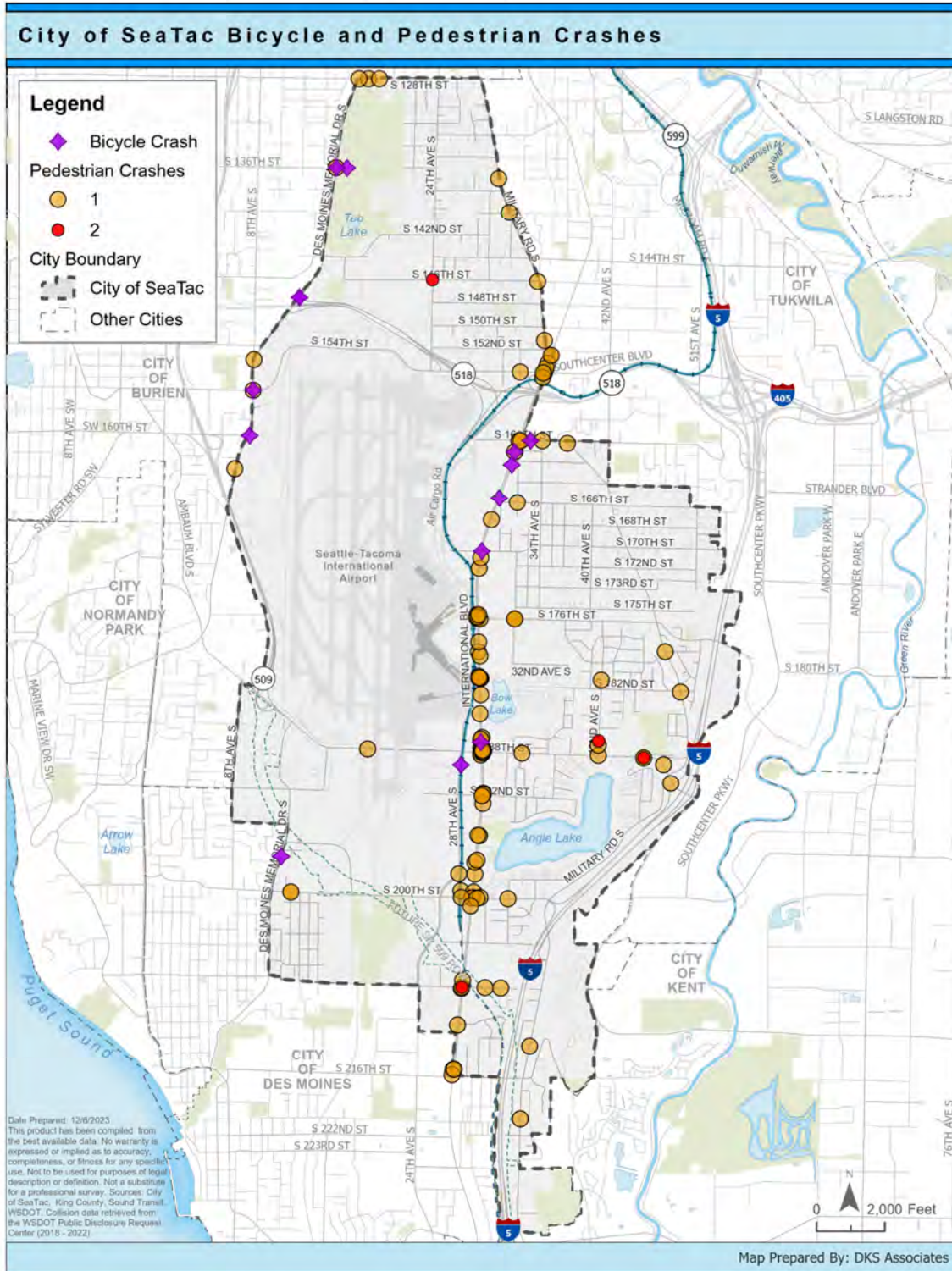


FIGURE 12: BICYCLE AND PEDESTRIAN CRASHES (2018-2022)

CRASHES BY COLLISION TYPE

Figure 13 displays the proportion of the top ten common crash types, revealing that entering at angle and rear-end are the top two crash types. Figure 14 shows the distribution of the top 12 listed contributing circumstances for all reported crashes, showing that 'did not grant right-of-way to vehicle' and 'inattention' are the two highest recorded contributing circumstances.

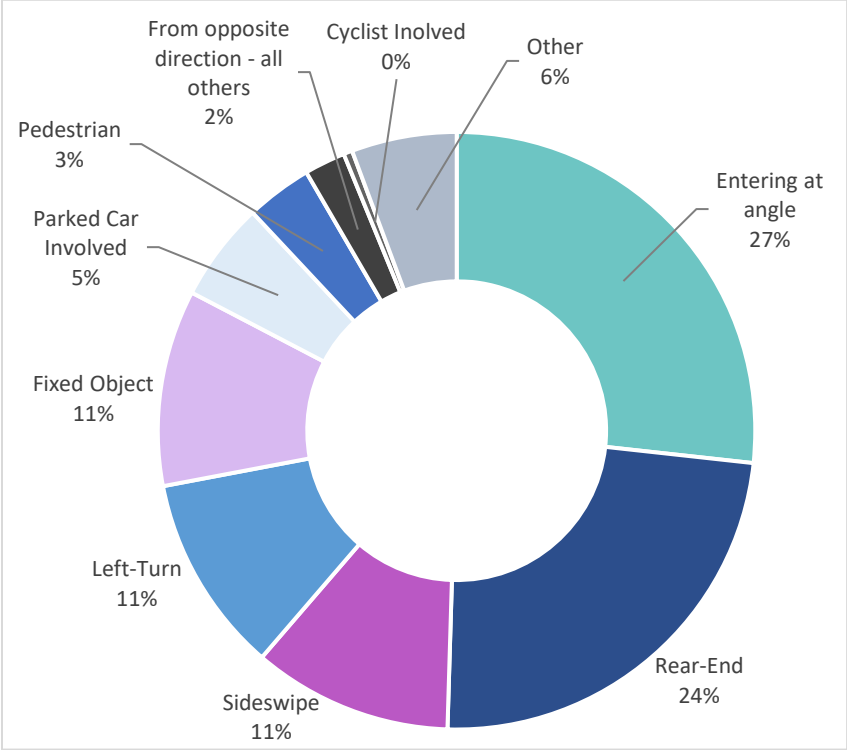


FIGURE 13: PROPORTION OF CRASH TYPES (2018-2022)

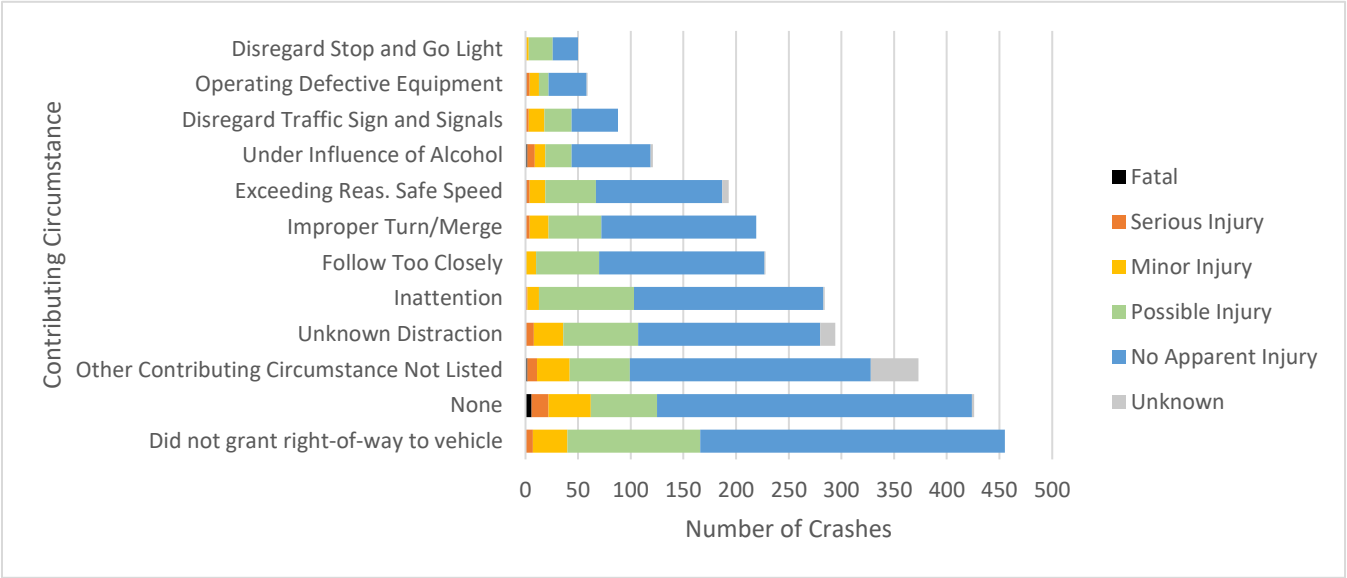


FIGURE 14: CONTRIBUTING CIRCUMSTANCES BY NUMBER OF CRASHES (2018-2022)

HIGH COLLISION LOCATIONS

Based on the summary data and collision attributes analyzed, the following five priority collision attributes were identified:

- Vulnerable User (Pedestrian or Bicyclist Involved)
 - 33% of KSI crashes involved a pedestrian or bicyclist.
 - 4% of total crashes involved a pedestrian or bicyclist.
- Dark/Dusk/Dawn Lighting Conditions
 - 59% of KSI crashes occurred during dark/ dusk/ dawn lighting conditions.
 - 4% of total crashes occurred during dark/ dusk/ dawn lighting conditions.
- Entering at angle collision type
 - 18% of KSI crashes involved at least one vehicle entering an angle.
 - 27% of total crashes involved at least one vehicle entering an angle.
- Speeding
 - 19% of KSI crashes involved at least one vehicle speeding.
 - 9% of total crashes involved at least one vehicle speeding.

The top five intersections and corridors were ranked by the number of risk factors identified above and shown in Figure 15. A location received a “point” for a risk factor if it experienced a relatively high frequency of crashes with that attribute compared to the rest of the City of SeaTac roadway network.

The top five high collision intersections were identified as the following:

- SR 99 and South 188th Street
- SR 99 and South 176th Street
- SR 99 and South 154th Street
- SR 99 and South 200th Street
- SR 99 and South 216th Street

The top five high collision corridors were identified as the following:

- SR 99 (From 152nd Street to South 216th Street)
- S 188th Street (Des Moines Memorial Drive South To Orillia Road South)
- Military Road (South 225th Place to South 200th Street)
- Des Moines Memorial Drive (South 156th Street to South 128th Street)
- Military Road South (South 152nd Street to South 128th Street)

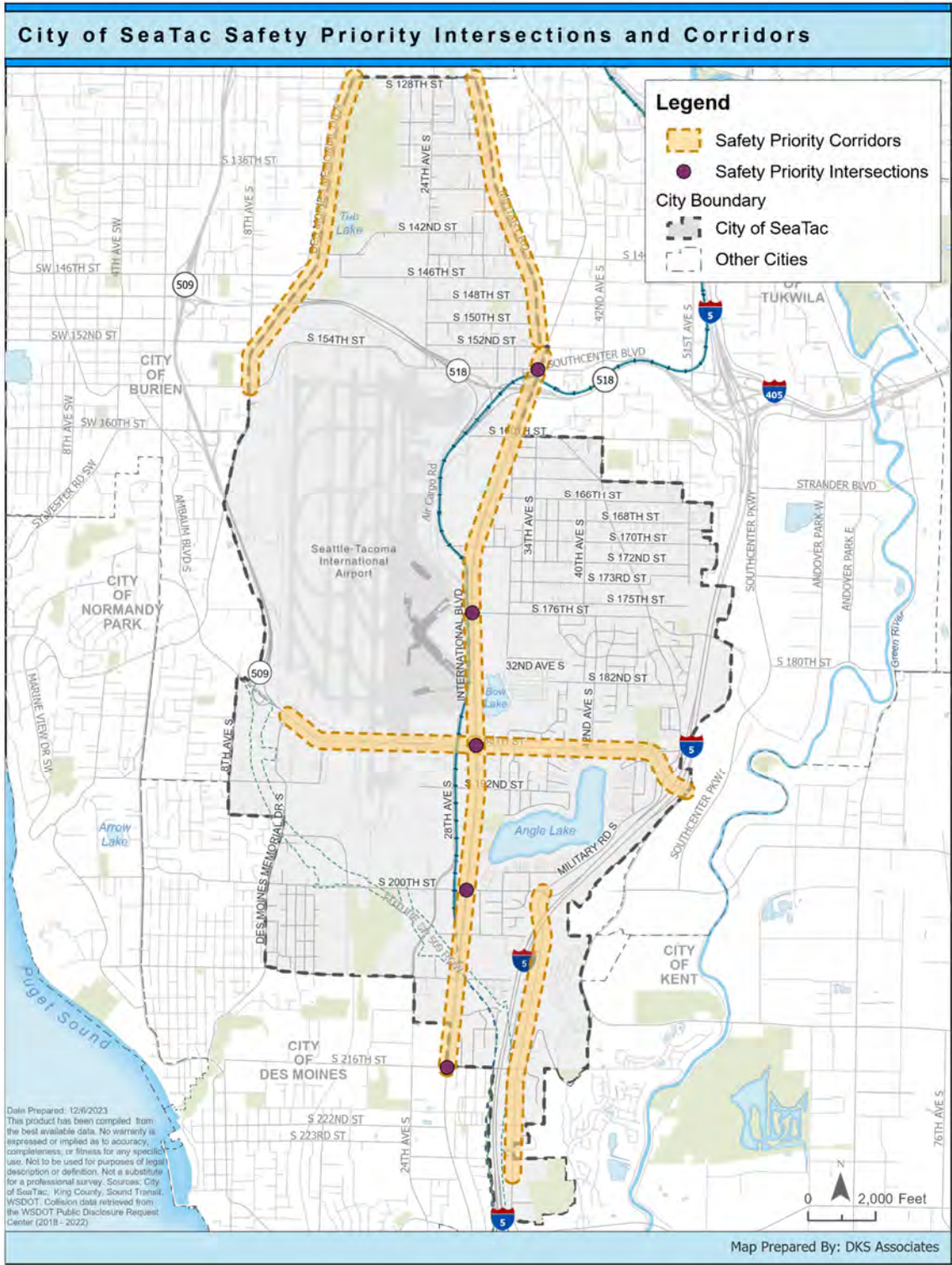


FIGURE 15: SAFETY PRIORITY INTERSECTIONS AND CORRIDORS

FREIGHT TRANSPORTATION SYSTEM

There are three main components of the freight transportation system in the City of SeaTac:

1. City of SeaTac designated truck routes;
2. WSDOT Freight and Goods Transportation System (FGTS) roadways; and
3. Air cargo (Sea-Tac International Airport).

SeaTac has designated several corridors as truck routes within city limits, including Des Moines Memorial Drive South, International Boulevard, 28th Avenue South, 8th Avenue South, Air Cargo Road, 24th Avenue South, South 144th Street/South 142nd Street, South 154th Street, South 160th Street, South 188th Street, South 200th Street, as well as small segments of several more streets. Air Cargo Road is designated as a truck facility that is owned by the Port of Seattle.

The WSDOT FGTS system¹⁶ uses a tiered system to rank freight corridors by annual freight tonnage moved by truck, rail, and waterway freight corridors. FGTS truck corridors are classified from T-1 to T-5 with T-1 corridors carrying more than 10 million tons per year, T-2 corridors carrying between 10 million and 4 million tons per year and so forth. The following FGTS corridors are within SeaTac city limits¹⁷:

- T-1:
 - I-5
- T-2:
 - SR 518
 - SR 509
 - International Boulevard (SR 99)
 - South 188th Street
- T-3:
 - Des Moines Memorial Drive South
 - 24th Avenue South
 - Military Road South (north of International Boulevard and south of South 216th Street)
 - Air Cargo Road
 - 42nd Avenue South (between South 176th Street and South 188th Street)
 - South 128th Street
 - South 136th Street
 - South 142nd Street (west of 24th Avenue South)
 - South 144th Street
 - South 156th Way
 - South 154th Street
 - South 176th Street

¹⁶ Washington State Freight and Goods Transportation System (FGTS) 2021 Update, WSDOT, December 2021, <https://wsdot.wa.gov/sites/default/files/2021-12/2021-FGTS-update.pdf>

¹⁷ WSDOT Freight Transportation System in WA, Updated March 2, 2023, <https://wsdot.maps.arcgis.com/home/item.html?id=0e37044a459244d9b6414826b46e8c46>

- South 200th Street
 - South 216th Street
- T-4:
 - 34th Avenue South
 - South 144th Street (between 24th Avenue South and Military Road South)
 - South 170th Street (west of Military Road South)

There are no T-5 corridors, nor are there FGTS rail freight corridors¹⁸ nor waterway freight corridors¹⁹ in the City of SeaTac. The City of SeaTac and FGTS facilities are depicted in Figure 16.

Sea-Tac International Airport serves as a regional air cargo hub with 27 carriers moving over 450 metric tons or \$24 billion of airfreight per year.²⁰ Sea-Tac is a major gateway for air cargo between Asia and North America. All trans modal freight through Sea-Tac Airport must rely on the City of SeaTac's designated truck routes and WSDOT's FGTS truck corridor system to travel beyond the airport, which is why the Port relies on key freight corridors identified earlier in this section such as International Boulevard and Air Cargo Road.

To provide a visual overview of the levels of freight traffic on study area roadways, commercial vehicle volumes from the Replica²¹ travel demand model are mapped in Figure 17.

¹⁸ WSDOT – Freight Data Freight and Goods Transportation System – Rail Corridors, Updated October 5, 2022, https://gisdata-wsdot.opendata.arcgis.com/datasets/84ac4a62bda248de9465878dd965a6b8_1/about

¹⁹ WSDOT – Freight Data Freight and Goods Transportation System – Waterway Corridors, Updated October 5, 2022, <https://geo.wa.gov/datasets/WSDOT::wsdot-freight-data-freight-and-goods-transportation-system-waterway-corridors/about>

²⁰ Air Cargo, Port of Seattle, <https://www.portseattle.org/sea-tac/air-cargo>

²¹ Replica Places, Fall 2023.

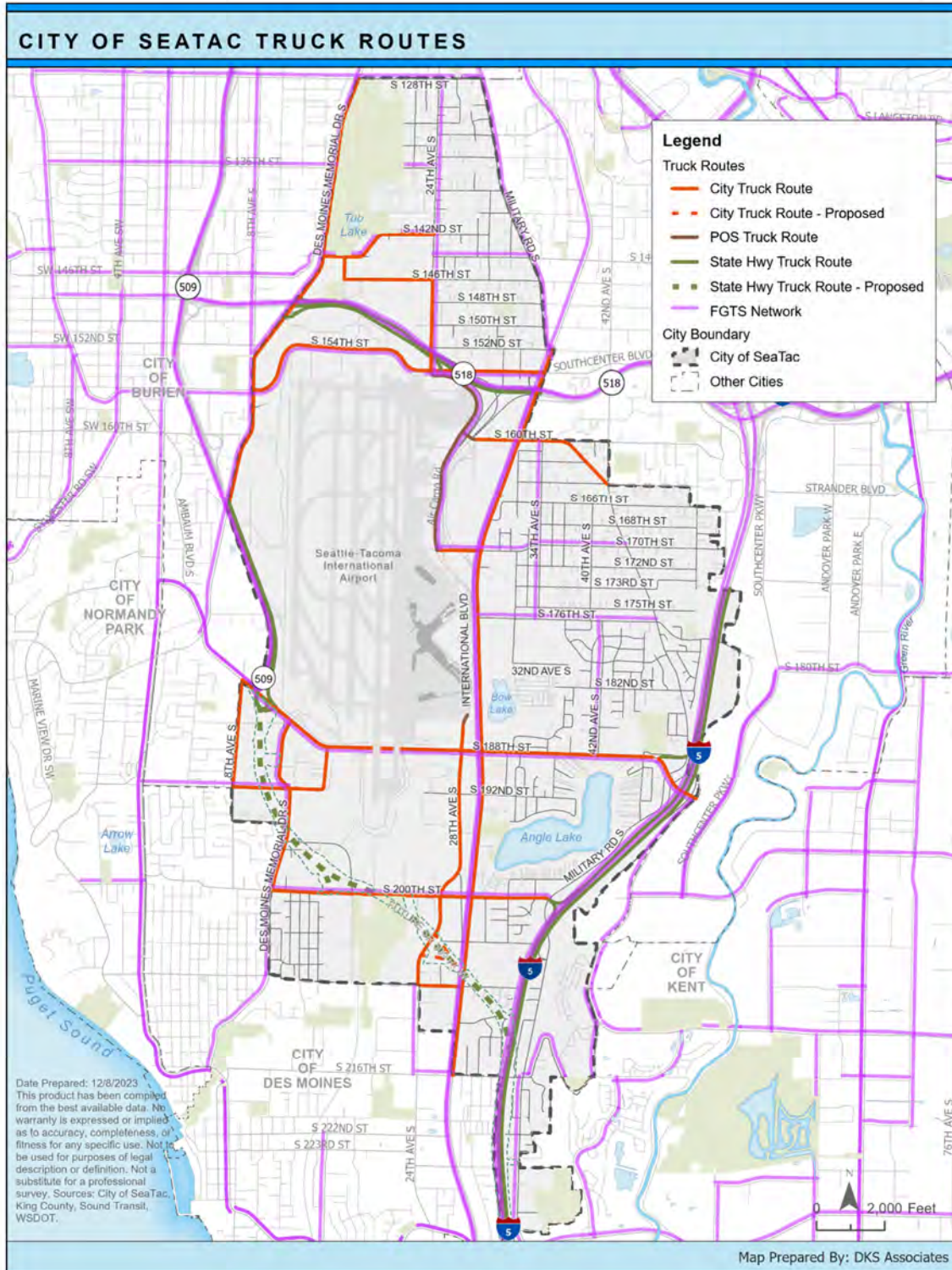


FIGURE 16: FREIGHT TRANSPORTATION SYSTEM

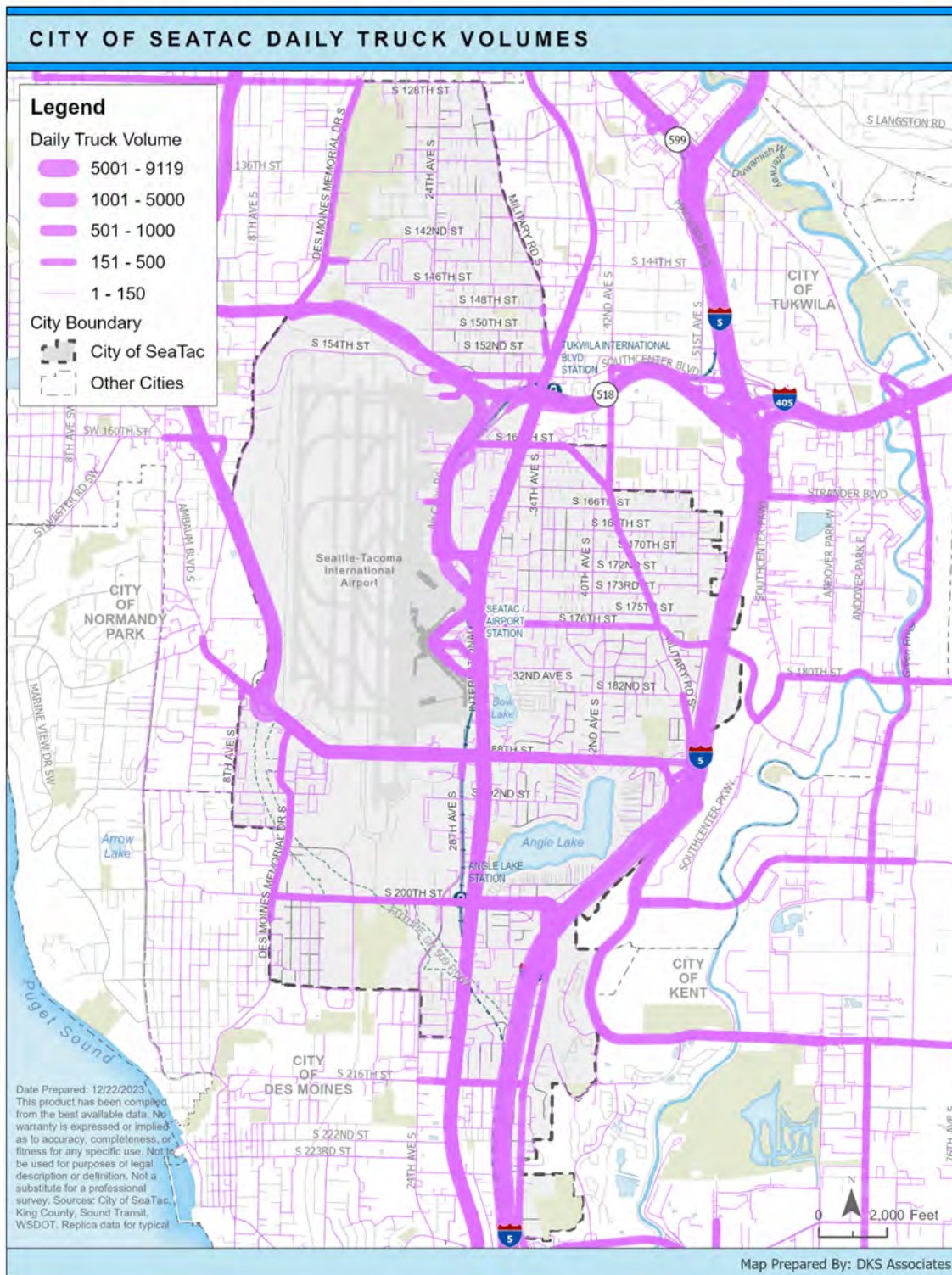


FIGURE 17: ESTIMATED DAILY TRUCK VOLUMES

SEA-TAC INTERNATIONAL AIRPORT

Sea-Tac International Airport is the largest single generator of traffic and freight movement in the City of SeaTac. As the regional hub for the Puget Sound, Sea-Tac now serves 2.8 million passengers per year (slightly more than it did in 2019) according to SEA Airport Statistics. Air travel has rebounded following a slump due to the COVID-19 pandemic. Although many air travelers arrive at Sea-Tac by car, the airport is served by a Sound Transit light rail station as well as several bus routes.

As discussed in the previous section, air cargo is an important element of SEA operations and the total air cargo tonnage in 2022 was slightly higher than that of 2019.²²

ACTIVE TRANSPORTATION SYSTEMS

PEDESTRIAN FACILITIES AND USE

Sidewalks, crosswalks, curb ramps, and pedestrian signals provide important access to key destinations for pedestrians such as schools, parks, senior centers, transit stops, commercial centers, and workplaces. The presence of a continuous sidewalk and safe, accessible crossings influence whether someone chooses to walk somewhere or not, and whether someone who is dependent on walking to get to their destination can do so safely and conveniently. This also affects the independent mobility of people with disabilities, people with reduced mobility, the elderly, and young people. Caregivers may not allow their children to walk independently to a nearby park or school if the streets lack continuous sidewalks and safe crossings.

Existing and sidewalk locations as well as the location of pedestrian signals in SeaTac are shown in Figure 18. Also shown are facilities that have been proposed in currently adopted planning documents. Figure 19 shows the estimated volume of pedestrian trips from the Replica travel demand model.

SIDEWALKS

In SeaTac, existing sidewalks and marked crosswalks are primarily located on arterial streets, with local streets often lacking these pedestrian facilities. In some cases, there are also gaps on arterial streets. For example, on Military Road South between South 164th Street and South 166th Street, the sidewalk ends abruptly for a segment on the east side of the street. Although there is a marked crosswalk with a Rectangular Rapid Flashing Beacon (RRFB) that provides access to the other side of the street where there is a sidewalk, the forced detour and unsafe conditions along the roadside put pedestrians at greater risk, especially those with visual or physical impairments. Other sidewalks on arterial streets such as South 200th Street lack buffers between adjacent loud and fast-moving motor vehicle traffic, resulting in an uncomfortable experience for pedestrians.

²² SEA Airport Statistics, Port of Seattle, published November 6, 2023, <https://www.portseattle.org/page/airport-statistics>

STREET CROSSINGS

Safe, comfortable, and convenient street crossings are an integral component of a connected pedestrian network. Distances between these crossings should not be so great to require pedestrians to take large detours to get to their destination. Unsignalized multi-lane crossings are not only uncomfortable for most pedestrians but can create safety risks. High visibility crosswalks, crossing islands, curb extensions, signals, and the presence of curb ramps enhance safety and accessibility at crossings. Grade-separated crossings provide access to destinations where at-grade crossings are unsafe, such as across highways and freeways. RRFBs can help alert drivers to the presence of pedestrians at uncontrolled, marked crosswalks and increase yielding rates for pedestrians crossing the street. There are a few RRFBs currently in SeaTac along major arterial streets such as the mid-block crossing to the north of Tukwila International Boulevard Station located on Military Road South north of South 152nd Street, on Military Road South and South 166th Street, and on 4th Avenue South and South 138th Street near the entrance to the SeaTac Senior Center and the Highline Botanical Garden.

In SeaTac, there are often great distances between marked and/or signalized crossings on major arterials such as Military Road South, leaving pedestrians with a choice of a large detour or risking an unsafe crossing to get to their destination.

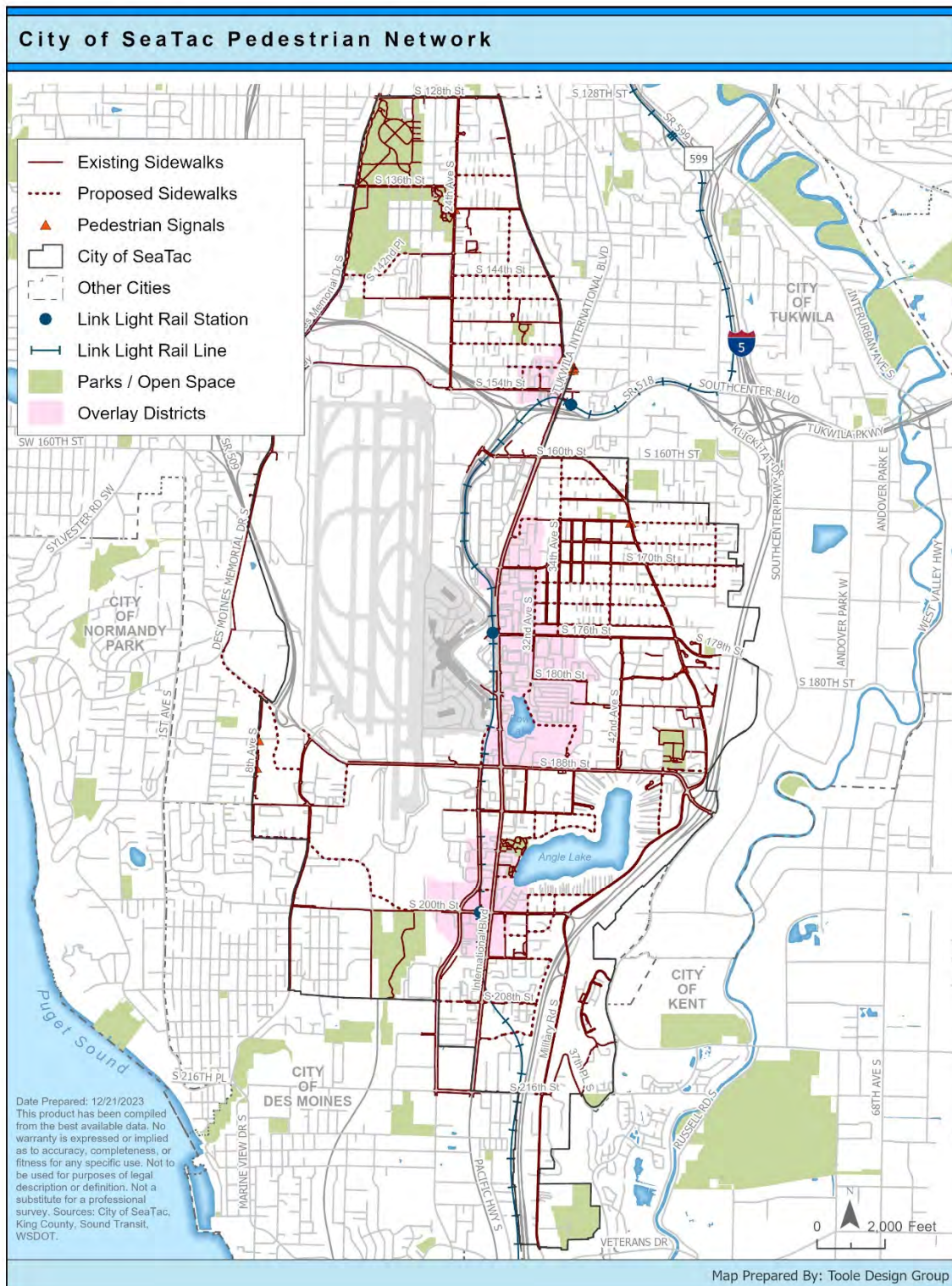


FIGURE 18: EXISTING PEDESTRIAN FACILITIES AND GAPS

City of SeaTac Estimated Volume of Pedestrian Trips

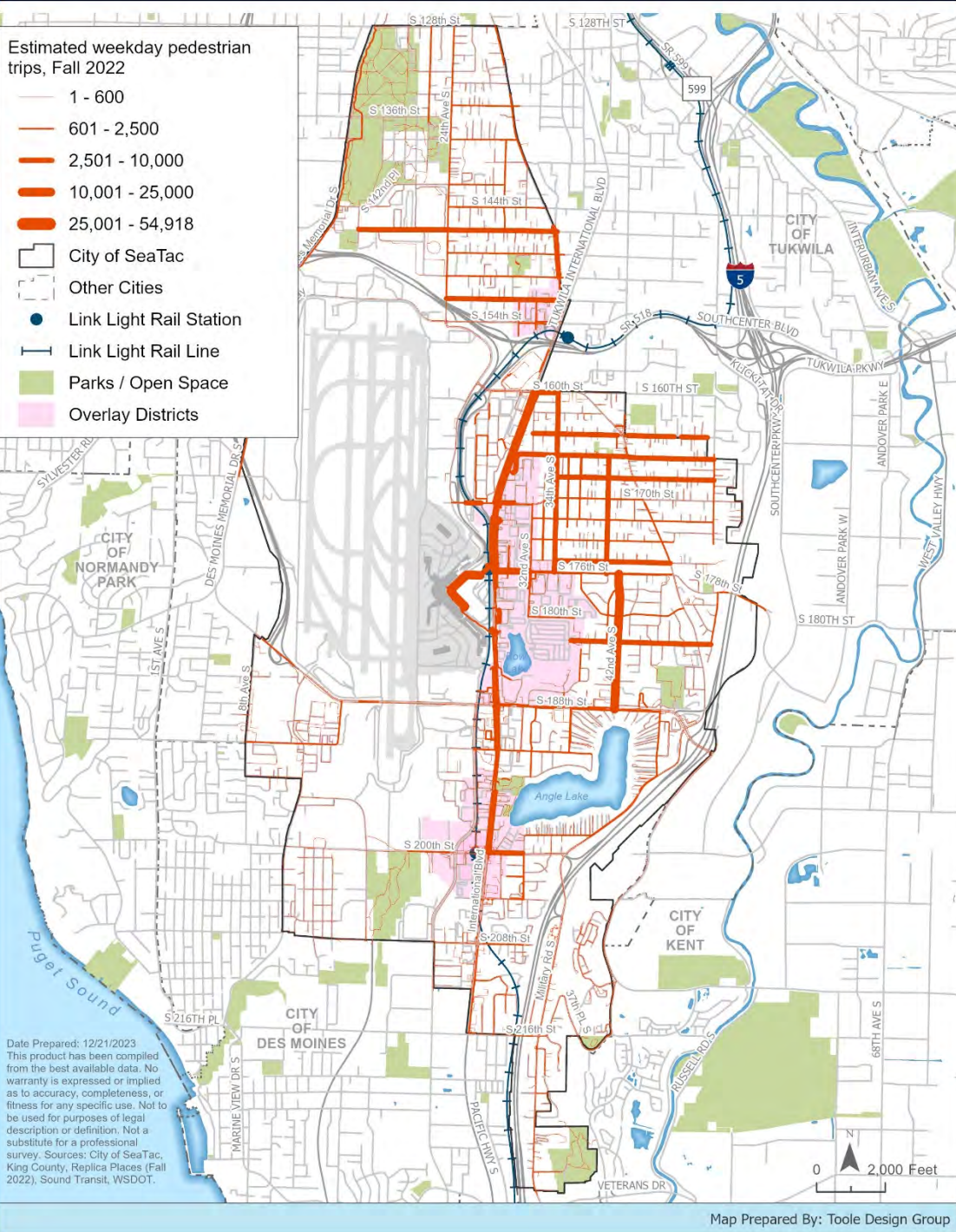


FIGURE 19: ESTIMATED VOLUME OF PEDESTRIAN TRIPS (ESTIMATED OVER 24-HOUR PERIOD, FALL 2022, REPLICA)

BICYCLE FACILITIES AND USE

The existing on-street bicycle network is shown in Figure 20 and is limited to:

- East-west bicycle lanes along South 170th Street and South 154th Street
- North-south bicycle lanes along 24th Avenue South, 26th Avenue South, 24th Avenue South, and on Military Boulevard South

Also shown in Figure 20 are bicycle facilities that have been proposed in currently adopted planning documents. Figure 21 shows the estimated volume of bicycle trips from the Replica travel demand model.

Separated and off-street trails include:

- A separated shared use path runs along the west side of 26th Avenue South/24th Avenue South starting south of South 200th Street and going to South 208th Street.
- A bi-directional shared use path on South 200th Street west of 26th Avenue South that connects with the Des Moines Creek Trail.
- In the northern area of the city, a multi-use path called the Westside Trail runs along Des Moines Memorial Drive South beginning north of South 144th Street in Sunset Park and continuing to South 128th Street.

The existing bicycle network lacks connections that would allow cyclists to access destinations safely and comfortably throughout the city. In addition, high motor vehicle traffic volumes and speeds in combination with narrow on-street bike lane widths that lack buffers or other protection increase the level of stress and reduce safety for cyclists. The presence of conflict points created by large driveways, right turn lanes that require cyclists to watch for traffic coming from behind, and continuous left turn lanes also diminish cyclist comfort and safety.

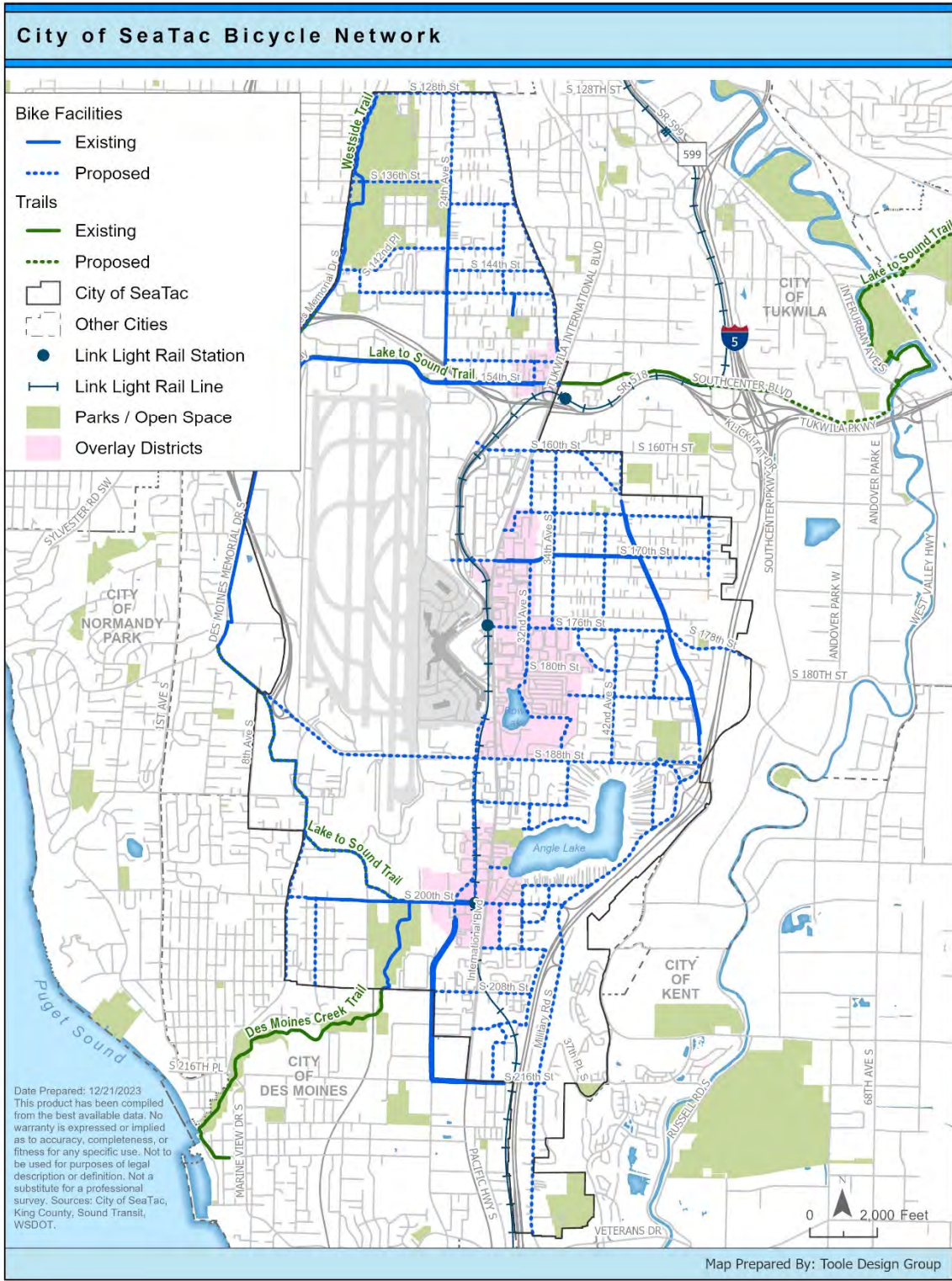


FIGURE 20: EXISTING BICYCLE FACILITIES AND GAPS

City of SeaTac Estimated Volume of Bicycle Trips

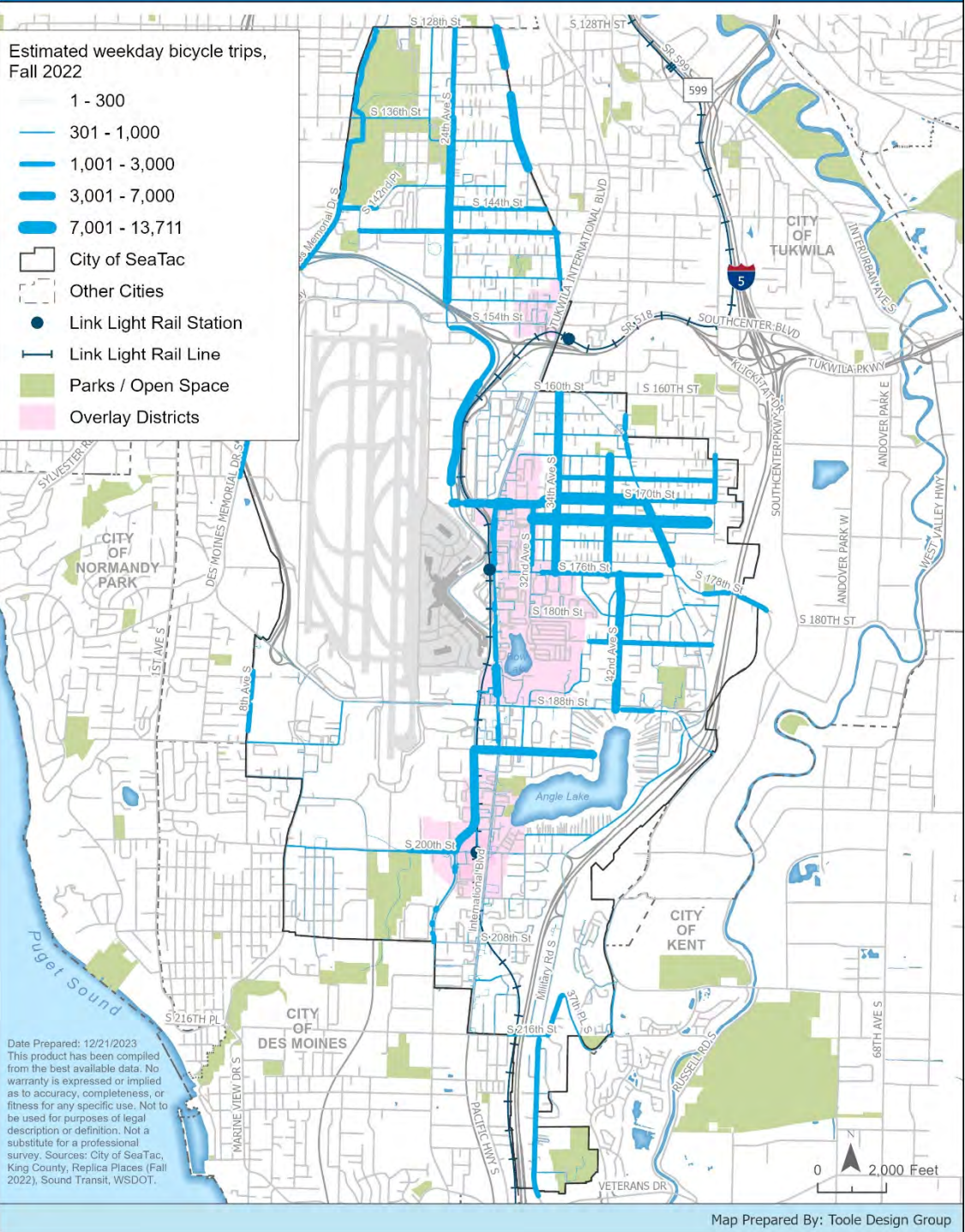


FIGURE 21: EXISTING BICYCLE USE (ESTIMATED OVER 24-HOUR PERIOD, FALL 2022, REPLICA)

LEVEL OF TRAFFIC STRESS

A successful multimodal transportation plan aims to address the needs, skills, and desires of a wide range of bicyclists and pedestrians, with a special focus on the *Interested but Concerned* population—those who would like to ride a bicycle or walk more but who have concerns about their personal safety. A bicyclist's or pedestrian's perception of their personal safety riding on or walking along a roadway is greatly influenced by their proximity to and interaction with motorized traffic. At low volumes and speeds of traffic, many people feel safe and comfortable sharing the roadway with traffic or crossing the street in unmarked crossings. As traffic speed and volumes increase, their perception of safety degrades significantly, resulting in a feeling of increased stress and discomfort on the roadway.

PEDESTRIAN CROSSING STRESS

The pedestrian crossing stress is assessed based on roadway characteristics and the level of crossing enhancements present (Figure 22). The analysis utilizes data on:

- Traffic control (traffic signals, stop signs, pedestrian crossing signals)
- Number of lanes
- Prevailing speed or speed limit
- Directionality (one-way or two-way traffic)
- The presence or lack of crosswalks

In some cases, factors for which data was lacking were assumed based on a road's functional class.

Generally, crossings at wide multi-lane streets with higher speed limits are higher stress. The presence of traffic control devices lowers the crossing stress rating. Generally, a lower functional class street crossing a busier street without a traffic control device receives a high crossing stress rating. While not included in this analysis, the presence of curb ramps are also important features in the pedestrian network in that they provide access and safety to people with disabilities and greater comfort for families with small children using strollers.

The pedestrian crossing stress analysis for existing pedestrian conditions suggests that most arterials in SeaTac have high crossing stress. High stress conditions are present on the arterial streets that connect to all light rail stations, particularly beyond the immediate station area. Figure 22 shows high stress crossings throughout the city. The greater the distance between low stress crossings the more out of direction a person walking must travel to reach their destination and the greater likelihood that they may choose to cross at an unsafe location. Within areas with higher pedestrian activity signalized or enhanced, high comfort crossings should be provided at every intersection, and where blocks are long and there are pedestrian generators on either side of the street, mid-block crossings should be considered. Similarly, high comfort crossings should be provided directly at transit stops, or within a short walk of the stop. Crossing barriers are evident where there are clusters of high stress crossings along individual corridors, or large distances between low comfort crossings. Example corridors of concentrated high stress crossings include 24th Avenue South, South 170th Street, South 176th Street, and Military Road South.

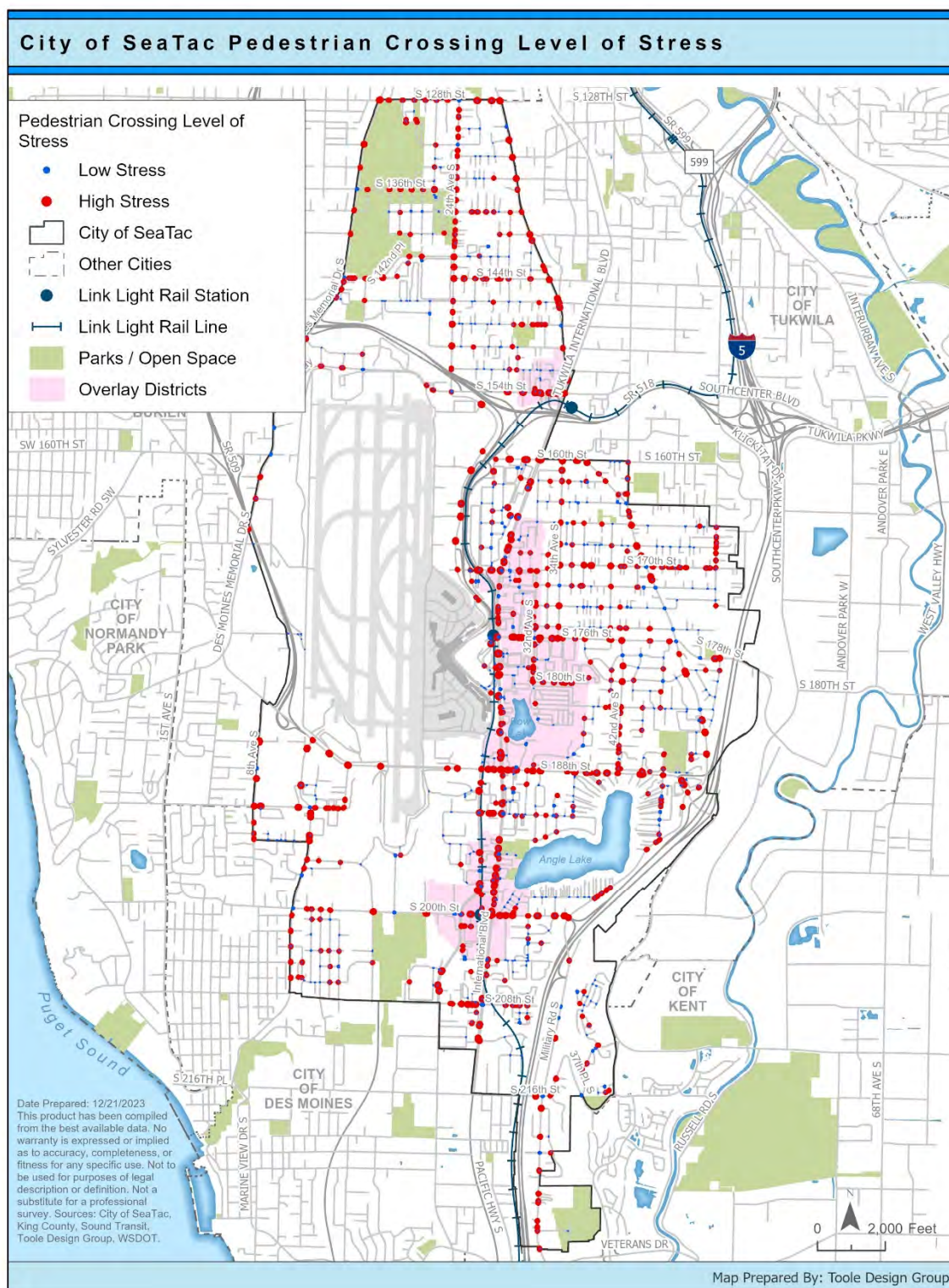


FIGURE 22: PEDESTRIAN LEVEL OF STRESS AT STREET CROSSINGS

While not captured in the analysis, it should be noted that navigating large multi-lane roads such as the seven-lane signalized crossing at 176th Street South and International Boulevard to access the RapidRide stop may be stressful for people who need more time to cross, such as those with disabilities, reduced mobility and/or those traveling with small children.

BICYCLE LEVEL OF STRESS

A bicycle level of traffic stress (LTS) analysis is used to classify streets based on how stressful they are for riding a bicycle using a 1-4 scale, with LTS 1 being least stressful and LTS 4 being very stressful. The LTS classifications use roadway characteristics such as speed limits, the amount of motor vehicle traffic, the number of travel lanes, on-street parking, and bikeway design characteristics. Shared use paths are typically classified as low stress and bikeways on major arterials that lack separation from motor vehicles are higher stress. This classification is important because people have different levels of comfort interacting with motor vehicle traffic when they are bicycling or considering bicycling.

The bicycle level of stress analysis (Figure 23) of the existing bicycle network suggests that cyclists experience high levels of stress on all the major arterials in SeaTac, including those that have existing on-street bicycle lanes. This analysis suggests that local streets are where cyclists experience the lowest levels of stress, except where they intersect with arterial streets unless there are crossing enhancements present.

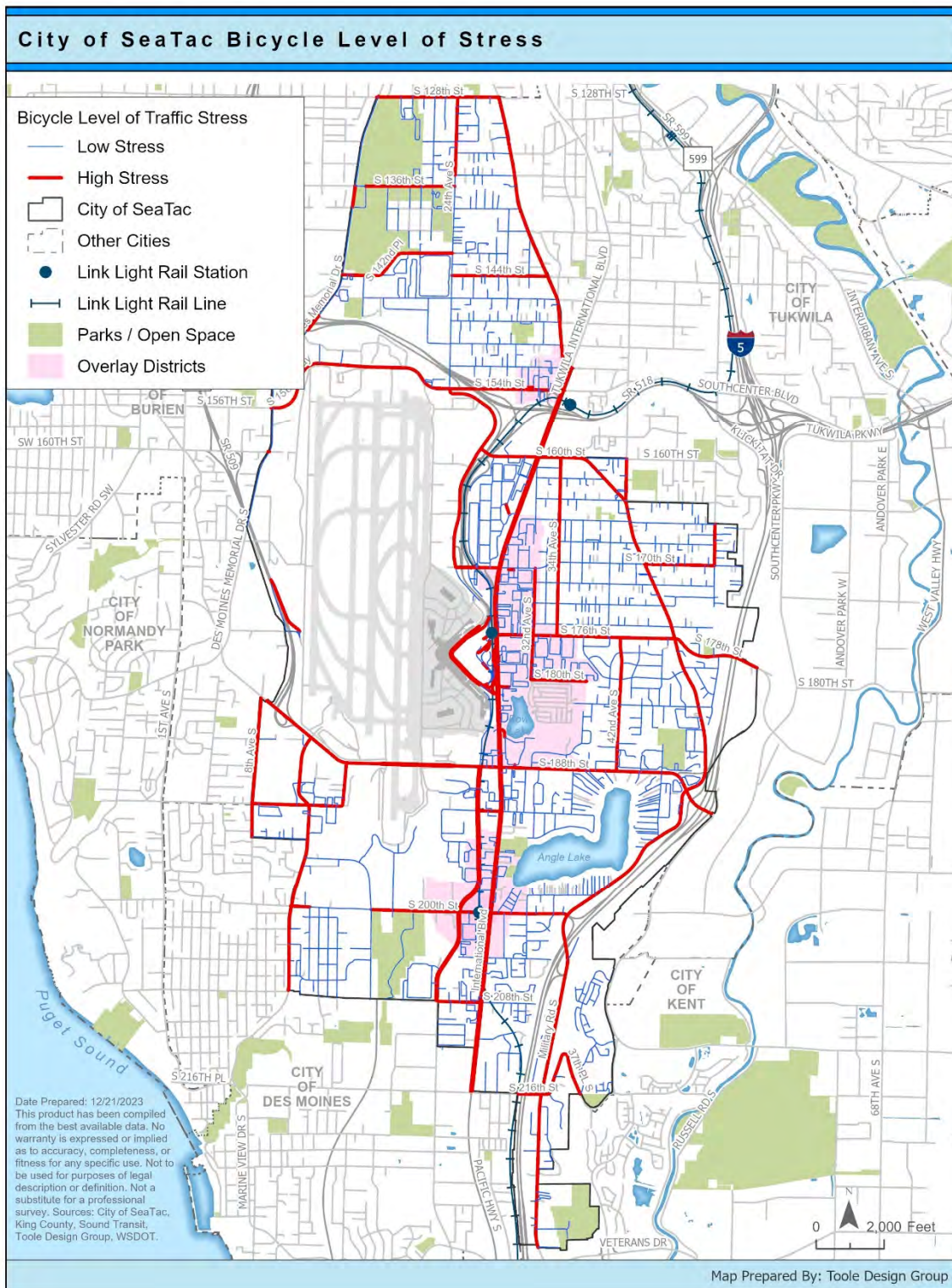


FIGURE 23: BICYCLE LEVEL OF TRAFFIC STRESS

TRANSIT SERVICE AND USE

This section describes routes operated within the City of SeaTac and summarizes recent ridership data and trends. Within SeaTac, transit is run by two different agencies- King County Metro and Sound Transit. The bus routes operating within the City of SeaTac as of Fall 2023 are listed in Table 7 and mapped in Figure 24.

TABLE 7: ACTIVE TRANSIT ROUTES AS OF FALL 2023

ROUTE NUMBER	ROUTE DESCRIPTION	WEEKDAY SERVICE	PEAK HOUR FREQUENCY	WEEKEND SERVICE	WEEKEND FREQUENCY	2022 AVG. WEEKDAY RIDERSHIP *
King County Metro Routes						
128	Southcenter to West Seattle	All Day	20 minutes	All Day	30 minutes	2,500
132	Downtown Seattle to Burien	All Day	30 minutes	All Day	30 minutes	2,000
156	Southcenter to Highline College	All Day	15 minutes	All Day	60 minutes	700
161	Burien to Kent	All Day	15 minutes	All Day	30 minutes	1,400
DART 365	Angle Lake Station to Des Moines	All Day	30 minutes	All Day Saturday	30 minutes	N/A
A LINE	Tukwila to Federal Way	All Day	10 minutes	All Day	10 minutes	6,800
F LINE	Renton to Burien	All Day	10 minutes	All Day	15 minutes	4,000
METROFLEX – TUKWILA	Tukwila/Othello/Rainier Beach/Skyway/Renton Highlands	All Day	On-demand	All Day	On-demand	N/A
Sound Transit Routes						
1 LINE (LIGHT RAIL)	Northgate to Angle Lake	All Day	8 minutes	All Day	10 minutes	68,700
560	Bellevue to West Seattle	All Day	30 minutes	All Day	60 minutes	1,100
574	Lakewood to SeaTac	All Day	30 minutes	All Day	30 minutes	1,500

*Sound Transit Ridership is average daily ridership, including weekends

Sources: <https://www.soundtransit.org/ride-with-us/system-performance-tracker/ridership>, Source: King County Metro Rider Dashboard

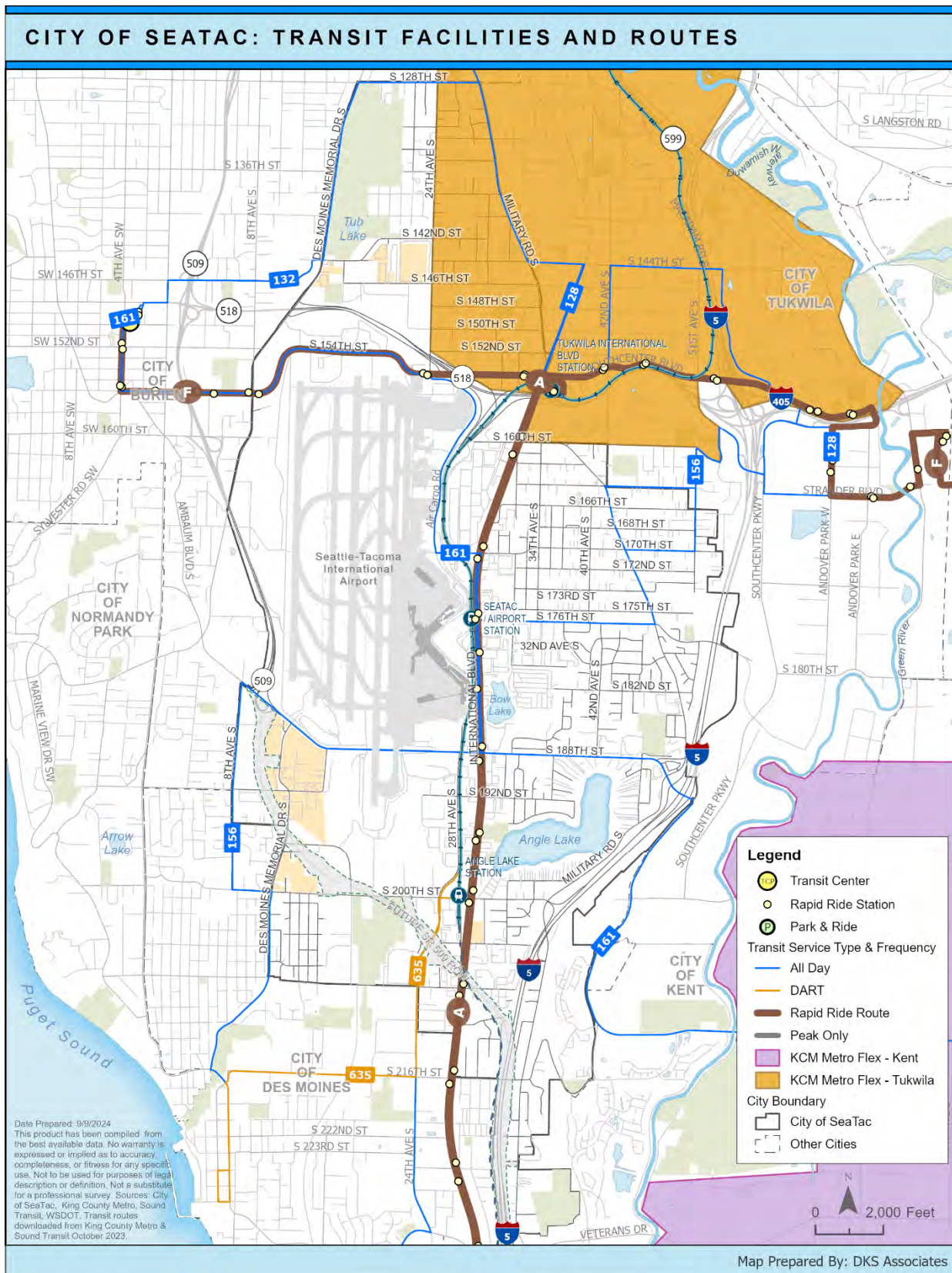


FIGURE 24: TRANSIT FACILITIES AND ROUTES

Transit ridership was heavily impacted by the COVID-19 pandemic. Generally, transit ridership was down in 2020 and 2021. Figure 25 shows the average weekday ridership for King County Metro routes listed in Table 7²³ and average daily ridership for the Link Light Rail in 2019, 2022, and through September 2023. In 2023, King County Metro bus routes have lower ridership than they did in 2019, but ridership has increased between 2022 and 2023. The Link Light Rail 1 line has higher daily ridership in 2023 so far than in 2019. It is worth noting that Link Light Rail expanded between 2019 and 2022 with the opening of U District and Northgate Stations. Transit ridership is generally increasing and is expected to continue to increase.

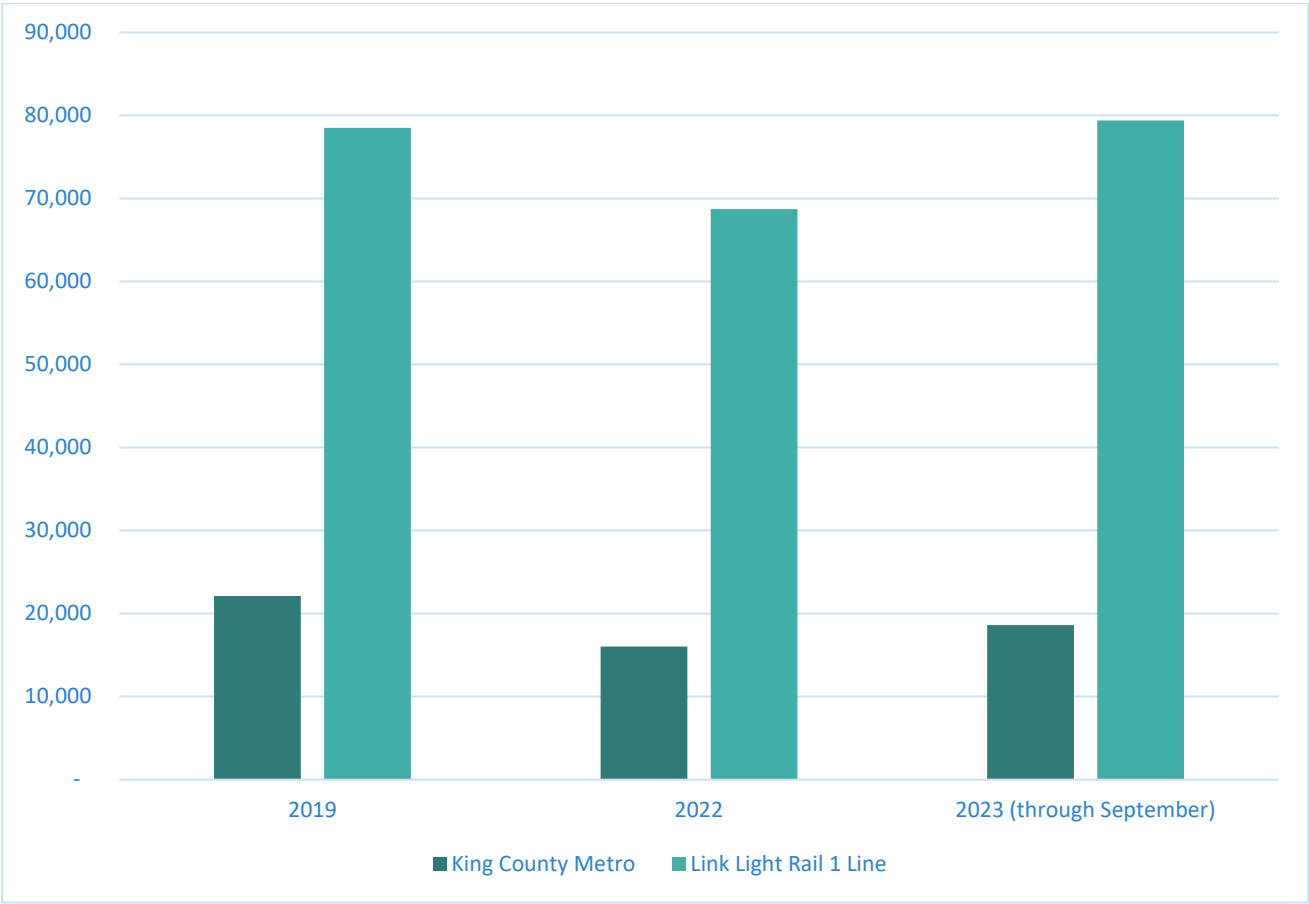


FIGURE 25: AVERAGE DAILY RIDERSHIP FOR KING COUNTY METRO BUS ROUTES IN SEATAC AND LINK LIGHT RAIL 1 LINE

Sources: <https://www.soundtransit.org/ride-with-us/system-performance-tracker/ridership>, King County Metro Rider Dashboard

SOUND TRANSIT

Sound Transit operates the Link Light Rail and two bus routes that travel through SeaTac. The Link Light Rail 1 line connects Northgate at the north end of the line to Angle Lake at the south end of

²³ Route 161 did not operate in 2019 and is not included in this data set.

the line. The line is currently in the planning phase to be expanded south to Des Moines, Federal Way, and beyond. There are many other regional changes to the Link Light Rail system both under construction and in the planning phase.

There are two light rail stations within the City of SeaTac include the SeaTac/Airport Station and Angle Lake Station. Both light rail stations are important regionally. SeaTac/Airport Station provides direct access to Sea-Tac International Airport. Angle Lake Station is currently the end of the line, with a 1,160-parking spot Park and Ride facility. In 2023 through September, SeaTac/Airport Station had 5,400 average daily boardings, and Angle Lake Station has 3,800 average daily boardings.

KING COUNTY METRO

King County Metro currently operates six bus routes that travel through SeaTac, including two Rapid Rides. The A Line connects Tukwila to Federal Way, stopping at both Angle Lake Station and SeaTac/Airport Station. The F Line connects Renton to Burien, stopping at Tukwila International Boulevard Station just outside of the City, and travelling east-west through SeaTac. Routes 156 and 161 also connect to SeaTac/Airport Station. Route 132 travels Des-Moines Memorial Drive on the west border of SeaTac, and Route 128 travels along Military Road on the east border of SeaTac.

King County Metro also operates DART Route 635, which connects Des Moines to Angle Lake Station. This is a Dial-A-Ride Transit (DART) service that runs on a fixed route under contract with the non-profit Hopelink. The service uses smaller transit vehicles and may deviate from the fixed route to make stops upon request. In this case, the deviation area is outside of SeaTac in Des Moines. This service runs Monday through Saturday.

King County Metro provides on-demand transit service in select neighborhoods, including a portion of SeaTac north of S 160th Street and east of 24th Avenue starting in 2023 (see Figure 24). This service is called MetroFlex and it is available weekdays and Saturdays from 5 AM - 1 AM and Sundays 6 AM - 12 AM. Rides are limited to the service area and may be made through an app, by phone, or via a website. Rides cost the same as a Metro bus and transfers are free.

PARK AND RIDE LOTS

SeaTac has a Park and Ride facility operated by Sound Transit at the Angle Lake Station. The lot is available for day use and has 1,160 available parking spaces. The SeaTac/Airport Station does not provide parking but has a drop-off area available. Just outside of the city limits, Sound Transit also operates the Tukwila International Boulevard Station with 600 parking stalls available.

TRANSPORTATION DEMAND MANAGEMENT

The City of SeaTac's Commute Trip Reduction (CTR) program aims to both reduce the proportion of drive-alone trips and decrease the vehicle miles traveled (VMT) for employees in the City's jurisdiction. The CTR implementation plan was updated in 2015 to target 34.9% non-drive-alone travel (NDAT), reduce VMT by 18% (from 2007-2008 baseline to 2019-2020 target goal), and

reduce greenhouse gas emissions by 18%. The plan update also targets increasing the City's Walk Score from 36 to 40 and achieving a 70% CTR survey response rate.²⁴ The CTR program mandates an Employee Transportation Coordinator (ETC) for applicable employers, as well as several additional program elements as needed to achieve CTR goals, e.g., transit subsidies, flexible work schedules, eliminating free parking, and providing bicycle parking.²⁵

PARKING

PARK AND FLY LOTS

Due to the proximity to the international airport, there are several parking lots designated for long-term usage. These lots are privately operated parking lots intended for airport passengers. The parking lot operators provide shuttles to and from Sea-Tac International Airport. Most of these parking lots are located along SR 99.

RESIDENTIAL PARKING PERMIT PROGRAM

The City of SeaTac's Permit Parking Program²⁶ was implemented to help manage parking demand in congested neighborhoods. The program was created due to a lack of parking supply on residents' streets. The program restricts parking for longer than 3 hours within the permit parking zone to permit holders. The restriction is in place 24 hours every day (with no exceptions for weekends nor holidays) and the number of permits per address is limited. There is currently only one parking permit zone, Zone 1. Only residents and business owners within the permit parking area may apply for permits. The parking permit area is shown in Figure 26.

²⁴ Commute Trip Reduction Implementation Plan Update: 2015-2019, Jurisdiction: City of SeaTac, <https://www.seatacwa.gov/home/showpublisheddocument/11393/636292344776430000>

²⁵ City of SeaTac Municipal Code, Chapter 11.30 COMUTE TRIP REDUCTION, <https://www.codepublishing.com/WA/SeaTac/html/SeaTac11/SeaTac1130.html>

²⁶ SeaTac Municipal Code Chapter 9.50 PERMIT PARKING PROGRAM

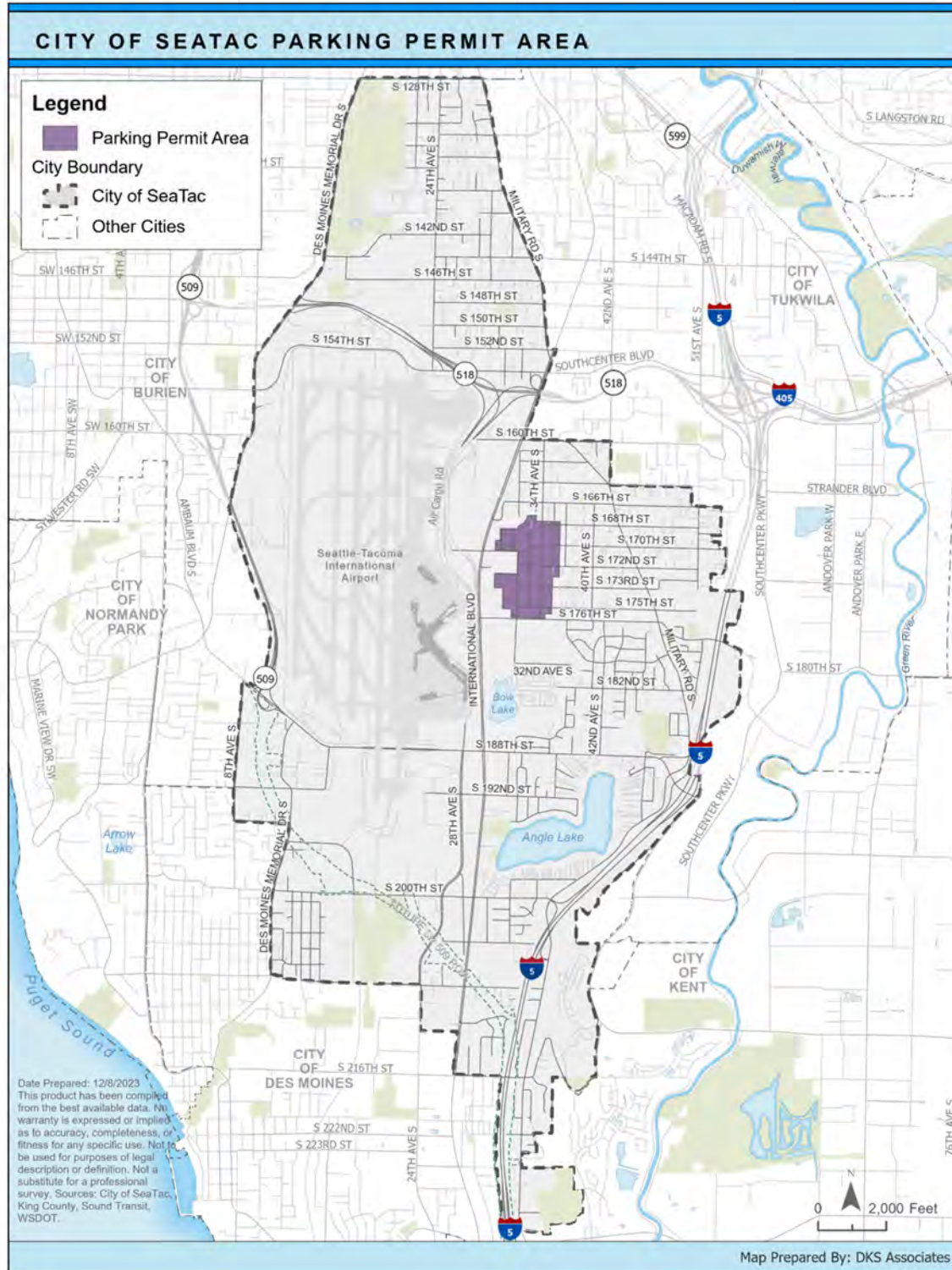


FIGURE 26: PARKING PERMIT AREA

SUMMARY

Key findings from the existing conditions analysis of the City of SeaTac's transportation system are highlighted below with respect to traffic operations, safety, active transportation network and transit services.

- Traffic Operations
 - Two intersections currently operate below LOS standards: Des Moines Memorial Drive & SR 518 Off Ramp (#8) and Des Moines Memorial Drive & SR 518 Off Ramp/SR 518 On Ramp (#9), which operate at LOS E on the off-ramp approach. Both intersections are under WSDOT's jurisdiction. All of the City of SeaTac owned intersections currently meet the city's LOS standards.
 - Queues are generally the longest on International Boulevard in the southbound direction between South 170th Street and South 188th Street.
- Safety
 - Between 2018 and 2022, there were a total of 3,232 reported crashes in the city, including 18 fatal crashes and 73 suspected serious injury crashes.
 - Approximately 58% of collisions were identified as intersection related.
 - 33% of fatal or serious injury crashes involved a pedestrian or bicyclist.
 - Of the 18 fatal crashes, eight involved a pedestrian and six involved speeding.
 - All top five high collision intersections identified are located on SR 99
- Pedestrian and Bicycle Level of Traffic Stress
 - Most arterials in SeaTac have high crossing stress, including arterial streets that connect to all light rail stations. High stress crossings are present throughout the city. Example corridors of concentrated high stress crossings include 24th Avenue South, South 170th Street, South 176th Street, and Military Road South.
 - Cyclists experience high levels of stress on all the major arterials in SeaTac, including those that have existing on-street bicycle lanes. This analysis suggests that local streets are where cyclists experience the lowest levels of stress, except where they intersect with arterial streets unless there are crossing enhancements present.
- Transit
 - SeaTac is served by King County Metro bus routes, Sound Transit bus routes, and the Sound Transit Link Light Rail 1 Line.
 - Average daily ridership is 19,000 on King County Metro and 79,000 on the Link Light Rail 1 Line.

APPENDIX



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SECTION 2: OPERATIONAL ANALYSIS REPORTS

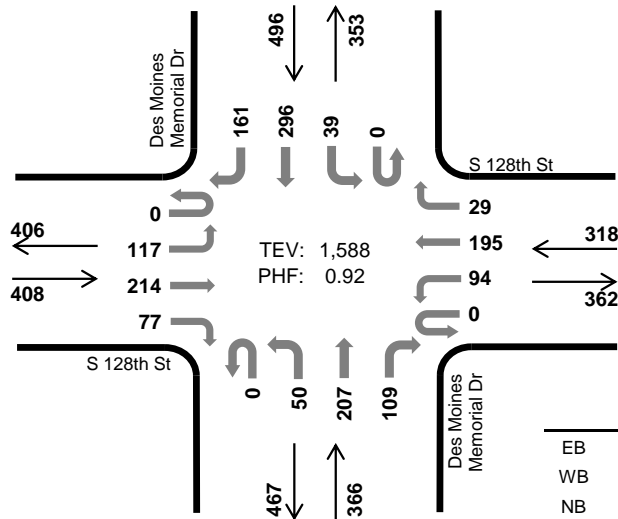
SECTION 1. TURNING MOVEMENT COUNT DATA SHEETS

WEEKDAY AFTERNOON PEAK PERIOD

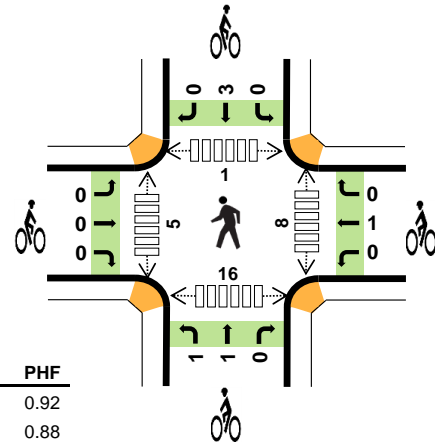
Des Moines Memorial Dr S 128th St



Peak Hour



Date: 09/19/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	2.9%	0.92
WB	1.9%	0.88
NB	4.1%	0.83
SB	1.2%	0.92
TOTAL	2.5%	0.92

Two-Hour Count Summaries

Interval Start		S 128th St				S 128th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	23	50	17	0	18	44	7	0	13	40	21	0	11	78	33	355	0
4:15 PM		0	23	59	14	0	19	46	7	1	12	32	21	0	12	87	46	379	0
4:30 PM		0	33	49	17	0	20	53	8	0	5	50	22	0	7	76	29	369	0
4:45 PM		0	26	59	16	0	23	33	8	0	10	52	21	0	5	73	52	378	1,481
5:00 PM		0	29	54	28	0	21	56	6	0	16	52	28	0	11	71	37	409	1,535
5:15 PM		0	29	52	16	0	30	53	7	0	19	53	38	0	16	76	43	432	1,588
5:30 PM		0	25	50	13	0	21	43	10	0	19	45	22	0	6	74	27	355	1,574
5:45 PM		0	24	39	14	0	14	35	9	0	15	25	22	0	8	59	28	292	1,488
Count Total		0	212	412	135	0	166	363	62	1	109	349	195	0	76	594	295	2,969	0
Peak Hour	All	0	117	214	77	0	94	195	29	0	50	207	109	0	39	296	161	1,588	0
	HV	0	3	4	5	0	2	4	0	0	2	9	4	0	0	3	3	39	0
	HV%	-	3%	2%	6%	-	2%	2%	0%	-	4%	4%	4%	-	0%	1%	2%	2%	0

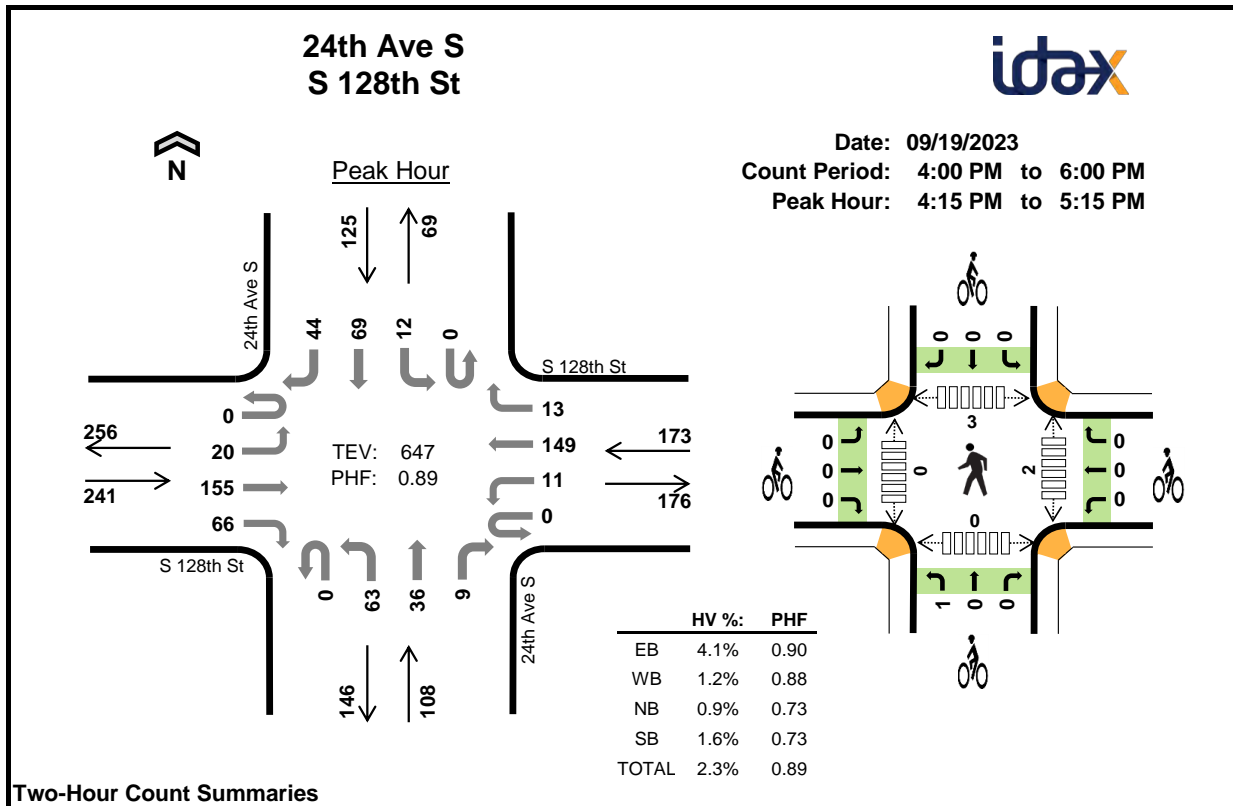
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	3	2	3	14	0	0	2	0	2	1	0	0	0	1
4:15 PM	2	0	2	4	8	0	0	1	0	1	1	0	0	8	9
4:30 PM	7	1	6	1	15	0	1	0	0	1	0	0	1	2	3
4:45 PM	2	2	4	4	12	0	0	1	0	1	3	3	0	4	10
5:00 PM	3	2	2	0	7	0	0	0	1	1	4	2	0	6	12
5:15 PM	0	1	3	1	5	0	0	1	2	3	1	0	0	4	5
5:30 PM	2	1	1	2	6	0	0	0	0	0	1	4	0	4	9
5:45 PM	1	0	2	1	4	0	0	0	0	0	0	0	0	1	1
Count Total	23	10	22	16	71	0	1	5	3	9	11	9	1	29	50
Peak Hour	12	6	15	6	39	0	1	2	3	6	8	5	1	16	30

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	S 128th St				S 128th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	2	4	0	0	0	2	1	0	2	0	0	0	0	0	2	1	14	0
4:15 PM	0	0	2	0	0	0	0	0	0	1	0	1	0	0	2	1	1	8	0
4:30 PM	0	2	3	2	0	1	0	0	0	0	4	2	0	0	0	0	1	15	0
4:45 PM	0	1	0	1	0	0	2	0	0	1	3	0	0	0	0	3	1	12	49
5:00 PM	0	0	1	2	0	1	1	0	0	0	0	2	0	0	0	0	0	7	42
5:15 PM	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	1	5	39
5:30 PM	0	1	1	0	0	1	0	0	0	0	0	1	0	0	2	0	0	6	30
5:45 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	4	22
Count Total	0	7	11	5	0	3	6	1	0	7	9	6	0	2	9	5	71	0	
Peak Hour	0	3	4	5	0	2	4	0	0	2	9	4	0	0	3	3	39	0	

Two-Hour Count Summaries - Bikes																		
Interval Start	S 128th St			S 128th St			Des Moines Memorial Dr			Des Moines Memorial Dr			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	2	0				
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0				
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	5				
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	4				
5:15 PM	0	0	0	0	0	0	0	1	0	0	2	0	3	6				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
Count Total	0	0	0	0	1	0	3	2	0	0	3	0	9	0				
Peak Hour	0	0	0	0	1	0	1	1	0	0	3	0	6	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start		S 128th St				S 128th St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	8	35	13	0	3	40	0	0	17	11	0	0	2	14	14	157	0
4:15 PM		0	4	36	17	0	4	33	2	0	12	3	4	0	2	19	8	144	0
4:30 PM		0	5	40	12	0	1	40	0	0	23	11	3	0	2	9	7	153	0
4:45 PM		0	7	41	19	0	2	36	6	0	13	14	0	0	4	22	17	181	635
5:00 PM		0	4	38	18	0	4	40	5	0	15	8	2	0	4	19	12	169	
5:15 PM		0	2	28	10	0	3	38	1	0	15	8	4	0	1	17	8	135	638
5:30 PM		0	8	39	19	0	2	34	2	0	8	11	2	1	2	21	3	152	637
5:45 PM		0	9	33	8	0	1	24	2	0	7	10	1	0	4	17	5	121	577
Count Total		0	47	290	116	0	20	285	18	0	110	76	16	1	21	138	74	1,212	0
Peak Hour	All	0	20	155	66	0	11	149	13	0	63	36	9	0	12	69	44	647	0
	HV	0	0	6	4	0	0	2	0	0	0	1	0	0	2	0	0	15	0
	HV%	-	0%	4%	6%	-	0%	1%	0%	-	0%	3%	0%	-	17%	0%	0%	2%	0

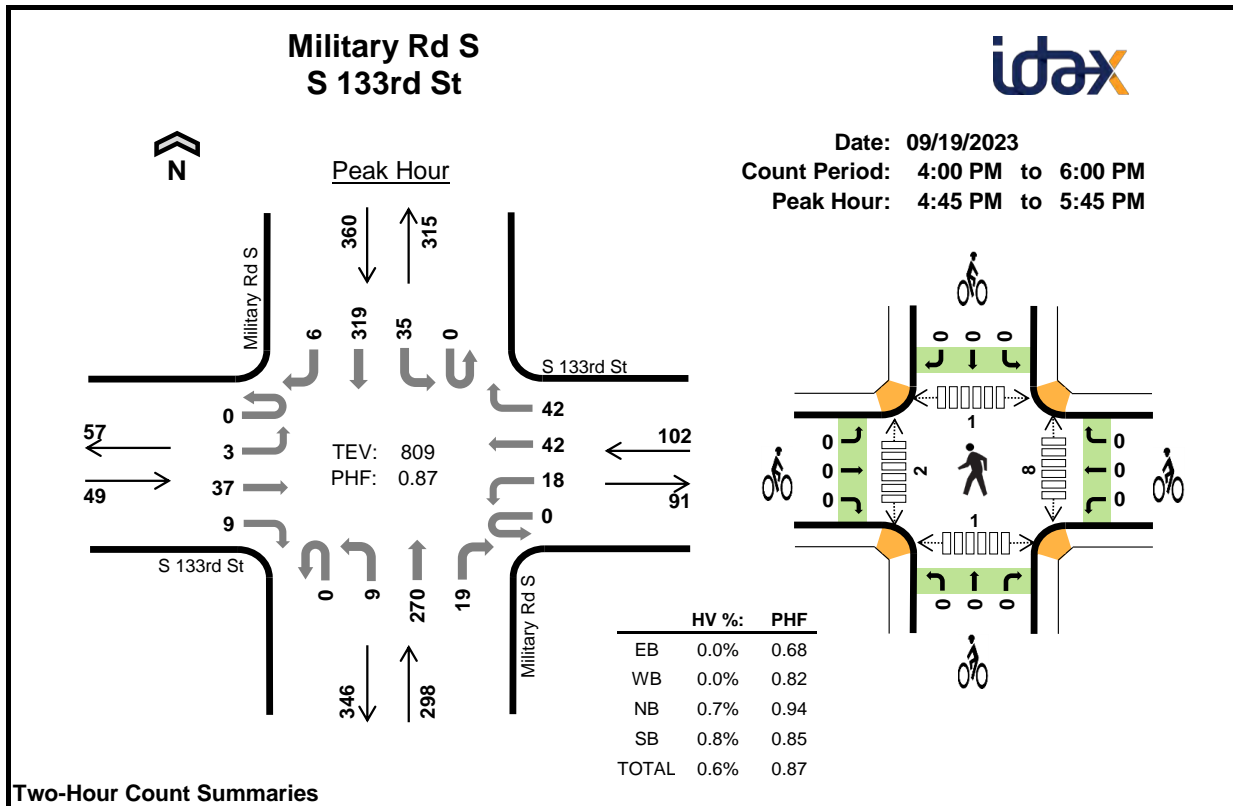
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	0	2	0	7	0	0	0	1	1	0	0	0	0	0
4:15 PM	6	0	0	0	6	0	0	1	0	1	1	0	0	0	1
4:30 PM	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0
4:45 PM	2	1	1	0	4	0	0	0	0	0	0	0	2	0	2
5:00 PM	1	0	0	1	2	0	0	0	0	0	1	0	1	0	2
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	1	1	3
5:30 PM	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1
5:45 PM	1	0	0	2	3	0	0	0	0	0	0	1	1	0	2
Count Total	17	4	3	4	28	0	0	1	1	2	2	2	6	1	11
Peak Hour	10	2	1	2	15	0	0	1	0	1	2	0	3	0	5

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 128th St				S 128th St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	1	0	0	0	0	0	1	1	0	0	0	0	0	7	0
4:15 PM	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6	0
4:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	3	0
4:45 PM	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	4	20
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	15
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	10
5:30 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	9
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	3	8
Count Total	0	1	11	5	0	0	3	1	0	1	2	0	0	3	1	0	28	0
Peak Hour	0	0	6	4	0	0	2	0	0	0	1	0	0	2	0	0	15	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 128th St			S 128th St			24th Ave S			24th Ave S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	0	0	1	0	0	0	1	0	2	0			
Peak Hour	0	0	0	0	0	0	1	0	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 133rd St				S 133rd St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	2	1	0	3	9	11	0	1	64	5	0	6	84	1	189	0
4:15 PM		0	0	5	1	0	3	9	9	0	1	70	1	1	6	75	1	182	0
4:30 PM		0	0	4	0	0	2	7	8	0	2	56	0	0	11	73	1	164	0
4:45 PM		0	0	6	3	0	4	8	13	0	1	72	5	0	4	89	1	206	741
5:00 PM		0	1	15	2	0	5	13	11	0	4	70	5	0	12	91	3	232	784
5:15 PM		0	1	6	2	0	4	14	13	0	2	59	3	0	6	78	2	190	792
5:30 PM		0	1	10	2	0	5	7	5	0	2	69	6	0	13	61	0	181	809
5:45 PM		0	0	6	1	0	2	6	9	0	1	59	4	1	10	64	1	164	767
Count Total		0	5	54	12	0	28	73	79	0	14	519	29	2	68	615	10	1,508	0
Peak Hour	All	0	3	37	9	0	18	42	42	0	9	270	19	0	35	319	6	809	0
	HV	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	0
	HV%	-	0%	0%	0%	-	0%	0%	0%	-	0%	1%	0%	-	0%	1%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

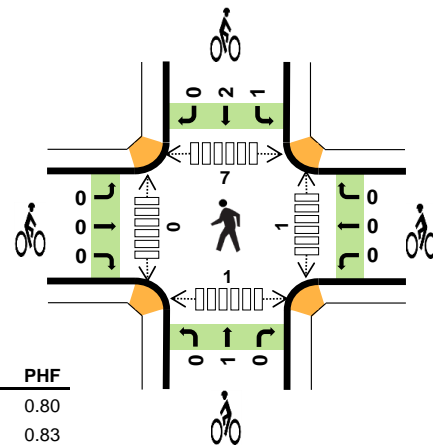
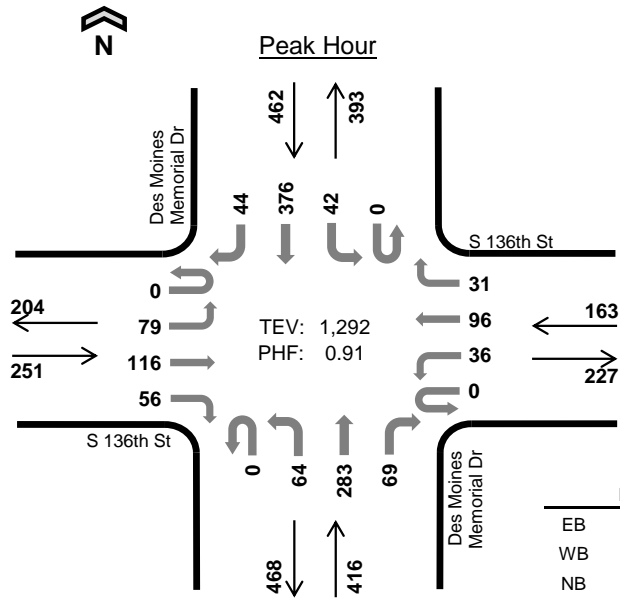
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	2	3	5	0	0	0	0	0	2	0	2	0	4
4:15 PM	0	0	1	1	2	0	0	0	0	0	3	1	0	0	4
4:30 PM	0	0	1	3	4	0	0	1	0	1	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
5:00 PM	0	0	1	1	2	0	0	0	0	0	2	0	1	1	4
5:15 PM	0	0	0	1	1	0	0	0	0	0	3	1	0	0	4
5:30 PM	0	0	1	1	2	0	0	0	0	0	1	1	0	0	2
5:45 PM	0	0	1	1	2	0	0	0	0	0	1	3	0	0	4
Count Total	0	0	7	11	18	0	0	1	0	1	14	6	3	1	24
Peak Hour	0	0	2	3	5	0	0	0	0	0	8	2	1	1	12

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 133rd St				S 133rd St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	8
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	7
Count Total	0	0	0	0	0	0	0	0	0	0	7	0	0	0	11	0	18	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 133rd St			S 133rd St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Des Moines Memorial Dr S 136th St



	HV %:	PHF
EB	1.2%	0.80
WB	0.6%	0.83
NB	2.2%	0.92
SB	3.2%	0.95
TOTAL	2.2%	0.91

Two-Hour Count Summaries

Interval Start		S 136th St				S 136th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	13	23	9	0	8	17	6	0	16	59	14	0	14	97	17	293	0
4:15 PM		0	13	24	7	0	8	26	8	0	10	58	9	0	15	96	13	287	0
4:30 PM		0	17	26	10	0	14	17	5	0	12	56	11	0	14	85	15	282	0
4:45 PM		0	14	25	16	0	6	17	7	0	16	80	17	0	7	97	6	308	1,170
5:00 PM		0	23	27	14	0	12	27	5	0	12	60	17	0	9	103	10	319	1,196
5:15 PM		0	25	35	18	0	7	31	11	0	19	77	16	0	17	84	16	356	1,265
5:30 PM		0	17	29	8	0	11	21	8	0	17	66	19	0	9	92	12	309	1,292
5:45 PM		0	8	34	11	0	11	22	5	0	15	57	21	0	12	66	8	270	1,254
Count Total		0	130	223	93	0	77	178	55	0	117	513	124	0	97	720	97	2,424	0
Peak Hour	All	0	79	116	56	0	36	96	31	0	64	283	69	0	42	376	44	1,292	0
	HV	0	1	0	2	0	1	0	0	0	0	8	1	0	0	14	1	28	0
	HV%	-	1%	0%	4%	-	3%	0%	0%	-	0%	3%	1%	-	0%	4%	2%	2%	0

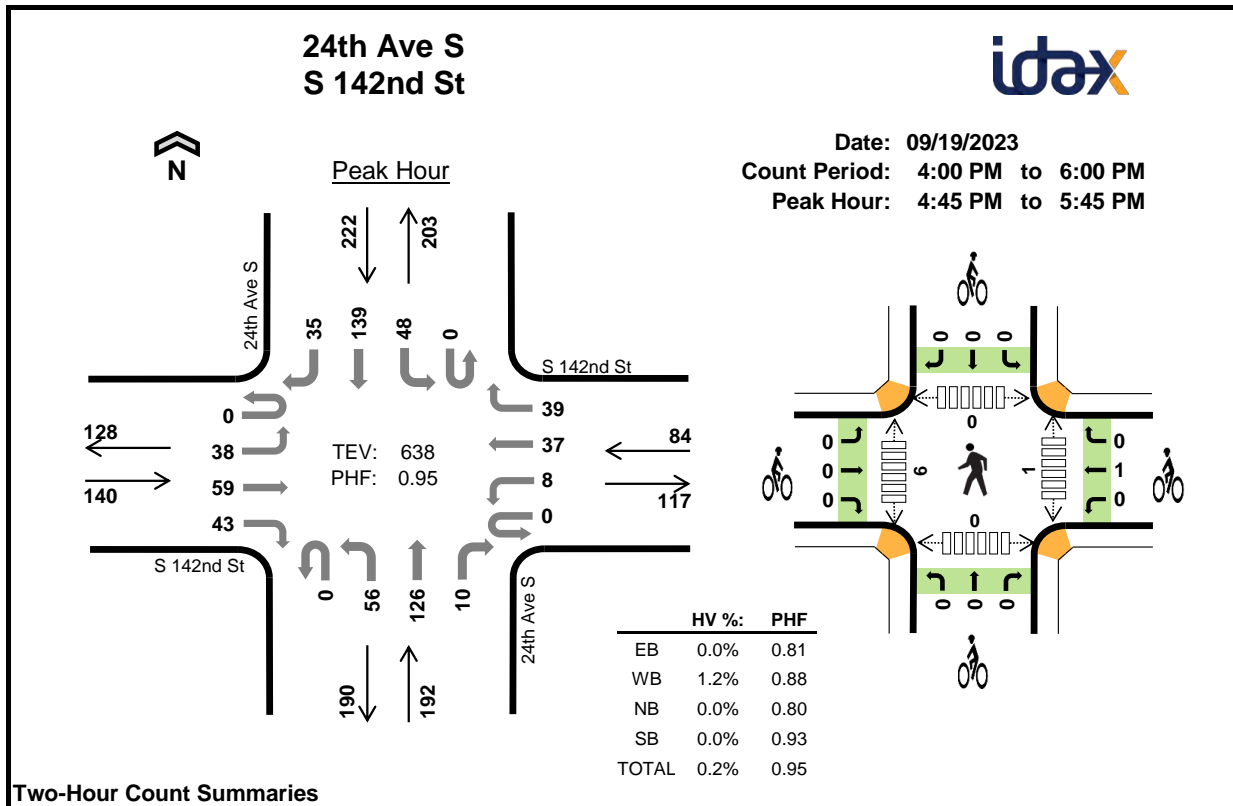
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	3	5	8	1	0	0	0	1	0	0	0	1	1
4:15 PM	1	0	2	1	4	0	0	3	0	3	0	0	0	0	0
4:30 PM	0	2	5	3	10	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	4	6	11	0	0	0	0	0	1	0	0	0	1
5:00 PM	2	0	2	6	10	0	0	0	1	1	0	0	4	1	5
5:15 PM	0	0	1	0	1	0	0	1	2	3	0	0	1	0	1
5:30 PM	1	0	2	3	6	0	0	0	0	0	0	0	2	0	2
5:45 PM	1	0	3	1	5	0	0	0	0	0	0	0	0	0	0
Count Total	5	3	22	25	55	1	0	4	3	8	1	0	7	2	10
Peak Hour	3	1	9	15	28	0	0	1	3	4	1	0	7	1	9

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 136th St				S 136th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	1	1	1	0	0	5	0	8	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	2	0	0	0	1	0	4	0
4:30 PM	0	0	0	0	0	2	0	0	0	0	5	0	0	0	3	0	10	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	4	0	0	0	6	0	11	33
5:00 PM	0	1	0	1	0	0	0	0	0	0	2	0	0	0	5	1	10	35
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	32
5:30 PM	0	0	0	1	0	0	0	0	0	0	1	1	0	0	3	0	6	28
5:45 PM	0	0	0	1	0	0	0	0	0	0	1	2	0	0	0	1	5	22
Count Total	0	2	0	3	0	3	0	0	0	0	2	18	2	0	0	24	1	55
Peak Hour	0	1	0	2	0	1	0	0	0	0	8	1	0	0	14	1	28	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 136th St			S 136th St			Des Moines Memorial Dr			Des Moines Memorial Dr			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0				
4:15 PM	0	0	0	0	0	0	0	2	1	0	0	0	3	0				
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	4				
5:15 PM	0	0	0	0	0	0	0	1	0	1	1	0	3	4				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
Count Total	1	0	0	0	0	0	0	3	1	1	2	0	8	0				
Peak Hour	0	0	0	0	0	0	0	1	0	1	2	0	4	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 142nd St				S 142nd St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	5	11	18	0	2	6	5	0	19	36	1	0	1	42	7	153	0
4:15 PM		0	6	7	21	0	4	3	3	0	16	30	2	0	6	41	10	149	0
4:30 PM		0	8	6	16	0	0	2	2	0	15	20	8	0	6	40	12	135	0
4:45 PM		0	9	15	14	0	3	7	13	0	19	27	2	0	11	36	7	163	600
5:00 PM		0	14	14	15	0	2	10	5	0	6	33	3	0	9	36	6	153	600
5:15 PM		0	9	12	7	0	2	9	9	0	17	39	4	0	14	33	13	168	619
5:30 PM		0	6	18	7	0	1	11	12	0	14	27	1	0	14	34	9	154	638
5:45 PM		0	7	7	11	0	1	6	4	0	10	33	2	0	8	26	9	124	599
Count Total		0	64	90	109	0	15	54	53	0	116	245	23	0	69	288	73	1,199	0
Peak Hour	All	0	38	59	43	0	8	37	39	0	56	126	10	0	48	139	35	638	0
	HV	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
	HV%	-	0%	0%	0%	-	0%	3%	0%	-	0%	0%	0%	-	0%	0%	0%	0%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

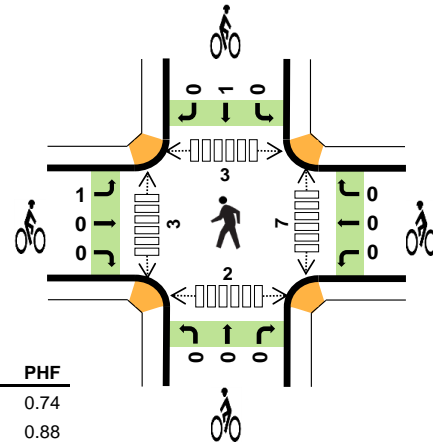
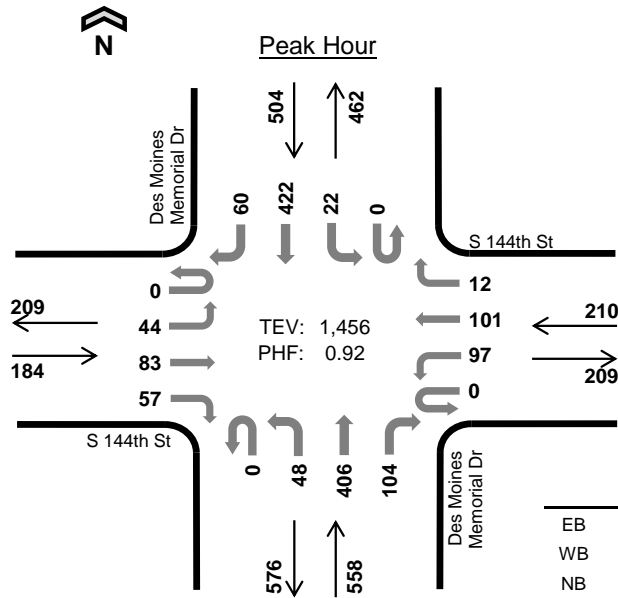
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	1	1	3	0	0	1	0	1	1	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5:30 PM	0	0	0	0	0	0	1	0	0	1	1	4	0	0	5
5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Count Total	0	2	2	3	7	0	1	1	0	2	3	6	0	1	10
Peak Hour	0	1	0	0	1	0	1	0	0	1	1	6	0	0	7

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 142nd St				S 142nd St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	3	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Count Total	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	1	7	0
Peak Hour	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 142nd St			S 142nd St			24th Ave S			24th Ave S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	1			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
Count Total	0	0	0	0	1	0	0	1	0	0	0	0	2	0			
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Des Moines Memorial Dr S 144th St



	HV %:	PHF
EB	9.8%	0.74
WB	3.3%	0.88
NB	3.6%	0.89
SB	3.2%	0.91
TOTAL	4.2%	0.92

Two-Hour Count Summaries

Interval Start		S 144th St				S 144th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	4	20	18	0	23	19	4	0	10	97	20	0	6	105	6	332	0
4:15 PM		0	11	28	17	0	21	21	5	1	19	66	23	0	3	99	22	336	0
4:30 PM		0	4	19	17	0	36	27	1	0	9	80	21	0	3	94	17	328	0
4:45 PM		0	13	29	20	0	25	23	7	0	16	107	27	0	7	105	15	394	1,390
5:00 PM		0	13	17	12	0	17	20	2	0	9	82	30	0	7	109	22	340	1,398
5:15 PM		0	9	21	12	0	26	31	3	0	13	118	26	0	6	102	11	378	1,440
5:30 PM		0	9	16	13	0	29	27	0	0	10	99	21	0	2	106	12	344	1,456
5:45 PM		0	9	22	10	0	27	15	9	0	8	79	25	0	1	73	12	290	1,352
Count Total		0	72	172	119	0	204	183	31	1	94	728	193	0	35	793	117	2,742	0
Peak Hour	All	0	44	83	57	0	97	101	12	0	48	406	104	0	22	422	60	1,456	0
	HV	0	3	3	12	0	3	2	2	0	7	11	2	0	0	12	4	61	0
	HV%	-	7%	4%	21%	-	3%	2%	17%	-	15%	3%	2%	-	0%	3%	7%	4%	0

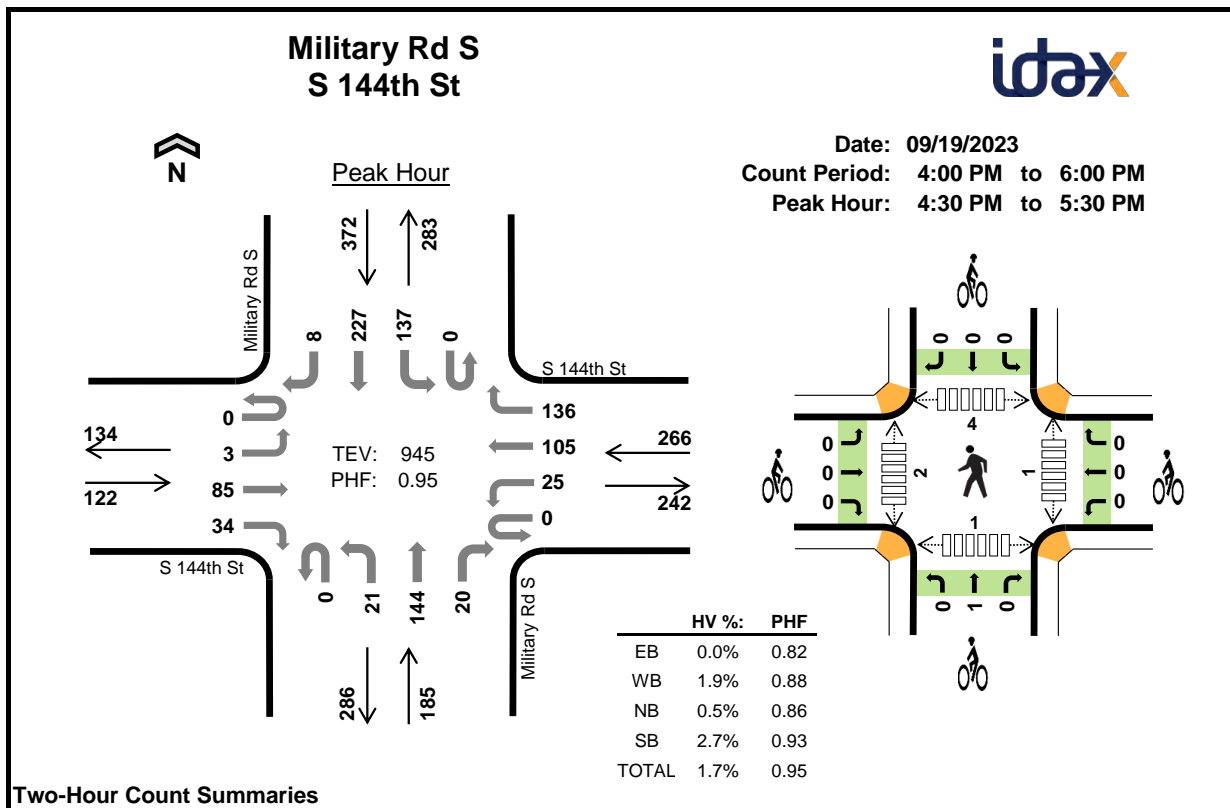
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	2	6	5	17	0	0	0	0	0	1	0	0	0	1
4:15 PM	4	3	6	4	17	1	0	1	0	2	0	1	2	1	4
4:30 PM	4	3	9	6	22	0	0	0	0	0	3	0	0	0	3
4:45 PM	6	2	7	4	19	0	0	0	0	0	3	0	0	0	3
5:00 PM	3	1	3	6	13	1	0	0	0	1	3	0	1	0	4
5:15 PM	5	3	7	1	16	0	0	0	1	1	1	3	2	2	8
5:30 PM	4	1	3	5	13	0	0	0	0	0	0	0	0	0	0
5:45 PM	3	3	9	3	18	0	0	0	0	0	4	0	4	1	9
Count Total	33	18	50	34	135	2	0	1	1	4	15	4	9	4	32
Peak Hour	18	7	20	16	61	1	0	0	1	2	7	3	3	2	15

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 144th St				S 144th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	3	0	1	1	0	0	2	4	0	0	1	3	1	17	0
4:15 PM	0	1	1	2	0	2	0	1	0	3	2	1	0	0	3	1	17	0
4:30 PM	0	1	0	3	0	2	1	0	0	3	6	0	0	0	4	2	22	0
4:45 PM	0	1	0	5	0	1	0	1	0	2	5	0	0	0	3	1	19	75
5:00 PM	0	1	0	2	0	1	0	0	0	1	2	0	0	0	4	2	13	71
5:15 PM	0	0	3	2	0	0	2	1	0	3	2	2	0	0	1	0	16	70
5:30 PM	0	1	0	3	0	1	0	0	0	1	2	0	0	0	4	1	13	61
5:45 PM	0	1	0	2	0	1	0	2	0	2	2	5	0	1	2	0	18	60
Count Total	0	7	4	22	0	9	4	5	0	17	25	8	0	2	24	8	135	0
Peak Hour	0	3	3	12	0	3	2	2	0	7	11	2	0	0	12	4	61	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 144th St			S 144th St			Des Moines Memorial Dr			Des Moines Memorial Dr			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	1	0	0	0	0	0	0	1	0	0	0	0	2	0			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	3			
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	2			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
Count Total	2	0	0	0	0	0	0	1	0	0	1	0	4	0			
Peak Hour	1	0	0	0	0	0	0	0	0	0	1	0	2	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 144th St				S 144th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	3	30	5	0	8	27	31	0	9	45	1	0	37	55	1	252	0
4:15 PM		0	0	22	5	0	8	27	30	0	8	37	2	0	21	53	1	214	0
4:30 PM		0	1	24	12	0	4	24	31	0	6	32	7	0	33	49	5	228	0
4:45 PM		0	1	20	10	0	7	23	38	0	5	40	3	0	29	64	1	241	935
5:00 PM		0	0	19	7	0	7	23	33	0	3	32	3	0	43	56	1	227	910
5:15 PM		0	1	22	5	0	7	35	34	0	7	40	7	0	32	58	1	249	945
5:30 PM		0	0	19	8	0	3	23	30	0	4	40	4	0	19	35	2	187	904
5:45 PM		0	0	14	5	0	9	27	28	0	15	39	6	0	33	35	0	211	874
Count Total		0	6	170	57	0	53	209	255	0	57	305	33	0	247	405	12	1,809	0
Peak Hour	All	0	3	85	34	0	25	105	136	0	21	144	20	0	137	227	8	945	0
	HV	0	0	0	0	0	1	1	3	0	1	0	0	0	7	3	0	16	0
	HV%	-	0%	0%	0%	-	4%	1%	2%	-	5%	0%	0%	-	5%	1%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	2	1	4	10	0	1	0	1	2	1	0	0	0	1
4:15 PM	2	1	3	3	9	0	1	0	1	2	0	0	0	1	1
4:30 PM	0	1	1	3	5	0	0	1	0	1	1	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	1	4
5:00 PM	0	2	0	4	6	0	0	0	0	0	0	0	3	0	3
5:15 PM	0	2	0	3	5	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	2	3	0	0	0	0	0	1	0	2	0	3
5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Count Total	5	9	5	20	39	0	2	1	2	5	3	2	6	2	13
Peak Hour	0	5	1	10	16	0	0	1	0	1	1	2	4	1	8

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 144th St				S 144th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	1	0	1	0	1	0	0	1	0	0	0	4	0	10	0
4:15 PM	0	0	1	1	0	0	0	1	0	1	2	0	0	2	1	0	9	0
4:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	2	1	0	5	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
5:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	3	1	0	6	20
5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	2	1	0	5	16
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	3	14
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	15
Count Total	0	0	3	2	0	2	1	6	0	2	3	0	0	10	10	0	39	0
Peak Hour	0	0	0	0	0	1	1	3	0	1	0	0	0	7	3	0	16	0

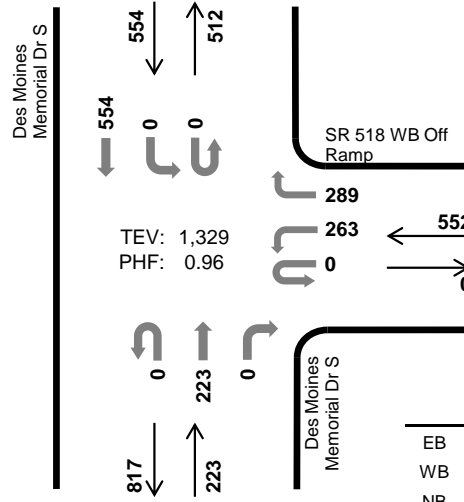
Two-Hour Count Summaries - Bikes																	
Interval Start	S 144th St			S 144th St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	1	0	0	0	0	0	0	1	0	2	0			
4:15 PM	0	0	0	1	0	0	0	0	0	1	0	0	2	0			
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	2	0	0	0	1	0	1	1	0	5	0			
Peak Hour	0	0	0	0	0	0	0	1	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

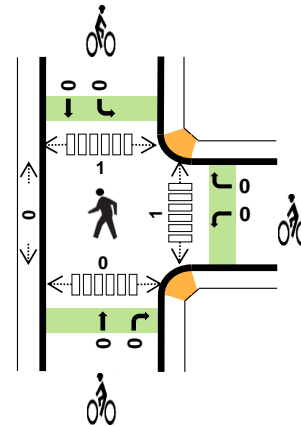
Des Moines Memorial Dr S SR 518 WB Off Ramp



Peak Hour



Date: 09/20/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	-	-
WB	4.7%	0.90
NB	2.2%	0.91
SB	4.7%	0.99
TOTAL	4.3%	0.96

Two-Hour Count Summaries

Interval Start		0				SR 518 WB Off Ramp				Des Moines Memorial Dr S				Des Moines Memorial Dr S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	53	0	54	0	0	47	0	0	0	117	0	271	0
4:15 PM		0	0	0	0	0	68	0	69	0	0	42	0	0	0	117	0	296	0
4:30 PM		0	0	0	0	0	56	0	61	0	0	48	0	0	0	142	0	307	0
4:45 PM		0	0	0	0	0	56	0	81	0	0	54	0	0	0	137	0	328	1,202
5:00 PM		0	0	0	0	0	63	0	62	0	0	61	0	0	0	140	0	326	1,257
5:15 PM		0	0	0	0	0	79	0	74	0	0	55	0	0	0	139	0	347	1,308
5:30 PM		0	0	0	0	0	65	0	72	0	0	53	0	0	0	138	0	328	1,329
5:45 PM		0	0	0	0	0	69	0	73	0	0	34	0	0	0	110	0	286	1,287
Count Total		0	0	0	0	0	509	0	546	0	0	394	0	0	0	1,040	0	2,489	0
Peak Hour	All	0	0	0	0	0	263	0	289	0	0	223	0	0	0	554	0	1,329	0
	HV	0	0	0	0	0	4	0	22	0	0	5	0	0	0	26	0	57	0
	HV%	-	-	-	-	-	2%	-	8%	-	-	2%	-	-	-	5%	-	4%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

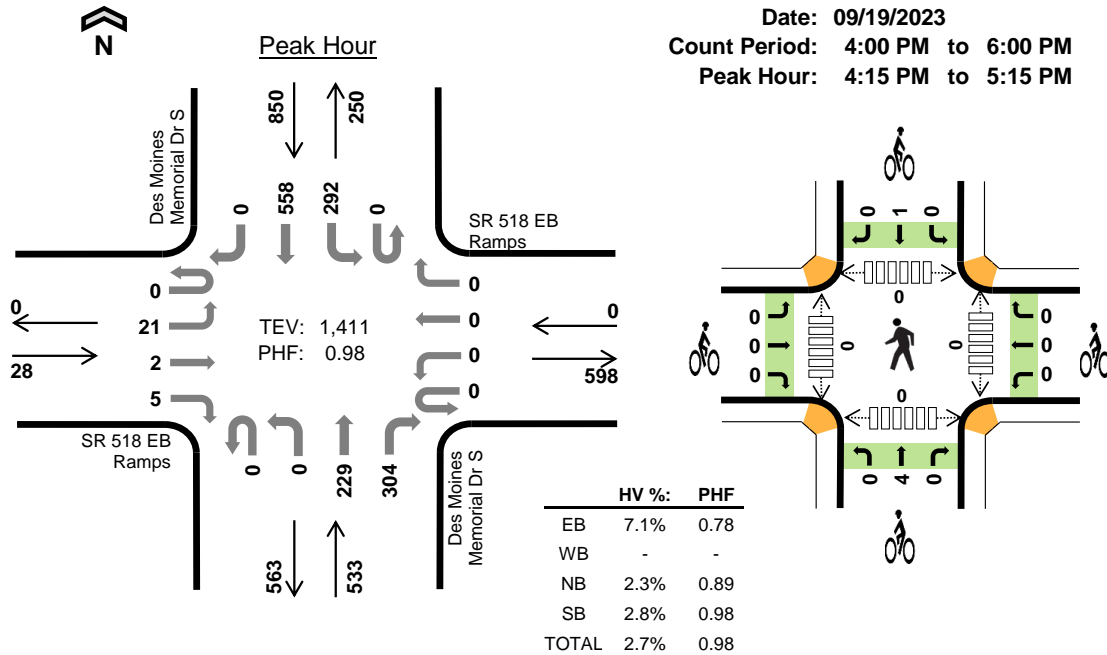
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	12	1	9	22	0	1	0	0	1	2	0	0	0	2
4:15 PM	0	2	2	10	14	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	10	2	8	20	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	7	0	7	14	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	8	0	5	13	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	7	2	6	15	0	0	0	0	0	1	0	1	0	2
5:30 PM	0	4	3	8	15	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	8	1	7	16	0	0	0	0	0	0	0	0	0	0
Count Total	0	58	11	60	129	0	1	0	0	1	4	0	1	0	5
Peak Hr	0	26	5	26	57	0	0	0	0	0	1	0	1	0	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	0				SR 518 WB Off Ramp				Des Moines Memorial Dr S				Des Moines Memorial Dr S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	3	0	9	0	0	1	0	0	0	9	0	22	0
4:15 PM	0	0	0	0	0	0	0	2	0	0	2	0	0	0	10	0	14	0
4:30 PM	0	0	0	0	0	1	0	9	0	0	2	0	0	0	8	0	20	0
4:45 PM	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	0	14	70
5:00 PM	0	0	0	0	0	3	0	5	0	0	0	0	0	0	5	0	13	61
5:15 PM	0	0	0	0	0	1	0	6	0	0	2	0	0	0	6	0	15	62
5:30 PM	0	0	0	0	0	0	0	4	0	0	3	0	0	0	8	0	15	57
5:45 PM	0	0	0	0	0	3	0	5	0	0	1	0	0	0	7	0	16	59
Count Total	0	0	0	0	0	11	0	47	0	0	11	0	0	0	60	0	129	0
Peak Hour	0	0	0	0	0	4	0	22	0	0	5	0	0	0	26	0	57	0

Two-Hour Count Summaries - Bikes																		
Interval Start	0			SR 518 WB Off Ramp			Des Moines Memorial Dr S			Des Moines Memorial Dr S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0				
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count Total	0	0	0	1	0	0	0	0	0	0	0	0	1	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Des Moines Memorial Dr S SR 518 EB Ramps



Two-Hour Count Summaries

Interval Start		SR 518 EB Ramps				SR 518 EB Ramps				Des Moines Memorial Dr S				Des Moines Memorial Dr S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	4	0	2	0	0	0	0	0	0	39	59	0	77	133	0	314	0
4:15 PM		0	3	0	2	0	0	0	0	0	0	48	101	0	74	132	0	360	0
4:30 PM		0	6	2	1	0	0	0	0	0	0	52	74	0	74	142	0	351	0
4:45 PM		0	5	0	1	0	0	0	0	0	0	68	63	0	76	138	0	351	1,376
5:00 PM		0	7	0	1	0	0	0	0	0	0	61	66	0	68	146	0	349	1,411
5:15 PM		0	4	0	3	0	0	0	0	0	0	56	61	0	59	155	0	338	1,389
5:30 PM		0	5	0	2	0	0	0	0	0	0	47	72	0	55	156	0	337	1,375
5:45 PM		0	9	0	0	0	0	0	0	0	0	33	62	0	50	121	0	275	1,299
Count Total		0	43	2	12	0	0	0	0	0	0	404	558	0	533	1,123	0	2,675	0
Peak Hour	All	0	21	2	5	0	0	0	0	0	0	229	304	0	292	558	0	1,411	0
	HV	0	2	0	0	0	0	0	0	0	0	6	6	0	17	7	0	38	0
	HV%	-	10%	0%	0%	-	-	-	-	-	-	3%	2%	-	6%	1%	-	3%	0

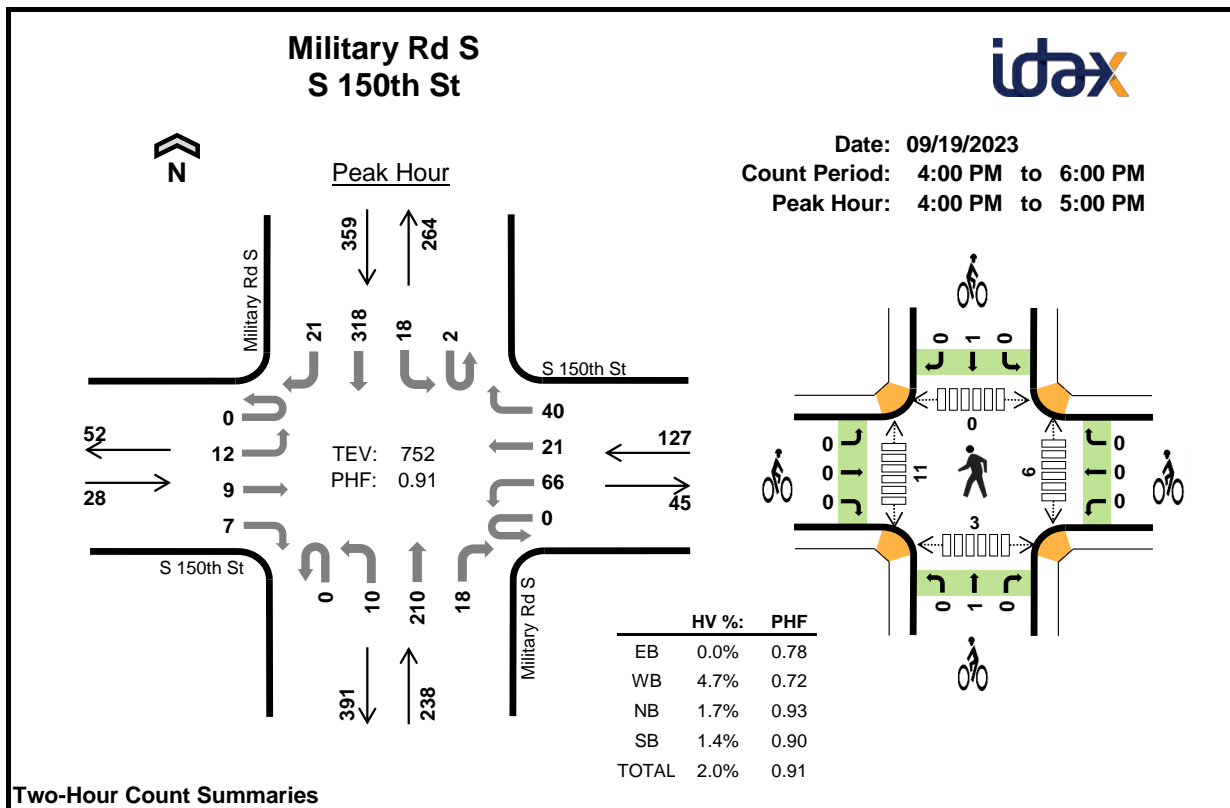
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	5	6	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	5	6	12	0	0	1	0	1	0	0	0	0	0
4:30 PM	0	0	3	6	9	0	0	1	1	2	0	0	0	0	0
4:45 PM	0	0	4	7	11	0	0	2	0	2	0	0	0	0	0
5:00 PM	1	0	0	5	6	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	1	2	4	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
5:45 PM	2	0	0	3	5	0	0	0	0	0	0	0	0	0	0
Count Total	6	0	13	40	59	0	0	4	1	5	0	0	0	0	0
Peak Hour	2	0	12	24	38	0	0	4	1	5	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	SR 518 EB Ramps				SR 518 EB Ramps				Des Moines Memorial Dr S				Des Moines Memorial Dr S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	3	2	0	6	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	2	3	0	4	2	0	12	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	2	0	4	2	0	9	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	1	0	5	2	0	11	38
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	4	1	0	6	38
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	4	30
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	6	27
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	1	2	0	5	21
Count Total	0	6	0	0	0	0	0	0	0	0	6	7	0	25	15	0	59	0
Peak Hour	0	2	0	0	0	0	0	0	0	0	6	6	0	17	7	0	38	0

Two-Hour Count Summaries - Bikes																	
Interval Start	SR 518 EB Ramps			SR 518 EB Ramps			Des Moines Memorial Dr S			Des Moines Memorial Dr S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0		
4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0		
4:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	4	0	0	1	0	5	0	0		
Peak Hour	0	0	0	0	0	0	0	4	0	0	1	0	5	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 150th St				S 150th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	4	2	3	0	27	9	8	0	3	57	4	0	8	80	1	206	0
4:15 PM		0	2	5	1	0	17	4	13	0	4	52	4	0	3	69	5	179	0
4:30 PM		0	6	1	0	0	9	4	8	0	2	49	9	1	3	85	4	181	0
4:45 PM		0	0	1	3	0	13	4	11	0	1	52	1	1	4	84	11	186	752
5:00 PM		0	5	0	3	0	15	2	8	0	4	56	3	0	12	70	5	183	729
5:15 PM		0	9	3	6	0	13	1	6	0	1	62	9	0	10	65	1	186	736
5:30 PM		0	4	6	4	0	8	1	13	0	2	41	4	0	3	67	3	156	711
5:45 PM		0	2	0	8	0	12	4	4	0	0	68	0	0	4	56	5	163	688
Count Total		0	32	18	28	0	114	29	71	0	17	437	34	2	47	576	35	1,440	0
Peak Hour	All	0	12	9	7	0	66	21	40	0	10	210	18	2	18	318	21	752	0
	HV	0	0	0	0	0	0	0	6	0	0	4	0	0	2	3	0	15	0
	HV%	-	0%	0%	0%	-	0%	0%	15%	-	0%	2%	0%	0%	11%	1%	0%	2%	0

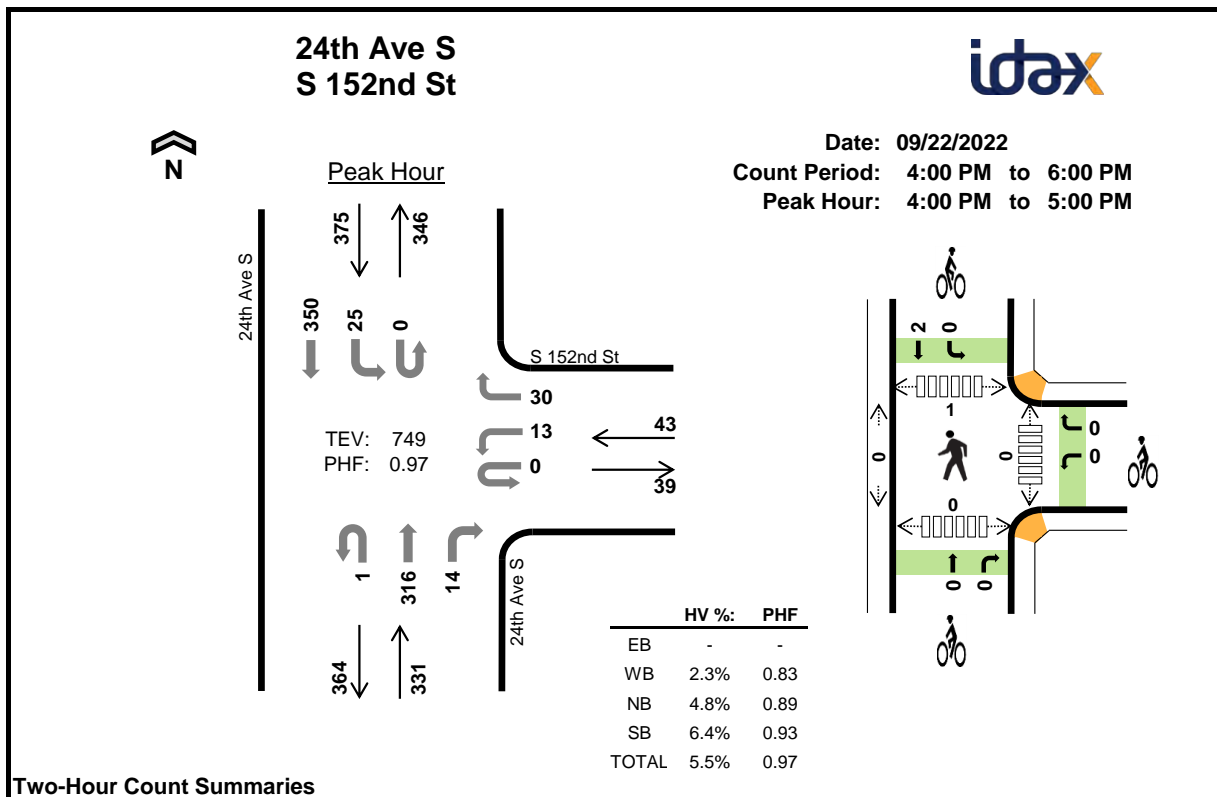
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	1	3	5	0	0	0	0	0	0	2	0	0	2
4:15 PM	0	0	2	1	3	0	0	0	0	0	3	3	0	2	8
4:30 PM	0	2	1	1	4	0	0	1	0	1	0	2	0	0	2
4:45 PM	0	3	0	0	3	0	0	0	1	1	3	4	0	1	8
5:00 PM	0	0	0	1	1	0	0	0	0	0	1	0	5	0	6
5:15 PM	0	1	0	1	2	0	0	0	0	0	1	2	1	0	4
5:30 PM	1	2	1	1	5	0	0	0	0	0	0	0	0	4	4
5:45 PM	0	0	0	1	1	0	0	0	0	0	0	2	1	3	6
Count Total	1	9	5	9	24	0	0	1	1	2	8	15	7	10	40
Peak Hour	0	6	4	5	15	0	0	1	1	2	6	11	0	3	20

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 150th St				S 150th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	2	1	0	5	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
4:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	0	0	1	0	4	0
4:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	15
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	11
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	10
5:30 PM	0	0	0	1	0	1	0	1	0	1	0	0	0	0	1	0	5	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9
Count Total	0	0	0	1	0	2	0	7	0	1	4	0	0	3	6	0	24	0
Peak Hour	0	0	0	0	0	0	0	6	0	0	4	0	0	2	3	0	15	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 150th St			S 150th St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	2	0	0
Peak Hour	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	2	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		0				S 152nd St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	2	0	7	0	0	74	4	0	9	92	0	188	0
4:15 PM		0	0	0	0	0	5	0	8	1	0	72	1	0	5	92	0	184	0
4:30 PM		0	0	0	0	0	3	0	9	0	0	82	4	0	5	81	0	184	0
4:45 PM		0	0	0	0	0	3	0	6	0	0	88	5	0	6	85	0	193	749
5:00 PM		0	0	0	0	0	4	0	6	0	0	71	8	0	4	79	0	172	733
5:15 PM		0	0	0	0	0	5	0	8	0	0	75	4	0	4	71	0	167	716
5:30 PM		0	0	0	0	0	8	0	1	0	0	66	2	0	5	69	0	151	683
5:45 PM		0	0	0	0	0	2	0	4	0	0	71	2	0	3	80	0	162	652
Count Total		0	0	0	0	0	32	0	49	1	0	599	30	0	41	649	0	1,401	0
Peak Hour	All	0	0	0	0	0	13	0	30	1	0	316	14	0	25	350	0	749	0
	HV	0	0	0	0	0	0	0	1	0	0	16	0	0	0	24	0	41	0
	HV%	-	-	-	-	-	0%	-	3%	0%	-	5%	0%	-	0%	7%	-	5%	0

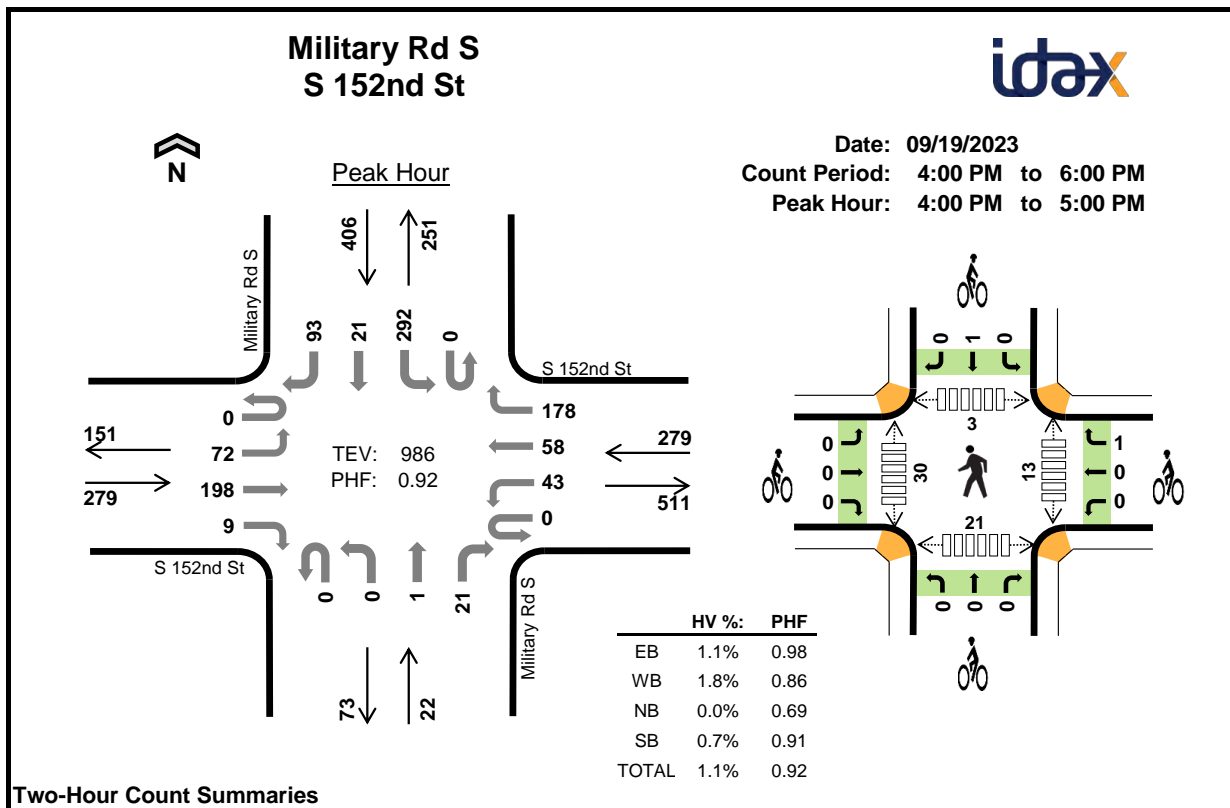
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	4	5	9	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	4	9	13	0	0	0	1	1	0	0	0	0	0
4:30 PM	0	1	6	6	13	0	0	0	1	1	0	0	1	0	1
4:45 PM	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	6	3	9	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	3	6	9	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	3	3	6	0	0	1	0	1	0	0	2	0	2
5:45 PM	0	0	5	2	7	0	0	0	0	0	0	0	0	0	0
Count Total	0	1	33	38	72	0	0	1	2	3	0	0	3	0	3
Peak Hr	0	1	16	24	41	0	0	0	2	2	0	0	1	0	1

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	0				S 152nd St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	9	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	9	0	13	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	6	0	0	0	6	0	13	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	6	41
5:00 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	3	0	9	41
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	6	0	9	37
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	6	30
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	2	0	7	31
Count Total	0	0	0	0	0	0	0	1	0	0	31	2	0	0	38	0	72	0
Peak Hour	0	0	0	0	0	0	0	1	0	0	16	0	0	0	24	0	41	0

Two-Hour Count Summaries - Bikes																		
Interval Start	0			S 152nd St			24th Ave S			24th Ave S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Count Total	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 152nd St				S 152nd St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	17	51	2	0	13	15	53	0	0	0	4	0	76	4	32	267	0
4:15 PM		0	21	49	1	0	13	14	42	0	0	0	8	0	61	3	30	242	0
4:30 PM		0	19	48	3	0	8	13	33	0	0	0	5	0	70	9	15	223	0
4:45 PM		0	15	50	3	0	9	16	50	0	0	1	4	0	85	5	16	254	986
5:00 PM		0	23	30	3	0	11	19	49	0	0	0	9	0	72	6	18	240	959
5:15 PM		0	19	41	1	0	12	13	43	0	0	0	8	0	61	5	18	221	938
5:30 PM		0	20	47	6	0	7	13	44	0	1	0	4	0	65	2	11	220	935
5:45 PM		0	16	32	0	0	13	8	49	0	0	0	5	0	57	3	20	203	884
Count Total		0	150	348	19	0	86	111	363	0	1	1	47	0	547	37	160	1,870	0
Peak Hour	All	0	72	198	9	0	43	58	178	0	0	1	21	0	292	21	93	986	0
	HV	0	0	3	0	0	0	2	3	0	0	0	0	0	3	0	0	11	0
	HV%	-	0%	2%	0%	-	0%	3%	2%	-	-	0%	0%	-	1%	0%	0%	1%	0

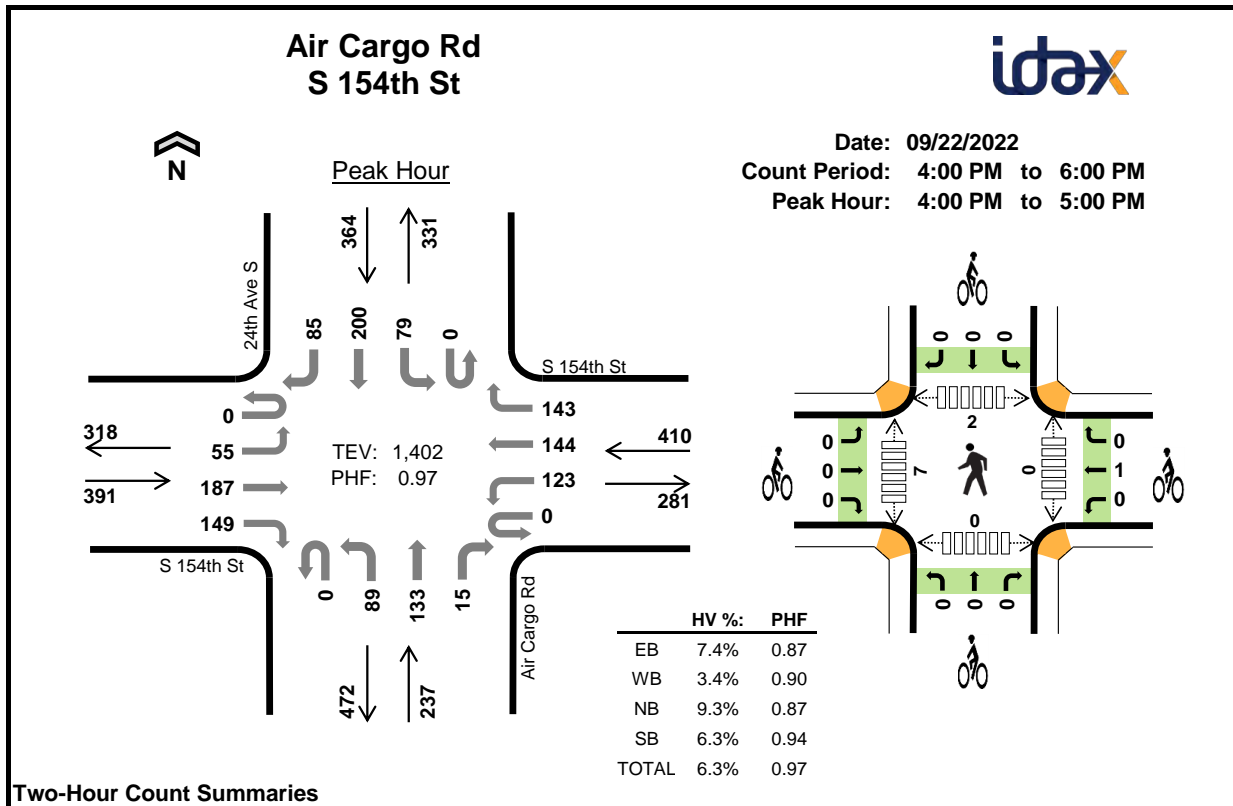
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	2	0	1	4	0	0	0	1	1	3	10	2	2	17
4:15 PM	2	1	0	1	4	0	0	0	0	0	2	6	1	6	15
4:30 PM	0	2	0	1	3	0	1	0	0	1	4	8	0	8	20
4:45 PM	0	0	0	0	0	0	0	0	0	0	4	6	0	5	15
5:00 PM	2	0	0	0	2	0	0	0	0	0	1	3	1	2	7
5:15 PM	2	0	0	2	4	0	0	0	0	0	3	10	7	10	30
5:30 PM	2	1	0	4	7	0	0	0	0	0	1	10	1	8	20
5:45 PM	1	0	0	1	2	0	0	0	0	0	0	5	1	2	8
Count Total	10	6	0	10	26	0	1	0	1	2	18	58	13	43	132
Peak Hour	3	5	0	3	11	0	1	0	1	2	13	30	3	21	67

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 152nd St				S 152nd St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	0	2	0	0	0	0	0	1	0	0	4	0
4:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0	4	0
4:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	4	9
5:30 PM	0	0	1	1	0	0	0	1	0	0	0	0	0	3	0	1	7	13
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	15
Count Total	0	0	9	1	0	0	2	4	0	0	0	0	0	8	0	2	26	0
Peak Hour	0	0	3	0	0	0	2	3	0	0	0	0	0	3	0	0	11	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 152nd St			S 152nd St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	0	1	0	0	0	0	1	0	2	0			
Peak Hour	0	0	0	0	0	1	0	0	0	0	1	0	2	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		S 154th St				S 154th St				Air Cargo Rd				24th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	11	42	39	0	30	36	35	0	23	33	2	0	20	51	22	344	0
4:15 PM		0	10	43	40	0	33	32	33	0	23	30	7	0	22	51	24	348	0
4:30 PM		0	16	59	37	0	31	35	31	0	25	38	5	0	17	50	18	362	0
4:45 PM		0	18	43	33	0	29	41	44	0	18	32	1	0	20	48	21	348	1,402
5:00 PM		0	21	35	33	0	29	38	34	0	30	24	4	0	18	41	24	331	1,389
5:15 PM		0	16	42	42	0	34	42	43	0	28	20	5	0	21	37	19	349	1,390
5:30 PM		0	19	46	19	0	27	37	31	0	25	19	13	0	18	35	22	311	1,339
5:45 PM		0	19	40	30	0	38	25	38	0	21	18	4	0	22	38	24	317	1,308
Count Total		0	130	350	273	0	251	286	289	0	193	214	41	0	158	351	174	2,710	0
Peak Hour	All	0	55	187	149	0	123	144	143	0	89	133	15	0	79	200	85	1,402	0
	HV	0	1	11	17	0	5	8	1	0	8	14	0	0	2	18	3	88	0
	HV%	-	2%	6%	11%	-	4%	6%	1%	-	9%	11%	0%	-	3%	9%	4%	6%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	8	5	5	6	24	0	0	0	0	0	0	2	1	0	3
4:15 PM	9	3	6	7	25	0	0	0	0	0	0	1	0	0	1
4:30 PM	6	3	8	6	23	0	0	0	0	0	0	3	0	0	3
4:45 PM	6	3	3	4	16	0	1	0	0	1	0	1	1	0	2
5:00 PM	5	4	5	3	17	0	0	0	0	0	1	2	1	0	4
5:15 PM	3	4	4	6	17	0	0	0	0	0	1	2	0	0	3
5:30 PM	1	5	7	4	17	0	1	0	0	1	0	0	0	0	0
5:45 PM	5	6	6	4	21	0	0	0	0	0	0	0	2	0	2
Count Total	43	33	44	40	160	0	2	0	0	2	2	11	5	0	18
Peak Hour	29	14	22	23	88	0	1	0	0	1	0	7	2	0	9

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 154th St				S 154th St				Air Cargo Rd				24th Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	1	6	0	4	1	0	0	2	3	0	0	1	4	1	24	0
4:15 PM	0	0	4	5	0	0	2	1	0	3	3	0	0	1	5	1	25	0
4:30 PM	0	0	2	4	0	1	2	0	0	2	6	0	0	0	5	1	23	0
4:45 PM	0	0	4	2	0	0	3	0	0	1	2	0	0	0	4	0	16	88
5:00 PM	0	0	2	3	0	0	1	3	0	2	3	0	0	1	2	0	17	81
5:15 PM	0	0	2	1	0	1	2	1	0	2	2	0	0	1	5	0	17	73
5:30 PM	0	0	1	0	0	0	3	2	0	4	2	1	0	0	4	0	17	67
5:45 PM	0	0	3	2	0	1	4	1	0	3	3	0	0	0	4	0	21	72
Count Total	0	1	19	23	0	7	18	8	0	19	24	1	0	4	33	3	160	0
Peak Hour	0	1	11	17	0	5	8	1	0	8	14	0	0	2	18	3	88	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 154th St			S 154th St			Air Cargo Rd			24th Ave S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
Peak Hour	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SR 518 WB Off-Ramp S 154th St

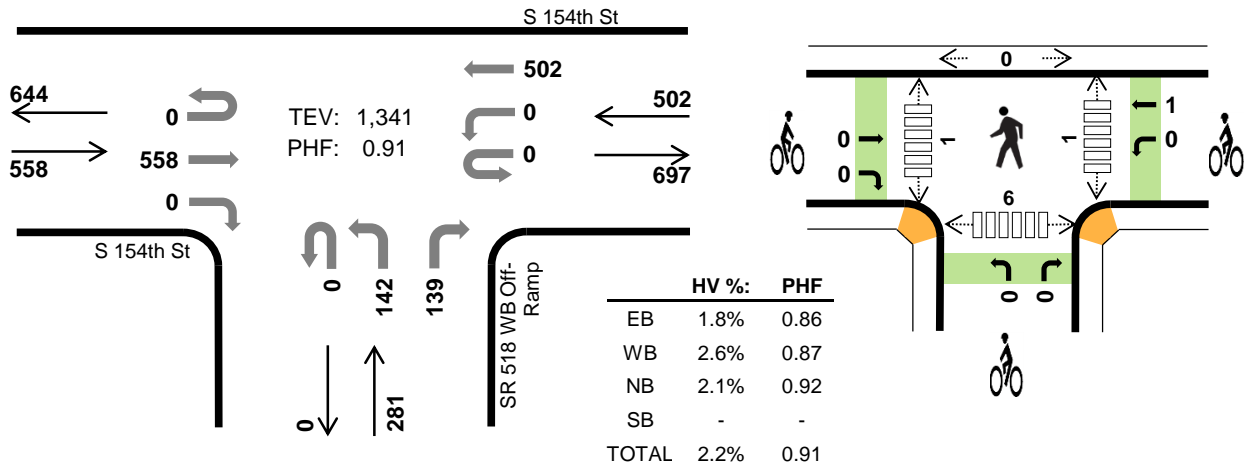


Peak Hour

Date: 09/19/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:30 PM to 5:30 PM



Two-Hour Count Summaries

Interval Start	S 154th St Eastbound				S 154th St Westbound				SR 518 WB Off-Ramp Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	130	0	0	0	126	0	0	46	0	37	0	0	0	0	339	0
4:15 PM	0	0	124	0	0	0	129	0	0	39	0	40	0	0	0	0	332	0
4:30 PM	0	0	163	0	0	0	112	0	0	34	0	32	0	0	0	0	341	0
4:45 PM	0	0	128	0	0	0	121	0	0	34	0	33	0	0	0	0	316	1,328
5:00 PM	0	0	120	0	0	0	124	0	0	33	0	39	0	0	0	0	316	1,305
5:15 PM	0	0	147	0	0	0	145	0	0	41	0	35	0	0	0	0	368	1,341
5:30 PM	0	0	113	0	0	0	100	0	0	39	0	45	0	0	0	0	297	1,297
5:45 PM	0	0	109	0	0	0	121	0	0	40	0	33	0	0	0	0	303	1,284
Count Total	0	0	1,034	0	0	0	978	0	0	306	0	294	0	0	0	0	2,612	0
Peak Hour	All	0	0	558	0	0	0	502	0	0	142	0	139	0	0	0	1,341	0
	HV	0	0	10	0	0	0	13	0	0	3	0	3	0	0	0	29	0
	HV%	-	-	2%	-	-	-	3%	-	-	2%	-	2%	-	-	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	5	0	0	8	0	0	0	0	0	0	1	0	1	2
4:15 PM	2	7	3	0	12	0	0	0	0	0	0	0	0	3	3
4:30 PM	4	1	3	0	8	0	0	0	0	0	1	0	0	2	3
4:45 PM	3	5	0	0	8	0	1	0	0	1	0	1	0	1	2
5:00 PM	1	2	1	0	4	0	0	0	0	0	0	0	0	1	1
5:15 PM	2	5	2	0	9	0	0	0	0	0	0	0	0	2	2
5:30 PM	3	3	2	0	8	0	0	0	0	0	0	0	0	8	8
5:45 PM	4	7	1	0	12	0	0	0	0	0	0	0	0	1	1
Count Total	22	35	12	0	69	0	1	0	0	1	1	2	0	19	22
Peak Hr	10	13	6	0	29	0	1	0	0	1	1	1	0	6	8

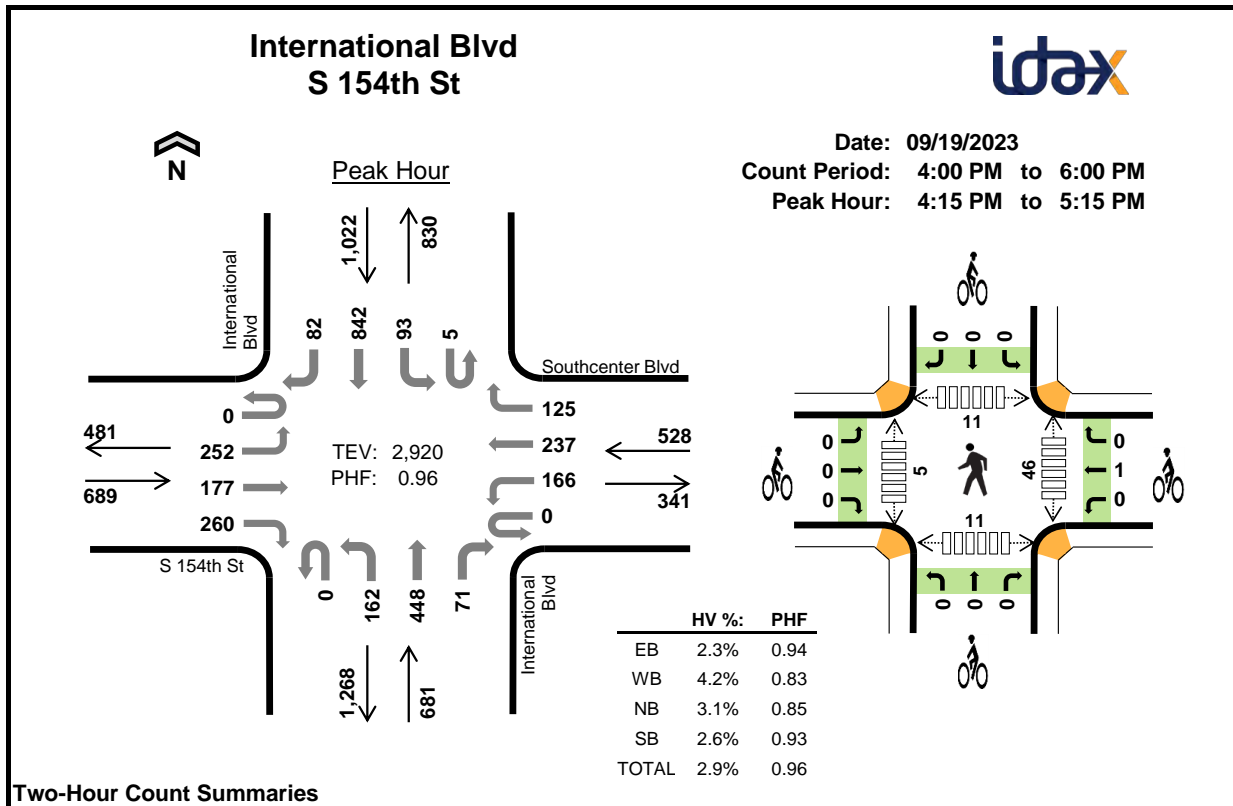
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	S 154th St				S 154th St				SR 518 WB Off-Ramp				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	8	0
4:15 PM	0	0	2	0	0	0	7	0	0	3	0	0	0	0	0	0	12	0
4:30 PM	0	0	4	0	0	0	1	0	0	1	0	2	0	0	0	0	8	0
4:45 PM	0	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	8	36
5:00 PM	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	4	32
5:15 PM	0	0	2	0	0	0	5	0	0	2	0	0	0	0	0	0	9	29
5:30 PM	0	0	3	0	0	0	3	0	0	1	0	1	0	0	0	0	8	29
5:45 PM	0	0	4	0	0	0	7	0	0	1	0	0	0	0	0	0	12	33
Count Total	0	0	22	0	0	0	35	0	0	8	0	4	0	0	0	0	69	0
Peak Hour	0	0	10	0	0	0	13	0	0	3	0	3	0	0	0	0	29	0

Two-Hour Count Summaries - Bikes

Interval Start	S 154th St			S 154th St			SR 518 WB Off-Ramp			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	1	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 154th St				Southcenter Blvd				International Blvd				International Blvd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	46	39	66	0	37	49	31	0	62	116	26	3	30	190	15	710	0
4:15 PM		0	58	52	66	0	53	67	39	0	44	72	15	2	28	194	18	708	0
4:30 PM		0	57	49	77	0	45	53	33	0	46	119	21	0	20	201	16	737	0
4:45 PM		0	65	44	57	0	31	59	28	0	35	151	14	2	22	227	24	759	2,914
5:00 PM		0	72	32	60	0	37	58	25	0	37	106	21	1	23	220	24	716	2,920
5:15 PM		0	64	50	66	0	36	74	26	0	50	88	18	1	26	181	23	703	2,915
5:30 PM		0	60	44	59	0	27	49	38	0	43	91	19	0	30	194	12	666	2,844
5:45 PM		1	41	39	54	0	38	55	33	0	37	95	28	0	18	198	25	662	2,747
Count Total		1	463	349	505	0	304	464	253	0	354	838	162	9	197	1,605	157	5,661	0
Peak Hour	All	0	252	177	260	0	166	237	125	0	162	448	71	5	93	842	82	2,920	0
	HV	0	4	7	5	0	6	6	10	0	6	7	8	0	9	18	0	86	0
	HV%	-	2%	4%	2%	-	4%	3%	8%	-	4%	2%	11%	0%	10%	2%	0%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

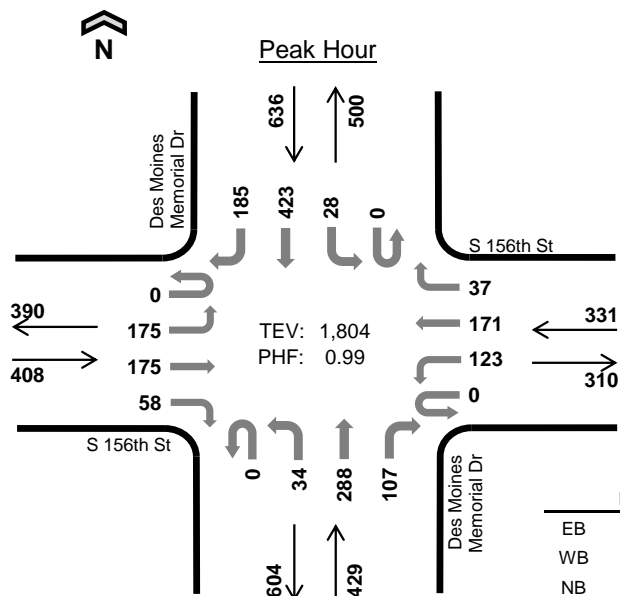
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	7	8	9	25	0	0	0	0	0	12	4	0	1	17
4:15 PM	5	7	4	10	26	0	0	0	0	0	13	0	2	4	19
4:30 PM	6	7	6	5	24	0	0	0	0	0	15	4	5	3	27
4:45 PM	3	4	6	5	18	0	1	0	0	1	2	1	0	3	6
5:00 PM	2	4	5	7	18	0	0	0	0	0	16	0	4	1	21
5:15 PM	3	8	4	7	22	0	0	0	0	0	24	1	2	5	32
5:30 PM	5	8	4	5	22	0	0	0	0	0	14	2	5	9	30
5:45 PM	5	4	4	8	21	0	0	0	0	0	15	2	7	2	26
Count Total	30	49	41	56	176	0	1	0	0	1	111	14	25	28	178
Peak Hour	16	22	21	27	86	0	1	0	0	1	46	5	11	11	73

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 154th St				Southcenter Blvd				International Blvd				International Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	2	4	1	0	1	5	2	0	2	7	0	25	0
4:15 PM	0	0	3	2	0	2	2	3	0	2	1	1	0	3	7	0	26	0
4:30 PM	0	3	1	2	0	2	2	3	0	1	2	3	0	2	3	0	24	0
4:45 PM	0	1	2	0	0	1	1	2	0	2	3	1	0	2	3	0	18	93
5:00 PM	0	0	1	1	0	1	1	2	0	1	1	3	0	2	5	0	18	86
5:15 PM	0	0	2	1	0	3	3	2	0	2	1	1	0	2	5	0	22	82
5:30 PM	0	1	2	2	0	3	1	4	0	2	0	2	0	2	3	0	22	80
5:45 PM	0	1	3	1	0	1	2	1	0	2	0	2	0	1	6	1	21	83
Count Total	0	6	15	9	0	15	16	18	0	13	13	15	0	16	39	1	176	0
Peak Hour	0	4	7	5	0	6	6	10	0	6	7	8	0	9	18	0	86	0

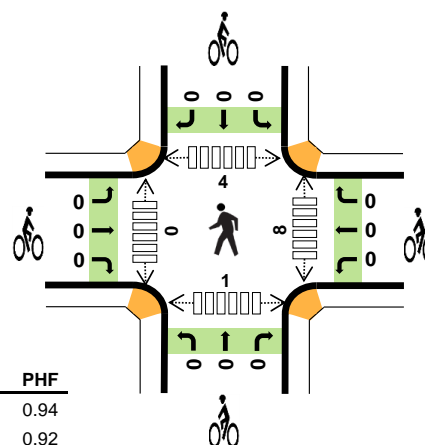
Two-Hour Count Summaries - Bikes																	
Interval Start	S 154th St			Southcenter Blvd			International Blvd			International Blvd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	1			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0			
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Des Moines Memorial Dr S 156th St



Date: 09/19/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	2.9%	0.94
WB	3.0%	0.92
NB	0.2%	0.94
SB	0.5%	0.96
TOTAL	1.4%	0.99

Two-Hour Count Summaries

Interval Start		S 156th St				S 156th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	22	29	16	0	21	32	13	0	2	73	31	0	4	128	31	402	0
4:15 PM		0	46	46	10	0	28	38	8	0	4	67	14	0	5	96	31	393	0
4:30 PM		0	41	52	15	0	25	38	17	0	13	62	27	0	8	109	38	445	0
4:45 PM		0	43	40	14	0	35	47	8	0	7	76	25	0	10	101	48	454	1,694
5:00 PM		0	47	43	14	0	30	40	6	0	6	77	31	0	4	104	49	451	1,743
5:15 PM		0	44	40	15	0	33	46	6	0	8	73	24	0	6	109	50	454	1,804
5:30 PM		0	53	34	24	0	34	53	8	0	7	56	24	0	3	89	57	442	1,801
5:45 PM		0	39	40	14	0	21	36	12	0	9	50	29	0	12	70	41	373	1,720
Count Total		0	335	324	122	0	227	330	78	0	56	534	205	0	52	806	345	3,414	0
Peak Hour	All	0	175	175	58	0	123	171	37	0	34	288	107	0	28	423	185	1,804	0
	HV	0	1	10	1	0	1	9	0	0	1	0	0	0	0	2	1	26	0
	HV%	-	1%	6%	2%	-	1%	5%	0%	-	3%	0%	0%	-	0%	0%	1%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	0	2	5	0	0	0	0	0	0	0	0	2	2
4:15 PM	3	5	2	1	11	0	0	0	0	0	4	0	4	2	10
4:30 PM	4	3	1	1	9	0	0	0	0	0	1	0	0	0	1
4:45 PM	2	2	0	2	6	0	0	0	0	0	3	0	1	1	5
5:00 PM	3	2	0	0	5	0	0	0	0	0	1	0	3	0	4
5:15 PM	3	3	0	0	6	0	0	0	0	0	3	0	0	0	3
5:30 PM	2	3	0	0	5	0	0	0	0	0	2	0	0	0	2
5:45 PM	4	3	0	0	7	0	0	0	0	0	1	8	0	3	12
Count Total	23	22	3	6	54	0	0	0	0	0	15	8	8	8	39
Peak Hour	12	10	1	3	26	0	0	0	0	0	8	0	4	1	13

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	S 156th St				S 156th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	1	1	5	0
4:15 PM	0	0	2	1	0	1	4	0	0	0	2	0	0	0	0	1	0	11	0
4:30 PM	0	0	3	1	0	1	2	0	0	1	0	0	0	0	0	1	0	9	0
4:45 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	1	6	31
5:00 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	31
5:15 PM	0	1	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	26
5:30 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	22
5:45 PM	0	0	3	1	0	0	3	0	0	0	0	0	0	0	0	0	0	7	23
Count Total	0	1	19	3	0	3	19	0	0	1	2	0	0	0	0	4	2	54	0
Peak Hour	0	1	10	1	0	1	9	0	0	1	0	0	0	0	0	2	1	26	0

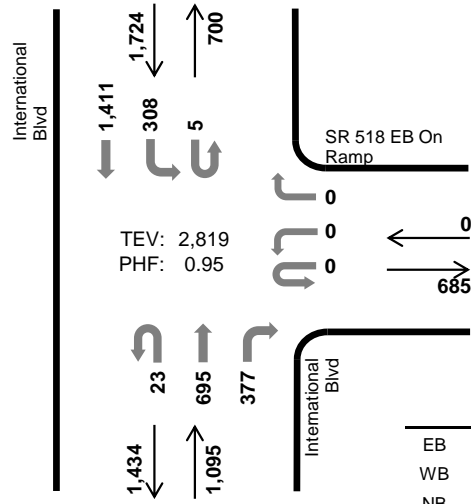
Two-Hour Count Summaries - Bikes																			
Interval Start	S 156th St			S 156th St			Des Moines Memorial Dr			Des Moines Memorial Dr			15-min Total	Rolling One Hour					
	Eastbound			Westbound			Northbound			Southbound									
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT							
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

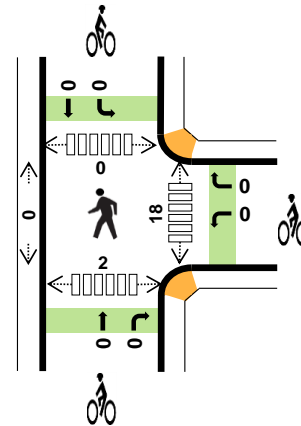
International Blvd SR 518 EB On Ramp



Peak Hour



Date: 09/19/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	-	-
WB	-	-
NB	2.6%	0.89
SB	2.0%	0.99
TOTAL	2.2%	0.95

Two-Hour Count Summaries

Interval Start		0				SR 518 EB On Ramp				International Blvd				International Blvd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	0	0	0	1	0	194	82	0	58	350	0	685	0
4:15 PM		0	0	0	0	0	0	0	0	4	0	143	88	0	77	357	0	669	0
4:30 PM		0	0	0	0	0	0	0	0	8	0	186	113	2	86	346	0	741	0
4:45 PM		0	0	0	0	0	0	0	0	5	0	197	82	2	68	362	0	716	2,811
5:00 PM		0	0	0	0	0	0	0	0	6	0	169	94	1	77	346	0	693	2,819
5:15 PM		0	0	0	0	0	0	0	0	5	0	154	98	1	72	324	0	654	2,804
5:30 PM		0	0	0	0	0	0	0	0	2	0	146	94	0	62	331	0	635	2,698
5:45 PM		0	0	0	0	0	0	0	0	5	0	158	80	3	54	321	0	621	2,603
Count Total		0	0	0	0	0	0	0	0	36	0	1,347	731	9	554	2,737	0	5,414	0
Peak Hour	All	0	0	0	0	0	0	0	0	23	0	695	377	5	308	1,411	0	2,819	0
	HV	0	0	0	0	0	0	0	0	0	0	20	8	0	7	27	0	62	0
	HV%	-	-	-	-	-	-	-	-	0%	-	3%	2%	0%	2%	2%	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

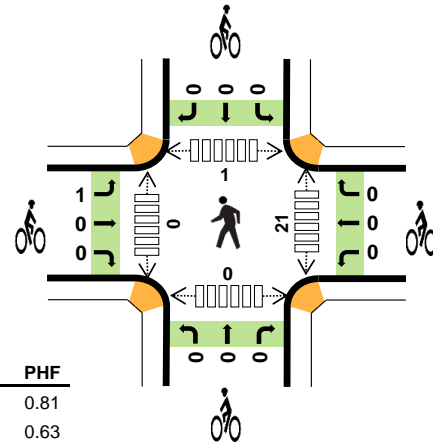
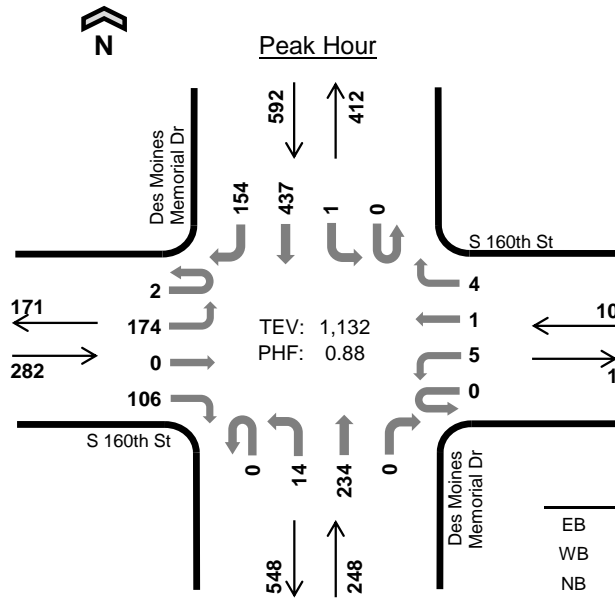
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	13	13	26	0	0	0	0	0	4	0	0	0	4
4:15 PM	0	0	7	12	19	0	0	0	0	0	7	0	0	1	8
4:30 PM	0	0	7	10	17	0	0	0	0	0	6	0	0	1	7
4:45 PM	0	0	8	4	12	0	0	0	0	0	2	0	0	0	2
5:00 PM	0	0	6	8	14	0	0	0	0	0	3	0	0	0	3
5:15 PM	0	0	4	8	12	0	0	0	0	0	3	0	0	0	3
5:30 PM	0	0	5	13	18	0	0	0	0	0	6	0	0	0	6
5:45 PM	0	0	4	7	11	0	0	0	0	0	9	0	0	0	9
Count Total	0	0	54	75	129	0	0	0	0	0	40	0	0	2	42
Peak Hr	0	0	28	34	62	0	0	0	0	0	18	0	0	2	20

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	0				SR 518 EB On Ramp				International Blvd				International Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	11	2	0	0	13	0	26	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	2	0	4	8	0	19	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	6	1	0	3	7	0	17	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	5	3	0	0	4	0	12	74
5:00 PM	0	0	0	0	0	0	0	0	0	0	4	2	0	0	8	0	14	62
5:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0	12	55
5:30 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	13	0	18	56
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	1	6	0	11	55
Count Total	0	0	0	0	0	0	0	0	0	0	43	11	0	8	67	0	129	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	20	8	0	7	27	0	62	0

Two-Hour Count Summaries - Bikes																		
Interval Start	0			SR 518 EB On Ramp			International Blvd			International Blvd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Des Moines Memorial Dr S 160th St



	HV %:	PHF
EB	0.4%	0.81
WB	0.0%	0.63
NB	0.0%	0.91
SB	1.7%	0.90
TOTAL	1.0%	0.88

Two-Hour Count Summaries

Interval Start		S 160th St				S 160th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		1	38	0	48	0	2	0	1	0	3	65	0	0	1	121	42	322	0
4:15 PM		1	40	0	22	0	0	0	1	0	4	57	0	0	0	100	27	252	0
4:30 PM		0	58	0	21	0	3	0	1	0	6	62	0	0	0	123	38	312	0
4:45 PM		0	38	0	15	0	0	1	1	0	1	50	0	0	0	93	47	246	1,132
5:00 PM		0	41	0	17	0	0	1	1	0	6	60	0	0	0	101	50	277	1,087
5:15 PM		1	42	0	12	0	1	0	0	0	1	63	0	0	0	114	37	271	1,106
5:30 PM		0	31	1	12	0	0	0	0	0	3	51	0	0	0	104	39	241	1,035
5:45 PM		0	29	0	14	0	0	0	2	0	7	50	0	0	0	85	21	208	997
Count Total		3	317	1	161	0	6	2	7	0	31	458	0	0	1	841	301	2,129	0
Peak Hour	All	2	174	0	106	0	5	1	4	0	14	234	0	0	1	437	154	1,132	0
	HV	0	0	0	1	0	0	0	0	0	0	0	0	0	0	9	1	11	0
	HV%	0%	0%	-	1%	-	0%	0%	0%	-	0%	0%	-	-	0%	2%	1%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

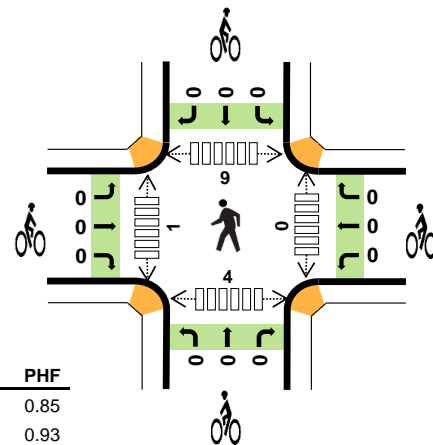
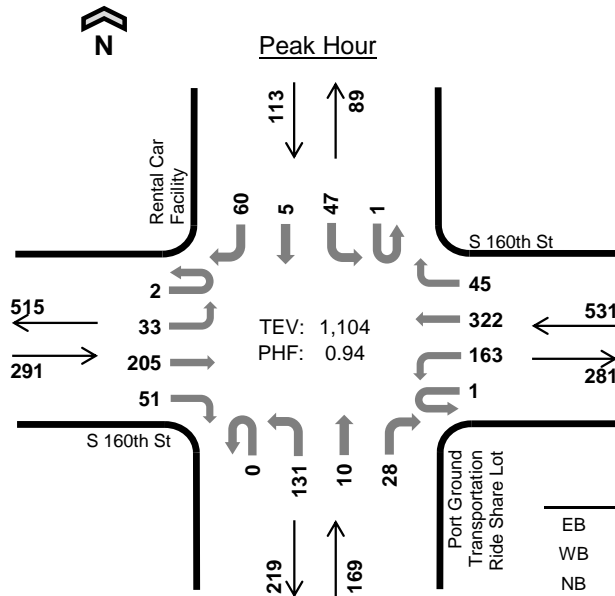
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	1	1	0	0	0	0	0	12	0	0	0	12
4:15 PM	1	0	0	2	3	0	0	0	0	0	5	0	0	0	5
4:30 PM	0	0	0	4	4	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	0	3	3	1	0	0	0	1	3	0	1	0	4
5:00 PM	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
5:30 PM	0	0	0	0	0	1	0	0	1	2	5	0	0	0	5
5:45 PM	0	0	0	2	2	0	0	0	0	0	3	4	0	0	7
Count Total	1	0	0	13	14	2	0	1	1	4	33	4	1	0	38
Peak Hour	1	0	0	10	11	1	0	0	0	1	21	0	1	0	22

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	S 160th St				S 160th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	11
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	11
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3
Count Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	12	1	14	0
Peak Hour	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	9	1	11	0

Two-Hour Count Summaries - Bikes																			
Interval Start	S 160th St			S 160th St			Des Moines Memorial Dr			Des Moines Memorial Dr			15-min Total	Rolling One Hour					
	Eastbound			Westbound			Northbound			Southbound									
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT							
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	4	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Count Total	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	4	0	0
Peak Hour	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Port Ground Transportation Ride Share S 160th St



	HV %:	PHF
EB	9.6%	0.85
WB	3.2%	0.93
NB	0.0%	0.52
SB	20.4%	0.78
TOTAL	6.2%	0.94

Two-Hour Count Summaries

Interval Start		S 160th St				S 160th St				Port Ground Transportation Ride Share Lot				Rental Car Facility				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		2	5	58	17	0	44	89	9	0	37	4	4	1	9	2	12	293	0
4:15 PM		0	7	44	10	0	45	77	16	0	22	5	8	0	8	1	18	261	0
4:30 PM		0	16	60	10	1	39	86	10	0	3	0	5	0	21	2	13	266	0
4:45 PM		0	5	43	14	0	35	70	10	0	69	1	11	0	9	0	17	284	1,104
5:00 PM		1	7	50	14	0	36	67	8	0	25	4	3	0	12	0	13	240	1,051
5:15 PM		0	6	32	16	0	48	78	6	0	71	2	16	0	8	2	13	298	1,088
5:30 PM		0	9	38	21	1	39	62	12	0	45	0	7	0	6	2	14	256	1,078
5:45 PM		0	11	28	18	0	39	95	8	0	47	0	7	0	10	0	14	277	1,071
Count Total		3	66	353	120	2	325	624	79	0	319	16	61	1	83	9	114	2,175	0
Peak Hour	All	2	33	205	51	1	163	322	45	0	131	10	28	1	47	5	60	1,104	0
	HV	0	19	9	0	0	0	16	1	0	0	0	0	0	1	0	22	68	0
	HV%	0%	58%	4%	0%	0%	0%	5%	2%	-	0%	0%	0%	0%	2%	0%	37%	6%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	4	0	6	16	0	0	0	0	0	0	0	4	0	4
4:15 PM	9	4	0	6	19	0	0	0	0	0	0	0	0	0	0
4:30 PM	7	6	0	4	17	0	0	0	0	0	0	1	5	1	7
4:45 PM	6	3	0	7	16	0	0	0	0	0	0	0	0	3	3
5:00 PM	7	5	0	3	15	0	0	0	0	0	0	0	0	0	0
5:15 PM	4	5	0	6	15	0	0	0	0	0	0	0	0	0	0
5:30 PM	6	4	0	7	17	0	0	0	0	0	0	2	0	0	2
5:45 PM	7	10	0	7	24	0	0	0	0	0	0	0	1	0	1
Count Total	52	41	0	46	139	0	0	0	0	0	0	3	10	4	17
Peak Hour	28	17	0	23	68	0	0	0	0	0	0	1	9	4	14

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	S 160th St				S 160th St				Port Ground Transportation Ride Share Lot				Rental Car Facility				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	4	2	0	0	0	4	0	0	0	0	0	0	0	0	6	16	0	
4:15 PM	0	6	3	0	0	0	4	0	0	0	0	0	0	0	1	0	5	19	0
4:30 PM	0	5	2	0	0	0	5	1	0	0	0	0	0	0	0	0	4	17	0
4:45 PM	0	4	2	0	0	0	3	0	0	0	0	0	0	0	0	0	7	16	68
5:00 PM	0	6	1	0	0	0	4	1	0	0	0	0	0	0	0	0	3	15	67
5:15 PM	0	3	1	0	0	0	5	0	0	0	0	0	0	0	0	0	6	15	63
5:30 PM	0	5	1	0	0	0	2	2	0	0	0	0	0	0	0	0	7	17	63
5:45 PM	0	6	1	0	0	0	9	1	0	0	0	0	0	0	1	0	6	24	71
Count Total	0	39	13	0	0	0	36	5	0	0	0	0	0	0	2	0	44	139	0
Peak Hour	0	19	9	0	0	0	16	1	0	0	0	0	0	0	1	0	22	68	0

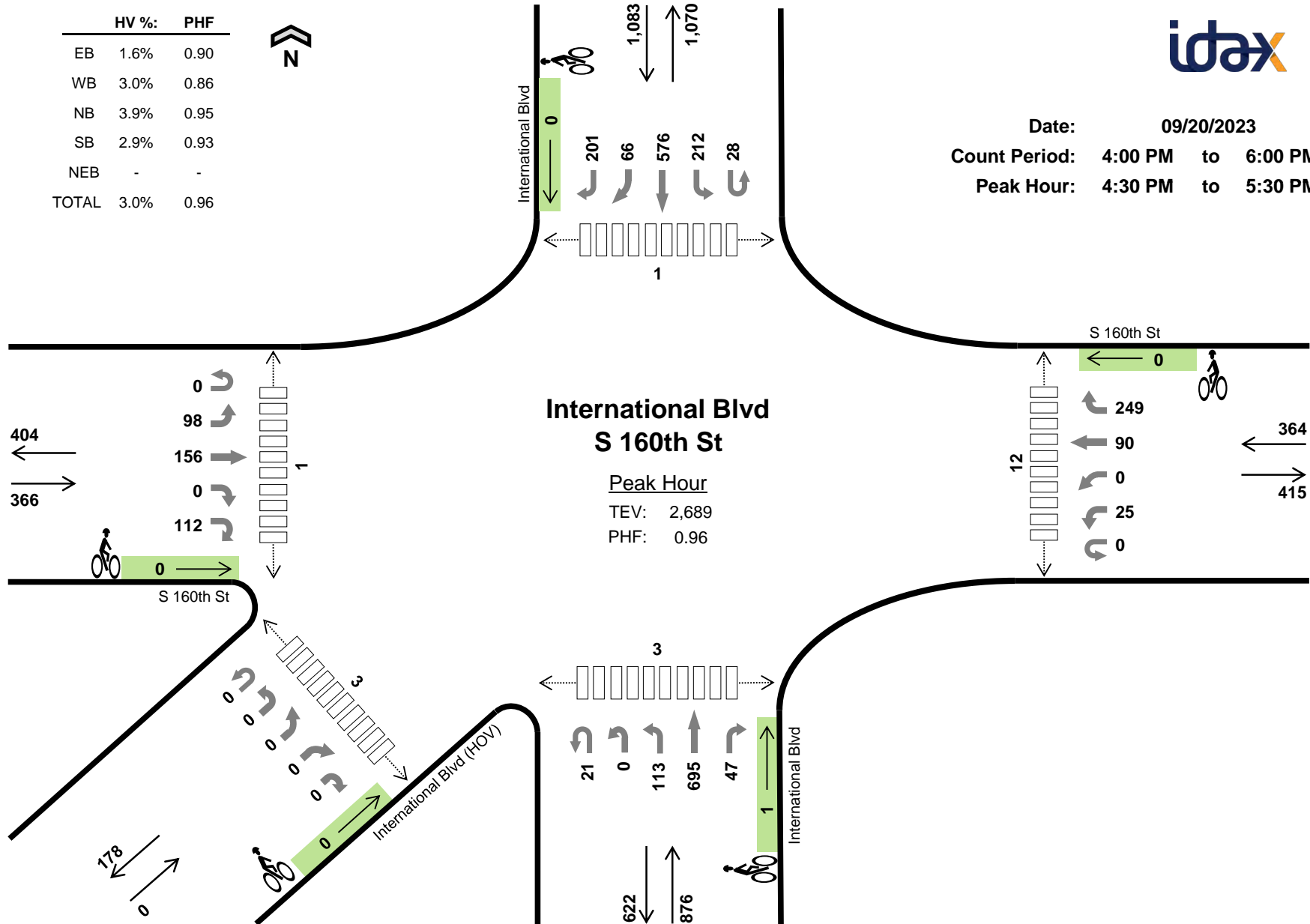
Two-Hour Count Summaries - Bikes																		
Interval Start	S 160th St			S 160th St			Port Ground Transportation Ride Share Lot			Rental Car Facility			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Date: 09/20/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:30 PM to 5:30 PM

	HV %:	PHF
EB	1.6%	0.90
WB	3.0%	0.86
NB	3.9%	0.95
SB	2.9%	0.93
NEB	-	-
TOTAL	3.0%	0.96



Two-Hour Count Summaries

Interval Start		S 160th St Eastbound					S 160th St Westbound					International Blvd Northbound					International Blvd Southbound					International Blvd (HOV) Northeastbound					15-min Total	Rolling One Hour
		UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
4:00 PM		0	37	58	0	23	0	7	0	22	59	7	0	28	123	8	10	49	175	22	48	0	0	0	0	0	676	0
4:15 PM		0	26	32	0	30	0	4	0	34	49	3	0	37	137	15	6	46	151	16	60	0	0	0	0	0	646	0
4:30 PM		0	25	42	0	35	0	4	0	27	75	4	0	25	184	14	6	50	132	13	44	0	0	0	0	0	680	0
4:45 PM		0	32	40	0	29	0	6	0	26	62	4	0	36	137	11	4	55	140	28	37	0	0	0	0	0	647	2,649
5:00 PM		0	23	35	0	18	0	6	0	11	45	6	0	22	190	13	6	56	154	14	62	0	0	0	0	0	661	2,634
5:15 PM		0	18	39	0	30	0	9	0	26	67	7	0	30	184	9	12	51	150	11	58	0	0	0	0	0	701	2,689
5:30 PM		0	13	27	0	21	0	6	0	15	61	5	0	26	188	20	9	40	174	15	49	0	0	0	0	0	669	2,678
5:45 PM		0	24	31	0	23	0	10	0	17	53	6	0	19	136	10	7	36	154	17	64	0	0	0	0	0	607	2,638
Count Total		0	198	304	0	209	0	52	0	178	471	42	0	223	1,279	100	60	383	1,230	136	422	0	0	0	0	0	5,287	0
Peak Hour	All	0	98	156	0	112	0	25	0	90	249	21	0	113	695	47	28	212	576	66	201	0	0	0	0	0	2,689	0
	HV	0	2	3	0	1	0	0	0	7	4	4	0	5	18	7	0	3	10	7	11	0	0	0	0	0	82	0
	HV%	-	2%	2%	-	1%	-	0%	-	8%	2%	19%	-	4%	3%	15%	0%	1%	2%	11%	5%	-	-	-	-	-	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

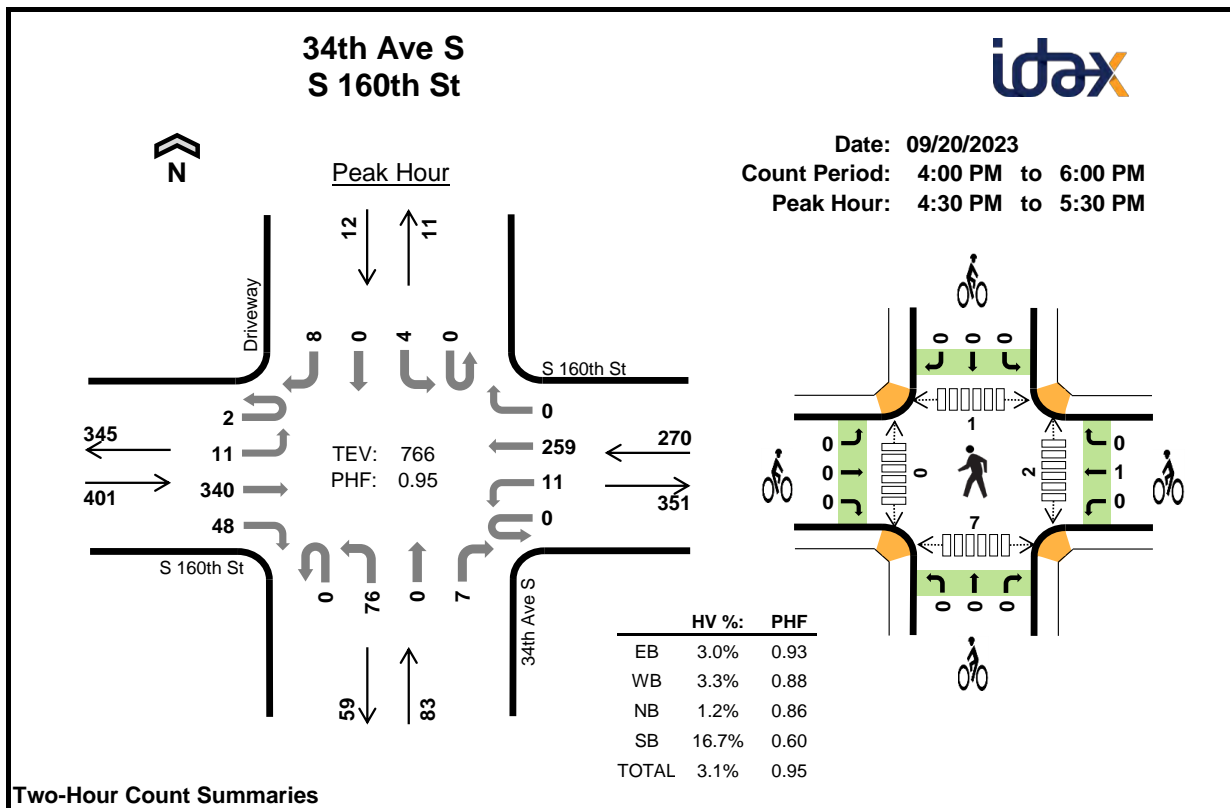
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NEB	Total	EB	WB	NB	SB	NEB	Total	East	West	North	South	Southwest	Total
4:00 PM	1	8	5	7	0	21	0	0	0	0	0	0	4	0	5	0	0	9
4:15 PM	5	3	9	7	0	24	0	0	0	0	0	0	3	0	1	3	3	10
4:30 PM	1	4	11	7	0	23	0	0	0	0	0	0	3	1	1	1	1	7
4:45 PM	3	3	9	7	0	22	0	0	0	0	0	0	3	0	0	2	2	7
5:00 PM	1	2	6	10	0	19	0	0	0	0	0	0	4	0	0	0	0	4
5:15 PM	1	2	8	7	0	18	0	0	1	0	0	1	2	0	0	0	0	2
5:30 PM	1	4	5	5	0	15	0	0	0	0	0	0	2	1	0	2	2	7
5:45 PM	2	2	3	11	0	18	0	0	0	0	0	0	4	0	0	1	1	6
Count Total	15	28	56	61	0	160	0	0	1	0	0	1	25	2	7	9	9	52
Peak Hr	6	11	34	31	0	82	0	0	1	0	0	1	12	1	1	3	3	20

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	S 160th St Eastbound					S 160th St Westbound					International Blvd Northbound					International Blvd Southbound					International Blvd (HOV) Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	1	0	0	0	0	0	4	4	1	0	0	4	0	0	2	3	2	0	0	0	0	0	0	21	0
4:15 PM	0	0	2	0	3	0	0	0	1	2	1	0	1	7	0	0	1	3	1	2	0	0	0	0	0	24	0
4:30 PM	0	0	1	0	0	0	0	0	3	1	2	0	2	5	2	0	1	4	1	1	0	0	0	0	0	23	0
4:45 PM	0	1	2	0	0	0	0	0	2	1	1	0	1	5	2	0	0	3	3	1	0	0	0	0	0	22	90
5:00 PM	0	0	0	0	1	0	0	0	1	1	1	0	1	3	1	0	1	2	2	5	0	0	0	0	0	19	88
5:15 PM	0	1	0	0	0	0	0	0	1	1	0	0	1	5	2	0	1	1	1	4	0	0	0	0	0	18	82
5:30 PM	0	0	0	0	1	0	0	0	3	1	1	0	1	3	0	0	0	1	3	1	0	0	0	0	0	15	74
5:45 PM	0	0	1	0	1	0	0	0	2	0	0	0	2	0	1	0	1	0	2	8	0	0	0	0	0	18	70
Count Total	0	2	7	0	6	0	0	0	17	11	7	0	9	32	8	0	7	17	15	22	0	0	0	0	0	160	0
Peak Hour	0	2	3	0	1	0	0	0	7	4	4	0	5	18	7	0	3	10	7	11	0	0	0	0	0	82	0

Two-Hour Count Summaries - Bikes

Interval Start	S 160th St Eastbound					S 160th St Westbound					International Blvd Northbound					International Blvd Southbound					International Blvd (HOV) Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0



Interval Start		S 160th St				S 160th St				34th Ave S				Driveway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		1	5	90	13	0	2	63	0	0	11	0	1	0	1	0	5	192	0
4:15 PM		0	2	71	14	0	2	63	0	0	14	0	1	0	2	0	4	173	0
4:30 PM		1	7	83	7	0	2	73	0	0	23	0	1	0	1	0	4	202	0
4:45 PM		0	2	83	14	0	2	58	0	0	20	0	2	0	3	0	2	186	753
5:00 PM		0	2	91	15	0	5	53	0	0	16	0	3	0	0	0	0	185	746
5:15 PM		1	0	83	12	0	2	75	0	0	17	0	1	0	0	0	2	193	766
5:30 PM		0	0	71	14	0	3	79	0	0	6	0	3	0	1	0	1	178	742
5:45 PM		1	0	62	11	0	2	54	0	0	17	0	3	0	0	0	1	151	707
Count Total		4	18	634	100	0	20	518	0	0	124	0	15	0	8	0	19	1,460	0
Peak Hour	All	2	11	340	48	0	11	259	0	0	76	0	7	0	4	0	8	766	0
	HV	0	1	11	0	0	0	9	0	0	1	0	0	0	0	0	2	24	0
	HV%	0%	9%	3%	0%	-	0%	3%	-	-	1%	-	0%	-	0%	-	25%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

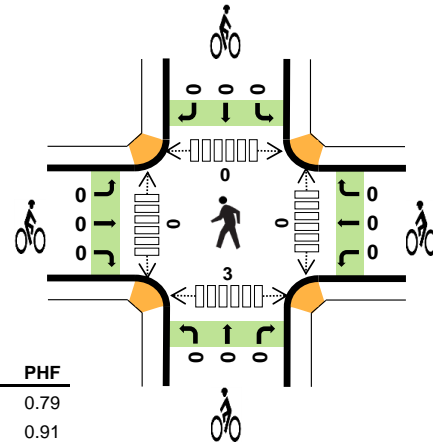
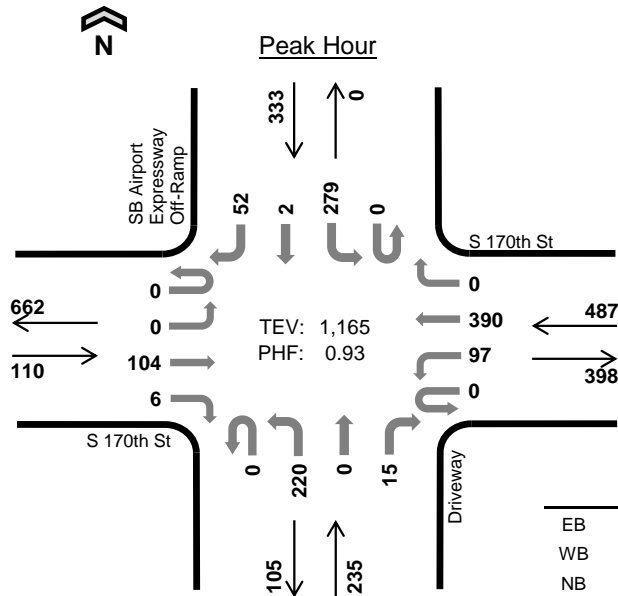
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	4	1	1	9	0	0	0	0	0	0	2	1	7	10
4:15 PM	5	2	0	2	9	0	0	0	0	0	2	0	1	2	5
4:30 PM	3	4	0	2	9	0	0	0	0	0	0	0	0	1	1
4:45 PM	4	1	0	0	5	0	0	0	0	0	1	0	0	3	4
5:00 PM	2	1	1	0	4	0	1	0	0	1	0	0	0	0	0
5:15 PM	3	3	0	0	6	0	0	0	0	0	1	0	1	3	5
5:30 PM	0	5	0	0	5	0	0	0	0	0	0	0	0	2	2
5:45 PM	3	3	0	0	6	0	0	0	0	0	0	0	0	2	2
Count Total	23	23	2	5	53	0	1	0	0	1	4	2	3	20	29
Peak Hour	12	9	1	2	24	0	1	0	0	1	2	0	1	7	10

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	S 160th St				S 160th St				34th Ave S				Driveway				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	2	1	0	0	0	4	0	0	1	0	0	0	0	0	0	1	9	0
4:15 PM	0	0	4	1	0	0	2	0	0	0	0	0	0	0	1	0	1	9	0
4:30 PM	0	1	2	0	0	0	4	0	0	0	0	0	0	0	0	0	2	9	0
4:45 PM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	32
5:00 PM	0	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4	27
5:15 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	24
5:30 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	20
5:45 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	21
Count Total	0	3	19	1	0	0	23	0	0	2	0	0	0	0	1	0	4	53	0
Peak Hour	0	1	11	0	0	0	9	0	0	1	0	0	0	0	0	0	2	24	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 160th St			S 160th St			34th Ave S			Driveway			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SB Airport Expressway Off-Ramp S 170th St



	HV %:	PHF
EB	16.4%	0.79
WB	25.3%	0.91
NB	0.9%	0.78
SB	2.1%	0.90
TOTAL	12.9%	0.93

Two-Hour Count Summaries

Interval Start		S 170th St				S 170th St				Driveway				SB Airport Expressway Off-Ramp				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	39	1	0	21	101	0	0	38	0	3	0	77	1	17	298	0
4:15 PM		0	0	33	2	0	18	113	0	0	36	0	4	0	52	0	13	271	0
4:30 PM		0	0	35	1	0	9	104	0	0	25	0	1	0	61	0	20	256	0
4:45 PM		0	0	22	1	0	24	110	0	0	47	0	2	0	65	1	11	283	1,108
5:00 PM		0	0	33	2	0	32	89	0	0	71	0	4	0	70	0	12	313	1,123
5:15 PM		0	0	26	0	0	19	106	0	0	64	0	7	0	68	1	13	304	1,156
5:30 PM		0	0	23	3	0	22	85	0	0	38	0	2	0	76	0	16	265	1,165
5:45 PM		0	0	21	3	0	18	104	0	0	59	0	3	0	62	0	13	283	1,165
Count Total		0	0	232	13	0	163	812	0	0	378	0	26	0	531	3	115	2,273	0
Peak Hour	All	0	0	104	6	0	97	390	0	0	220	0	15	0	279	2	52	1,165	0
	HV	0	0	18	0	0	0	123	0	0	2	0	0	0	3	0	4	150	0
	HV%	-	-	17%	0%	-	0%	32%	-	-	1%	-	0%	-	1%	0%	8%	13%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	30	1	3	38	0	0	0	0	0	0	0	0	0	0
4:15 PM	6	30	0	2	38	0	0	0	0	0	0	0	0	1	1
4:30 PM	6	32	0	8	46	0	0	0	0	0	0	0	0	1	1
4:45 PM	5	30	0	2	37	0	0	0	0	0	0	0	0	0	0
5:00 PM	5	34	0	0	39	0	0	0	0	0	0	0	0	2	2
5:15 PM	2	31	1	1	35	0	0	0	0	0	0	0	0	0	0
5:30 PM	6	28	1	4	39	0	0	0	0	0	0	0	0	1	1
5:45 PM	3	27	0	3	33	0	0	0	0	0	0	0	0	0	0
Count Total	37	242	3	23	305	0	0	0	0	0	0	0	0	5	5
Peak Hour	18	123	2	7	150	0	0	0	0	0	0	0	0	3	3

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	S 170th St				S 170th St				Driveway				SB Airport Expressway Off-Ramp				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	4	0	0	0	30	0	0	1	0	0	0	0	0	0	3	38	0
4:15 PM	0	0	6	0	0	0	30	0	0	0	0	0	0	0	1	0	1	38	0
4:30 PM	0	0	6	0	0	0	32	0	0	0	0	0	0	0	6	0	2	46	0
4:45 PM	0	0	5	0	0	0	30	0	0	0	0	0	0	0	1	0	1	37	159
5:00 PM	0	0	5	0	0	0	34	0	0	0	0	0	0	0	0	0	0	39	160
5:15 PM	0	0	2	0	0	0	31	0	0	1	0	0	0	0	0	0	1	35	157
5:30 PM	0	0	6	0	0	0	28	0	0	1	0	0	0	0	2	0	2	39	150
5:45 PM	0	0	3	0	0	0	27	0	0	0	0	0	0	0	1	0	2	33	146
Count Total	0	0	37	0	0	0	242	0	0	3	0	0	0	0	11	0	12	305	0
Peak Hour	0	0	18	0	0	0	123	0	0	2	0	0	0	0	3	0	4	150	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 170th St			S 170th St			Driveway			SB Airport Expressway Off-Ramp			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

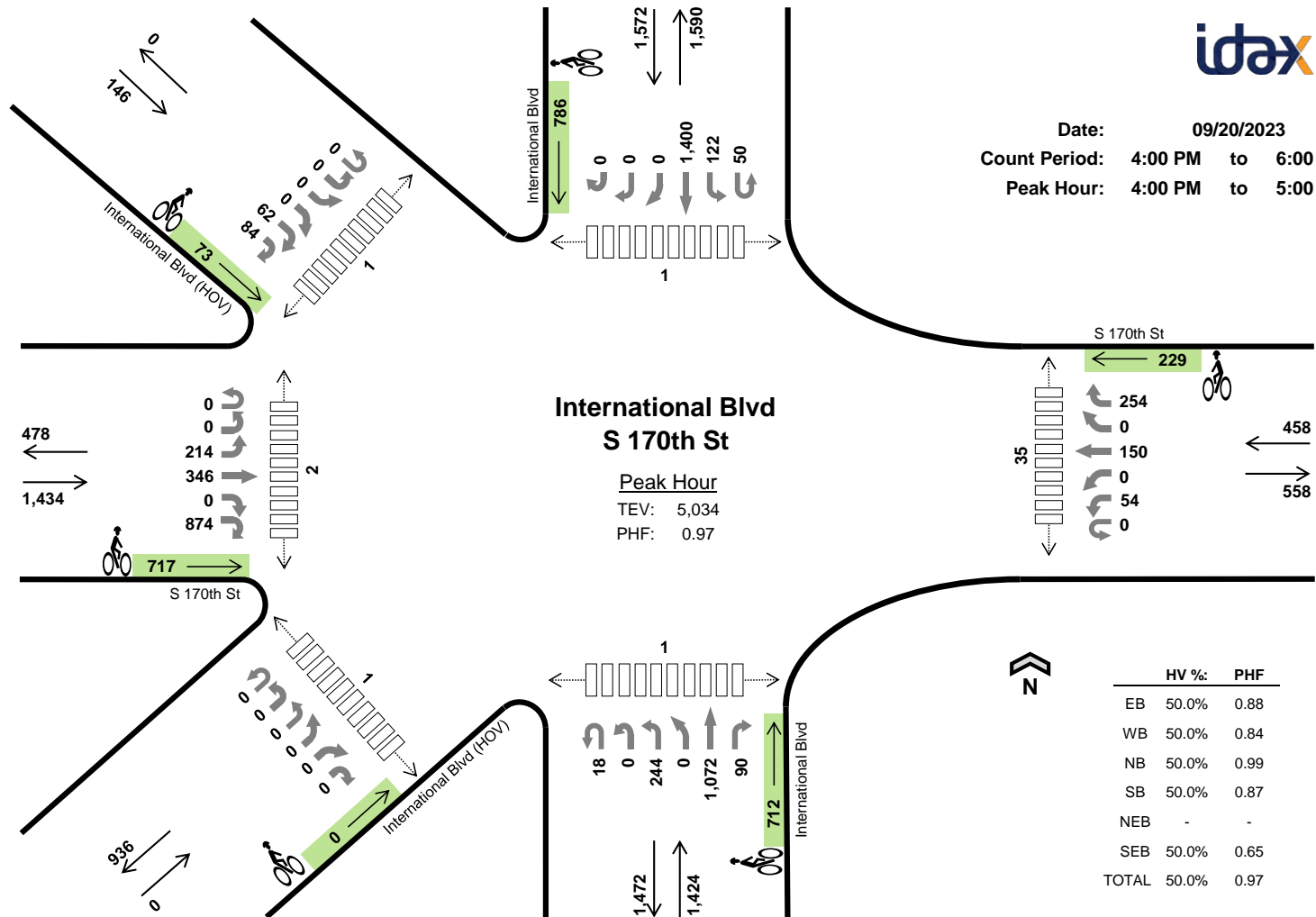
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Date: 09/20/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:00 PM to 5:00 PM

International Blvd S 170th St

Peak Hour
 TEV: 5,034
 PHF: 0.97



Two-Hour Count Summaries

Interval Start	S 170th St						S 170th St						International Blvd						International Blvd						International Blvd (HOV)						International Blvd (HOV)						15-min Total	Rolling One Hour
	Eastbound						Westbound						Northbound						Southbound						Northeastbound						Southeastbound							
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	44	84	0	198	0	14	0	38	0	50	4	0	58	0	272	26	16	30	408	0	0	0	0	0	0	0	0	0	0	0	0	28	28	1,298	0	
4:15 PM	0	0	52	96	0	260	0	12	0	32	0	56	2	0	68	0	268	8	16	30	322	0	0	0	0	0	0	0	0	0	0	0	4	18	1,244	0		
4:30 PM	0	0	56	92	0	208	0	16	0	44	0	76	2	0	42	0	278	36	4	24	306	0	0	0	0	0	0	0	0	0	0	0	14	22	1,220	0		
4:45 PM	0	0	62	74	0	208	0	12	0	36	0	72	10	0	76	0	254	20	14	38	364	0	0	0	0	0	0	0	0	0	0	0	16	16	1,272	5,034		
5:00 PM	0	0	58	74	0	210	0	22	0	58	0	58	2	0	44	0	272	8	4	38	312	0	0	0	0	0	0	0	0	0	0	0	22	20	1,202	4,938		
5:15 PM	0	0	36	62	0	178	0	16	0	40	0	54	10	0	44	0	340	16	6	28	376	0	0	0	0	0	0	0	0	0	0	0	20	38	1,264	4,958		
5:30 PM	0	0	58	70	0	194	0	32	0	36	0	66	10	0	36	0	244	20	14	40	362	0	0	0	0	0	0	0	0	0	0	8	24	1,214	4,952			
5:45 PM	0	0	46	66	0	128	0	8	0	46	0	44	8	0	48	0	230	24	10	30	348	0	0	0	0	0	0	0	0	0	0	8	24	1,068	4,748			
Count Total	0	0	412	618	0	1,584	0	132	0	330	0	476	48	0	416	0	2,158	158	84	258	2,798	0	0	0	0	0	0	0	0	0	0	120	190	9,782	0			
Peak Hour	All	0	0	214	346	0	874	0	54	0	150	0	254	18	0	244	0	1,072	90	50	122	1,400	0	0	0	0	0	0	0	0	0	62	84	5,034	0			
	HV	0	0	107	173	0	437	0	27	0	75	0	127	9	0	122	0	536	45	25	61	700	0	0	0	0	0	0	0	0	0	31	42	2,517	0			
	HV%	-	-	50%	50%	-	50%	-	50%	-	50%	-	50%	50%	-	50%	-	50%	50%	50%	50%	-	-	-	-	-	-	-	-	-	-	-	50%	50%	50%	50%	0	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

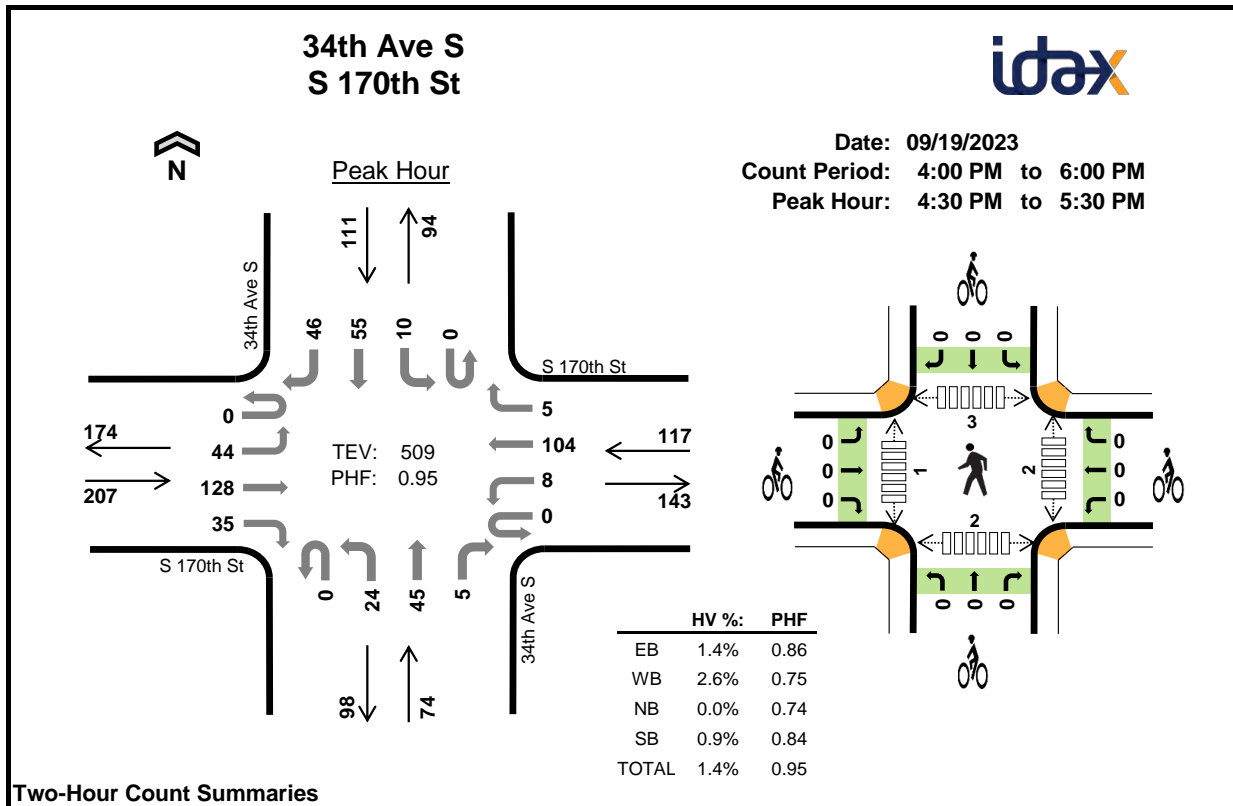
Interval Start	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)						
	EB	WB	NB	SB	NEB	SEB	Total	EB	WB	NB	SB	NEB	SEB	Total	East	West	North	South	NW	SW	Total
4:00 PM	163	51	180	227	0	28	649	163	51	180	227	0	28	649	9	0	0	0	0	0	9
4:15 PM	204	50	173	184	0	11	622	204	50	173	184	0	11	622	8	0	0	0	0	0	8
4:30 PM	178	68	179	167	0	18	610	178	68	179	167	0	18	610	12	2	0	1	0	1	16
4:45 PM	172	60	180	208	0	16	636	172	60	180	208	0	16	636	6	0	1	0	1	0	8
5:00 PM	171	69	163	177	0	21	601	171	69	163	177	0	21	601	3	0	0	2	0	2	7
5:15 PM	138	55	205	205	0	29	632	138	55	205	205	0	29	632	11	1	0	0	0	0	12
5:30 PM	161	67	155	208	0	16	607	161	67	155	208	0	16	607	8	0	0	0	0	0	8
5:45 PM	120	49	155	194	0	16	534	120	49	155	194	0	16	534	8	1	0	1	0	1	11
Count Total	1,307	469	1,390	1,570	0	155	4,891	1,307	469	1,390	1,570	0	155	4,891	65	4	1	4	1	4	79
Peak Hr	717	229	712	786	0	73	2,517	717	229	712	786	0	73	2,517	35	2	1	1	1	1	41

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	S 170th St						S 170th St						International Blvd						International Blvd						International Blvd (HOV)						International Blvd (HOV)						15-min Total	Rolling One Hour
	Eastbound						Westbound						Northbound						Southbound						Northeastbound						Southeastbound							
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	22	42	0	99	0	7	0	19	0	25	2	0	29	0	136	13	8	15	204	0	0	0	0	0	0	0	0	0	0	0	0	14	14	649	0	
4:15 PM	0	0	26	48	0	130	0	6	0	16	0	28	1	0	34	0	134	4	8	15	161	0	0	0	0	0	0	0	0	0	0	0	2	9	622	0		
4:30 PM	0	0	28	46	0	104	0	8	0	22	0	38	1	0	21	0	139	18	2	12	153	0	0	0	0	0	0	0	0	0	0	7	11	610	0			
4:45 PM	0	0	31	37	0	104	0	6	0	18	0	36	5	0	38	0	127	10	7	19	182	0	0	0	0	0	0	0	0	0	0	8	8	636	2,517			
5:00 PM	0	0	29	37	0	105	0	11	0	29	0	29	1	0	22	0	136	4	2	19	156	0	0	0	0	0	0	0	0	0	0	11	10	601	2,469			
5:15 PM	0	0	18	31	0	89	0	8	0	20	0	27	5	0	22	0	170	8	3	14	188	0	0	0	0	0	0	0	0	0	0	10	19	632	2,479			
5:30 PM	0	0	29	35	0	97	0	16	0	18	0	33	5	0	18	0	122	10	7	20	181	0	0	0	0	0	0	0	0	0	0	4	12	607	2,476			
5:45 PM	0	0	23	33	0	64	0	4	0	23	0	22	4	0	24	0	115	12	5	15	174	0	0	0	0	0	0	0	0	0	0	4	12	534	2,374			
Count Total	0	0	206	309	0	792	0	66	0	165	0	238	24	0	208	0	1,079	79	42	129	1,399	0	0	0	0	0	0	0	0	0	0	60	95	4,891	0			
Peak Hour	0	0	107	173	0	437	0	27	0	75	0	127	9	0	122	0	536	45	25	61	700	0	0	0	0	0	0	0	0	0	0	31	42	2,517	0			

Two-Hour Count Summaries - Bikes

Interval Start	S 170th St						S 170th St						International Blvd						International Blvd						International Blvd (HOV)						International Blvd (HOV)						15-min Total	Rolling One Hour
	Eastbound						Westbound						Northbound						Southbound						Northeastbound						Southeastbound							
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	22	42	0	99	0	7	0	19	0	25	2	0	29	0	136	13	8	15	204	0	0	0	0	0	0	0	0	0	0	0	0	14	14	649	0	
4:15 PM	0	0	26	48	0	130	0	6	0	16	0	28	1	0	34	0	134	4	8	15	161	0	0	0	0	0	0	0	0	0	0	0	2	9	622	0		
4:30 PM	0	0	28	46	0	104	0	8	0	22	0	38	1	0	21	0	139	18	2	12	153	0	0	0	0	0	0	0	0	0	0	0	7	11	610	0		
4:45 PM	0	0	31	37	0	104	0	6	0	18	0	36	5	0	38	0	127	10	7	19	182	0	0	0	0	0	0	0	0	0	0	0	8	8	636	2,517		
5:00 PM	0	0	29	37	0	105	0	11	0	29	0	29	1	0	22	0	136	4	2	19	156	0	0	0	0	0	0	0	0	0	0	0	11	10	601	2,469		
5:15 PM	0	0	18	31	0	89	0	8	0	20	0	27	5	0	22	0	170	8	3	14	188	0	0	0	0	0	0	0	0	0	0	0	10	19	632	2,479		
5:30 PM	0	0	29	35	0	97	0	16	0	18	0	33	5	0	18	0	122	10	7	20	181	0	0	0	0	0	0	0	0	0	0	0	4	12	607	2,476		
5:45 PM	0	0	23	33	0	64	0	4	0	23	0	22	4	0	24	0	115	12	5	15	174	0	0	0	0	0	0	0	0	0	0	0	4	12	534	2,374		
Count Total	0	0	206	309	0	792	0	66	0	165	0	238	24	0	208	0	1,079	79	42	129	1,399	0	0	0	0	0	0	0	0	0	0	60	95	4,891	0			
Peak Hour	0	0	107	173	0	437	0	27	0	75	0	127	9	0	122	0	536	45	25	61	700	0	0	0	0	0	0	0	0	0	31	42	2,517	0				

**Two-Hour Count Summaries**

Interval Start		S 170th St				S 170th St				34th Ave S				34th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	8	19	6	0	3	15	2	0	3	8	2	0	2	13	3	84	0
4:15 PM		0	8	37	9	0	1	26	1	0	8	7	0	0	3	10	7	117	0
4:30 PM		0	9	36	11	0	3	19	0	0	5	11	1	0	4	13	9	121	0
4:45 PM		0	16	31	5	0	2	23	1	0	8	15	2	0	2	14	11	130	452
5:00 PM		0	13	38	9	0	1	28	1	0	6	12	1	0	2	12	11	134	502
5:15 PM		0	6	23	10	0	2	34	3	0	5	7	1	0	2	16	15	124	509
5:30 PM		0	15	21	10	0	1	18	0	0	5	11	0	0	1	20	7	109	497
5:45 PM		0	4	33	17	0	4	18	0	0	4	8	0	0	2	12	7	109	476
Count Total		0	79	238	77	0	17	181	8	0	44	79	7	0	18	110	70	928	0
Peak Hour	All	0	44	128	35	0	8	104	5	0	24	45	5	0	10	55	46	509	0
	HV	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	1	7	0
	HV%	-	0%	2%	0%	-	0%	3%	0%	-	0%	0%	0%	-	0%	0%	2%	1%	0

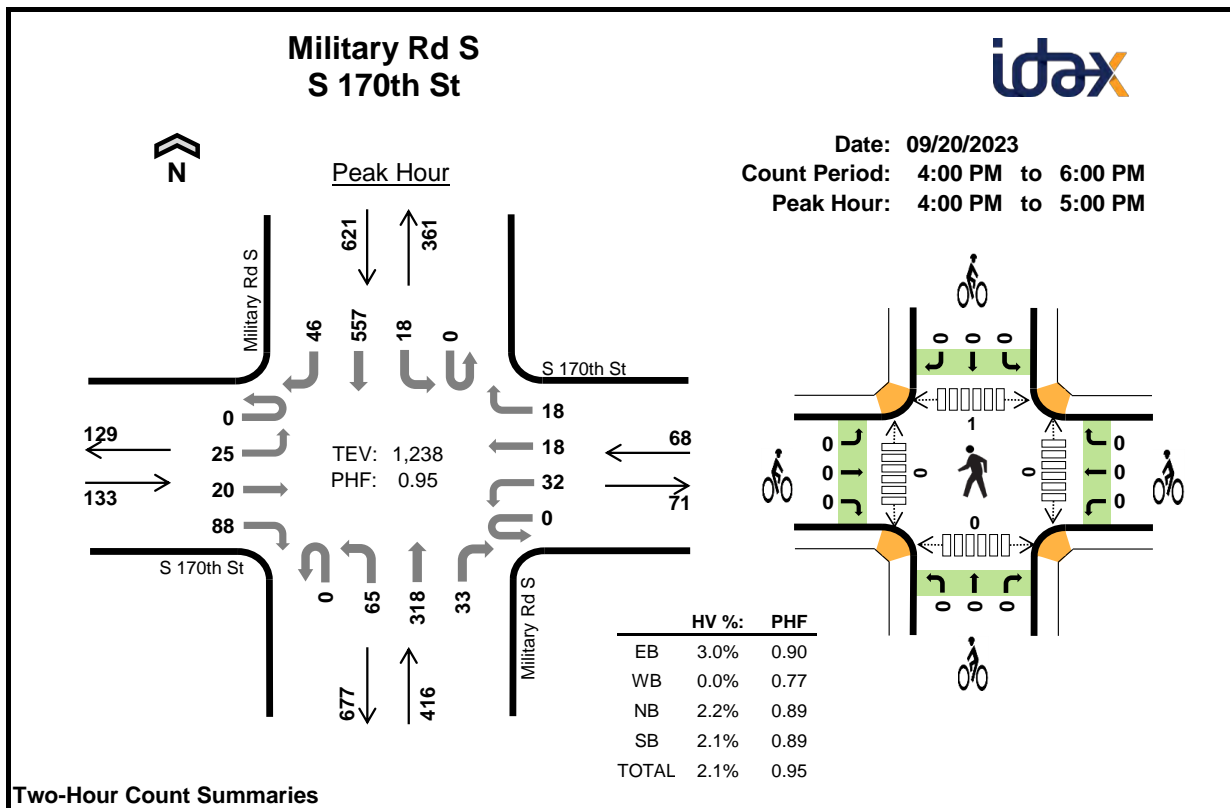
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	0	1	0	0	0	0	0	0	1	3	1	5
4:15 PM	1	1	0	3	5	1	0	0	0	1	0	0	0	1	1
4:30 PM	1	0	0	0	1	0	0	0	0	0	1	1	1	0	3
4:45 PM	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:15 PM	1	2	0	0	3	0	0	0	0	0	0	0	2	2	4
5:30 PM	1	0	0	0	1	0	2	0	0	2	4	0	0	0	4
5:45 PM	2	1	0	0	3	0	0	0	0	0	0	0	2	0	2
Count Total	7	5	1	4	17	1	2	0	0	3	6	2	8	4	20
Peak Hour	3	3	0	1	7	0	0	0	0	0	2	1	3	2	8

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 170th St				S 170th St				34th Ave S				34th Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	2	0	1	5	0
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	3	10
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
5:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	7
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
5:45 PM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	7
Count Total	0	0	7	0	0	1	4	0	0	0	1	0	0	2	0	2	17	0
Peak Hour	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	1	7	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 170th St			S 170th St			34th Ave S			34th Ave S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	2			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
Count Total	0	1	0	0	2	0	0	0	0	0	0	0	3	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 170th St				S 170th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	7	6	24	0	9	6	7	0	20	63	8	0	3	162	10	325	0
4:15 PM		0	6	2	26	0	5	2	3	0	20	91	6	0	7	130	14	312	0
4:30 PM		0	10	5	21	0	10	3	5	0	12	80	11	0	5	132	9	303	0
4:45 PM		0	2	7	17	0	8	7	3	0	13	84	8	0	3	133	13	298	1,238
5:00 PM		0	10	3	26	0	5	5	6	0	21	60	11	0	7	152	8	314	1,227
5:15 PM		0	4	4	16	0	8	6	5	0	14	78	5	0	7	157	15	319	1,234
5:30 PM		0	6	6	20	0	7	3	3	0	16	68	9	0	6	127	19	290	1,221
5:45 PM		0	6	4	14	0	2	3	1	0	17	84	3	0	3	147	19	303	1,226
Count Total		0	51	37	164	0	54	35	33	0	133	608	61	0	41	1,140	107	2,464	0
Peak Hour	All	0	25	20	88	0	32	18	18	0	65	318	33	0	18	557	46	1,238	0
	HV	0	1	0	3	0	0	0	0	0	2	5	2	0	1	11	1	26	0
	HV%	-	4%	0%	3%	-	0%	0%	0%	-	3%	2%	6%	-	6%	2%	2%	2%	0

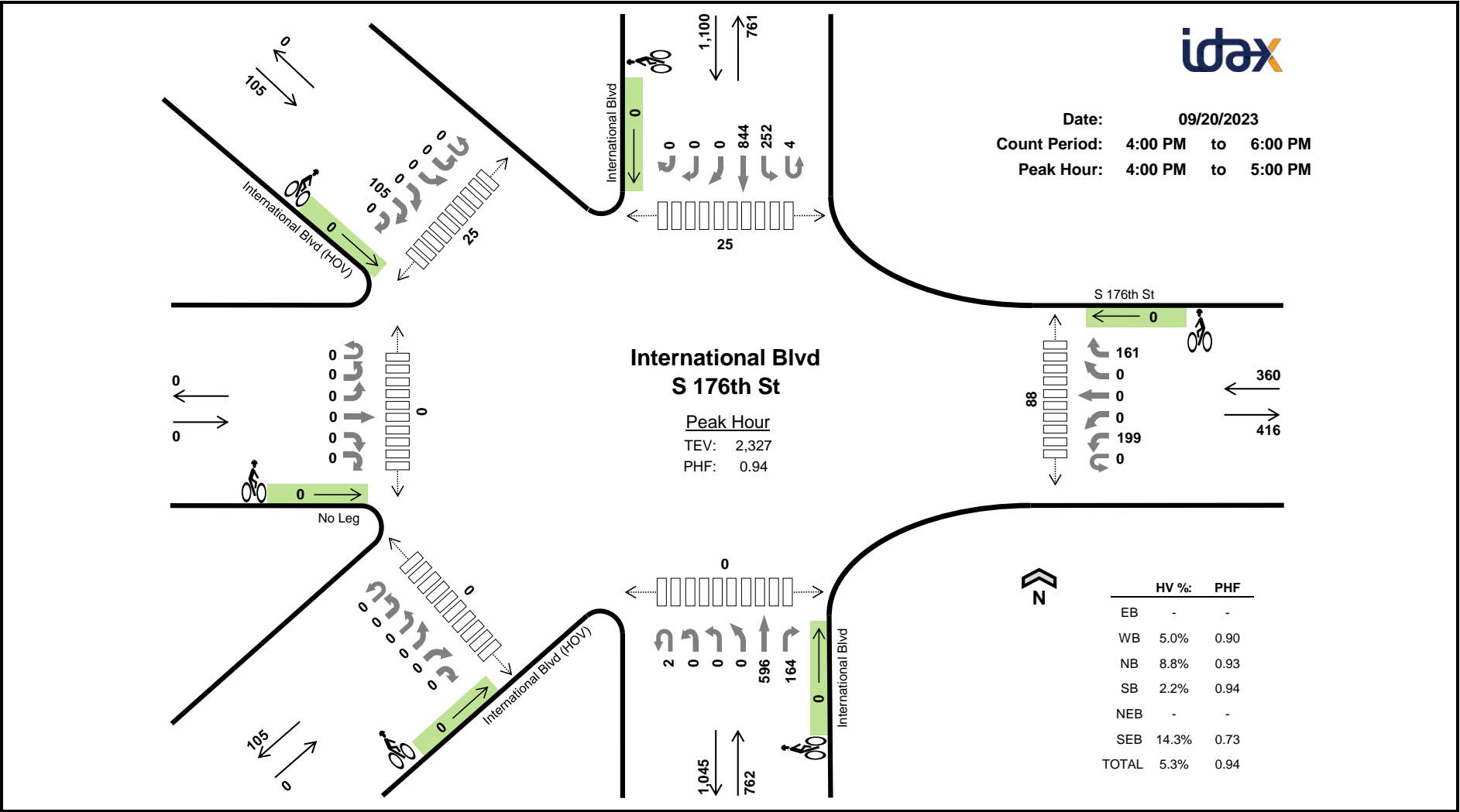
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	4	3	7	0	0	0	0	0	0	0	0	0	0
4:15 PM	3	0	0	5	8	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	4	3	7	0	0	0	0	0	0	0	1	0	1
4:45 PM	1	0	1	2	4	0	0	0	0	0	0	0	0	0	0
5:00 PM	3	0	2	4	9	0	0	1	0	1	1	1	0	1	3
5:15 PM	1	0	2	4	7	0	0	0	0	0	1	1	1	0	3
5:30 PM	2	0	4	2	8	0	0	0	0	0	3	1	1	0	5
5:45 PM	1	0	2	2	5	0	0	0	0	0	1	0	0	0	1
Count Total	11	0	19	25	55	0	0	1	0	1	6	3	3	1	13
Peak Hour	4	0	9	13	26	0	0	0	0	0	0	0	1	0	1

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 170th St				S 170th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	7	0
4:15 PM	0	1	0	2	0	0	0	0	0	0	0	0	0	0	4	1	8	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	2	1	0	1	2	7	0
4:45 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	4	26
5:00 PM	0	1	0	2	0	0	0	0	0	0	0	1	1	0	0	4	9	28
5:15 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	4	7	27
5:30 PM	0	1	0	1	0	0	0	0	0	0	1	2	1	0	0	1	8	28
5:45 PM	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	5	29
Count Total	0	3	1	7	0	0	0	0	0	0	4	11	4	0	1	21	55	0
Peak Hour	0	1	0	3	0	0	0	0	0	0	2	5	2	0	1	11	26	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 170th St			S 170th St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

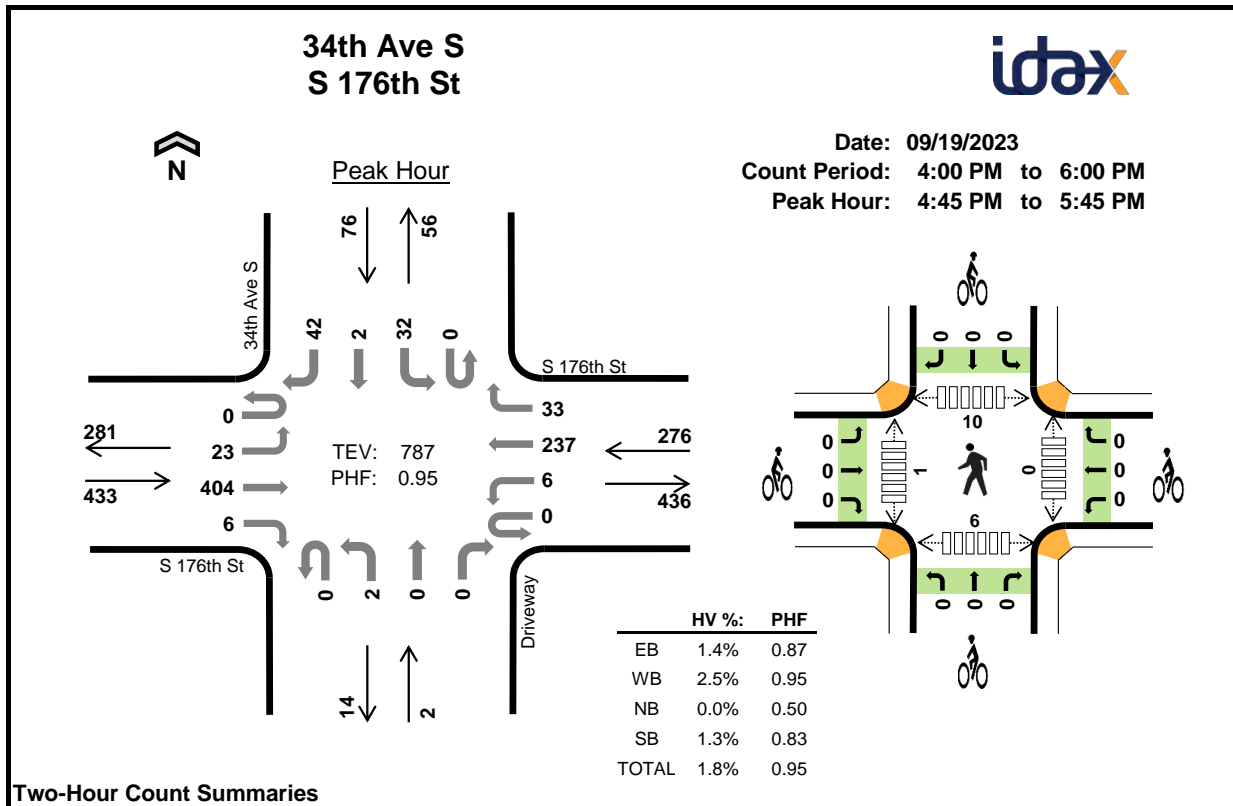


Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Two-Hour Count Summaries - Heavy Vehicles

Two-Hour Count Summaries - Bikes

project.manager.wa@idaxdata.com

**Two-Hour Count Summaries**

Interval Start		S 176th St				S 176th St				Driveway				34th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	7	106	0	0	0	70	6	0	0	0	0	0	7	0	12	208	0
4:15 PM		0	6	82	0	0	0	80	11	0	0	0	0	0	7	0	6	192	0
4:30 PM		0	5	97	1	0	0	54	7	0	0	0	0	0	11	0	13	188	0
4:45 PM		0	7	95	2	0	2	59	11	0	1	0	0	0	5	0	8	190	778
5:00 PM		0	6	96	3	0	0	58	9	0	0	0	0	0	12	2	7	193	763
5:15 PM		0	4	95	1	0	3	63	7	0	1	0	0	0	9	0	14	197	768
5:30 PM		0	6	118	0	0	1	57	6	0	0	0	0	0	6	0	13	207	787
5:45 PM		0	9	65	2	0	0	33	3	0	0	0	0	0	10	0	12	134	731
Count Total		0	50	754	9	0	6	474	60	0	2	0	0	0	67	2	85	1,509	0
Peak Hour	All	0	23	404	6	0	6	237	33	0	2	0	0	0	32	2	42	787	0
	HV	0	0	6	0	0	0	6	1	0	0	0	0	0	0	0	1	14	0
	HV%	-	0%	1%	0%	-	0%	3%	3%	-	0%	-	-	-	0%	0%	2%	2%	0

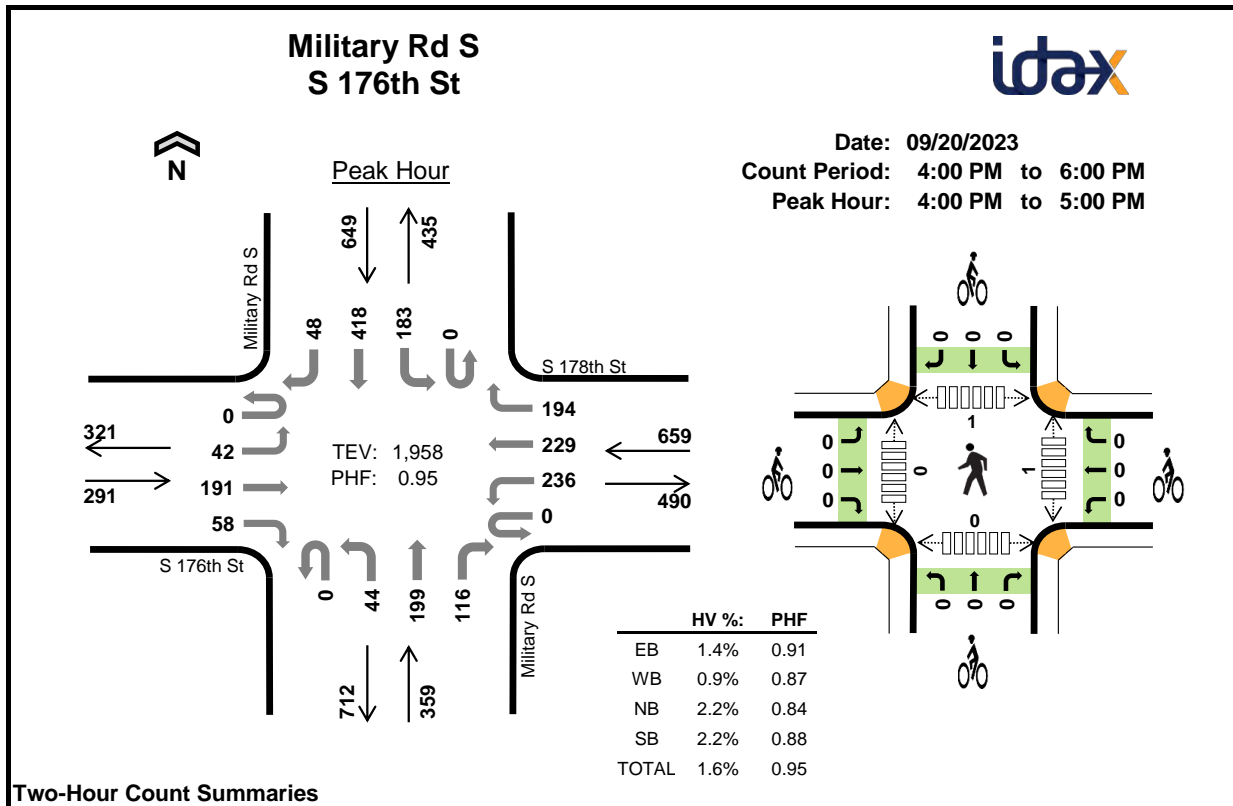
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	1	0	1	6	0	0	0	0	0	0	1	2	4	7
4:15 PM	1	0	0	1	2	0	0	0	0	0	0	0	2	1	3
4:30 PM	3	2	0	0	5	0	0	0	0	0	0	0	4	4	8
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
5:00 PM	3	3	0	1	7	0	0	0	0	0	0	0	1	2	3
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	5	2	7
5:30 PM	3	3	0	0	6	0	0	0	0	0	0	1	2	0	3
5:45 PM	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0
Count Total	15	10	0	4	29	0	0	0	0	0	0	2	18	15	35
Peak Hour	6	7	0	1	14	0	0	0	0	0	0	1	10	6	17

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	S 176th St				S 176th St				Driveway				34th Ave S				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	1	0	0	6	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
4:30 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
5:00 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	1	7	14
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	13
5:30 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	14
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	16
Count Total	0	0	15	0	0	0	9	1	0	0	0	0	0	0	1	0	3	29	0
Peak Hour	0	0	6	0	0	0	6	1	0	0	0	0	0	0	0	0	1	14	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 176th St			S 176th St			Driveway			34th Ave S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 176th St				S 178th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	11	41	24	0	71	61	58	0	11	44	24	0	46	101	10	502	0
4:15 PM		0	13	53	14	0	55	57	48	0	11	52	26	0	48	126	11	514	0
4:30 PM		0	11	45	14	0	58	55	40	0	15	50	42	0	50	87	13	480	0
4:45 PM		0	7	52	6	0	52	56	48	0	7	53	24	0	39	104	14	462	1,958
5:00 PM		0	7	54	17	0	70	51	35	0	8	50	16	0	35	113	6	462	1,918
5:15 PM		0	16	53	19	0	75	56	48	0	10	49	36	0	38	116	11	527	1,931
5:30 PM		0	12	40	7	0	38	37	51	0	14	45	36	0	51	111	8	450	1,901
5:45 PM		0	16	41	13	0	40	39	31	0	12	58	24	0	40	106	13	433	1,872
Count Total		0	93	379	114	0	459	412	359	0	88	401	228	0	347	864	86	3,830	0
Peak Hour	All	0	42	191	58	0	236	229	194	0	44	199	116	0	183	418	48	1,958	0
	HV	0	2	1	1	0	3	1	2	0	0	8	0	0	5	7	2	32	0
	HV%	-	5%	1%	2%	-	1%	0%	1%	-	0%	4%	0%	-	3%	2%	4%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	2	3	2	8	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	1	5	7	0	0	0	0	0	0	0	1	0	1
4:30 PM	2	3	3	4	12	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	1	1	3	5	0	0	0	0	0	0	0	0	0	0
5:00 PM	2	1	0	6	9	0	0	0	0	0	1	1	0	1	3
5:15 PM	2	4	1	6	13	0	0	0	0	0	0	0	0	0	0
5:30 PM	2	3	4	1	10	0	0	0	0	0	0	1	0	0	1
5:45 PM	0	3	1	3	7	0	0	0	0	0	0	0	0	0	0
Count Total	10	17	14	30	71	0	0	0	0	0	2	2	1	1	6
Peak Hour	4	6	8	14	32	0	0	0	0	0	1	0	1	0	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 176th St				S 178th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	0	0	1	0	1	0	0	3	0	0	1	0	1	8	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	2	3	0	7	0
4:30 PM	0	1	0	1	0	1	1	1	0	0	3	0	0	1	2	1	12	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	2	0	5	32
5:00 PM	0	1	1	0	0	1	0	0	0	0	0	0	0	2	3	1	9	33
5:15 PM	0	0	2	0	0	0	3	1	0	0	1	0	0	2	4	0	13	39
5:30 PM	0	1	1	0	0	1	0	2	0	0	3	1	0	0	0	1	10	37
5:45 PM	0	0	0	0	0	0	0	3	0	0	1	0	0	0	3	0	7	39
Count Total	0	4	5	1	0	5	4	8	0	0	13	1	0	9	17	4	71	0
Peak Hour	0	2	1	1	0	3	1	2	0	0	8	0	0	5	7	2	32	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 176th St			S 178th St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

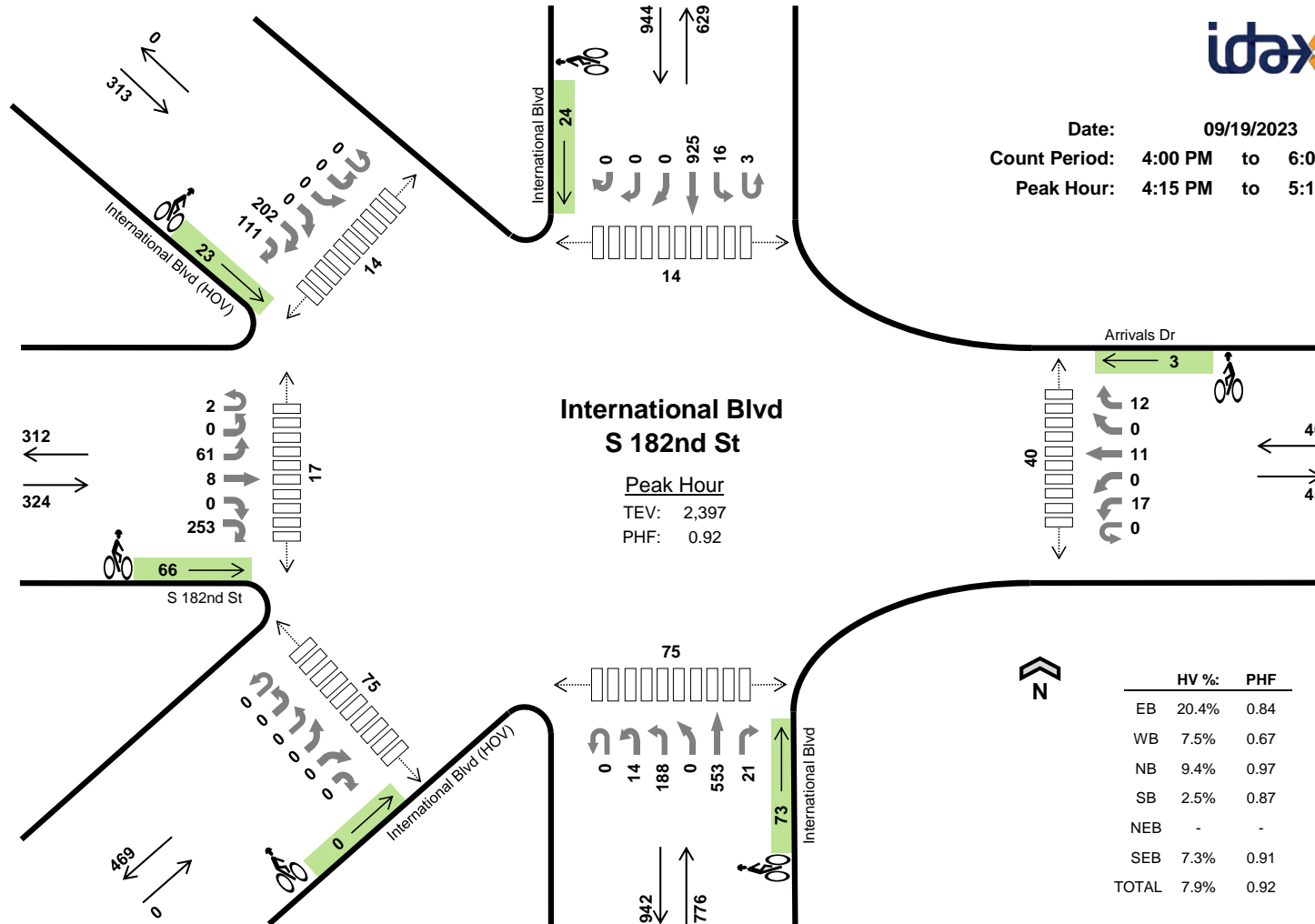
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Date: 09/19/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:15 PM to 5:15 PM

International Blvd S 182nd St

Peak Hour
 TEV: 2,397
 PHF: 0.92



	HV %:	PHF
EB	20.4%	0.84
WB	7.5%	0.67
NB	9.4%	0.97
SB	2.5%	0.87
NEB	-	-
SEB	7.3%	0.91
TOTAL	7.9%	0.92

Two-Hour Count Summaries

Interval Start	S 182nd St						Arrivals Dr						International Blvd						International Blvd						International Blvd (HOV)						International Blvd (HOV)						15-min Total	Rolling One Hour
	Eastbound						Westbound						Northbound						Southbound						Northeastbound						Southeastbound							
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	3	0	30	2	0	62	0	7	0	1	0	5	0	3	53	0	151	8	0	3	161	0	0	0	0	0	0	0	0	0	0	0	0	0	54	29	572	0
4:15 PM	1	0	20	1	0	74	0	5	0	0	0	2	0	6	48	0	131	4	1	4	267	0	0	0	0	0	0	0	0	0	0	0	0	61	25	650	0	
4:30 PM	0	0	12	2	0	66	0	5	0	5	0	2	0	4	51	0	142	4	1	3	206	0	0	0	0	0	0	0	0	0	0	0	0	50	30	583	0	
4:45 PM	0	0	12	2	0	63	0	2	0	2	0	2	0	2	46	0	143	9	0	3	225	0	0	0	0	0	0	0	0	0	0	0	0	44	28	583	2,388	
5:00 PM	1	0	17	3	0	50	0	5	0	4	0	6	0	2	43	0	137	4	1	6	227	0	0	0	0	0	0	0	0	0	0	0	0	47	28	581	2,397	
5:15 PM	0	0	19	3	0	67	0	2	0	5	0	5	0	3	55	0	142	12	1	3	215	0	0	0	0	0	0	0	0	0	0	0	0	36	20	588	2,335	
5:30 PM	0	0	16	1	0	61	0	3	0	1	0	2	0	3	44	0	149	4	1	4	201	0	0	0	0	0	0	0	0	0	0	0	0	35	31	556	2,308	
5:45 PM	0	0	19	2	0	55	0	4	0	5	0	3	0	0	43	0	157	7	2	1	161	0	0	0	0	0	0	0	0	0	0	0	0	12	35	506	2,231	
Count Total	5	0	145	16	0	498	0	33	0	23	0	27	0	23	383	0	1,152	52	7	27	1,663	0	0	0	0	0	0	0	0	0	0	0	339	226	4,619	0		
Peak Hour	All	2	0	61	8	0	253	0	17	0	11	0	12	0	14	188	0	553	21	3	16	925	0	0	0	0	0	0	0	0	0	0	0	202	111	2,397	0	
	HV	0	0	21	3	0	42	0	1	0	2	0	0	0	0	34	0	39	0	0	1	23	0	0	0	0	0	0	0	0	0	0	21	2	189	0		
	HV%	0%	-	34%	38%	-	17%	-	6%	-	18%	-	0%	-	0%	18%	-	7%	0%	0%	6%	2%	-	-	-	-	-	-	-	-	-	-	10%	2%	8%	0		

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)						
	EB	WB	NB	SB	NEB	SEB	Total	EB	WB	NB	SB	NEB	SEB	Total	East	West	North	South	NW	SW	Total
4:00 PM	15	0	28	4	0	8	55	15	0	28	4	0	8	55	19	6	6	34	6	34	105
4:15 PM	18	0	11	8	0	6	43	18	0	11	8	0	6	43	14	4	3	21	3	21	66
4:30 PM	15	2	22	3	0	5	47	15	2	22	3	0	5	47	15	8	8	15	8	15	69
4:45 PM	18	0	17	5	0	6	46	18	0	17	5	0	6	46	4	1	2	20	2	20	49
5:00 PM	15	1	23	8	0	6	53	15	1	23	8	0	6	53	7	4	1	19	1	19	51
5:15 PM	18	1	18	2	0	2	41	18	1	18	2	0	2	41	16	3	2	18	2	18	59
5:30 PM	17	0	19	6	0	4	46	17	0	19	6	0	4	46	23	7	4	28	4	28	94
5:45 PM	16	1	17	1	0	2	37	16	1	17	1	0	2	37	7	26	21	21	21	21	117
Count Total	132	5	155	37	0	39	368	132	5	155	37	0	39	368	105	59	47	176	47	176	610
Peak Hr	66	3	73	24	0	23	189	66	3	73	24	0	23	189	40	17	14	75	14	75	235

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	S 182nd St						Arrivals Dr						International Blvd						International Blvd						International Blvd (HOV)						International Blvd (HOV)						15-min Total	Rolling One Hour
	Eastbound						Westbound						Northbound						Southbound						Northeastbound						Southeastbound							
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	4	0	0	11	0	0	0	0	0	0	0	0	13	0	15	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8	0	55	0	
4:15 PM	0	0	7	0	0	11	0	0	0	0	0	0	0	0	4	0	7	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	5	1	43	0		
4:30 PM	0	0	4	1	0	10	0	0	0	2	0	0	0	0	11	0	11	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	5	0	47	0		
4:45 PM	0	0	5	1	0	12	0	0	0	0	0	0	0	0	9	0	8	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	6	0	46	191		
5:00 PM	0	0	5	1	0	9	0	1	0	0	0	0	0	0	10	0	13	0	0	1	7	0	0	0	0	0	0	0	0	0	0	5	1	53	189			
5:15 PM	0	0	5	1	0	12	0	0	0	1	0	0	0	0	8	0	10	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	41	187		
5:30 PM	0	0	6	0	0	11	0	0	0	0	0	0	0	0	10	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	4	0	46	186		
5:45 PM	0	0	2	0	0	14	0	0	0	1	0	0	0	0	5	0	12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	37	177		
Count Total	0	0	38	4	0	90	0	1	0	4	0	0	0	0	70	0	85	0	0	1	36	0	0	0	0	0	0	0	0	0	0	37	2	368	0			
Peak Hour	0	0	21	3	0	42	0	1	0	2	0	0	0	0	34	0	39	0	0	1	23	0	0	0	0	0	0	0	0	0	0	21	2	189	0			

Two-Hour Count Summaries - Bikes

Interval Start	S 182nd St						Arrivals Dr						International Blvd						International Blvd						International Blvd (HOV)						International Blvd (HOV)						15-min Total	Rolling One Hour
	Eastbound						Westbound						Northbound						Southbound						Northeastbound						Southeastbound							
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	4	0	0	11	0	0	0	0	0	0	0	0	13	0	15	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8	0	55	0	
4:15 PM	0	0	7	0	0	11	0	0	0	0	0	0	0	0	4	0	7	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	5	1	43	0		
4:30 PM	0	0	4	1	0	10	0	0	0	2	0	0	0	0	11	0	11	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	5	0	47	0		
4:45 PM	0	0	5	1	0	12	0	0	0	0	0	0	0	0	9	0	8	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	6	0	46	191		
5:00 PM	0	0	5	1	0	9	0	1	0	0	0	0	0	0	10	0	13	0	0	1	7	0	0	0	0	0	0	0	0	0	0	5	1	53	189			
5:15 PM	0	0	5	1	0	12	0	0	0	1	0	0	0	0	8	0	10	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	41	187		
5:30 PM	0	0	6	0	0	11	0	0	0	0	0	0	0	0	10	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	4	0	46	186		
5:45 PM	0	0	2	0	0	14	0	0	0	1	0	0	0	0	5	0	12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	37	177		
Count Total	0	0	38	4	0	90	0	1	0	4	0	0	0	0	70	0	85	0	0	1	36	0	0	0	0	0	0	0	0	0	0	37	2	368	0			
Peak Hour	0	0	21	3	0	42	0	1	0	2	0	0	0	0	34	0	39	0	0	1	23	0	0	0	0	0	0	0	0	0	21	2	189	0				

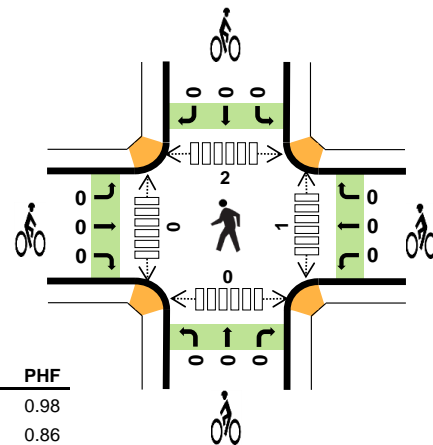
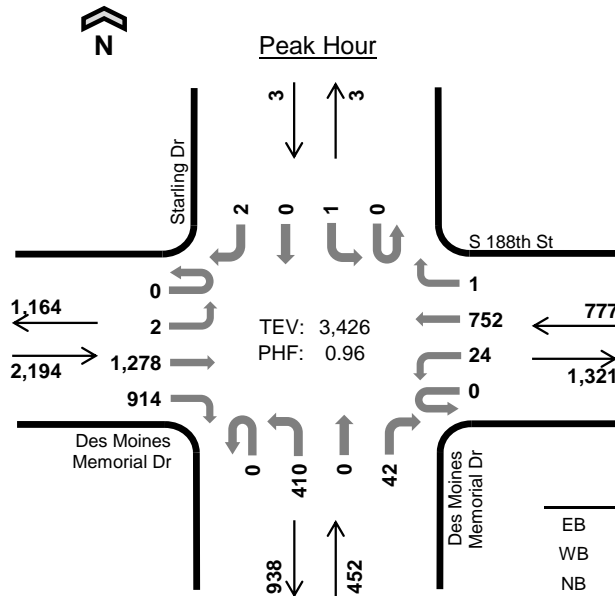
Des Moines Memorial Dr
S 188th St



Date: 09/19/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	1.0%	0.98
WB	1.5%	0.86
NB	5.1%	0.95
SB	0.0%	0.75
TOTAL	1.6%	0.96

Two-Hour Count Summaries

Interval Start		Des Moines Memorial Dr				S 188th St				Des Moines Memorial Dr				Starling Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	365	174	0	12	174	1	0	99	0	10	0	1	0	1	837	0
4:15 PM		0	0	299	243	0	5	162	0	0	109	0	10	0	0	0	0	828	0
4:30 PM		0	0	302	238	0	9	175	0	0	107	0	10	0	1	0	0	842	0
4:45 PM		0	1	337	217	0	7	193	0	0	93	0	11	0	0	0	1	860	3,367
5:00 PM		0	1	340	216	0	3	222	1	0	101	0	11	0	0	0	1	896	3,426
5:15 PM		0	0	338	181	0	9	209	0	0	79	0	8	0	1	0	0	825	3,423
5:30 PM		0	0	354	201	0	7	149	0	0	97	0	9	0	0	0	2	819	3,400
5:45 PM		0	0	328	170	0	12	168	0	0	87	0	9	0	0	0	0	774	3,314
Count Total		0	2	2,663	1,640	0	64	1,452	2	0	772	0	78	0	3	0	5	6,681	0
Peak Hour	All	0	2	1,278	914	0	24	752	1	0	410	0	42	0	1	0	2	3,426	0
	HV	0	0	15	6	0	1	11	0	0	16	0	7	0	0	0	0	56	0
	HV%	-	0%	1%	1%	-	4%	1%	0%	-	4%	-	17%	-	0%	-	0%	2%	0

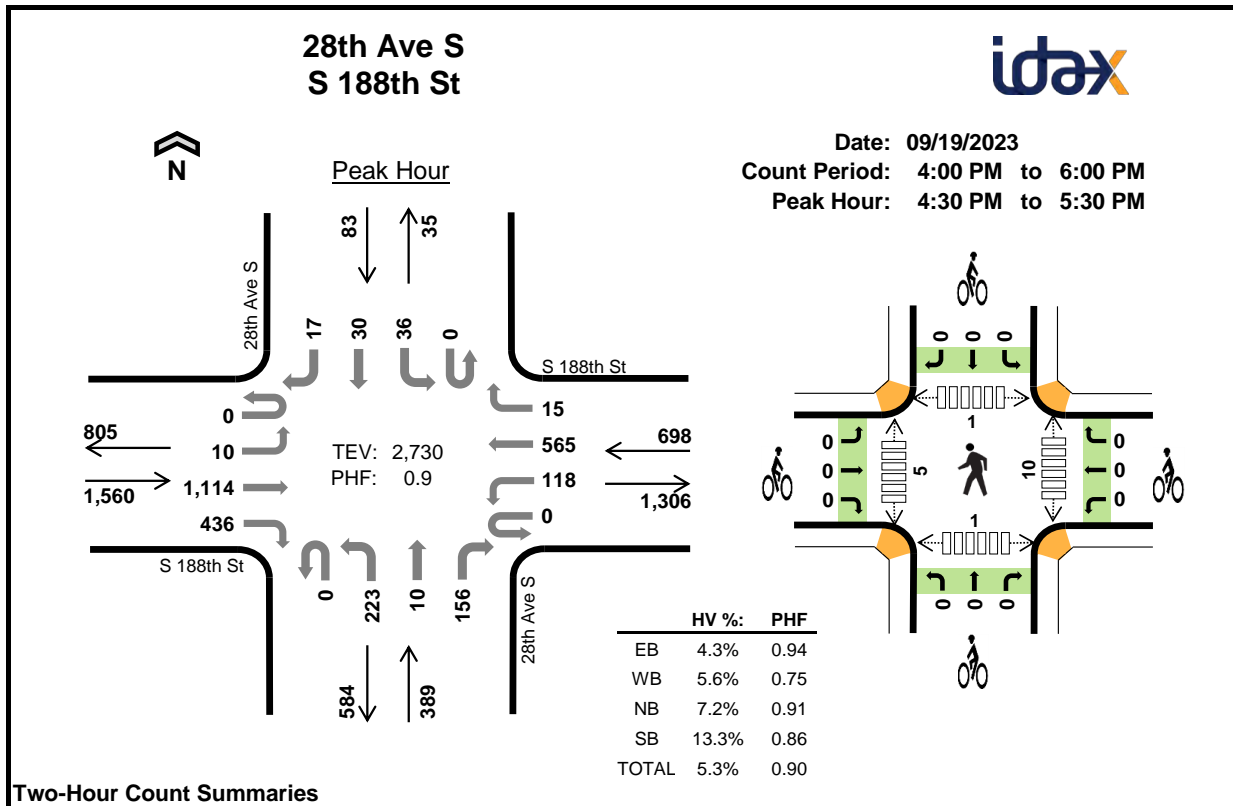
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	3	1	0	10	1	0	0	0	1	2	0	1	2	5
4:15 PM	7	3	1	0	11	0	0	0	0	0	0	0	0	0	0
4:30 PM	5	0	13	0	18	0	0	0	0	0	0	0	1	0	1
4:45 PM	4	6	5	0	15	0	0	0	0	0	1	0	1	0	2
5:00 PM	5	3	4	0	12	0	0	0	0	0	0	0	0	0	0
5:15 PM	4	2	0	0	6	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	6	3	2	0	11	0	0	0	0	0	0	0	1	0	1
Count Total	37	21	26	0	84	1	0	0	0	1	3	0	4	3	10
Peak Hour	21	12	23	0	56	0	0	0	0	0	1	0	2	0	3

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Des Moines Memorial Dr				S 188th St				Des Moines Memorial Dr				Starling Dr				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	5	1	0	1	2	0	0	1	0	0	0	0	0	0	0	10	0
4:15 PM	0	0	3	4	0	0	3	0	0	1	0	0	0	0	0	0	0	11	0
4:30 PM	0	0	4	1	0	0	0	0	0	11	0	2	0	0	0	0	0	18	0
4:45 PM	0	0	4	0	0	0	6	0	0	2	0	3	0	0	0	0	0	15	54
5:00 PM	0	0	4	1	0	1	2	0	0	2	0	2	0	0	0	0	0	12	56
5:15 PM	0	0	3	1	0	1	1	0	0	0	0	0	0	0	0	0	0	6	51
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	34
5:45 PM	0	0	6	0	0	0	3	0	0	2	0	0	0	0	0	0	0	11	30
Count Total	0	0	29	8	0	3	18	0	0	19	0	7	0	0	0	0	0	84	0
Peak Hour	0	0	15	6	0	1	11	0	0	16	0	7	0	0	0	0	0	56	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Des Moines Memorial Dr				S 188th St				Des Moines Memorial Dr				Starling Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
4:00 PM	0	0	1		0	0	0		0	0	0		0	0	0		1	0
4:15 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
4:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
4:45 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	1
5:00 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:15 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:45 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
Count Total	0	0	1		0	0	0		0	0	0		0	0	0		1	0
Peak Hour	0	0	0		0	0	0		0	0	0		0	0	0		0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		S 188th St				S 188th St				28th Ave S				28th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	259	113	0	21	145	2	0	38	4	63	0	5	9	3	664	0
4:15 PM		0	10	253	94	0	25	122	2	0	37	0	52	0	14	5	4	618	0
4:30 PM		0	4	289	115	0	24	113	2	0	52	2	38	0	13	7	4	663	0
4:45 PM		0	3	247	92	0	30	136	2	0	60	2	45	0	7	7	6	637	2,582
5:00 PM		0	3	296	116	0	39	188	6	0	49	4	34	0	9	11	3	758	2,676
5:15 PM		0	0	282	113	0	25	128	5	0	62	2	39	0	7	5	4	672	2,730
5:30 PM		0	2	248	117	0	26	134	3	0	29	1	43	0	9	6	4	622	2,689
5:45 PM		0	1	266	119	0	19	132	2	0	37	4	40	0	5	7	1	633	2,685
Count Total		0	25	2,140	879	0	209	1,098	24	0	364	19	354	0	69	57	29	5,267	0
Peak Hour	All	0	10	1,114	436	0	118	565	15	0	223	10	156	0	36	30	17	2,730	0
	HV	0	0	60	7	0	7	25	7	0	5	2	21	0	9	1	1	145	0
	HV%	-	0%	5%	2%	-	6%	4%	47%	-	2%	20%	13%	-	25%	3%	6%	5%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	19	15	7	1	42	0	0	0	0	0	1	3	1	1	6
4:15 PM	15	8	3	4	30	0	0	0	0	0	1	2	1	1	5
4:30 PM	17	8	10	4	39	0	0	0	0	0	0	1	0	0	1
4:45 PM	16	10	10	3	39	0	0	0	0	0	4	2	0	0	6
5:00 PM	17	14	3	2	36	0	0	0	0	0	3	2	1	0	6
5:15 PM	17	7	5	2	31	0	0	0	0	0	3	0	0	1	4
5:30 PM	4	7	7	1	19	0	0	0	0	0	4	2	1	2	9
5:45 PM	13	5	7	1	26	0	0	0	0	0	1	0	0	0	1
Count Total	118	74	52	18	262	0	0	0	0	0	17	12	4	5	38
Peak Hour	67	39	28	11	145	0	0	0	0	0	10	5	1	1	17

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 188th St				S 188th St				28th Ave S				28th Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	15	4	0	3	11	1	0	0	1	6	0	0	1	0	42	0
4:15 PM	0	0	12	3	0	1	7	0	0	0	0	3	0	2	2	0	30	0
4:30 PM	0	0	15	2	0	1	6	1	0	1	2	7	0	4	0	0	39	0
4:45 PM	0	0	15	1	0	1	8	1	0	4	0	6	0	1	1	1	39	150
5:00 PM	0	0	16	1	0	4	6	4	0	0	0	3	0	2	0	0	36	144
5:15 PM	0	0	14	3	0	1	5	1	0	0	0	5	0	2	0	0	31	145
5:30 PM	0	0	3	1	0	1	4	2	0	0	0	7	0	1	0	0	19	125
5:45 PM	0	0	11	2	0	1	4	0	0	1	0	6	0	1	0	0	26	112
Count Total	0	0	101	17	0	13	51	10	0	6	3	43	0	13	4	1	262	0
Peak Hour	0	0	60	7	0	7	25	7	0	5	2	21	0	9	1	1	145	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 188th St			S 188th St			28th Ave S			28th Ave S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



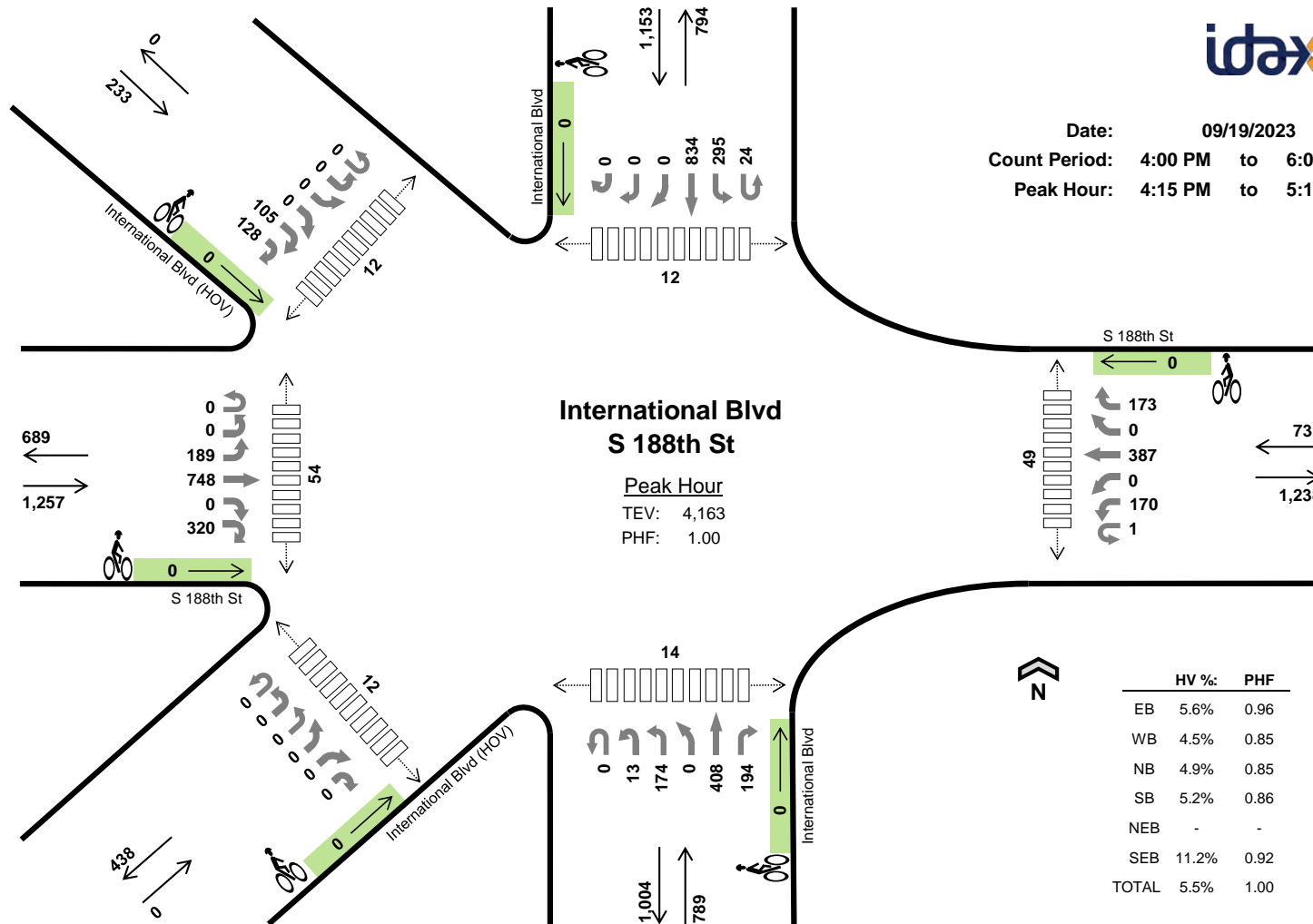
Date: 09/19/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:15 PM to 5:15 PM

International Blvd S 188th St

Peak Hour
 TEV: 4,163
 PHF: 1.00



	HV %:	PHF
EB	5.6%	0.96
WB	4.5%	0.85
NB	4.9%	0.85
SB	5.2%	0.86
NEB	-	-
SEB	11.2%	0.92
TOTAL	5.5%	1.00



Two-Hour Count Summaries

Interval Start	S 188th St						S 188th St						International Blvd						International Blvd						International Blvd (HOV)						International Blvd (HOV)						15-min Total	Rolling One Hour	
	Eastbound						Westbound						Northbound						Southbound						Northeastbound						Southeastbound								
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BL	BR	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT			HR
4:00 PM	0	0	62	183	0	76	0	38	0	109	0	48	0	3	35	0	107	43	5	63	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	33	997	0
4:15 PM	0	0	45	195	0	83	0	39	0	72	0	47	0	3	26	0	85	45	7	86	243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	33	1,037	0
4:30 PM	0	0	50	165	0	78	1	32	0	86	0	36	0	3	50	0	129	50	8	58	228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	24	1,037	0
4:45 PM	0	0	52	196	0	78	0	47	0	101	0	54	0	6	43	0	94	43	6	92	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	30	1,044	4,115
5:00 PM	0	0	42	192	0	81	0	52	0	128	0	36	0	1	55	0	100	56	3	59	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	41	1,045	4,163
5:15 PM	0	0	52	195	0	95	0	52	0	108	0	47	0	6	24	0	87	36	7	59	202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	29	1,025	4,151
5:30 PM	0	0	56	168	0	64	0	42	0	77	0	43	0	4	38	0	104	47	6	86	223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	31	1,013	4,127
5:45 PM	0	0	57	168	0	81	0	42	0	107	0	47	0	6	34	0	94	35	9	38	159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	27	918	4,001
Count Total	0	0	416	1,462	0	636	1	344	0	788	0	358	0	32	305	0	800	355	51	541	1,564	0	0	0	0	0	0	0	0	0	0	0	0	0	215	248	8,116	0	
Peak Hour	All	0	0	189	748	0	320	1	170	0	387	0	173	0	13	174	0	408	194	24	295	834	0	0	0	0	0	0	0	0	0	0	0	0	0	105	128	4,163	0
	HV	0	0	26	35	0	10	0	3	0	19	0	11	0	1	4	0	27	7	8	20	32	0	0	0	0	0	0	0	0	0	0	0	0	10	16	229	0	
	HV%	-	-	14%	5%	-	3%	0%	2%	-	5%	-	6%	-	8%	2%	-	7%	4%	33%	7%	4%	-	-	-	-	-	-	-	-	-	-	-	-	10%	13%	6%	0	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

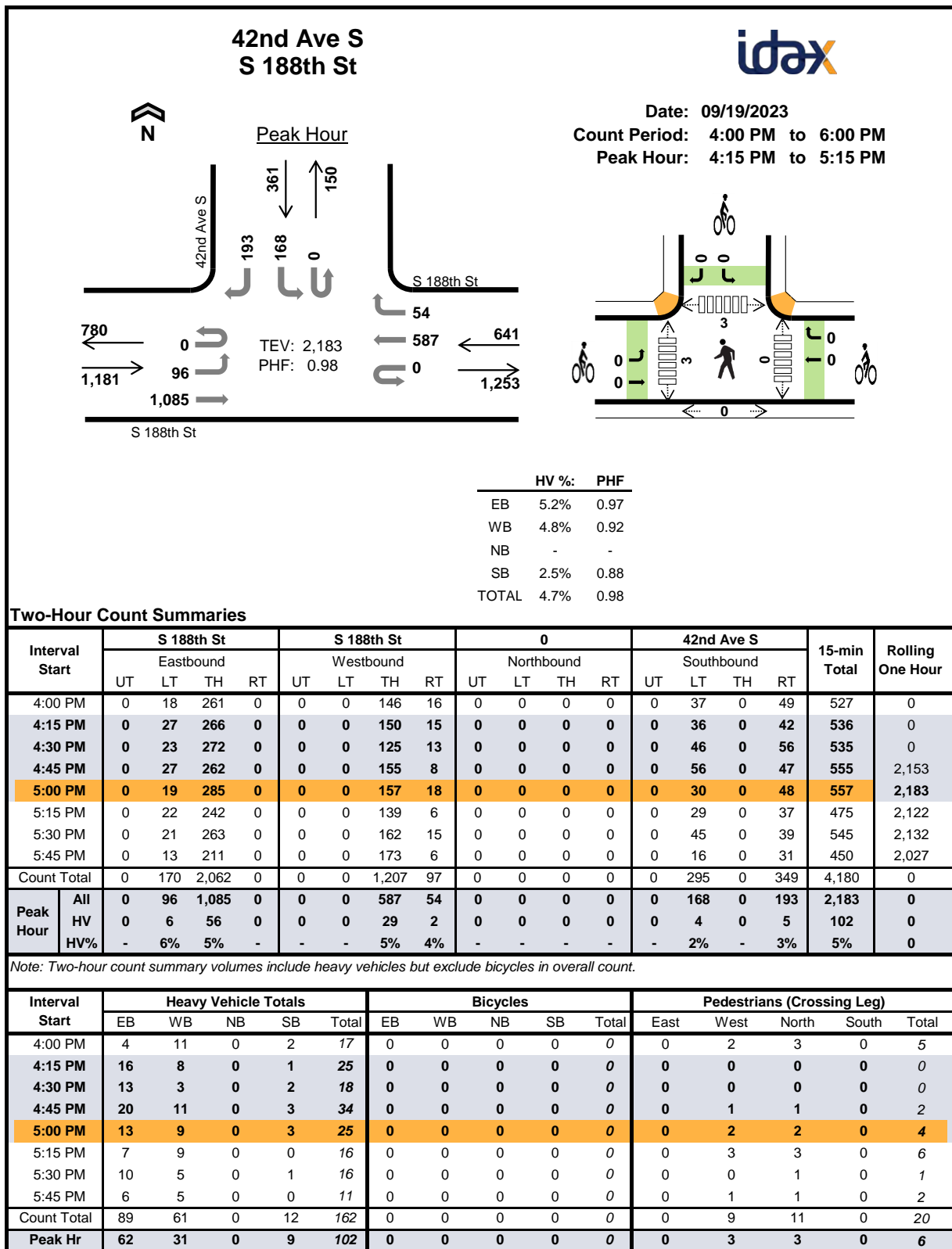
Interval	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)						
Start	EB	WB	NB	SB	NEB	SEB	Total	EB	WB	NB	SB	NEB	SEB	Total	East	West	North	South	NW	SW	Total
4:00 PM	21	14	10	14	0	7	66	0	0	0	0	0	0	0	16	10	3	16	3	16	64
4:15 PM	14	7	10	14	0	6	51	0	0	0	0	0	0	0	5	15	7	4	7	4	42
4:30 PM	21	5	11	15	0	6	58	0	0	0	0	0	0	0	8	11	4	4	4	4	35
4:45 PM	22	10	7	18	0	10	67	0	0	0	0	0	0	0	16	11	0	6	0	4	37
5:00 PM	14	11	11	13	0	4	53	0	0	0	0	0	0	0	20	17	1	0	1	0	39
5:15 PM	12	10	8	12	0	6	48	0	0	0	0	0	0	0	5	12	18	15	18	15	83
5:30 PM	13	4	8	20	0	8	53	1	0	0	0	0	0	1	14	15	12	7	12	7	67
5:45 PM	14	5	5	12	0	4	40	0	0	0	0	0	0	0	15	13	15	10	15	10	78
Count Total	131	66	70	118	0	51	436	1	0	0	0	0	0	1	99	104	60	62	60	60	445
Peak Hr	71	33	39	60	0	26	229	0	0	0	0	0	0	0	49	54	12	14	12	12	153

Two-Hour Count Summaries - Heavy Vehicles

[illegible]

Two-Hour Count Summaries - Bikes

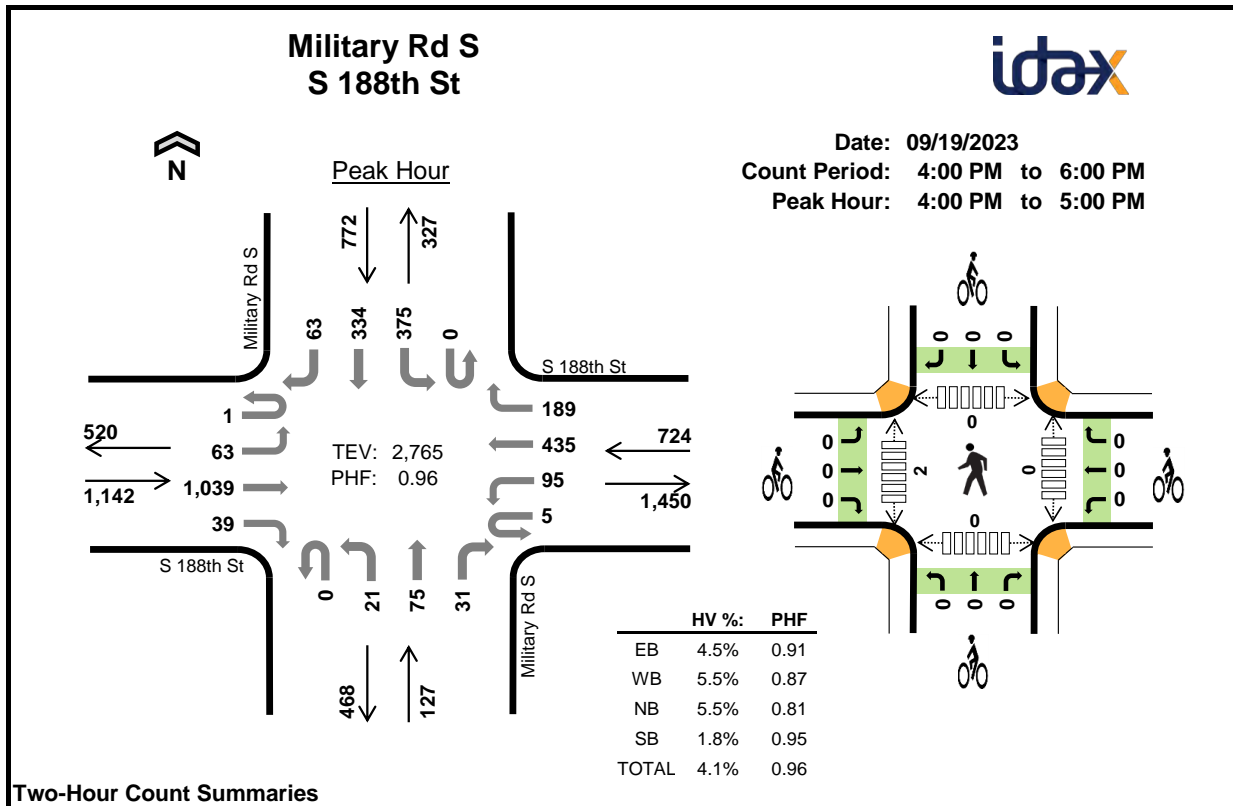
[illegible]



Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 188th St				S 188th St				0				42nd Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	0	0	0	11	0	0	0	0	0	0	2	0	0	17	0
4:15 PM	0	2	14	0	0	0	7	1	0	0	0	0	0	1	0	0	25	0
4:30 PM	0	1	12	0	0	0	3	0	0	0	0	0	0	0	0	2	18	0
4:45 PM	0	2	18	0	0	0	11	0	0	0	0	0	0	1	0	2	34	94
5:00 PM	0	1	12	0	0	0	8	1	0	0	0	0	0	2	0	1	25	102
5:15 PM	0	0	7	0	0	0	9	0	0	0	0	0	0	0	0	0	16	93
5:30 PM	0	1	9	0	0	0	4	1	0	0	0	0	0	0	0	1	16	91
5:45 PM	0	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	11	68
Count Total	0	7	82	0	0	0	58	3	0	0	0	0	0	6	0	6	162	0
Peak Hour	0	6	56	0	0	0	29	2	0	0	0	0	0	4	0	5	102	0

Two-Hour Count Summaries - Bikes														
Interval Start	S 188th St			S 188th St			0			42nd Ave S			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		S 188th St				S 188th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	13	261	6	0	28	115	54	0	4	23	12	0	92	86	23	717	0
4:15 PM		0	16	281	18	1	22	100	48	0	2	16	7	0	92	76	13	692	0
4:30 PM		1	23	249	9	3	18	96	32	0	8	16	8	0	103	84	16	666	0
4:45 PM		0	11	248	6	1	27	124	55	0	7	20	4	0	88	88	11	690	2,765
5:00 PM		0	19	266	6	0	18	116	56	0	1	20	6	0	71	79	12	670	2,718
5:15 PM		0	17	279	14	0	18	99	44	0	3	27	7	0	94	107	20	729	2,755
5:30 PM		0	14	261	10	0	17	107	53	0	5	22	9	0	92	59	20	669	2,758
5:45 PM		0	24	231	7	0	27	113	60	0	7	23	9	0	106	57	24	688	2,756
Count Total		1	137	2,076	76	5	175	870	402	0	37	167	62	0	738	636	139	5,521	0
Peak Hour	All	1	63	1,039	39	5	95	435	189	0	21	75	31	0	375	334	63	2,765	0
	HV	0	1	50	0	0	4	28	8	0	0	2	5	0	7	7	0	112	0
	HV%	0%	2%	5%	0%	0%	4%	6%	4%	-	0%	3%	16%	-	2%	2%	0%	4%	0

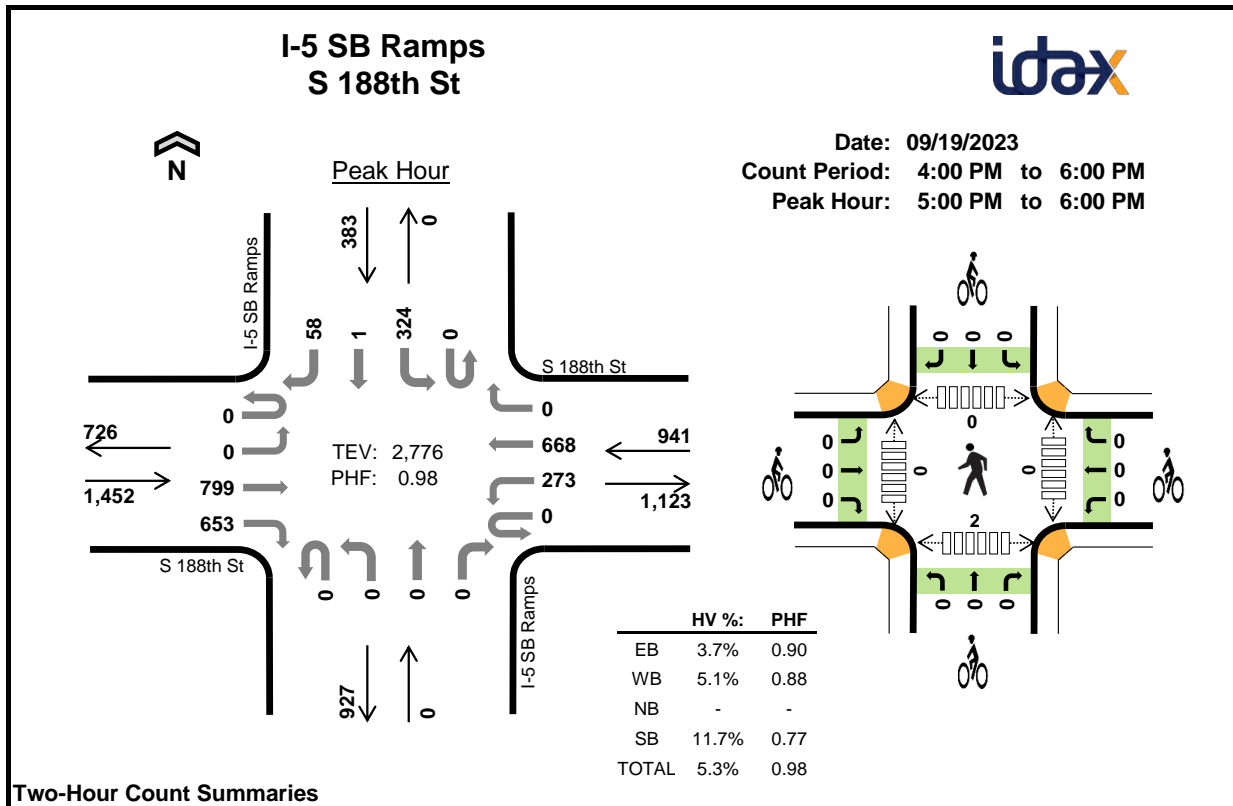
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	7	15	1	4	27	0	0	0	0	0	0	2	0	0	2
4:15 PM	13	8	4	2	27	0	0	0	0	0	0	0	0	0	0
4:30 PM	16	2	2	4	24	0	0	0	0	0	0	0	0	0	0
4:45 PM	15	15	0	4	34	0	0	0	0	0	0	0	0	0	0
5:00 PM	12	7	0	2	21	0	0	0	0	0	0	0	0	0	0
5:15 PM	14	8	2	2	26	0	0	0	0	0	0	0	1	0	1
5:30 PM	7	6	0	3	16	0	0	0	0	0	0	1	0	0	1
5:45 PM	10	8	2	3	23	0	0	0	0	0	0	2	0	0	2
Count Total	94	69	11	24	198	0	0	0	0	0	0	5	1	0	6
Peak Hour	51	40	7	14	112	0	0	0	0	0	0	2	0	0	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 188th St				S 188th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	7	0	0	2	9	4	0	0	0	1	0	3	1	0	27	0
4:15 PM	0	0	13	0	0	1	5	2	0	0	1	3	0	1	1	0	27	0
4:30 PM	0	0	16	0	0	0	2	0	0	0	1	1	0	2	2	0	24	0
4:45 PM	0	1	14	0	0	1	12	2	0	0	0	0	0	1	3	0	34	112
5:00 PM	0	0	11	1	0	0	6	1	0	0	0	0	0	1	1	0	21	106
5:15 PM	0	0	14	0	0	0	6	2	0	0	0	2	0	1	1	0	26	105
5:30 PM	0	0	7	0	0	0	4	2	0	0	0	0	0	3	0	0	16	97
5:45 PM	0	0	10	0	0	0	4	4	0	0	0	2	0	3	0	0	23	86
Count Total	0	1	92	1	0	4	48	17	0	0	2	9	0	15	9	0	198	0
Peak Hour	0	1	50	0	0	4	28	8	0	0	2	5	0	7	7	0	112	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 188th St			S 188th St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start	S 188th St Eastbound				S 188th St Westbound				I-5 SB Ramps Northbound				I-5 SB Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	206	162	0	69	189	0	0	0	0	0	0	57	1	7	691	0
4:15 PM	0	0	216	156	0	69	165	0	0	0	0	0	0	55	3	7	671	0
4:30 PM	0	0	190	164	0	63	141	0	0	0	0	0	0	80	0	8	646	0
4:45 PM	0	0	176	157	0	76	192	0	0	0	0	0	0	55	0	18	674	2,682
5:00 PM	0	0	183	164	0	85	181	0	0	0	0	0	0	71	0	8	692	2,683
5:15 PM	0	0	243	159	0	73	146	0	0	0	0	0	0	54	0	15	690	2,702
5:30 PM	0	0	192	164	0	62	159	0	0	0	0	0	0	94	0	17	688	2,744
5:45 PM	0	0	181	166	0	53	182	0	0	0	0	0	0	105	1	18	706	2,776
Count Total	0	0	1,587	1,292	0	550	1,355	0	0	0	0	0	0	571	5	98	5,458	0
Peak Hour	All	0	0	799	653	0	273	668	0	0	0	0	0	324	1	58	2,776	0
	HV	0	0	34	20	0	19	29	0	0	0	0	0	45	0	0	147	0
	HV%	-	-	4%	3%	-	7%	4%	-	-	-	-	-	14%	0%	0%	5%	0

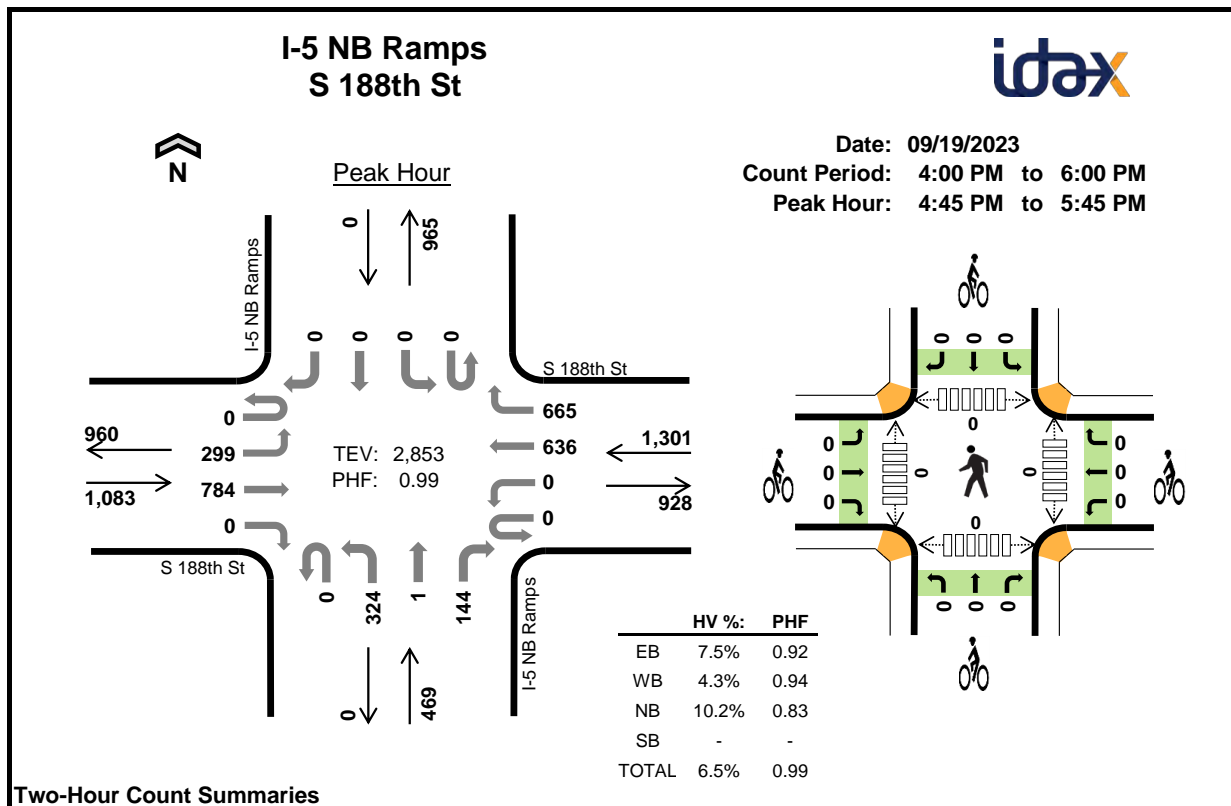
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	11	21	0	14	46	0	0	0	0	0	0	0	0	1	1
4:15 PM	17	11	0	13	41	0	0	0	0	0	0	0	0	0	0
4:30 PM	20	6	0	12	38	0	0	0	0	0	0	0	0	0	0
4:45 PM	14	21	0	13	48	0	0	0	0	0	0	0	0	0	0
5:00 PM	12	13	0	13	38	0	0	0	0	0	0	0	0	0	0
5:15 PM	17	13	0	6	36	0	0	0	0	0	0	0	0	2	2
5:30 PM	11	9	0	14	34	0	0	0	0	0	0	0	0	0	0
5:45 PM	14	13	0	12	39	0	0	0	0	0	0	0	0	0	0
Count Total	116	107	0	97	320	0	0	0	0	0	0	0	0	3	3
Peak Hour	54	48	0	45	147	0	0	0	0	0	0	0	0	2	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 188th St				S 188th St				I-5 SB Ramps				I-5 SB Ramps				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	8	3	0	6	15	0	0	0	0	0	0	14	0	0	46	0
4:15 PM	0	0	15	2	0	3	8	0	0	0	0	0	0	13	0	0	41	0
4:30 PM	0	0	13	7	0	5	1	0	0	0	0	0	0	12	0	0	38	0
4:45 PM	0	0	9	5	0	6	15	0	0	0	0	0	0	12	0	1	48	173
5:00 PM	0	0	6	6	0	6	7	0	0	0	0	0	0	13	0	0	38	165
5:15 PM	0	0	12	5	0	4	9	0	0	0	0	0	0	6	0	0	36	160
5:30 PM	0	0	9	2	0	4	5	0	0	0	0	0	0	14	0	0	34	156
5:45 PM	0	0	7	7	0	5	8	0	0	0	0	0	0	12	0	0	39	147
Count Total	0	0	79	37	0	39	68	0	0	0	0	0	0	96	0	1	320	0
Peak Hour	0	0	34	20	0	19	29	0	0	0	0	0	0	45	0	0	147	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 188th St				S 188th St				I-5 SB Ramps				I-5 SB Ramps				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
4:00 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
4:15 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
4:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
4:45 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:00 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:15 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
5:45 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
Count Total	0	0	0		0	0	0		0	0	0		0	0	0		0	0
Peak Hour	0	0	0		0	0	0		0	0	0		0	0	0		0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 188th St				S 188th St				I-5 NB Ramps				I-5 NB Ramps				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	4:00 PM	0	63	194	0	0	0	161	122	0	100	0	31	0	0	0	0	671	0
	4:15 PM	0	78	189	0	0	0	167	161	0	73	0	41	0	0	0	0	709	0
	4:30 PM	0	63	198	0	0	0	132	156	0	79	0	47	0	0	0	0	675	0
	4:45 PM	0	67	182	0	0	0	164	169	0	97	1	44	0	0	0	0	724	2,779
	5:00 PM	0	66	186	0	0	0	194	153	0	83	0	35	0	0	0	0	717	2,825
	5:15 PM	0	91	202	0	0	0	138	195	0	62	0	30	0	0	0	0	718	2,834
	5:30 PM	0	75	214	0	0	0	140	148	0	82	0	35	0	0	0	0	694	2,853
	5:45 PM	0	78	211	0	0	0	148	139	0	86	0	33	0	0	0	0	695	2,824
Count Total		0	581	1,576	0	0	0	1,244	1,243	0	662	1	296	0	0	0	0	5,603	0
Peak Hour	All	0	299	784	0	0	0	636	665	0	324	1	144	0	0	0	0	2,853	0
	HV	0	4	77	0	0	0	43	13	0	12	1	35	0	0	0	0	185	0
	HV%	-	1%	10%	-	-	-	7%	2%	-	4%	100%	24%	-	-	-	-	6%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

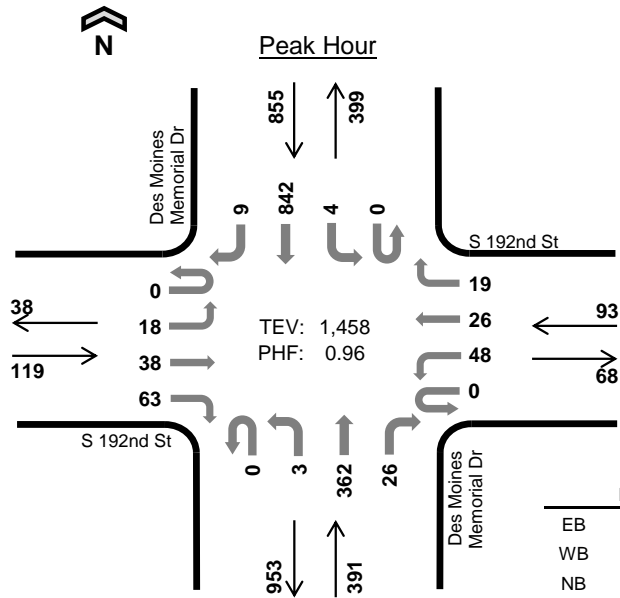
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	21	15	19	0	55	0	0	0	0	0	0	0	0	0	0
4:15 PM	30	13	19	0	62	0	0	0	0	0	0	0	0	0	0
4:30 PM	23	8	11	0	42	0	0	0	0	0	0	0	0	0	0
4:45 PM	22	21	15	0	58	0	0	0	0	0	0	0	0	0	0
5:00 PM	19	12	8	0	39	0	0	0	0	0	0	0	0	0	0
5:15 PM	17	13	11	0	41	0	0	0	0	0	0	0	0	0	0
5:30 PM	23	10	14	0	47	0	0	0	0	0	0	0	0	0	0
5:45 PM	20	16	9	0	45	0	0	0	0	0	0	0	0	0	0
Count Total	175	108	106	0	389	0	0	0	0	0	0	0	0	0	0
Peak Hour	81	56	48	0	185	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 188th St				S 188th St				I-5 NB Ramps				I-5 NB Ramps				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	20	0	0	0	10	5	0	12	0	7	0	0	0	0	55	0
4:15 PM	0	3	27	0	0	0	9	4	0	2	0	17	0	0	0	0	62	0
4:30 PM	0	0	23	0	0	0	6	2	0	1	0	10	0	0	0	0	42	0
4:45 PM	0	3	19	0	0	0	17	4	0	4	1	10	0	0	0	0	58	217
5:00 PM	0	0	19	0	0	0	9	3	0	3	0	5	0	0	0	0	39	201
5:15 PM	0	1	16	0	0	0	10	3	0	3	0	8	0	0	0	0	41	180
5:30 PM	0	0	23	0	0	0	7	3	0	2	0	12	0	0	0	0	47	185
5:45 PM	0	2	18	0	0	0	10	6	0	2	0	7	0	0	0	0	45	172
Count Total	0	10	165	0	0	0	78	30	0	29	1	76	0	0	0	0	389	0
Peak Hour	0	4	77	0	0	0	43	13	0	12	1	35	0	0	0	0	185	0

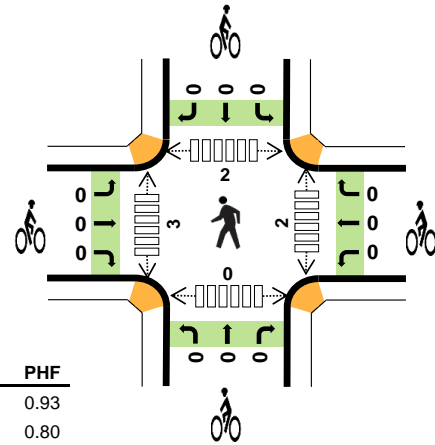
Two-Hour Count Summaries - Bikes																
Interval Start	S 188th St			S 188th St			I-5 NB Ramps			I-5 NB Ramps			15-min Total	Rolling One Hour		
	Eastbound			Westbound			Northbound			Southbound						
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Des Moines Memorial Dr S 192nd St



Date: 09/19/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	3.4%	0.93
WB	3.2%	0.80
NB	3.8%	0.88
SB	0.4%	0.92
TOTAL	1.7%	0.96

Two-Hour Count Summaries

Interval Start		S 192nd St				S 192nd St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	3	9	29	0	13	7	2	0	6	93	4	0	4	150	2	322	0
4:15 PM		0	3	5	19	0	19	7	3	0	1	101	9	0	0	210	1	378	0
4:30 PM		0	5	11	15	0	9	4	6	0	1	89	6	0	3	226	3	378	0
4:45 PM		0	4	16	12	0	10	9	3	0	0	93	7	0	0	215	4	373	1,451
5:00 PM		0	6	6	17	0	10	6	7	0	1	79	4	0	1	191	1	329	1,458
5:15 PM		0	0	11	13	0	10	6	2	0	3	78	6	0	1	176	1	307	1,387
5:30 PM		0	5	7	15	0	7	12	3	0	2	78	4	0	1	164	3	301	1,310
5:45 PM		0	1	7	12	0	7	5	1	0	1	77	8	0	0	157	1	277	1,214
Count Total		0	27	72	132	0	85	56	27	0	15	688	48	0	10	1,489	16	2,665	0
Peak Hour	All	0	18	38	63	0	48	26	19	0	3	362	26	0	4	842	9	1,458	0
	HV	0	2	1	1	0	0	0	3	0	0	14	1	0	2	0	1	25	0
	HV%	-	11%	3%	2%	-	0%	0%	16%	-	0%	4%	4%	-	50%	0%	11%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	1	5	7	0	0	0	1	1	0	1	0	0	1
4:15 PM	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	3	9	2	15	0	0	0	0	0	2	1	2	0	5
4:45 PM	1	0	2	0	3	0	0	0	0	0	0	1	0	0	1
5:00 PM	1	0	1	1	3	0	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Count Total	5	4	17	9	35	0	0	0	1	1	2	4	2	0	8
Peak Hour	4	3	15	3	25	0	0	0	0	0	2	3	2	0	7

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 192nd St				S 192nd St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	4	1	0	7	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	0	4	0
4:30 PM	0	0	1	0	0	0	0	3	0	0	9	0	0	2	0	0	15	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	29
5:00 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3	25
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	22
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	8
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	6
Count Total	0	2	1	2	0	0	1	3	0	0	16	1	0	7	1	1	35	0
Peak Hour	0	2	1	1	0	0	0	3	0	0	14	1	0	2	0	1	25	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S 192nd St			S 192nd St			Des Moines Memorial Dr			Des Moines Memorial Dr			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0				
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

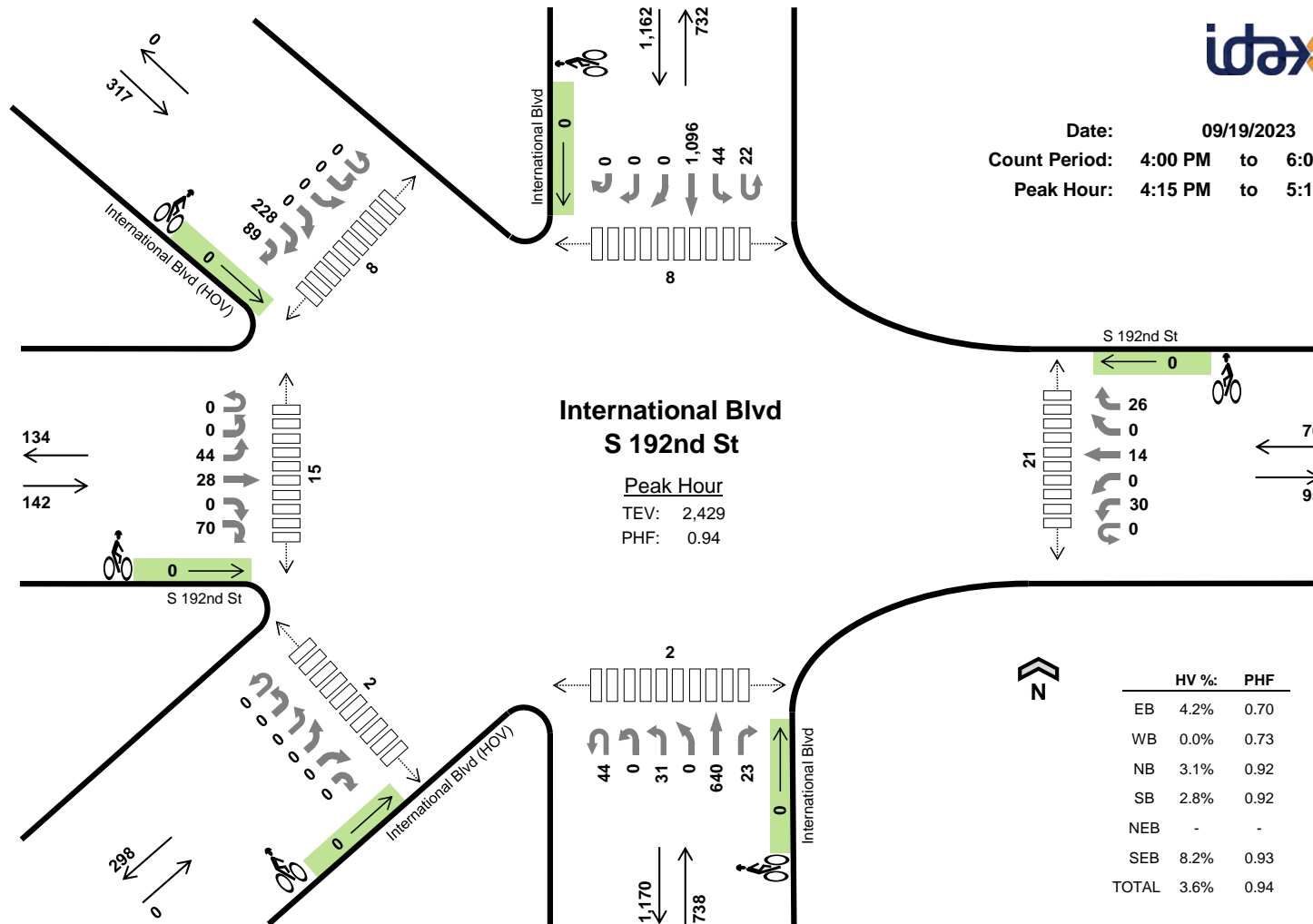


Date: 09/19/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:15 PM to 5:15 PM

International Blvd S 192nd St

Peak Hour
 TEV: 2,429
 PHF: 0.94

	HV %:	PHF
EB	4.2%	0.70
WB	0.0%	0.73
NB	3.1%	0.92
SB	2.8%	0.92
NEB	-	-
SEB	8.2%	0.93
TOTAL	3.6%	0.94



Two-Hour Count Summaries

Interval Start		S 192nd St Eastbound						S 192nd St Westbound						International Blvd Northbound						International Blvd Southbound						International Blvd (HOV) Northeastbound						International Blvd (HOV) Southeastbound						15-min Total	Rolling One Hour	
		UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	BR	RT	HR	UT	HL	BL	BR	RT			HR
4:00 PM		0	0	6	4	0	24	0	13	0	2	0	5	9	0	5	0	177	8	6	14	242	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	22	579	0
4:15 PM		0	0	8	3	0	17	0	7	0	8	0	9	9	0	8	0	144	7	6	15	294	0	0	0	0	0	0	0	0	0	0	0	0	54	23	612	0		
4:30 PM		0	0	11	9	0	12	0	4	0	0	0	5	12	0	10	0	167	12	3	8	305	0	0	0	0	0	0	0	0	0	0	0	60	25	643	0			
4:45 PM		0	0	13	10	0	28	0	10	0	2	0	7	16	0	11	0	165	3	5	10	230	0	0	0	0	0	0	0	0	0	0	0	63	20	593	2,427			
5:00 PM		0	0	12	6	0	13	0	9	0	4	0	5	7	0	2	0	164	1	8	11	267	0	0	0	0	0	0	0	0	0	0	51	21	581	2,429				
5:15 PM		0	0	10	5	0	13	0	10	0	7	0	5	10	0	8	0	150	6	6	5	295	0	0	0	0	0	0	0	0	0	0	42	26	598	2,415				
5:30 PM		0	0	7	6	0	12	0	11	0	4	0	6	7	0	4	0	163	7	5	14	265	0	0	0	0	0	0	0	0	0	41	26	578	2,350					
5:45 PM		0	0	9	5	0	21	0	6	0	2	0	10	5	0	3	0	148	5	4	20	223	0	0	0	0	0	0	0	0	0	37	21	519	2,276					
Count Total		0	0	76	48	0	140	0	70	0	29	0	52	75	0	51	0	1,278	49	43	97	2,121	0	0	0	0	0	0	0	0	0	390	184	4,703	0					
Peak Hour	All HV	0	0	44	28	0	70	0	30	0	14	0	26	44	0	31	0	640	23	22	44	1,096	0	0	0	0	0	0	0	0	0	228	89	2,429	0					
	HV%	0	0	4	1	0	1	0	0	0	0	0	0	0	0	0	0	23	0	5	3	25	0	0	0	0	0	0	0	0	0	16	10	88	0					
	-	-	9%	4%	-	1%	-	0%	-	0%	-	0%	0%	0%	-	0%	-	4%	0%	23%	7%	2%	-	-	-	-	-	-	-	-	-	7%	11%	4%	0					

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)						
	EB	WB	NB	SB	NEB	SEB	Total	EB	WB	NB	SB	NEB	SEB	Total	East	West	North	South	NW	SW	Total
4:00 PM	1	0	8	10	0	5	24	0	0	0	0	0	0	0	0	3	2	0	2	0	7
4:15 PM	2	0	5	12	0	5	24	0	0	0	0	0	0	0	2	3	2	0	2	0	9
4:30 PM	2	0	8	10	0	7	27	0	0	0	0	0	0	0	7	5	0	2	0	2	16
4:45 PM	0	0	4	2	0	11	17	0	0	0	0	0	0	0	6	1	0	0	0	0	7
5:00 PM	2	0	6	9	0	3	20	0	0	0	0	0	0	0	6	6	6	0	6	0	24
5:15 PM	2	1	5	4	0	4	16	0	0	0	0	0	0	0	0	9	0	0	0	0	9
5:30 PM	3	0	4	6	0	9	22	0	0	0	0	0	0	0	8	4	1	0	1	0	14
5:45 PM	1	2	4	7	0	4	18	0	0	0	0	0	0	0	1	7	3	0	3	0	14
Count Total	13	3	44	60	0	48	168	0	0	0	0	0	0	0	30	38	14	2	14	2	100
Peak Hr	6	0	23	33	0	26	88	0	0	0	0	0	0	0	21	15	8	2	8	2	56

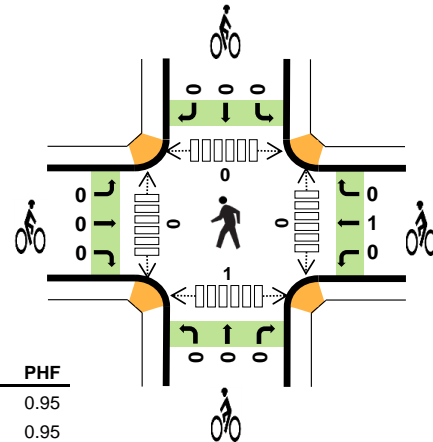
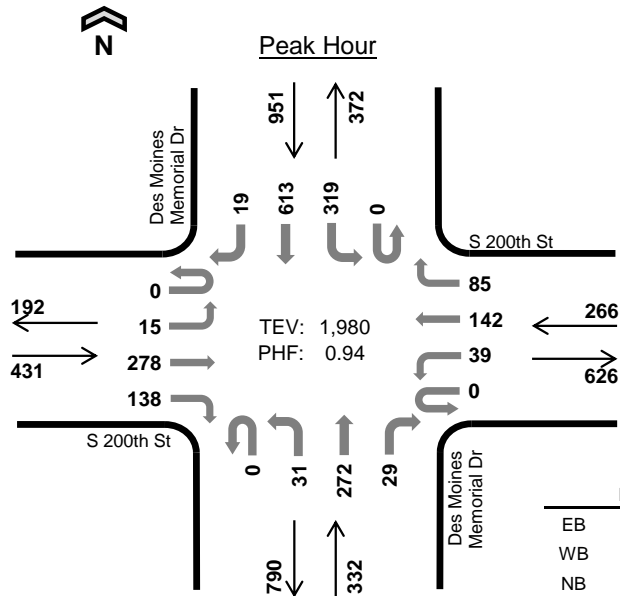
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	S 192nd St Eastbound						S 192nd St Westbound						International Blvd Northbound						International Blvd Southbound						International Blvd (HOV) Northeastbound						International Blvd (HOV) Southeastbound						15-min Total	Rolling One Hour				
	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	BL	TH	RT	UT	L	T	H	B	R	T	HR	UT	HL	LT	BL	BR	TR	HR	UT	HL	BL			BR	RT	HR	
4:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	6	1	0	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	24	0
4:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	2	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	24	0	
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	27	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4	17	92		
5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	0	2	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	20	88	
5:15 PM	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	0	1	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	16	80		
5:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	22	75		
5:45 PM	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	1	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	18	76		
Count Total	0	0	10	1	0	2	0	3	0	0	0	0	0	0	1	0	0	41	2	7	7	46	0	0	0	0	0	0	0	0	0	0	0	0	0	29	19	168	0			
Peak Hour	0	0	4	1	0	1	0	0	0	0	0	0	0	0	0	0	0	23	0	5	3	25	0	0	0	0	0	0	0	0	0	0	0	0	0	16	10	88	0			

Two-Hour Count Summaries - Bikes

[illegible]

Des Moines Memorial Dr S 200th St



	HV %:	PHF
EB	2.1%	0.95
WB	3.4%	0.95
NB	3.9%	0.89
SB	1.4%	0.91
TOTAL	2.2%	0.94

Two-Hour Count Summaries

Interval Start		S 200th St				S 200th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	7	74	35	0	8	28	26	0	7	52	6	0	72	136	8	459	0
4:15 PM		0	7	48	42	0	7	35	24	0	10	84	6	0	65	151	4	483	0
4:30 PM		0	5	69	37	0	9	32	22	0	10	72	11	0	95	160	5	527	0
4:45 PM		0	6	58	31	0	7	38	25	0	6	67	4	0	75	163	7	487	1,956
5:00 PM		0	4	70	39	0	12	33	19	0	7	59	8	0	71	147	4	473	1,970
5:15 PM		0	0	81	31	0	11	39	19	0	8	74	6	0	78	143	3	493	1,980
5:30 PM		0	4	48	25	0	14	32	14	0	8	59	4	0	64	147	2	421	1,874
5:45 PM		0	4	36	20	0	11	39	13	0	5	72	13	0	43	136	7	399	1,786
Count Total		0	37	484	260	0	79	276	162	0	61	539	58	0	563	1,183	40	3,742	0
Peak Hour	All	0	15	278	138	0	39	142	85	0	31	272	29	0	319	613	19	1,980	0
	HV	0	1	5	3	0	1	2	6	0	2	9	2	0	5	8	0	44	0
	HV%	-	7%	2%	2%	-	3%	1%	7%	-	6%	3%	7%	-	2%	1%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

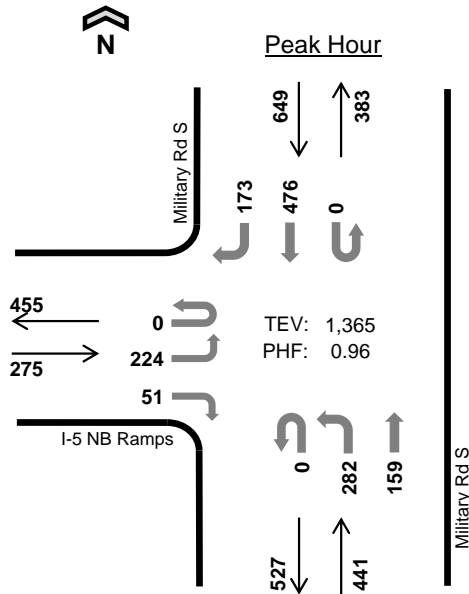
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	0	0	1	4	0	0	0	1	1	0	5	0	3	8
4:15 PM	3	2	5	4	14	0	0	0	1	1	0	0	0	1	1
4:30 PM	3	2	7	6	18	0	1	0	0	1	0	0	0	0	0
4:45 PM	1	4	2	5	12	0	0	0	0	0	0	0	0	0	0
5:00 PM	3	1	1	2	7	0	0	0	0	0	0	0	0	1	1
5:15 PM	2	2	3	0	7	0	0	0	0	0	0	0	0	0	0
5:30 PM	2	2	2	2	8	0	0	0	0	0	0	0	0	0	0
5:45 PM	4	0	4	5	13	1	0	0	0	1	0	0	0	0	0
Count Total	21	13	24	25	83	1	1	0	2	4	0	5	0	5	10
Peak Hour	9	9	13	13	44	0	1	0	0	1	0	0	0	1	1

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 200th St				S 200th St				Des Moines Memorial Dr				Des Moines Memorial Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	4	0
4:15 PM	0	0	1	2	0	0	1	1	0	1	3	1	0	2	2	0	14	0
4:30 PM	0	0	2	1	0	0	0	2	0	0	6	1	0	4	2	0	18	0
4:45 PM	0	0	0	1	0	0	1	3	0	1	1	0	0	1	4	0	12	48
5:00 PM	0	1	2	0	0	0	0	1	0	0	1	0	0	0	2	0	7	51
5:15 PM	0	0	1	1	0	1	1	0	0	1	1	1	0	0	0	0	7	44
5:30 PM	0	0	1	1	0	0	2	0	0	0	1	1	0	0	2	0	8	34
5:45 PM	0	1	2	1	0	0	0	0	0	1	3	0	0	3	0	2	13	35
Count Total	0	3	10	8	0	1	5	7	0	4	16	4	0	10	13	2	83	0
Peak Hour	0	1	5	3	0	1	2	6	0	2	9	2	0	5	8	0	44	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 200th St			S 200th St			Des Moines Memorial Dr			Des Moines Memorial Dr			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	1			
Count Total	0	0	1	0	1	0	0	0	0	0	2	0	4	0			
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	1	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Military Rd S I-5 NB Ramps



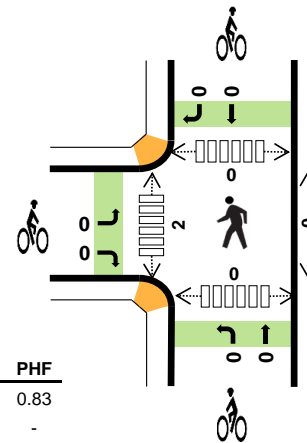
Peak Hour

Date: 09/19/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:15 PM to 5:15 PM

TEV: 1,365
PHF: 0.96



	HV %:	PHF
EB	2.5%	0.83
WB	-	-
NB	1.4%	0.96
SB	2.3%	0.85
TOTAL	2.1%	0.96

Two-Hour Count Summaries

Interval Start		I-5 NB Ramps				0				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	53	0	11	0	0	0	0	0	63	39	0	0	0	117	34	317	0
4:15 PM		0	68	0	15	0	0	0	0	0	70	42	0	0	0	112	44	351	0
4:30 PM		0	64	0	15	0	0	0	0	0	71	44	0	0	0	110	35	339	0
4:45 PM		0	51	0	11	0	0	0	0	0	67	34	0	0	0	141	50	354	1,361
5:00 PM		0	41	0	10	0	0	0	0	0	74	39	0	0	0	113	44	321	
5:15 PM		0	46	0	16	0	0	0	0	0	66	51	0	0	0	128	40	347	1,361
5:30 PM		0	61	0	13	0	0	0	0	0	49	41	0	0	0	130	38	332	1,354
5:45 PM		0	61	0	10	0	0	0	0	0	50	32	0	0	0	95	36	284	1,284
Count Total		0	445	0	101	0	0	0	0	0	510	322	0	0	0	946	321	2,645	0
Peak Hour	All	0	224	0	51	0	0	0	0	0	282	159	0	0	0	476	173	1,365	0
	HV	0	7	0	0	0	0	0	0	0	3	3	0	0	0	10	5	28	0
	HV%	-	3%	-	0%	-	-	-	-	-	1%	2%	-	-	-	2%	3%	2%	0

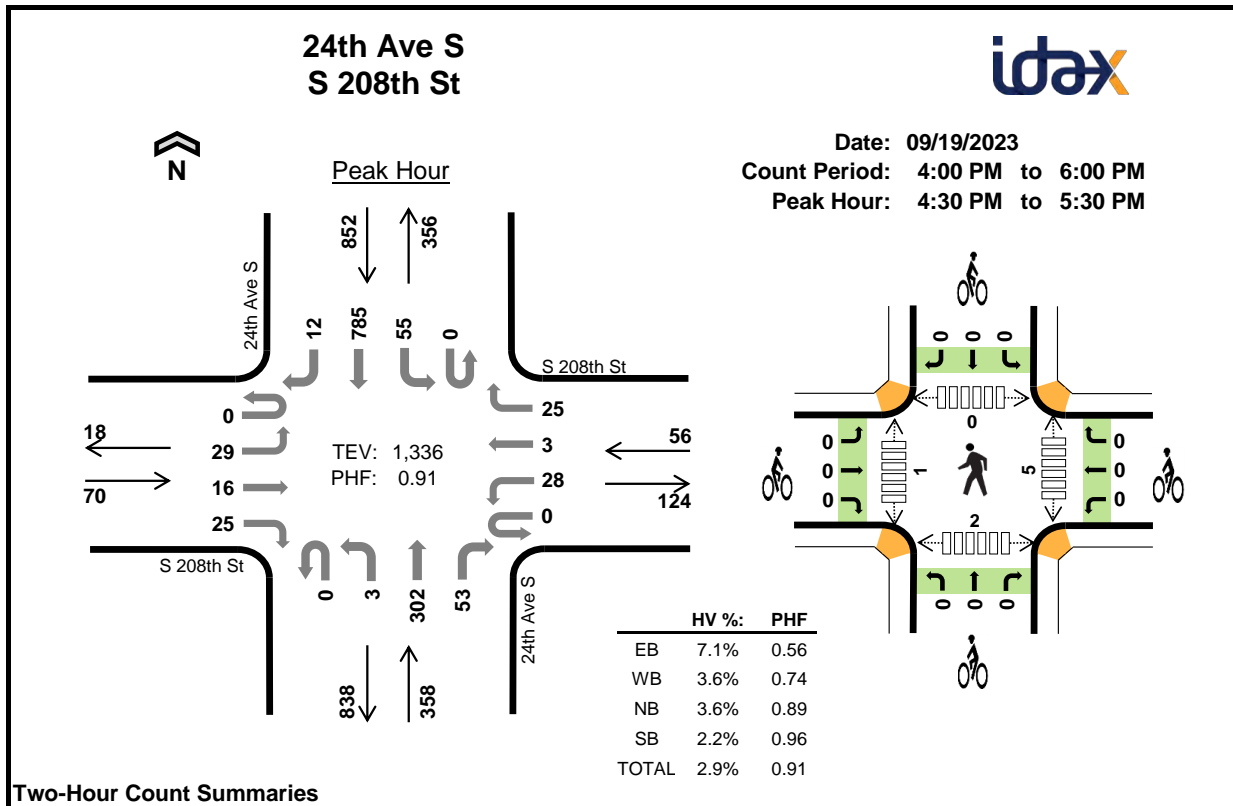
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	3	1	6	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	1	5	7	0	0	0	0	0	0	1	0	0	1
4:30 PM	3	0	2	4	9	0	0	0	0	0	0	0	0	0	0
4:45 PM	2	0	3	3	8	0	0	0	0	0	0	1	0	0	1
5:00 PM	1	0	0	3	4	0	0	0	0	0	0	0	0	0	0
5:15 PM	2	0	6	2	10	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	2	3	5	0	0	0	0	0	0	2	0	0	2
5:45 PM	1	0	0	4	5	0	0	0	0	0	0	0	0	0	0
Count Total	12	0	17	25	54	0	0	0	0	0	0	4	0	0	4
Peak Hr	7	0	6	15	28	0	0	0	0	0	0	2	0	0	2

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	I-5 NB Ramps				0				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	0	0	0	0	0	0	0	2	1	0	0	0	1	0	6	0
4:15 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2	3	7	0
4:30 PM	0	3	0	0	0	0	0	0	0	1	1	0	0	0	3	1	9	0
4:45 PM	0	2	0	0	0	0	0	0	0	1	2	0	0	0	2	1	8	30
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4	28
5:15 PM	0	2	0	0	0	0	0	0	0	5	1	0	0	0	2	0	10	31
5:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	5	27
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1	5	24
Count Total	0	12	0	0	0	0	0	0	0	11	6	0	0	0	18	7	54	0
Peak Hour	0	7	0	0	0	0	0	0	0	3	3	0	0	0	10	5	28	0

Two-Hour Count Summaries - Bikes																		
Interval Start	I-5 NB Ramps			0			Military Rd S			Military Rd S			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 208th St				S 208th St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	3	1	7	0	7	0	9	0	0	79	17	0	17	177	2	319	0
4:15 PM		0	7	1	2	0	7	0	11	0	2	62	9	0	11	171	1	284	0
4:30 PM		0	13	9	9	0	6	1	8	0	0	81	17	0	16	202	5	367	0
4:45 PM		0	5	1	6	0	10	1	8	0	1	66	14	0	15	174	1	302	1,272
5:00 PM		0	2	3	6	0	6	1	5	0	2	89	10	0	12	207	4	347	1,300
5:15 PM		0	9	3	4	0	6	0	4	0	0	66	12	0	12	202	2	320	1,336
5:30 PM		0	1	3	5	0	2	1	5	0	0	62	12	0	13	184	0	288	1,257
5:45 PM		0	2	2	1	0	2	0	1	0	2	57	4	0	14	147	2	234	1,189
Count Total		0	42	23	40	0	46	4	51	0	7	562	95	0	110	1,464	17	2,461	0
Peak Hour	All	0	29	16	25	0	28	3	25	0	3	302	53	0	55	785	12	1,336	0
	HV	0	2	1	2	0	1	0	1	0	0	13	0	0	2	14	3	39	0
	HV%	-	7%	6%	8%	-	4%	0%	4%	-	0%	4%	0%	-	4%	2%	25%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	1	6	7	15	0	0	0	0	0	0	0	0	1	1
4:15 PM	3	2	4	4	13	0	0	0	0	0	2	5	0	0	7
4:30 PM	2	2	6	8	18	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	4	3	7	0	0	0	0	0	1	1	0	0	2
5:00 PM	3	0	1	4	8	0	0	0	0	0	2	0	0	0	2
5:15 PM	0	0	2	4	6	0	0	0	0	0	1	0	0	2	3
5:30 PM	3	0	4	2	9	0	0	0	0	0	1	0	0	0	1
5:45 PM	4	0	3	2	9	0	0	0	0	0	0	2	0	0	2
Count Total	16	5	30	34	85	0	0	0	0	0	8	8	0	3	19
Peak Hour	5	2	13	19	39	0	0	0	0	0	5	1	0	2	8

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 208th St				S 208th St				24th Ave S				24th Ave S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	1	0	0	4	2	0	0	6	1	15	0
4:15 PM	0	2	1	0	0	1	0	1	0	1	2	1	0	1	3	0	13	0
4:30 PM	0	1	1	0	0	1	0	1	0	0	6	0	0	0	7	1	18	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	7	53
5:00 PM	0	1	0	2	0	0	0	0	0	0	1	0	0	1	2	1	8	46
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	2	1	6	39
5:30 PM	0	0	2	1	0	0	0	0	0	0	4	0	0	1	1	0	9	30
5:45 PM	0	2	2	0	0	0	0	0	0	0	2	1	0	0	2	0	9	32
Count Total	0	7	6	3	0	2	0	3	0	1	25	4	0	4	26	4	85	0
Peak Hour	0	2	1	2	0	1	0	1	0	0	13	0	0	2	14	3	39	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 208th St			S 208th St			24th Ave S			24th Ave S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

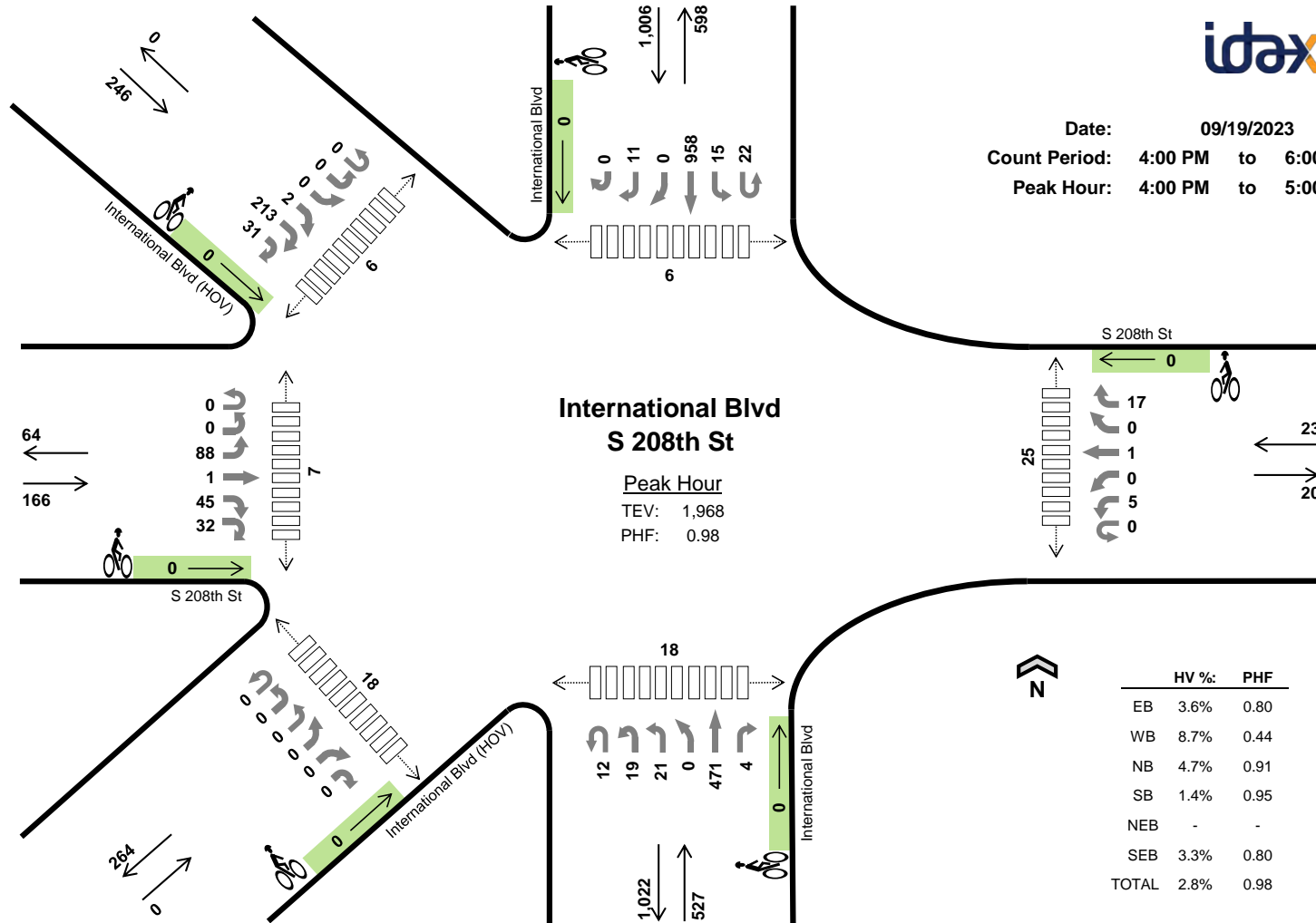


Date: 09/19/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:00 PM to 5:00 PM

International Blvd S 208th St

Peak Hour
 TEV: 1,968
 PHF: 0.98

	HV %:	PHF
EB	3.6%	0.80
WB	8.7%	0.44
NB	4.7%	0.91
SB	1.4%	0.95
NEB	-	-
SEB	3.3%	0.80
TOTAL	2.8%	0.98

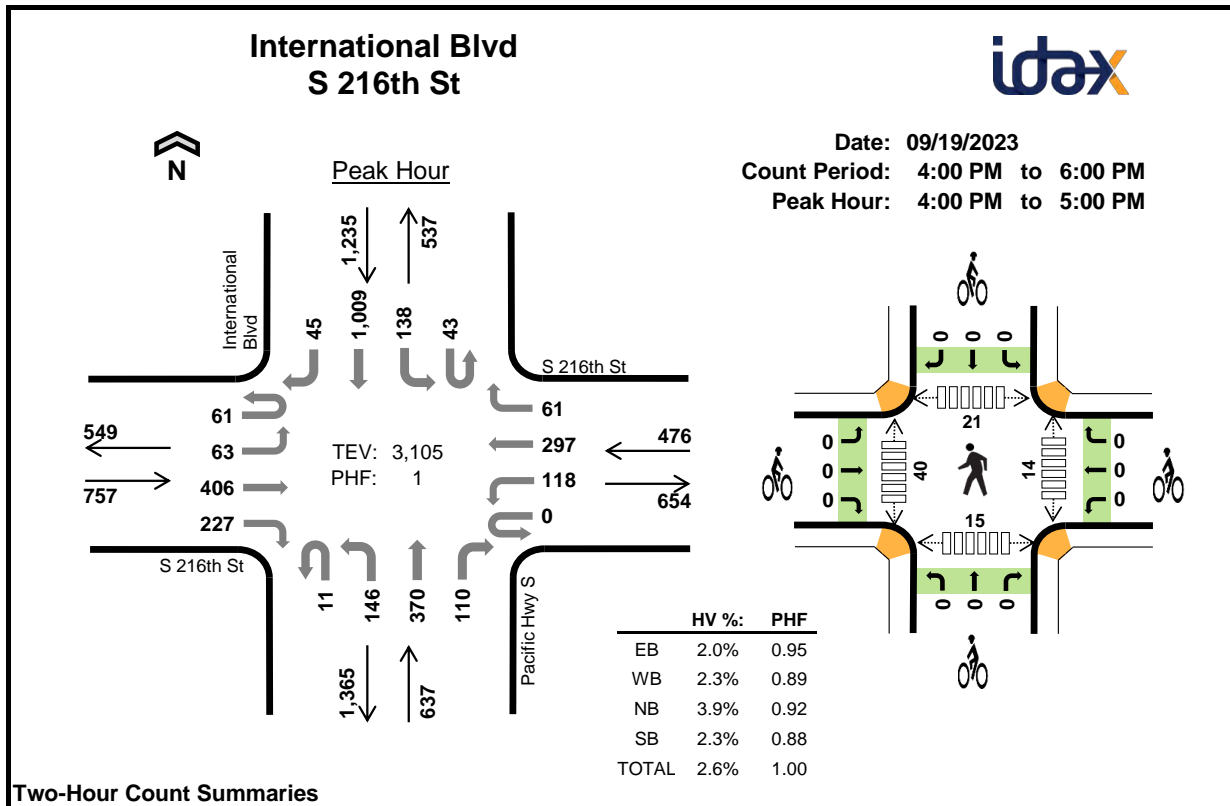


Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Two-Hour Count Summaries - Heavy Vehicles

Two-Hour Count Summaries - Bikes

project.manager.wa@idaxdata.com

**Two-Hour Count Summaries**

Interval Start		S 216th St				S 216th St				Pacific Hwy S				International Blvd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		16	16	102	61	0	27	71	16	2	26	80	32	14	36	264	13	776	0
4:15 PM		17	19	105	59	0	38	67	23	4	42	103	22	14	34	219	11	777	0
4:30 PM		21	10	90	50	0	22	70	8	2	40	87	24	7	36	295	11	773	0
4:45 PM		7	18	109	57	0	31	89	14	3	38	100	32	8	32	231	10	779	3,105
5:00 PM		15	16	94	52	0	21	68	23	4	39	87	33	10	39	232	25	758	3,087
5:15 PM		14	16	96	61	0	37	65	23	6	32	111	14	7	41	240	9	772	3,082
5:30 PM		17	10	89	59	0	35	70	13	2	25	109	24	12	33	264	17	779	3,088
5:45 PM		14	10	71	54	0	20	67	18	2	36	80	30	3	43	234	5	687	2,996
Count Total		121	115	756	453	0	231	567	138	25	278	757	211	75	294	1,979	101	6,101	0
Peak Hour	All	61	63	406	227	0	118	297	61	11	146	370	110	43	138	1,009	45	3,105	0
	HV	0	2	5	8	0	3	5	3	0	5	18	2	0	3	25	1	80	0
	HV%	0%	3%	1%	4%	-	3%	2%	5%	0%	3%	5%	2%	0%	2%	2%	2%	3%	0

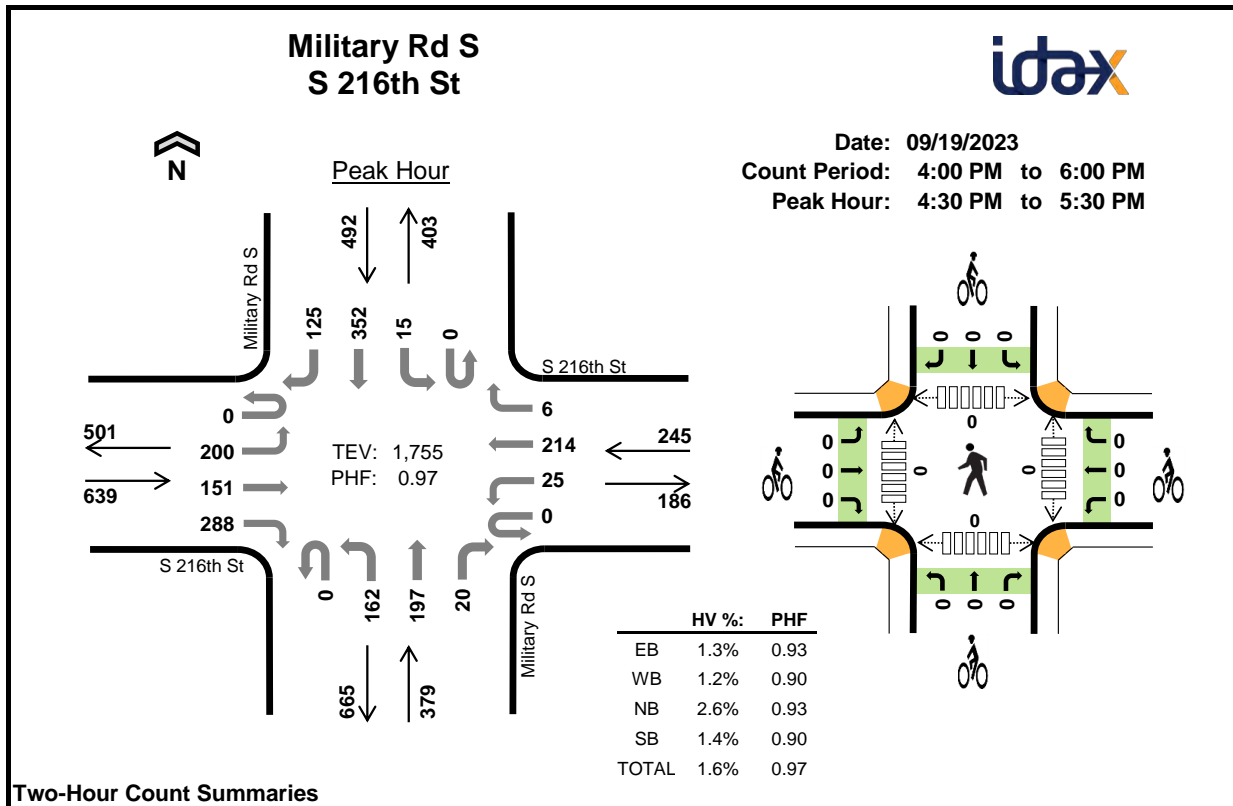
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	4	6	6	22	0	0	0	0	0	3	11	3	1	18
4:15 PM	6	3	7	10	26	0	0	0	0	0	5	10	7	6	28
4:30 PM	0	1	9	7	17	0	0	0	0	0	2	11	3	2	18
4:45 PM	3	3	3	6	15	0	0	0	0	0	4	8	8	6	26
5:00 PM	1	2	5	0	8	0	0	0	0	0	1	11	5	5	22
5:15 PM	4	1	7	10	22	0	0	0	1	1	5	10	4	9	28
5:30 PM	4	3	1	3	11	0	0	0	0	0	4	7	0	2	13
5:45 PM	1	0	3	3	7	0	1	0	0	1	6	10	4	7	27
Count Total	25	17	41	45	128	0	1	0	1	2	30	78	34	38	180
Peak Hour	15	11	25	29	80	0	0	0	0	0	14	40	21	15	90

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 216th St				S 216th St				Pacific Hwy S				International Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	1	4	0	2	1	1	0	0	4	2	0	1	5	0	22	0
4:15 PM	0	1	3	2	0	1	1	1	0	3	4	0	0	0	9	1	26	0
4:30 PM	0	0	0	0	0	0	0	1	0	2	7	0	0	0	7	0	17	0
4:45 PM	0	0	1	2	0	0	3	0	0	0	3	0	0	2	4	0	15	80
5:00 PM	0	1	0	0	0	0	1	1	0	3	2	0	0	0	0	0	8	66
5:15 PM	0	0	2	2	0	0	0	1	0	2	5	0	0	1	9	0	22	62
5:30 PM	0	0	2	2	0	0	3	0	0	0	1	0	0	0	3	0	11	56
5:45 PM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	7	48
Count Total	0	3	10	12	0	3	9	5	0	10	29	2	0	4	40	1	128	0
Peak Hour	0	2	5	8	0	3	5	3	0	5	18	2	0	3	25	1	80	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 216th St			S 216th St			Pacific Hwy S			International Blvd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
Count Total	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S 216th St				S 216th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	52	33	70	0	11	56	0	0	39	46	14	0	2	79	39	441	0
4:15 PM		0	44	27	79	0	9	50	0	0	50	53	2	0	3	77	28	422	0
4:30 PM		0	44	44	64	0	7	44	2	0	38	50	3	0	2	103	32	433	0
4:45 PM		0	66	34	71	0	9	51	2	0	37	45	4	0	5	79	35	438	1,734
5:00 PM		0	46	36	74	0	4	62	2	0	48	45	9	0	3	75	26	430	1,723
5:15 PM		0	44	37	79	0	5	57	0	0	39	57	4	0	5	95	32	454	1,755
5:30 PM		0	42	35	71	0	8	49	0	0	37	47	4	0	4	95	29	421	1,743
5:45 PM		0	38	43	68	0	12	47	0	0	36	33	4	0	7	81	31	400	1,705
Count Total		0	376	289	576	0	65	416	6	0	324	376	44	0	31	684	252	3,439	0
Peak Hour	All	0	200	151	288	0	25	214	6	0	162	197	20	0	15	352	125	1,755	0
	HV	0	4	2	2	0	0	3	0	0	5	5	0	0	2	5	0	28	0
	HV%	-	2%	1%	1%	-	0%	1%	0%	-	3%	3%	0%	-	13%	1%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	1	5	1	10	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	2	1	4	0	0	0	0	0	0	1	0	0	1
4:30 PM	2	0	1	3	6	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	2	3	2	8	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	2	2	5	0	0	0	0	0	0	0	0	0	0
5:15 PM	4	1	4	0	9	0	0	0	0	0	0	0	0	0	0
5:30 PM	2	0	3	1	6	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	1	1	2	5	0	0	0	0	0	0	1	0	0	1
Count Total	15	5	21	12	53	0	0	0	0	0	0	2	0	0	2
Peak Hour	8	3	10	7	28	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S 216th St				S 216th St				Military Rd S				Military Rd S				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	2	0	0	1	0	0	4	1	0	0	0	1	0	10	0
4:15 PM	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	4	0
4:30 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	2	6	0
4:45 PM	0	0	1	0	0	0	2	0	0	1	2	0	0	0	1	1	8	28
5:00 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	2	5	23
5:15 PM	0	2	0	2	0	0	1	0	0	1	3	0	0	0	0	0	9	28
5:30 PM	0	1	0	1	0	0	0	0	0	2	1	0	0	0	0	1	6	28
5:45 PM	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	1	5	25
Count Total	0	6	2	7	0	0	5	0	0	13	8	0	0	3	9	0	53	0
Peak Hour	0	4	2	2	0	0	3	0	0	5	5	0	0	2	5	0	28	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S 216th St			S 216th St			Military Rd S			Military Rd S			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.























SECTION 2: OPERATIONAL ANALYSIS REPORTS

EXISTING CONDITIONS

HCM 6th Signalized Intersection Summary

1: Des Moines Memorial Dr & S 128th St

















11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	214	77	94	195	29	50	207	109	39	296	161
Future Volume (veh/h)	117	214	77	94	195	29	50	207	109	39	296	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.93	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1841	1841	1841	1870	1870	1945
Adj Flow Rate, veh/h	127	233	84	102	212	32	54	225	118	42	322	175
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	2	2	2
Cap, veh/h	168	486	169	136	533	79	89	480	398	76	473	564
Arrive On Green	0.09	0.19	0.19	0.08	0.17	0.17	0.05	0.26	0.26	0.04	0.25	0.25
Sat Flow, veh/h	1767	2533	881	1781	3073	454	1753	1841	1525	1781	1870	1609
Grp Volume(v), veh/h	127	160	157	102	121	123	54	225	118	42	322	175
Grp Sat Flow(s),veh/h/ln	1767	1763	1652	1781	1777	1750	1753	1841	1525	1781	1870	1609
Q Serve(g_s), s	3.9	4.5	4.8	3.1	3.4	3.5	1.7	5.8	3.5	1.3	8.7	4.5
Cycle Q Clear(g_c), s	3.9	4.5	4.8	3.1	3.4	3.5	1.7	5.8	3.5	1.3	8.7	4.5
Prop In Lane	1.00		0.53	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	338	317	136	308	304	89	480	398	76	473	564
V/C Ratio(X)	0.76	0.47	0.50	0.75	0.39	0.41	0.61	0.47	0.30	0.55	0.68	0.31
Avail Cap(c_a), veh/h	630	1885	1766	952	1900	1871	937	1968	1630	1270	2000	1877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	20.1	20.2	25.4	20.6	20.6	26.1	17.5	16.6	26.3	18.9	13.4
Incr Delay (d2), s/veh	6.8	1.0	1.2	8.0	0.8	0.9	6.5	0.7	0.4	6.1	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.8	1.8	1.5	1.3	1.4	0.8	2.3	1.1	0.6	3.6	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	21.2	21.4	33.4	21.4	21.5	32.6	18.2	17.0	32.4	20.6	13.7
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		444			346			397			539	
Approach Delay, s/veh		24.2			24.9			19.8			19.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	15.7	8.8	20.2	10.3	16.8	8.4	20.6				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	60.0	30.0	60.0	30.0	60.0	40.0	60.0				
Max Q Clear Time (g_c+I1), s	5.9	5.5	3.7	10.7	5.1	6.8	3.3	7.8				
Green Ext Time (p_c), s	0.2	1.5	0.1	2.7	0.2	2.0	0.1	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			C									
Notes												
User approved changes to right turn type.												

HCM 6th Signalized Intersection Summary





2: 24th Ave S & S 128th St

11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	155	66	11	149	13	63	36	9	12	69	44
Future Volume (veh/h)	20	155	66	11	149	13	63	36	9	12	69	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1914	1841	1870	1945	1870	1870	1945	1870	1870	1945	1870
Adj Flow Rate, veh/h	22	174	74	12	167	15	71	40	10	13	78	49
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	394	158	221	545	47	446	80	20	231	149	92
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	75	1218	488	53	1684	146	986	555	139	150	1035	638
Grp Volume(v), veh/h	270	0	0	194	0	0	121	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1782	0	0	1883	0	0	1680	0	0	1824	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0	1.4	0.0	0.0	1.1	0.0	0.0	1.3	0.0	0.0
Prop In Lane	0.08		0.27	0.06		0.08	0.59		0.08	0.09		0.35
Lane Grp Cap(c), veh/h	784	0	0	813	0	0	546	0	0	472	0	0
V/C Ratio(X)	0.34	0.00	0.00	0.24	0.00	0.00	0.22	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	4403	0	0	4635	0	0	2716	0	0	3041	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.0	0.0	0.0	4.8	0.0	0.0	7.4	0.0	0.0	7.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	0.0	0.0	4.9	0.0	0.0	7.6	0.0	0.0	7.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		270			194			121			140	
Approach Delay, s/veh		5.3			4.9			7.6			7.8	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.1		7.7		11.1		7.7				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		45.0		30.0		45.0		30.0				
Max Q Clear Time (g_c+I1), s		4.2		3.1		3.4		3.3				
Green Ext Time (p_c), s		1.7		0.6		1.2		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				6.1								
HCM 6th LOS				A								

HCM 6th TWSC
3: Military Rd S & S 133rd St



















11/07/2023

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	37	9	18	42	42	9	270	19	35	319	6
Future Vol, veh/h	3	37	9	18	42	42	9	270	19	35	319	6
Conflicting Peds, #/hr	1	0	1	1	0	1	2	0	8	8	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	43	10	21	48	48	10	310	22	40	367	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	843	813	374	827	805	330	376	0	0	340	0	0
Stage 1	453	453	-	349	349	-	-	-	-	-	-	-
Stage 2	390	360	-	478	456	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	284	313	672	291	316	712	1182	-	-	1219	-	-
Stage 1	586	570	-	667	633	-	-	-	-	-	-	-
Stage 2	634	626	-	568	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	222	294	670	243	297	706	1180	-	-	1210	-	-
Mov Cap-2 Maneuver	222	294	-	243	297	-	-	-	-	-	-	-
Stage 1	579	545	-	655	622	-	-	-	-	-	-	-
Stage 2	539	615	-	493	543	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	18.6		19.1		0.2		0.8					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1180	-	-	321	371	1210	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.175	0.316	0.033	-	-				
HCM Control Delay (s)	8.1	0	-	18.6	19.1	8.1	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.6	1.3	0.1	-	-				

HCM 6th Signalized Intersection Summary





4: Des Moines Memorial Dr & S 136th St

11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	116	56	36	96	31	64	283	69	42	376	44
Future Volume (veh/h)	79	116	56	36	96	31	64	283	69	42	376	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	87	127	62	40	105	34	70	311	76	46	413	48
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	251	229	95	198	291	82	439	608	149	490	685	80
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	401	918	382	229	1165	327	931	1444	353	988	1627	189
Grp Volume(v), veh/h	276	0	0	179	0	0	70	0	387	46	0	461
Grp Sat Flow(s),veh/h/ln	1701	0	0	1722	0	0	931	0	1797	988	0	1816
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.0	1.1	0.0	6.2
Cycle Q Clear(g_c), s	4.3	0.0	0.0	2.6	0.0	0.0	8.1	0.0	5.0	6.1	0.0	6.2
Prop In Lane	0.32		0.22	0.22		0.19	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	576	0	0	570	0	0	439	0	757	490	0	765
V/C Ratio(X)	0.48	0.00	0.00	0.31	0.00	0.00	0.16	0.00	0.51	0.09	0.00	0.60
Avail Cap(c_a), veh/h	1721	0	0	1708	0	0	1535	0	2874	1653	0	2904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	0.0	0.0	9.8	0.0	0.0	10.2	0.0	6.7	8.9	0.0	7.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.5	0.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.7	0.0	0.0	0.3	0.0	1.0	0.2	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	0.0	0.0	10.1	0.0	0.0	10.3	0.0	7.2	9.0	0.0	7.8
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		276			179			457			507	
Approach Delay, s/veh		11.0			10.1			7.7			7.9	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.2		13.1		18.2		13.1				
Change Period (Y+Rc), s		5.0		5.3		5.0		5.3				
Max Green Setting (Gmax), s		50.0		30.0		50.0		30.0				
Max Q Clear Time (g_c+I1), s		10.1		6.3		8.2		4.6				
Green Ext Time (p_c), s		3.0		1.6		3.4		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				8.7								
HCM 6th LOS				A								

Intersection

Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	59	43	8	37	39	56	126	10	48	139	35
Future Vol, veh/h	38	59	43	8	37	39	56	126	10	48	139	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	62	45	8	39	41	59	133	11	51	146	37
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0




















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	8.7	9.7	9.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	27%	10%	22%
Vol Thru, %	66%	42%	44%	63%
Vol Right, %	5%	31%	46%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	192	140	84	222
LT Vol	56	38	8	48
Through Vol	126	59	37	139
RT Vol	10	43	39	35
Lane Flow Rate	202	147	88	234
Geometry Grp	1	1	1	1
Degree of Util (X)	0.271	0.203	0.12	0.306
Departure Headway (Hd)	4.821	4.948	4.905	4.71
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	740	721	724	759
Service Time	2.883	3.016	2.982	2.769
HCM Lane V/C Ratio	0.273	0.204	0.122	0.308
HCM Control Delay	9.7	9.3	8.7	9.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.8	0.4	1.3

HCM Signalized Intersection Capacity Analysis





6: Des Moines Memorial Dr & S 144th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	83	57	97	101	12	48	406	104	22	422	60
Future Volume (vph)	44	83	57	97	101	12	48	406	104	22	422	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99			1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94			0.99		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1604			1787		1735	1759		1751	1804	
Flt Permitted	0.95	1.00			0.98		0.27	1.00		0.27	1.00	
Satd. Flow (perm)	1641	1604			1787		486	1759		494	1804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	90	62	105	110	13	52	441	113	24	459	65
RTOR Reduction (vph)	0	19	0	0	2	0	0	5	0	0	3	0
Lane Group Flow (vph)	48	133	0	0	226	0	52	549	0	24	521	0
Confl. Peds. (#/hr)	3		2	2		3	3		7	7		3
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	10%	10%	10%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Turn Type	Split	NA		Split	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases							2			6		
Actuated Green, G (s)	13.9	13.9			17.9		48.8	46.3		48.8	43.0	
Effective Green, g (s)	13.9	13.9			17.9		48.8	46.3		48.8	43.0	
Actuated g/C Ratio	0.14	0.14			0.18		0.49	0.46		0.49	0.43	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	226	221			317		307	809		270	771	
v/s Ratio Prot	0.03	c0.08			c0.13		c0.01	c0.31		0.00	0.29	
v/s Ratio Perm							0.07			0.04		
v/c Ratio	0.21	0.60			0.71		0.17	0.68		0.09	0.68	
Uniform Delay, d1	38.5	40.7			38.9		15.6	21.3		15.4	23.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	4.6			7.4		0.3	2.3		0.1	2.4	
Delay (s)	39.0	45.3			46.4		15.9	23.6		15.5	25.5	
Level of Service	D	D			D		B	C		B	C	
Approach Delay (s)		43.8			46.4			22.9			25.1	
Approach LOS		D			D			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			100.6				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			69.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh	13.7
Intersection LOS	B





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	85	34	25	105	136	21	144	20	137	227	8
Future Vol, veh/h	3	85	34	25	105	136	21	144	20	137	227	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	3	89	36	26	111	143	22	152	21	144	239	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.6	12.8	11.4	16.6
HCM LOS	B	B	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	2%	9%	37%
Vol Thru, %	78%	70%	39%	61%
Vol Right, %	11%	28%	51%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	185	122	266	372
LT Vol	21	3	25	137
Through Vol	144	85	105	227
RT Vol	20	34	136	8
Lane Flow Rate	195	128	280	392
Geometry Grp	1	1	1	1
Degree of Util (X)	0.31	0.212	0.43	0.601
Departure Headway (Hd)	5.737	5.949	5.529	5.524
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	623	598	647	650
Service Time	3.808	4.032	3.597	3.581
HCM Lane V/C Ratio	0.313	0.214	0.433	0.603
HCM Control Delay	11.4	10.6	12.8	16.6
HCM Lane LOS	B	B	B	C
HCM 95th-tile Q	1.3	0.8	2.2	4

Intersection

Int Delay, s/veh 11.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	263	289	223	0	0	554
Future Vol, veh/h	263	289	223	0	0	554
Conflicting Peds, #/hr	0	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	281	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	5	5	2	2	5	5
Mvmt Flow	274	301	232	0	0	577

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	809	233	0
Stage 1	232	-	-
Stage 2	577	-	-
Critical Hdwy	6.45	6.25	-
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.345	-
Pot Cap-1 Maneuver	346	799	0
Stage 1	799	-	0
Stage 2	556	-	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	346	798	-
Mov Cap-2 Maneuver	346	-	-
Stage 1	799	-	-
Stage 2	556	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 346 798	-
HCM Lane V/C Ratio	- 0.792 0.377	-
HCM Control Delay (s)	- 45.4 12.2	-
HCM Lane LOS	- E B	-
HCM 95th %tile Q(veh)	- 6.6 1.8	-

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↖		↘	↕	
Traffic Vol, veh/h	21	2	5	0	0	0	0	229	304	292	558	0
Future Vol, veh/h	21	2	5	0	0	0	0	229	304	292	558	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	247	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	7	7	7	2	2	2	3	3	3	3	3	3
Mvmt Flow	21	2	5	0	0	0	0	234	310	298	569	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	1399	1399	569				-	0	-	234	0	0
Stage 1	1165	1165	-				-	-	-	-	-	-
Stage 2	234	234	-				-	-	-	-	-	-
Critical Hdwy	6.47	6.57	6.27				-	-	-	4.13	-	-
Critical Hdwy Stg 1	5.47	5.57	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.47	5.57	-				-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363				-	-	-	2.227	-	-
Pot Cap-1 Maneuver	151	137	512				0	-	0	1328	-	0
Stage 1	290	263	-				0	-	0	-	-	0
Stage 2	793	702	-				0	-	0	-	-	0
Platoon blocked, %								-	-			
Mov Cap-1 Maneuver	117	0	512				-	-	-	1328	-	-
Mov Cap-2 Maneuver	117	0	-				-	-	-	-	-	-
Stage 1	290	0	-				-	-	-	-	-	-
Stage 2	615	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	37.7						0		2.9			
HCM LOS	E											
Minor Lane/Major Mvmt	NBT		EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-		117	512	1328	-						
HCM Lane V/C Ratio	-		0.201	0.01	0.224	-						
HCM Control Delay (s)	-		43.3	12.1	8.5	-						
HCM Lane LOS	-		E	B	A	-						
HCM 95th %tile Q(veh)	-		0.7	0	0.9	-						

HCM 6th TWSC
10: Military Rd S & S 150th St

11/07/2023

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	9	7	66	21	40	10	210	18	20	318	21
Future Vol, veh/h	12	9	7	66	21	40	10	210	18	20	318	21
Conflicting Peds, #/hr	0	0	3	3	0	0	11	0	6	6	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	5	5	5	2	2	2	2	2	2
Mvmt Flow	13	10	8	73	23	44	11	231	20	22	349	23




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	713	695	375	686	696	247	383	0	0	257	0	0
Stage 1	416	416	-	269	269	-	-	-	-	-	-	-
Stage 2	297	279	-	417	427	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.15	6.55	6.25	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.545	4.045	3.345	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	347	366	671	358	362	784	1175	-	-	1308	-	-
Stage 1	614	592	-	730	681	-	-	-	-	-	-	-
Stage 2	712	680	-	607	580	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	300	349	662	335	345	780	1163	-	-	1301	-	-
Mov Cap-2 Maneuver	300	349	-	335	345	-	-	-	-	-	-	-
Stage 1	601	574	-	718	669	-	-	-	-	-	-	-
Stage 2	642	668	-	576	562	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.7		18.2		0.3		0.4	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1163	-	-	367	411	1301	-
HCM Lane V/C Ratio	0.009	-	-	0.084	0.34	0.017	-
HCM Control Delay (s)	8.1	0	-	15.7	18.2	7.8	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	1.5	0.1	-

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	30	317	14	25	350
Future Vol, veh/h	13	30	317	14	25	350
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	5	5	6	6
Mvmt Flow	13	31	327	14	26	361

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	747	335	0
Stage 1	334	-	-
Stage 2	413	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	381	707	-
Stage 1	725	-	-
Stage 2	668	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	371	706	-
Mov Cap-2 Maneuver	371	-	-
Stage 1	725	-	-
Stage 2	650	-	-

















Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	555	1196
HCM Lane V/C Ratio	-	-	0.08	0.022
HCM Control Delay (s)	-	-	12	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

HCM Signalized Intersection Capacity Analysis

12: Military Rd S & S 152nd St






















11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	198	9	43	58	178	0	0	0	292	21	93
Future Volume (vph)	72	198	9	43	58	178	0	0	0	292	21	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0					3.0	
Lane Util. Factor		1.00			1.00	1.00					1.00	
Frpb, ped/bikes		1.00			1.00	1.00					0.99	
Flpb, ped/bikes		1.00			0.99	1.00					0.99	
Frt		1.00			1.00	0.85					0.97	
Flt Protected		0.99			0.98	1.00					0.97	
Satd. Flow (prot)		1827			1813	1583					1713	
Flt Permitted		0.91			0.82	1.00					0.97	
Satd. Flow (perm)		1680			1525	1583					1713	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	215	10	47	63	193	0	0	0	317	23	101
RTOR Reduction (vph)	0	2	0	0	0	103	0	0	0	0	14	0
Lane Group Flow (vph)	0	301	0	0	110	90	0	0	0	0	427	0
Confl. Peds. (#/hr)	3		21	21		3	30		13	13		30
Confl. Bikes (#/hr)						1						1
Turn Type	Perm	NA		Perm	NA	custom				Perm	NA	
Protected Phases		4			8	6					6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		13.0			13.0	16.5					16.5	
Effective Green, g (s)		13.0			13.0	16.5					16.5	
Actuated g/C Ratio		0.37			0.37	0.46					0.46	
Clearance Time (s)		3.0			3.0	3.0					3.0	
Vehicle Extension (s)		3.0			3.0	3.0					3.0	
Lane Grp Cap (vph)		615			558	735					796	
v/s Ratio Prot						0.06						
v/s Ratio Perm		0.18			0.07						0.25	
v/c Ratio		0.49			0.20	0.12					0.54	
Uniform Delay, d1		8.7			7.7	5.4					6.8	
Progression Factor		1.00			1.00	1.00					1.00	
Incremental Delay, d2		0.6			0.2	0.1					0.7	
Delay (s)		9.3			7.9	5.5					7.5	
Level of Service		A			A	A					A	
Approach Delay (s)		9.3			6.3			0.0			7.5	
Approach LOS		A			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		7.7			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.52										
Actuated Cycle Length (s)		35.5			Sum of lost time (s)			6.0				
Intersection Capacity Utilization		58.6%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

13: Air Cargo Rd/24th Ave S & S 154th St

11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	187	149	123	144	143	89	133	15	79	200	85
Future Volume (veh/h)	55	187	149	123	144	143	89	133	15	79	200	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1796	1796	1796	1856	1856	1856	1767	1767	1767	1811	1811	1811
Adj Flow Rate, veh/h	57	193	154	127	148	147	92	137	15	81	206	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	7	7	3	3	3	9	9	9	6	6	6
Cap, veh/h	502	362	289	465	332	330	433	514	431	283	549	226
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1040	924	737	1024	848	842	1018	1767	1479	423	1885	777
Grp Volume(v), veh/h	57	0	347	127	0	295	92	137	15	205	0	170
Grp Sat Flow(s),veh/h/ln	1040	0	1661	1024	0	1690	1018	1767	1479	1588	0	1497
Q Serve(g_s), s	1.3	0.0	5.1	3.4	0.0	4.1	2.5	1.9	0.2	0.3	0.0	2.9
Cycle Q Clear(g_c), s	5.4	0.0	5.1	8.5	0.0	4.1	5.4	1.9	0.2	2.9	0.0	2.9
Prop In Lane	1.00		0.44	1.00		0.50	1.00		1.00	0.39		0.52
Lane Grp Cap(c), veh/h	502	0	650	465	0	661	433	514	431	622	0	436
V/C Ratio(X)	0.11	0.00	0.53	0.27	0.00	0.45	0.21	0.27	0.03	0.33	0.00	0.39
Avail Cap(c_a), veh/h	1581	0	2373	1527	0	2414	1106	1682	1408	1613	0	1426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	0.0	7.4	10.6	0.0	7.1	11.1	8.6	8.0	8.9	0.0	8.9
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.1	0.0	0.2	0.1	0.1	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.0	0.5	0.0	0.8	0.4	0.5	0.0	0.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	7.6	10.8	0.0	7.2	11.2	8.7	8.0	9.0	0.0	9.1
LnGrp LOS	A	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h	404			422			244			375		
Approach Delay, s/veh	7.8			8.3			9.6			9.1		
Approach LOS	A			A			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	17.3			14.2			17.3			14.2		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	45.0			30.0			45.0			30.0		
Max Q Clear Time (g_c+I1), s	7.4			7.4			10.5			4.9		
Green Ext Time (p_c), s	1.6			0.7			1.6			1.4		
Intersection Summary												
HCM 6th Ctrl Delay	8.6											
HCM 6th LOS	A											

HCM 6th TWSC
14: SR 518 Off Ramp & S 154th St

11/07/2023

Intersection

Int Delay, s/veh 3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑↑	↘	
Traffic Vol, veh/h	558	0	0	502	142	139
Future Vol, veh/h	558	0	0	502	142	139
Conflicting Peds, #/hr	0	6	6	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	613	0	0	552	156	153

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	890 614
Stage 1	-	-	-	-	613 -
Stage 2	-	-	-	-	277 -
Critical Hdwy	-	-	-	-	6.63 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.83 -
Follow-up Hdwy	-	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	-	0	0	-	297 491
Stage 1	-	0	0	-	539 -
Stage 2	-	0	0	-	746 -
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	297 491
Mov Cap-2 Maneuver	-	-	-	-	297 -
Stage 1	-	-	-	-	539 -
Stage 2	-	-	-	-	745 -























Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	588	-	-
HCM Lane V/C Ratio	0.525	-	-
HCM Control Delay (s)	17.7	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	3.1	-	-

HCM Signalized Intersection Capacity Analysis

15: International Blvd & S 154th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	252	177	260	166	237	125	162	448	71	5	93	842
Future Volume (vph)	252	177	260	166	237	125	162	448	71	5	93	842
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.0	5.0	4.6	5.0		4.6	5.3	5.3		4.6	5.3
Lane Util. Factor	0.97	1.00	1.00	0.97	0.95		1.00	0.95	1.00		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.98	1.00	0.99		1.00	1.00	0.91		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	1863	1550	3367	3267		1752	3505	1425		1752	3505
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	1863	1550	3367	3267		1752	3505	1425		1752	3505
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	262	184	271	173	247	130	169	467	74	5	97	877
RTOR Reduction (vph)	0	0	214	0	42	0	0	0	45	0	0	0
Lane Group Flow (vph)	263	184	57	173	335	0	169	467	29	0	102	877
Confl. Peds. (#/hr)	11		11	11		11	5		46		46	
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	7	4		3	8		5	2		1	1	6
Permitted Phases			4						2			
Actuated Green, G (s)	14.5	22.7	22.7	11.5	19.7		16.3	41.8	41.8		12.3	37.8
Effective Green, g (s)	14.5	22.7	22.7	11.5	19.7		16.3	41.8	41.8		12.3	37.8
Actuated g/C Ratio	0.13	0.21	0.21	0.11	0.18		0.15	0.39	0.39		0.11	0.35
Clearance Time (s)	4.6	5.0	5.0	4.6	5.0		4.6	5.3	5.3		4.6	5.3
Vehicle Extension (s)	2.5	3.0	3.0	2.5	3.0		2.5	4.0	4.0		2.5	4.0
Lane Grp Cap (vph)	461	392	326	359	597		264	1359	552		199	1229
v/s Ratio Prot	c0.08	0.10		0.05	c0.10		c0.10	c0.13			0.06	c0.25
v/s Ratio Perm			0.04						0.02			
v/c Ratio	0.57	0.47	0.18	0.48	0.56		0.64	0.34	0.05		0.51	0.71
Uniform Delay, d1	43.7	37.3	34.9	45.3	40.1		43.0	23.3	20.6		44.9	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.9	0.3	0.7	1.2		4.6	0.2	0.1		1.7	2.1
Delay (s)	45.1	38.2	35.1	46.1	41.3		47.6	23.5	20.7		46.6	32.4
Level of Service	D	D	D	D	D		D	C	C		D	C
Approach Delay (s)		39.6			42.8			29.0				33.1
Approach LOS		D			D			C				C
Intersection Summary												
HCM 2000 Control Delay			35.4			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			107.8			Sum of lost time (s)			19.5			
Intersection Capacity Utilization			75.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

15: International Blvd & S 154th St




















11/16/2023

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	82
Future Volume (vph)	82
Ideal Flow (vphpl)	1900
Total Lost time (s)	5.3
Lane Util. Factor	1.00
Frpb, ped/bikes	0.98
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1543
Flt Permitted	1.00
Satd. Flow (perm)	1543
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	85
RTOR Reduction (vph)	50
Lane Group Flow (vph)	35
Confl. Peds. (#/hr)	5
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	3%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	37.8
Effective Green, g (s)	37.8
Actuated g/C Ratio	0.35
Clearance Time (s)	5.3
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	541
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.06
Uniform Delay, d1	23.3
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	23.3
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

16: Des Moines Memorial Dr & S 156th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	175	58	123	171	37	34	288	107	28	423	185
Future Volume (vph)	175	175	58	123	171	37	34	288	107	28	423	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			0.99			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.96		1.00	0.97			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1749	1766		1752	1788			1780			1857	1583
Flt Permitted	0.57	1.00		0.53	1.00			0.92			0.96	1.00
Satd. Flow (perm)	1042	1766		985	1788			1638			1788	1583
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	177	177	59	124	173	37	34	291	108	28	427	187
RTOR Reduction (vph)	0	9	0	0	6	0	0	8	0	0	0	88
Lane Group Flow (vph)	177	227	0	124	204	0	0	425	0	0	455	99
Confl. Peds. (#/hr)	4		1	1		4			8	8		
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		pm+pt	NA	pm+ov
Protected Phases	5	2		1	6			4		3	8	5
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	24.3	16.1		24.3	14.4			23.5			23.5	33.4
Effective Green, g (s)	24.3	16.1		24.3	14.4			23.5			23.5	33.4
Actuated g/C Ratio	0.39	0.26		0.39	0.23			0.37			0.37	0.53
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0			2.0	2.0
Lane Grp Cap (vph)	514	452		481	409			612			669	967
v/s Ratio Prot	c0.05	c0.13		0.03	0.11							0.02
v/s Ratio Perm	0.08			0.07				c0.26			0.25	0.05
v/c Ratio	0.34	0.50		0.26	0.50			0.69			0.68	0.10
Uniform Delay, d1	13.1	19.9		12.7	21.1			16.6			16.5	7.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.1	0.3		0.1	0.3			2.8			2.3	0.0
Delay (s)	13.3	20.3		12.8	21.4			19.4			18.8	7.3
Level of Service	B	C		B	C			B			B	A
Approach Delay (s)		17.3			18.2			19.4			15.4	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			17.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			62.8			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			85.9%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis





















17: International Blvd & SR 518 On Ramp

11/16/2023

Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations			↰	↱	↰		↰	↱
Traffic Volume (vph)	0	0	23	695	377	5	308	1411
Future Volume (vph)	0	0	23	695	377	5	308	1411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5	6.3	6.3		5.5	6.3
Lane Util. Factor			1.00	0.95	1.00		1.00	0.91
Frpb, ped/bikes			1.00	1.00	0.96		1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00		1.00	1.00
Frt			1.00	1.00	0.85		1.00	1.00
Flt Protected			0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)			1752	3505	1511		1770	5085
Flt Permitted			0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)			1752	3505	1511		1770	5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	24	732	397	5	324	1485
RTOR Reduction (vph)	0	0	0	0	223	0	0	0
Lane Group Flow (vph)	0	0	24	732	174	0	329	1485
Confl. Peds. (#/hr)			2		18		18	
Heavy Vehicles (%)	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type			Prot	NA	Perm	Prot	Prot	NA
Protected Phases			5	2		1	1	6
Permitted Phases					2			
Actuated Green, G (s)			2.3	30.3	30.3		19.1	47.1
Effective Green, g (s)			2.3	30.3	30.3		19.1	47.1
Actuated g/C Ratio			0.03	0.44	0.44		0.28	0.68
Clearance Time (s)			5.5	6.3	6.3		5.5	6.3
Vehicle Extension (s)			2.5	4.0	4.0		3.0	4.0
Lane Grp Cap (vph)			58	1534	661		488	3461
v/s Ratio Prot			0.01	c0.21			c0.19	0.29
v/s Ratio Perm					0.12			
v/c Ratio			0.41	0.48	0.26		0.67	0.43
Uniform Delay, d1			32.8	13.8	12.4		22.3	5.0
Progression Factor			1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2			3.5	0.3	0.3		3.7	0.1
Delay (s)			36.2	14.1	12.6		25.9	5.1
Level of Service			D	B	B		C	A
Approach Delay (s)	0.0			14.1				8.9
Approach LOS	A			B				A
Intersection Summary								
HCM 2000 Control Delay			10.9		HCM 2000 Level of Service			B
HCM 2000 Volume to Capacity ratio			0.52					
Actuated Cycle Length (s)			69.2		Sum of lost time (s)			16.8
Intersection Capacity Utilization			52.3%		ICU Level of Service			A
Analysis Period (min)			15					
c Critical Lane Group								

HCM 6th Signalized Intersection Summary 18: Des Moines Memorial Dr & S 160th St




















11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	0	106	5	1	4	14	234	0	1	437	154
Future Volume (veh/h)	176	0	106	5	1	4	14	234	0	1	437	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	0	0	6	1	0	16	266	0	1	497	175
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	468	338		469	338		390	978	0	701	687	242
Arrive On Green	0.18	0.00	0.00	0.18	0.18	0.00	0.52	0.52	0.00	0.52	0.52	0.52
Sat Flow, veh/h	1412	1870	0	1414	1870	0	761	1870	0	1099	1313	462
Grp Volume(v), veh/h	200	0	0	6	1	0	16	266	0	1	0	672
Grp Sat Flow(s),veh/h/ln	1412	1870	0	1414	1870	0	761	1870	0	1099	0	1776
Q Serve(g_s), s	4.6	0.0	0.0	0.1	0.0	0.0	0.6	2.7	0.0	0.0	0.0	9.8
Cycle Q Clear(g_c), s	4.6	0.0	0.0	0.1	0.0	0.0	10.4	2.7	0.0	2.7	0.0	9.8
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.00	1.00		0.26
Lane Grp Cap(c), veh/h	468	338		469	338		390	978	0	701	0	928
V/C Ratio(X)	0.43	0.00		0.01	0.00		0.04	0.27	0.00	0.00	0.00	0.72
Avail Cap(c_a), veh/h	1679	1941		1681	1941		1008	2496	0	1593	0	2370
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	11.4	11.3	0.0	10.2	4.5	0.0	5.2	0.0	6.2
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	0.0	0.0	11.4	11.3	0.0	10.2	4.6	0.0	5.2	0.0	7.3
LnGrp LOS	B	A		B	B		B	A	A	A	A	A
Approach Vol, veh/h	200			7			282			673		
Approach Delay, s/veh	13.8			11.4			4.9			7.3		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	22.6			11.1			22.6			11.1		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	45.0			35.0			45.0			35.0		
Max Q Clear Time (g_c+I1), s	12.4			2.1			11.8			6.6		
Green Ext Time (p_c), s	1.7			0.0			5.3			0.5		
Intersection Summary												
HCM 6th Ctrl Delay	7.9											
HCM 6th LOS	A											

HCM Signalized Intersection Capacity Analysis

19: Rental Car Facility/Port Ground Lot & S 160th St























11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	205	51	164	322	45	131	10	28	48	5	60
Future Volume (vph)	35	205	51	164	322	45	131	10	28	48	5	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.97		1.00	0.98		1.00	0.89			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1635	3169		1749	3427		1769	1658			1429	
Flt Permitted	0.52	1.00		0.58	1.00		0.76	1.00			0.85	
Satd. Flow (perm)	897	3169		1076	3427		1406	1658			1243	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	218	54	174	343	48	139	11	30	51	5	64
RTOR Reduction (vph)	0	22	0	0	8	0	0	24	0	0	47	0
Lane Group Flow (vph)	37	250	0	174	383	0	139	17	0	0	73	0
Confl. Peds. (#/hr)	9		4	4		9	1					1
Heavy Vehicles (%)	10%	10%	10%	3%	3%	3%	2%	2%	2%	20%	20%	20%
Turn Type	D.P+P	NA		D.P+P	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			6			2	
Permitted Phases	4			8			6			2		
Actuated Green, G (s)	31.0	17.4		31.0	28.2		12.0	12.0			12.0	
Effective Green, g (s)	31.0	17.4		31.0	28.2		12.0	12.0			12.0	
Actuated g/C Ratio	0.53	0.30		0.53	0.49		0.21	0.21			0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	
Lane Grp Cap (vph)	515	950		732	1666		290	343			257	
v/s Ratio Prot	0.00	c0.08		c0.06	0.11			0.01				
v/s Ratio Perm	0.03			0.07			c0.10				0.06	
v/c Ratio	0.07	0.26		0.24	0.23		0.48	0.05			0.28	
Uniform Delay, d1	6.4	15.4		7.0	8.6		20.2	18.4			19.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.3		0.4	0.1		2.6	0.1			1.3	
Delay (s)	6.6	15.7		7.3	8.8		22.8	18.6			20.7	
Level of Service	A	B		A	A		C	B			C	
Approach Delay (s)		14.6			8.3			21.9			20.7	
Approach LOS		B			A			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			58.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			45.5%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

20: International Blvd & S 160th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	98	156	112	25	90	249	21	113	695	47	28	212
Future Volume (vph)	98	156	112	25	90	249	21	113	695	47	28	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0		5.0	5.0			5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.97	0.91			0.97
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	1863	1559	1752	1845	1547		3367	4929			3400
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	1863	1559	1752	1845	1547		3367	4929			3400
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	102	162	117	26	94	259	22	118	724	49	29	221
RTOR Reduction (vph)	0	0	0	0	0	206	0	0	4	0	0	0
Lane Group Flow (vph)	102	163	117	26	94	53	0	140	769	0	0	250
Confl. Peds. (#/hr)	1		3	3		1		1		12		12
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	4%	4%	4%	4%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Actuated Green, G (s)	14.3	26.8	26.8	5.2	17.7	17.7		10.7	68.4			15.6
Effective Green, g (s)	14.3	26.8	26.8	5.2	17.7	17.7		10.7	68.4			15.6
Actuated g/C Ratio	0.10	0.19	0.19	0.04	0.13	0.13		0.08	0.49			0.11
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		5.0	5.0			5.0
Vehicle Extension (s)	4.0	4.0	4.0	3.0	2.0	2.0		2.5	3.0			3.0
Lane Grp Cap (vph)	180	356	298	65	233	195		257	2408			378
v/s Ratio Prot	c0.06	c0.09		0.01	0.05			0.04	0.16			c0.07
v/s Ratio Perm			0.08			0.03						
v/c Ratio	0.57	0.46	0.39	0.40	0.40	0.27		0.54	0.32			0.66
Uniform Delay, d1	59.9	50.2	49.5	65.9	56.3	55.3		62.3	21.7			59.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.16	0.58			1.00
Incremental Delay, d2	4.9	1.3	1.2	4.0	0.4	0.3		1.6	0.3			4.3
Delay (s)	64.8	51.4	50.7	69.9	56.7	55.6		73.7	12.9			64.0
Level of Service	E	D	D	E	E	E		E	B			E
Approach Delay (s)		54.8			56.8				22.2			
Approach LOS		D			E				C			
Intersection Summary												
HCM 2000 Control Delay			34.2				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		24.0			
Intersection Capacity Utilization			66.9%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

20: International Blvd & S 160th St

11/16/2023




Movement	SBT	SBR	SBR2
Lane Configurations	↑↑	←	→
Traffic Volume (vph)	576	66	201
Future Volume (vph)	576	66	201
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.0	5.0	
Lane Util. Factor	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	1.00	0.85	
Flt Protected	1.00	1.00	
Satd. Flow (prot)	3505	1568	
Flt Permitted	1.00	1.00	
Satd. Flow (perm)	3505	1568	
Peak-hour factor, PHF	0.96	0.96	0.96
Adj. Flow (vph)	600	69	209
RTOR Reduction (vph)	0	60	0
Lane Group Flow (vph)	600	218	0
Confl. Peds. (#/hr)			1
Confl. Bikes (#/hr)			
Heavy Vehicles (%)	3%	3%	3%
Turn Type	NA	Prot	
Protected Phases	6	6	
Permitted Phases			
Actuated Green, G (s)	73.3	73.3	
Effective Green, g (s)	73.3	73.3	
Actuated g/C Ratio	0.52	0.52	
Clearance Time (s)	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	
Lane Grp Cap (vph)	1835	820	
v/s Ratio Prot	c0.17	0.14	
v/s Ratio Perm			
v/c Ratio	0.33	0.27	
Uniform Delay, d1	19.2	18.5	
Progression Factor	1.00	1.00	
Incremental Delay, d2	0.5	0.8	
Delay (s)	19.6	19.3	
Level of Service	B	B	
Approach Delay (s)	29.4		
Approach LOS	C		
Intersection Summary			

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↕			↕	
Traffic Vol, veh/h	13	340	48	11	259	0	76	0	7	4	0	8
Future Vol, veh/h	13	340	48	11	259	0	76	0	7	4	0	8
Conflicting Peds, #/hr	1	0	7	7	0	1	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	17	17	17
Mvmt Flow	14	358	51	12	273	0	80	0	7	4	0	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	274	0	0	416	0	0	580	717	214	507	742	138
Stage 1	-	-	-	-	-	-	419	419	-	298	298	-
Stage 2	-	-	-	-	-	-	161	298	-	209	444	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.54	6.54	6.94	7.84	6.84	7.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.84	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.84	5.84	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.52	4.02	3.32	3.67	4.17	3.47
Pot Cap-1 Maneuver	1279	-	-	1132	-	-	398	354	791	416	314	839
Stage 1	-	-	-	-	-	-	582	588	-	646	630	-
Stage 2	-	-	-	-	-	-	825	666	-	732	537	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1278	-	-	1124	-	-	383	342	784	403	303	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	383	342	-	403	303	-
Stage 1	-	-	-	-	-	-	570	576	-	636	621	-
Stage 2	-	-	-	-	-	-	806	657	-	714	526	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.3			16.5			11		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	400	1278	-	-	1124	-	-	616				
HCM Lane V/C Ratio	0.218	0.011	-	-	0.01	-	-	0.021				
HCM Control Delay (s)	16.5	7.8	0.1	-	8.2	0	-	11				
HCM Lane LOS	C	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.1				

HCM Signalized Intersection Capacity Analysis

22: Port Cell Lot/Airport Exp SB Off Ramp & S 170th St

11/16/2023






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↶		↶	↶↶		↶		↶		↶↶	↶
Traffic Volume (vph)	0	104	6	97	390	0	220	0	15	279	2	52
Future Volume (vph)	0	104	6	97	390	0	220	0	15	279	2	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	5.5		5.5		5.5		5.5	5.5
Lane Util. Factor		1.00		1.00	0.95		1.00		1.00		1.00	1.00
Frpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Frt		0.99		1.00	1.00		1.00		0.85		1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00		0.95	1.00
Satd. Flow (prot)		1625		1438	2888		1770		1583		1775	1583
Flt Permitted		1.00		0.68	1.00		0.58		1.00		0.95	1.00
Satd. Flow (perm)		1625		1031	2888		1073		1583		1775	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	112	6	104	419	0	237	0	16	300	2	56
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	11	0	0	42
Lane Group Flow (vph)	0	116	0	104	419	0	237	0	5	0	302	14
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	16%	16%	16%	25%	25%	25%	2%	2%	2%	2%	2%	2%
Turn Type		NA		Perm	NA		Perm		Perm	Perm	NA	Perm
Protected Phases		2			6						4	
Permitted Phases				6			8		8	4		4
Actuated Green, G (s)		17.2		17.2	17.2		22.5		22.5		18.9	18.9
Effective Green, g (s)		17.2		17.2	17.2		22.5		22.5		18.9	18.9
Actuated g/C Ratio		0.23		0.23	0.23		0.30		0.30		0.25	0.25
Clearance Time (s)		5.5		5.5	5.5		5.5		5.5		5.5	5.5
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0		3.0	3.0
Lane Grp Cap (vph)		372		236	661		321		474		446	398
v/s Ratio Prot		0.07			c0.15							
v/s Ratio Perm				0.10			c0.22		0.00		0.17	0.01
v/c Ratio		0.31		0.44	0.63		0.74		0.01		0.68	0.04
Uniform Delay, d1		24.0		24.8	26.1		23.7		18.5		25.3	21.2
Progression Factor		1.00		1.00	1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2		0.5		1.3	2.0		8.6		0.0		4.1	0.0
Delay (s)		24.5		26.1	28.1		32.2		18.5		29.4	21.3
Level of Service		C		C	C		C		B		C	C
Approach Delay (s)		24.5			27.7			31.4			28.1	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			28.3			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			75.1			Sum of lost time (s)			16.5			
Intersection Capacity Utilization			48.9%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

23: International Blvd & S 170th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	131	188	457	30	86	128	9	163	559	45	25	62
Future Volume (vph)	131	188	457	30	86	128	9	163	559	45	25	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0		6.5	6.5		5.0	5.0			5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00		1.00	0.95			1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	0.99		1.00	0.99			1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00		1.00	1.00			1.00
Frt	1.00	1.00	0.85		1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00		0.99	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1671	1759	1476		1770	1503		1671	3277			1736
Flt Permitted	0.95	1.00	1.00		0.99	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1671	1759	1476		1770	1503		1671	3277			1736
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	135	194	471	31	89	132	9	168	576	46	26	64
RTOR Reduction (vph)	0	0	0	0	0	116	0	0	5	0	0	0
Lane Group Flow (vph)	135	194	471	0	120	16	0	177	617	0	0	90
Confl. Peds. (#/hr)	1		1	1		1		2		35		35
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	8%	8%	8%	6%	6%	6%	8%	8%	8%	8%	4%	4%
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	3		4	4		5	5	2		1	1
Permitted Phases			3			4						
Actuated Green, G (s)	53.4	53.4	53.4		17.1	17.1		21.0	32.4			13.6
Effective Green, g (s)	53.4	53.4	53.4		17.1	17.1		21.0	32.4			13.6
Actuated g/C Ratio	0.38	0.38	0.38		0.12	0.12		0.15	0.23			0.10
Clearance Time (s)	7.0	7.0	7.0		6.5	6.5		5.0	5.0			5.0
Vehicle Extension (s)	2.5	2.5	2.5		4.0	4.0		3.0	3.0			2.0
Lane Grp Cap (vph)	637	670	562		216	183		250	758			168
v/s Ratio Prot	0.08	0.11			c0.07			c0.11	c0.19			0.05
v/s Ratio Perm			c0.32			0.01						
v/c Ratio	0.21	0.29	0.84		0.56	0.09		0.71	0.81			0.54
Uniform Delay, d1	29.1	30.1	39.4		57.9	54.5		56.6	51.0			60.2
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.02	1.44			1.03
Incremental Delay, d2	0.1	0.2	10.4		3.8	0.3		8.1	8.6			1.6
Delay (s)	29.3	30.3	49.7		61.7	54.8		65.8	82.0			63.4
Level of Service	C	C	D		E	D		E	F			E
Approach Delay (s)		41.6			58.1				78.4			
Approach LOS		D			E				E			
Intersection Summary												
HCM 2000 Control Delay			83.7									
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			140.0						23.5			
Intersection Capacity Utilization			71.8%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

23: International Blvd & S 170th St





11/16/2023



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑	←	→
Traffic Volume (vph)	712	38	55
Future Volume (vph)	712	38	55
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.0	5.0	
Lane Util. Factor	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	1.00	0.85	
Flt Protected	1.00	1.00	
Satd. Flow (prot)	3471	1553	
Flt Permitted	1.00	1.00	
Satd. Flow (perm)	3471	1553	
Peak-hour factor, PHF	0.97	0.97	0.97
Adj. Flow (vph)	734	39	57
RTOR Reduction (vph)	0	79	0
Lane Group Flow (vph)	734	17	0
Confl. Peds. (#/hr)			2
Confl. Bikes (#/hr)			1
Heavy Vehicles (%)	4%	4%	4%
Turn Type	NA	Prot	
Protected Phases	6	6	
Permitted Phases			
Actuated Green, G (s)	25.0	25.0	
Effective Green, g (s)	25.0	25.0	
Actuated g/C Ratio	0.18	0.18	
Clearance Time (s)	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	
Lane Grp Cap (vph)	619	277	
v/s Ratio Prot	c0.21	0.01	
v/s Ratio Perm			
v/c Ratio	1.19	0.06	
Uniform Delay, d1	57.5	47.8	
Progression Factor	0.91	1.00	
Incremental Delay, d2	99.0	0.4	
Delay (s)	151.4	48.2	
Level of Service	F	D	
Approach Delay (s)	132.0		
Approach LOS	F		
Intersection Summary			

Intersection

Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	128	35	8	104	5	24	45	5	10	55	46
Future Vol, veh/h	44	128	35	8	104	5	24	45	5	10	55	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	46	135	37	8	109	5	25	47	5	11	58	48
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0



















Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	8.6	8.5	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	32%	21%	7%	9%
Vol Thru, %	61%	62%	89%	50%
Vol Right, %	7%	17%	4%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	74	207	117	111
LT Vol	24	44	8	10
Through Vol	45	128	104	55
RT Vol	5	35	5	46
Lane Flow Rate	78	218	123	117
Geometry Grp	1	1	1	1
Degree of Util (X)	0.106	0.271	0.159	0.149
Departure Headway (Hd)	4.889	4.482	4.65	4.589
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	731	800	770	779
Service Time	2.93	2.516	2.688	2.627
HCM Lane V/C Ratio	0.107	0.273	0.16	0.15
HCM Control Delay	8.5	9.2	8.6	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	1.1	0.6	0.5

HCM 6th Signalized Intersection Summary

25: Military Rd S & S 170th St




















11/02/2023





												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	20	88	32	18	18	65	318	33	18	557	46
Future Volume (veh/h)	25	20	88	32	18	18	65	318	33	18	557	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	21	93	34	19	19	68	335	35	19	586	48
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	48	148	200	95	62	408	814	85	573	764	63
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.49	0.49	0.02	0.45	0.45
Sat Flow, veh/h	193	340	1056	548	679	440	1781	1665	174	1781	1706	140
Grp Volume(v), veh/h	140	0	0	72	0	0	68	0	370	19	0	634
Grp Sat Flow(s),veh/h/ln	1590	0	0	1667	0	0	1781	0	1839	1781	0	1845
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	0.0	0.8	0.0	5.6	0.2	0.0	12.5
Cycle Q Clear(g_c), s	3.5	0.0	0.0	1.6	0.0	0.0	0.8	0.0	5.6	0.2	0.0	12.5
Prop In Lane	0.19		0.66	0.47		0.26	1.00		0.09	1.00		0.08
Lane Grp Cap(c), veh/h	322	0	0	357	0	0	408	0	899	573	0	826
V/C Ratio(X)	0.43	0.00	0.00	0.20	0.00	0.00	0.17	0.00	0.41	0.03	0.00	0.77
Avail Cap(c_a), veh/h	1185	0	0	1173	0	0	1323	0	2553	1562	0	2562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	0.0	16.6	0.0	0.0	7.3	0.0	7.1	5.6	0.0	10.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.3	0.0	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.6	0.0	0.0	0.2	0.0	1.5	0.1	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	0.0	0.0	16.9	0.0	0.0	7.5	0.0	7.4	5.6	0.0	11.6
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	A	B
Approach Vol, veh/h	140			72			438			653		
Approach Delay, s/veh	18.4			16.9			7.4			11.4		
Approach LOS	B			B			A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	26.1		11.1	7.8	24.4		11.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	25.0	60.0		30.0	25.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	7.6		3.6	2.8	14.5		5.5				
Green Ext Time (p_c), s	0.0	2.4		0.3	0.1	4.9		0.8				
Intersection Summary												
HCM 6th Ctrl Delay	11.1											
HCM 6th LOS	B											

HCM Signalized Intersection Capacity Analysis

26: International Blvd & S 176th St

11/16/2023

												
Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NER
Lane Configurations												
Traffic Volume (vph)	199	0	161	0	598	164	4	252	844	105	0	0
Future Volume (vph)	199	0	161	0	598	164	4	252	844	105	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		6.5		5.0	6.5		5.0	5.0	5.0		
Lane Util. Factor	0.97		1.00		0.95	1.00		1.00	0.95	1.00		
Frpb, ped/bikes	1.00		0.95		1.00	0.84		1.00	1.00	1.00		
Flpb, ped/bikes	1.00		1.00		1.00	1.00		0.98	1.00	1.00		
Frt	1.00		0.85		1.00	0.85		1.00	1.00	0.85		
Flt Protected	0.95		1.00		1.00	1.00		0.95	1.00	1.00		
Satd. Flow (prot)	3335		1467		3312	1243		1722	3505	1568		
Flt Permitted	0.95		1.00		1.00	1.00		0.29	1.00	1.00		
Satd. Flow (perm)	3335		1467		3312	1243		526	3505	1568		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	212	0	171	0	636	174	4	268	898	112	0	0
RTOR Reduction (vph)	0	0	147	0	0	86	0	0	0	52	0	0
Lane Group Flow (vph)	212	0	24	0	636	88	0	272	898	60	0	0
Confl. Peds. (#/hr)			25			88		88				
Heavy Vehicles (%)	5%	5%	5%	9%	9%	9%	3%	3%	3%	3%	2%	2%
Turn Type	Prot		Perm		NA	pm+ov	D.P+P	D.P+P	NA	Perm		
Protected Phases	8				2	8	1	1	6			
Permitted Phases			8			2	2	2		6		
Actuated Green, G (s)	19.4		19.4		51.8	71.2		70.6	75.6	75.6		
Effective Green, g (s)	19.4		19.4		51.8	71.2		70.6	75.6	75.6		
Actuated g/C Ratio	0.14		0.14		0.37	0.51		0.50	0.54	0.54		
Clearance Time (s)	6.5		6.5		5.0	6.5		5.0	5.0	5.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0		2.0	3.0	3.0		
Lane Grp Cap (vph)	462		203		1225	632		425	1892	846		
v/s Ratio Prot	c0.06				0.19	0.02		c0.09	0.26			
v/s Ratio Perm			0.02			0.05		c0.24		0.04		
v/c Ratio	0.46		0.12		0.52	0.14		0.64	0.47	0.07		
Uniform Delay, d1	55.5		52.8		34.4	18.2		21.7	19.9	15.4		
Progression Factor	1.00		1.00		1.16	7.08		1.62	0.68	0.48		
Incremental Delay, d2	0.7		0.3		1.5	0.1		0.6	0.2	0.0		
Delay (s)	56.2		53.1		41.3	129.0		35.8	13.8	7.4		
Level of Service	E		D		D	F		D	B	A		
Approach Delay (s)		54.8			60.1				17.9		0.0	
Approach LOS		D			E				B		A	
Intersection Summary												
HCM 2000 Control Delay			37.4		HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					18.5		
Intersection Capacity Utilization			69.9%		ICU Level of Service					C		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	404	6	6	237	33	2	0	0	32	2	42
Future Vol, veh/h	23	404	6	6	237	33	2	0	0	32	2	42
Conflicting Peds, #/hr	10	0	6	6	0	10	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	108394	1888	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	24	425	6	6	249	35	2	0	0	34	2	44

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	294	0	0	437	0	0	765	774	278
Stage 1	-	-	-	-	-	-	289	289	-
Stage 2	-	-	-	-	-	-	476	485	-
Critical Hdwy	4.12	-	-	4.13	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1268	-	-	1117	-	-	371	329	761
Stage 1	-	-	-	-	-	-	760	673	-
Stage 2	-	-	-	-	-	-	625	552	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1256	-	-	1117	-	-	355	0	753
Mov Cap-2 Maneuver	-	-	-	-	-	-	355	0	-
Stage 1	-	-	-	-	-	-	738	0	-
Stage 2	-	-	-	-	-	-	616	0	-























Approach	EB	WB	SB
HCM Control Delay, s	0.4	0.2	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1256	-	-	1117	-	-	507
HCM Lane V/C Ratio	0.019	-	-	0.006	-	-	0.158
HCM Control Delay (s)	7.9	-	-	8.2	0	-	13.4
HCM Lane LOS	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-	0.6

HCM 6th Signalized Intersection Summary

28: Military Rd S & S 176th St






















11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	191	58	236	229	194	44	199	116	183	418	48
Future Volume (veh/h)	42	191	58	236	229	194	44	199	116	183	418	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	44	201	61	248	241	204	46	209	122	193	440	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	296	90	437	291	246	243	474	401	464	527	61
Arrive On Green	0.04	0.21	0.21	0.14	0.31	0.31	0.04	0.25	0.25	0.11	0.32	0.32
Sat Flow, veh/h	1781	1376	418	1781	935	791	1781	1870	1582	1781	1645	191
Grp Volume(v), veh/h	44	0	262	248	0	445	46	209	122	193	0	491
Grp Sat Flow(s),veh/h/ln	1781	0	1794	1781	0	1726	1781	1870	1582	1781	0	1836
Q Serve(g_s), s	1.3	0.0	9.4	7.0	0.0	16.8	1.2	6.6	4.4	5.4	0.0	17.4
Cycle Q Clear(g_c), s	1.3	0.0	9.4	7.0	0.0	16.8	1.2	6.6	4.4	5.4	0.0	17.4
Prop In Lane	1.00		0.23	1.00		0.46	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	244	0	386	437	0	537	243	474	401	464	0	588
V/C Ratio(X)	0.18	0.00	0.68	0.57	0.00	0.83	0.19	0.44	0.30	0.42	0.00	0.83
Avail Cap(c_a), veh/h	679	0	768	955	0	1109	676	1068	903	778	0	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	25.3	16.8	0.0	22.4	16.9	22.0	21.2	16.3	0.0	22.1
Incr Delay (d2), s/veh	0.4	0.0	2.1	1.2	0.0	3.4	0.4	0.6	0.4	0.6	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	4.0	2.7	0.0	6.7	0.5	2.8	1.6	2.1	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	27.4	18.0	0.0	25.8	17.3	22.6	21.6	16.9	0.0	25.3
LnGrp LOS	C	A	C	B	A	C	B	C	C	B	A	C
Approach Vol, veh/h	306			693			377			684		
Approach Delay, s/veh	26.5			23.0			21.6			22.9		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	22.8	7.9	26.8	8.0	27.4	14.6	20.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	40.0	20.0	45.0	20.0	40.0	30.0	30.0				
Max Q Clear Time (g_c+I1), s	7.4	8.6	3.3	18.8	3.2	19.4	9.0	11.4				
Green Ext Time (p_c), s	0.4	1.6	0.1	3.0	0.1	3.0	0.7	1.4				
Intersection Summary												
HCM 6th Ctrl Delay	23.2											
HCM 6th LOS	C											

HCM Signalized Intersection Capacity Analysis

29: International Blvd & S 182nd St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	63	8	253	17	11	12	14	188	553	21	3	16
Future Volume (vph)	63	8	253	17	11	12	14	188	553	21	3	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0			5.0	5.0	5.0		5.0
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00			0.97	0.95	1.00		1.00
Frpb, ped/bikes	1.00	1.00	0.90	1.00	0.99			1.00	1.00	0.85		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	0.92			1.00	1.00	0.85		1.00
Flt Protected	0.95	0.96	1.00	0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	1429	1448	1211	1671	1599			3213	3312	1258		1736
Flt Permitted	0.95	0.96	1.00	0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	1429	1448	1211	1671	1599			3213	3312	1258		1736
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	9	275	18	12	13	15	204	601	23	3	17
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	13	0	0
Lane Group Flow (vph)	38	39	275	18	12	0	0	219	601	10	0	20
Confl. Peds. (#/hr)	14		75	75		14		17		40		40
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	9%	9%	9%	9%	4%	4%
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	4	4		3	3		5	5	2		1	1
Permitted Phases			4							2		
Actuated Green, G (s)	33.6	33.6	33.6	1.0	1.0			14.8	60.1	60.1		4.3
Effective Green, g (s)	33.6	33.6	33.6	1.0	1.0			14.8	60.1	60.1		4.3
Actuated g/C Ratio	0.24	0.24	0.24	0.01	0.01			0.11	0.43	0.43		0.03
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0			5.0	5.0	5.0		5.0
Vehicle Extension (s)	2.5	2.5	2.5	2.0	2.0			3.0	3.0	3.0		2.0
Lane Grp Cap (vph)	342	347	290	11	11			339	1421	540		53
v/s Ratio Prot	0.03	0.03		c0.01	0.01			c0.07	c0.18			0.01
v/s Ratio Perm			c0.23							0.01		
v/c Ratio	0.11	0.11	0.95	1.64	1.10			0.65	0.42	0.02		0.38
Uniform Delay, d1	41.5	41.6	52.3	69.5	69.5			60.1	27.9	23.0		66.5
Progression Factor	1.00	1.00	1.00	1.00	1.00			0.79	1.87	1.00		1.10
Incremental Delay, d2	0.1	0.1	38.7	518.7	307.8			3.6	0.8	0.1		1.6
Delay (s)	41.6	41.7	91.0	588.2	377.3			50.9	52.8	23.0		74.7
Level of Service	D	D	F	F	F			D	D	C		E
Approach Delay (s)		80.2			465.5				51.5			
Approach LOS		F			F				D			
Intersection Summary												
HCM 2000 Control Delay			59.5			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			30.0			
Intersection Capacity Utilization			93.7%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

29: International Blvd & S 182nd St

11/16/2023



























Movement	SBT	SBR	SBR2
Lane Configurations	↑↑	←	→
Traffic Volume (vph)	925	202	111
Future Volume (vph)	925	202	111
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.0	5.0	
Lane Util. Factor	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	1.00	0.85	
Flt Protected	1.00	1.00	
Satd. Flow (prot)	3471	1553	
Flt Permitted	1.00	1.00	
Satd. Flow (perm)	3471	1553	
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	1005	220	121
RTOR Reduction (vph)	0	147	0
Lane Group Flow (vph)	1005	194	0
Confl. Peds. (#/hr)			17
Heavy Vehicles (%)	4%	4%	4%
Turn Type	NA	Prot	
Protected Phases	6	6	
Permitted Phases			
Actuated Green, G (s)	49.1	49.1	
Effective Green, g (s)	49.1	49.1	
Actuated g/C Ratio	0.35	0.35	
Clearance Time (s)	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	
Lane Grp Cap (vph)	1217	544	
v/s Ratio Prot	c0.29	0.13	
v/s Ratio Perm			
v/c Ratio	0.83	0.36	
Uniform Delay, d1	41.5	33.7	
Progression Factor	0.98	1.21	
Incremental Delay, d2	6.3	1.8	
Delay (s)	47.0	42.6	
Level of Service	D	D	
Approach Delay (s)	46.3		
Approach LOS	D		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

30: Des Moines Memorial Dr S/Starling Dr & S 188th St












11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 		 				 	
Traffic Volume (vph)	2	1278	914	24	752	1	410	0	42	1	0	2
Future Volume (vph)	2	1278	914	24	752	1	410	0	42	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3		5.3	5.3		5.5	5.5			5.5	
Lane Util. Factor	1.00	0.91		1.00	0.95		0.97	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.94		1.00	1.00		1.00	0.85			0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1769	4767		1770	3538		3335	1517			1667	
Flt Permitted	0.32	1.00		0.05	1.00		0.95	1.00			0.98	
Satd. Flow (perm)	594	4767		102	3538		3335	1517			1667	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2	1331	952	25	783	1	427	0	44	1	0	2
RTOR Reduction (vph)	0	31	0	0	0	0	0	37	0	0	3	0
Lane Group Flow (vph)	2	2252	0	25	784	0	427	7	0	0	0	0
Confl. Peds. (#/hr)	2					2			1	1		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	2%	2%	2%
Turn Type	D.P+P	NA		D.P+P	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases	6			2								
Actuated Green, G (s)	76.6	73.0		76.6	75.6		20.0	20.0			0.9	
Effective Green, g (s)	76.6	73.0		76.6	75.6		20.0	20.0			0.9	
Actuated g/C Ratio	0.64	0.61		0.64	0.63		0.17	0.17			0.01	
Clearance Time (s)	5.3	5.3		5.3	5.3		5.5	5.5			5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	391	2921		116	2245		560	254			12	
v/s Ratio Prot	0.00	c0.47		c0.01	c0.22		c0.13	0.00			c0.00	
v/s Ratio Perm	0.00			0.13								
v/c Ratio	0.01	0.91dr		0.22	0.35		0.76	0.03			0.00	
Uniform Delay, d1	7.8	16.9		13.5	10.2		47.3	41.4			58.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.3		0.9	0.1		6.1	0.0			0.1	
Delay (s)	7.8	18.2		14.4	10.3		53.4	41.5			58.7	
Level of Service	A	B		B	B		D	D			E	
Approach Delay (s)		18.2			10.4			52.3			58.7	
Approach LOS		B			B			D			E	
Intersection Summary												
HCM 2000 Control Delay			21.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			119.1			Sum of lost time (s)			21.6			
Intersection Capacity Utilization			72.6%			ICU Level of Service			C			
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

31: 28th Ave S & S 188th St

11/16/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1114	436	118	565	15	223	10	156	36	30	17
Future Volume (vph)	10	1114	436	118	565	15	223	10	156	36	30	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.96	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	1.00		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	4759		1703	3390		1687	1776	1455	1597	1576	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	4759		1703	3390		1687	1776	1455	1597	1576	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	1238	484	131	628	17	248	11	173	40	33	19
RTOR Reduction (vph)	0	31	0	0	1	0	0	0	146	0	18	0
Lane Group Flow (vph)	11	1691	0	131	644	0	248	11	27	40	34	0
Confl. Peds. (#/hr)	1		1	1		1	5		10	10		5
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	7%	7%	7%	13%	13%	13%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	3.0	70.6		15.7	83.3		22.9	23.2	23.2	5.5	5.8	
Effective Green, g (s)	3.0	70.6		15.7	83.3		22.9	23.2	23.2	5.5	5.8	
Actuated g/C Ratio	0.02	0.48		0.11	0.57		0.16	0.16	0.16	0.04	0.04	
Clearance Time (s)	6.5	6.5		6.5	6.5		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	2.0		2.0	2.0		3.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	35	2285		181	1921		262	280	229	59	62	
v/s Ratio Prot	0.01	c0.36		c0.08	0.19		c0.15	0.01		0.03	c0.02	
v/s Ratio Perm									0.02			
v/c Ratio	0.31	0.74		0.72	0.34		0.95	0.04	0.12	0.68	0.54	
Uniform Delay, d1	71.0	30.8		63.6	17.0		61.4	52.5	53.1	69.9	69.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.1	1.2		11.5	0.0		40.8	0.3	1.1	21.6	30.2	
Delay (s)	76.1	32.0		75.0	17.1		102.2	52.7	54.2	91.5	99.5	
Level of Service	E	C		E	B		F	D	D	F	F	
Approach Delay (s)		32.2			26.9			81.7			96.0	
Approach LOS		C			C			F			F	
Intersection Summary												
HCM 2000 Control Delay			39.8			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			147.0			Sum of lost time (s)			27.0			
Intersection Capacity Utilization			72.7%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

32: International Blvd & S 188th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	189	748	320	171	387	173	13	174	408	194	24	295
Future Volume (vph)	189	748	320	171	387	173	13	174	408	194	24	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0		6.0	6.0	7.0		6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.97	0.95	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97		1.00	1.00	0.94		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	1703	3406	1476	1719	3438	1496		3335	3438	1450		3303
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	1703	3406	1476	1719	3438	1496		3335	3438	1450		3303
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	189	748	320	171	387	173	14	174	408	194	24	295
RTOR Reduction (vph)	0	0	0	0	0	135	0	0	0	88	0	0
Lane Group Flow (vph)	189	748	320	171	387	38	0	188	408	106	0	319
Confl. Peds. (#/hr)	12		14	14		12		54		49		49
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	5%	5%	5%	5%	6%	6%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	7	4		3	8		5	5	2	3	1	1
Permitted Phases			4			8				2		
Actuated Green, G (s)	20.1	35.4	35.4	17.7	30.4	30.4		13.0	24.0	41.7		19.2
Effective Green, g (s)	20.1	35.4	35.4	17.7	30.4	30.4		13.0	24.0	41.7		19.2
Actuated g/C Ratio	0.14	0.25	0.25	0.13	0.22	0.22		0.09	0.17	0.30		0.14
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		6.0	6.0	7.0		6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		4.0	3.0	3.0		4.0
Lane Grp Cap (vph)	244	861	373	217	746	324		309	589	431		452
v/s Ratio Prot	c0.11	c0.22		0.10	0.11			0.06	c0.12	0.03		c0.10
v/s Ratio Perm			0.22			0.03				0.04		
v/c Ratio	0.77	0.87	0.86	0.79	0.52	0.12		0.61	0.69	0.25		0.71
Uniform Delay, d1	57.8	50.1	49.9	59.3	48.3	44.0		61.1	54.5	37.2		57.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.08	1.09	1.20		1.09
Incremental Delay, d2	14.2	9.3	17.4	17.1	0.6	0.2		3.8	6.4	0.3		3.1
Delay (s)	72.0	59.4	67.3	76.4	49.0	44.2		70.0	65.7	45.1		65.8
Level of Service	E	E	E	E	D	D		E	E	D		E
Approach Delay (s)		63.3			54.2				61.7			
Approach LOS		E			D				E			
Intersection Summary												
HCM 2000 Control Delay			74.2				HCM 2000 Level of Service		E			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		30.0			
Intersection Capacity Utilization			85.1%				ICU Level of Service		E			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

32: International Blvd & S 188th St

11/16/2023

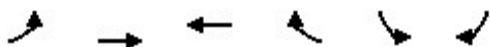


Movement	SBT	SBR	SBR2
Lane Configurations	↑↑	←	→
Traffic Volume (vph)	834	105	128
Future Volume (vph)	834	105	128
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	1.00	0.85	
Flt Protected	1.00	1.00	
Satd. Flow (prot)	3406	1524	
Flt Permitted	1.00	1.00	
Satd. Flow (perm)	3406	1524	
Peak-hour factor, PHF	1.00	1.00	1.00
Adj. Flow (vph)	834	105	128
RTOR Reduction (vph)	0	125	0
Lane Group Flow (vph)	834	108	0
Confl. Peds. (#/hr)			54
Heavy Vehicles (%)	6%	6%	6%
Turn Type	NA	Prot	
Protected Phases	6	6	
Permitted Phases			
Actuated Green, G (s)	33.0	33.0	
Effective Green, g (s)	33.0	33.0	
Actuated g/C Ratio	0.24	0.24	
Clearance Time (s)	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	
Lane Grp Cap (vph)	802	359	
v/s Ratio Prot	c0.24	0.07	
v/s Ratio Perm			
v/c Ratio	1.04	0.30	
Uniform Delay, d1	53.5	44.0	
Progression Factor	1.43	2.64	
Incremental Delay, d2	35.0	1.2	
Delay (s)	111.4	117.3	
Level of Service	F	F	
Approach Delay (s)	101.9		
Approach LOS	F		
Intersection Summary			

HCM 6th Signalized Intersection Summary

33: S 188th St & 42nd Ave S

11/02/2023
























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	96	1085	587	54	168	193
Future Volume (veh/h)	96	1085	587	54	168	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1856	1856
Adj Flow Rate, veh/h	98	1107	599	55	171	197
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	5	5	5	5	3	3
Cap, veh/h	454	1811	948	87	351	312
Arrive On Green	0.09	0.52	0.30	0.30	0.20	0.20
Sat Flow, veh/h	1739	3561	3303	294	1767	1572
Grp Volume(v), veh/h	98	1107	323	331	171	197
Grp Sat Flow(s),veh/h/ln	1739	1735	1735	1771	1767	1572
Q Serve(g_s), s	1.3	8.0	5.8	5.8	3.1	4.1
Cycle Q Clear(g_c), s	1.3	8.0	5.8	5.8	3.1	4.1
Prop In Lane	1.00			0.17	1.00	1.00
Lane Grp Cap(c), veh/h	454	1811	512	523	351	312
V/C Ratio(X)	0.22	0.61	0.63	0.63	0.49	0.63
Avail Cap(c_a), veh/h	1761	5818	2909	2970	1482	1318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.8	6.0	10.9	10.9	12.7	13.1
Incr Delay (d2), s/veh	0.1	0.1	0.5	0.5	1.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.6	1.7	1.1	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.9	6.1	11.4	11.4	13.8	15.2
LnGrp LOS	A	A	B	B	B	B
Approach Vol, veh/h		1205	654		368	
Approach Delay, s/veh		6.3	11.4		14.6	
Approach LOS		A	B		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	15.6			23.7	12.1
Change Period (Y+Rc), s	5.0	5.0			5.0	5.0
Max Green Setting (Gmax), s	30.0	60.0			60.0	30.0
Max Q Clear Time (g_c+I1), s	3.3	7.8			10.0	6.1
Green Ext Time (p_c), s	0.1	2.6			6.2	1.2
Intersection Summary						
HCM 6th Ctrl Delay			9.1			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis

34: Military Rd S & S 188th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	64	1039	39	5	95	435	189	21	75	31	375	334
Future Volume (vph)	64	1039	39	5	95	435	189	21	75	31	375	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.7	6.8			5.7	5.7	5.7	6.7	6.9		6.6	6.8
Lane Util. Factor	1.00	0.91			1.00	0.95	1.00	1.00	1.00		0.97	1.00
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99			1.00	1.00	0.85	1.00	0.96		1.00	0.98
Flt Protected	0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1719	4913			1703	3406	1524	1703	1714		3433	1814
Flt Permitted	0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1719	4913			1703	3406	1524	1703	1714		3433	1814
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	67	1082	41	5	99	453	197	22	78	32	391	348
RTOR Reduction (vph)	0	3	0	0	0	0	119	0	14	0	0	6
Lane Group Flow (vph)	67	1120	0	0	104	453	78	22	96	0	391	408
Confl. Peds. (#/hr)								2				
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	6%	6%	6%	6%	2%	2%
Turn Type	Prot	NA		Prot	Prot	NA	Perm	Prot	NA		Prot	NA
Protected Phases	1	6		5	5	2		7	4		3	8
Permitted Phases						2						
Actuated Green, G (s)	6.9	40.4			10.2	43.8	43.8	3.2	17.0		16.4	30.2
Effective Green, g (s)	6.9	40.4			10.2	43.8	43.8	3.2	17.0		16.4	30.2
Actuated g/C Ratio	0.06	0.37			0.09	0.40	0.40	0.03	0.15		0.15	0.27
Clearance Time (s)	6.7	6.8			5.7	5.7	5.7	6.7	6.9		6.6	6.8
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	3.0	3.0		2.0	2.0
Lane Grp Cap (vph)	107	1804			157	1356	606	49	264		511	498
v/s Ratio Prot	0.04	c0.23			c0.06	0.13		0.01	0.06		c0.11	c0.23
v/s Ratio Perm							0.05					
v/c Ratio	0.63	0.62			0.66	0.33	0.13	0.45	0.37		0.77	0.82
Uniform Delay, d1	50.3	28.5			48.2	23.0	21.0	52.5	41.7		45.0	37.4
Progression Factor	1.00	1.00			0.74	1.58	6.79	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.0	1.6			7.6	0.6	0.4	6.4	0.9		6.1	9.7
Delay (s)	58.3	30.1			43.1	37.0	142.9	59.0	42.5		51.0	47.0
Level of Service	E	C			D	D	F	E	D		D	D
Approach Delay (s)		31.7				65.5			45.3			49.0
Approach LOS		C				E			D			D
Intersection Summary												
HCM 2000 Control Delay			46.0	HCM 2000 Level of Service					D			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			110.0	Sum of lost time (s)					26.0			
Intersection Capacity Utilization			64.1%	ICU Level of Service					C			
Analysis Period (min)			15									
c Critical Lane Group												

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

34: Military Rd S & S 188th St


11/16/2023

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	63
Future Volume (vph)	63
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	66
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Heavy Vehicles (%)	2%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

35: I-5 On Ramp/I-5 Off Ramp & S 188th St

11/16/2023






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑					↖	↗	
Traffic Volume (vph)	0	799	653	273	668	0	0	0	0	324	1	58
Future Volume (vph)	0	799	653	273	668	0	0	0	0	324	1	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.6	4.0	5.5	6.6					5.9	5.9	
Lane Util. Factor		0.95	1.00	1.00	0.95					1.00	1.00	
Frpb, ped/bikes		1.00	0.99	1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.85	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3471	1533	1719	3438					1612	1446	
Flt Permitted		1.00	1.00	0.21	1.00					0.95	1.00	
Satd. Flow (perm)		3471	1533	377	3438					1612	1446	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	815	666	279	682	0	0	0	0	331	1	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	45	0
Lane Group Flow (vph)	0	815	666	279	682	0	0	0	0	331	15	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	0%	0%	0%	12%	12%	12%
Turn Type		NA	Free	D.P+P	NA					Split	NA	
Protected Phases		2		1	6					8	8	
Permitted Phases			Free	2								
Actuated Green, G (s)		39.3	110.0	54.9	60.4					25.9	25.9	
Effective Green, g (s)		39.3	110.0	54.9	60.4					25.9	25.9	
Actuated g/C Ratio		0.36	1.00	0.50	0.55					0.24	0.24	
Clearance Time (s)		6.6		5.5	6.6					5.9	5.9	
Vehicle Extension (s)		4.0		3.0	5.0					3.5	3.5	
Lane Grp Cap (vph)		1240	1533	378	1887					379	340	
v/s Ratio Prot		0.23		c0.10	0.20					c0.21	0.01	
v/s Ratio Perm			c0.43	c0.26								
v/c Ratio		0.66	0.43	0.74	0.36					0.87	0.04	
Uniform Delay, d1		29.7	0.0	18.5	14.0					40.5	32.5	
Progression Factor		1.29	1.00	1.81	0.64					1.00	1.00	
Incremental Delay, d2		2.3	0.7	6.5	0.5					19.7	0.1	
Delay (s)		40.5	0.7	39.8	9.4					60.2	32.5	
Level of Service		D	A	D	A					E	C	
Approach Delay (s)		22.6			18.2			0.0			56.0	
Approach LOS		C			B			A			E	
Intersection Summary												
HCM 2000 Control Delay			25.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)				20.0		
Intersection Capacity Utilization			86.1%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

36: I-5 Off Ramp/I-5 On Ramp & S 188th St





















11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	299	784	0	0	636	665	324	1	144	0	0	0
Future Volume (vph)	299	784	0	0	636	665	324	1	144	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.4			6.4	6.4	6.0	6.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95				
Frt	1.00	1.00			1.00	0.85	1.00	0.90				
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98				
Satd. Flow (prot)	1671	3343			3471	1553	1559	1458				
Flt Permitted	0.33	1.00			1.00	1.00	0.95	0.98				
Satd. Flow (perm)	579	3343			3471	1553	1559	1458				
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	302	792	0	0	642	672	327	1	145	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	203	0	60	0	0	0	0
Lane Group Flow (vph)	302	792	0	0	642	469	245	168	0	0	0	0
Heavy Vehicles (%)	8%	8%	8%	4%	4%	4%	10%	10%	10%	0%	0%	0%
Turn Type	D.P+P	NA			NA	Perm	Split	NA				
Protected Phases	5	2			6		4	4				
Permitted Phases	6					6						
Actuated Green, G (s)	59.5	65.0			44.8	44.8	21.9	21.9				
Effective Green, g (s)	59.5	65.0			44.8	44.8	21.9	21.9				
Actuated g/C Ratio	0.54	0.59			0.41	0.41	0.20	0.20				
Clearance Time (s)	5.5	6.4			6.4	6.4	6.0	6.0				
Vehicle Extension (s)	3.0	4.0			5.0	5.0	3.5	3.5				
Lane Grp Cap (vph)	459	1975			1413	632	310	290				
v/s Ratio Prot	c0.09	0.24			0.18		c0.16	0.12				
v/s Ratio Perm	0.27					c0.30						
v/c Ratio	0.66	0.40			0.45	0.74	0.79	0.58				
Uniform Delay, d1	14.7	12.1			23.7	27.7	41.9	39.9				
Progression Factor	1.55	0.31			1.00	1.00	1.00	1.00				
Incremental Delay, d2	2.4	0.4			1.1	7.7	13.2	3.0				
Delay (s)	25.3	4.2			24.8	35.4	55.0	42.9				
Level of Service	C	A			C	D	E	D				
Approach Delay (s)		10.0			30.2			49.2			0.0	
Approach LOS		B			C			D			A	
Intersection Summary												
HCM 2000 Control Delay		25.7			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		110.0			Sum of lost time (s)			19.9				
Intersection Capacity Utilization		86.1%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

HCM 6th Signalized Intersection Summary

37: Des Moines Memorial Dr S & S 192nd St




















11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	38	63	48	26	19	3	362	26	4	842	9
Future Volume (veh/h)	18	38	63	48	26	19	3	362	26	4	842	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	19	40	66	50	27	20	3	377	27	4	877	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	2	2	2
Cap, veh/h	263	56	93	222	112	83	9	923	66	19	1016	10
Arrive On Green	0.02	0.09	0.09	0.04	0.11	0.11	0.00	0.54	0.54	0.01	0.55	0.55
Sat Flow, veh/h	1767	625	1031	1767	986	730	1753	1697	122	1781	1848	19
Grp Volume(v), veh/h	19	0	106	50	0	47	3	0	404	4	0	886
Grp Sat Flow(s),veh/h/ln	1767	0	1656	1767	0	1716	1753	0	1818	1781	0	1867
Q Serve(g_s), s	0.7	0.0	4.2	1.7	0.0	1.7	0.1	0.0	8.8	0.2	0.0	27.6
Cycle Q Clear(g_c), s	0.7	0.0	4.2	1.7	0.0	1.7	0.1	0.0	8.8	0.2	0.0	27.6
Prop In Lane	1.00		0.62	1.00		0.43	1.00		0.07	1.00		0.01
Lane Grp Cap(c), veh/h	263	0	150	222	0	194	9	0	989	19	0	1027
V/C Ratio(X)	0.07	0.00	0.71	0.23	0.00	0.24	0.35	0.00	0.41	0.21	0.00	0.86
Avail Cap(c_a), veh/h	615	0	733	533	0	760	388	0	1610	788	0	1653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	30.0	26.2	0.0	27.4	33.6	0.0	9.1	33.2	0.0	13.1
Incr Delay (d2), s/veh	0.1	0.0	6.0	0.5	0.0	0.6	23.0	0.0	0.3	5.3	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.8	0.7	0.0	0.7	0.1	0.0	2.9	0.1	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	0.0	36.0	26.7	0.0	28.0	56.6	0.0	9.3	38.6	0.0	15.9
LnGrp LOS	C	A	D	C	A	C	E	A	A	D	A	B
Approach Vol, veh/h	125			97			407			890		
Approach Delay, s/veh	34.6			27.4			9.7			16.0		
Approach LOS	C			C			A			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	41.9	6.5	12.7	6.3	42.3	8.0	11.1				
Change Period (Y+Rc), s	6.0	5.0	5.0	5.0	6.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	30.0	60.0	15.0	30.0	15.0	60.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	2.2	10.8	2.7	3.7	2.1	29.6	3.7	6.2				
Green Ext Time (p_c), s	0.0	2.7	0.0	0.2	0.0	7.7	0.1	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	16.6											
HCM 6th LOS	B											

HCM Signalized Intersection Capacity Analysis

38: International Blvd & S 192nd St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	44	28	70	30	14	26	44	31	640	23	22	44
Future Volume (vph)	44	28	70	30	14	26	44	31	640	23	22	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		5.0	5.0			5.0
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	0.95			1.00
Frpb, ped/bikes	1.00	0.99			1.00	0.98		1.00	1.00			1.00
Flpb, ped/bikes	0.99	1.00			1.00	1.00		1.00	1.00			0.99
Frt	1.00	0.89			1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00			0.97	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1718	1615			1799	1548		1752	3476			1722
Flt Permitted	0.73	1.00			0.74	1.00		0.20	1.00			0.36
Satd. Flow (perm)	1314	1615			1371	1548		370	3476			656
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	30	74	32	15	28	47	33	681	24	23	47
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	1	0	0	0
Lane Group Flow (vph)	47	104	0	0	47	4	0	80	704	0	0	70
Confl. Peds. (#/hr)	8		2	2		8		15		21		21
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	3%	4%	4%
Turn Type	Perm	NA		Perm	NA	Perm	D.P+P	D.P+P	NA		D.P+P	D.P+P
Protected Phases		8			4		1	1	6		5	5
Permitted Phases	8			4		4	2	2			6	6
Actuated Green, G (s)	19.1	19.1			19.1	19.1		104.9	99.1			104.9
Effective Green, g (s)	19.1	19.1			19.1	19.1		104.9	99.1			104.9
Actuated g/C Ratio	0.14	0.14			0.14	0.14		0.75	0.71			0.75
Clearance Time (s)	6.0	6.0			6.0	6.0		5.0	5.0			5.0
Vehicle Extension (s)	5.0	5.0			3.0	3.0		2.0	4.0			2.0
Lane Grp Cap (vph)	179	220			187	211		349	2460			535
v/s Ratio Prot		c0.06						c0.01	0.20			0.01
v/s Ratio Perm	0.04				0.03	0.00		0.16				0.09
v/c Ratio	0.26	0.47			0.25	0.02		0.23	0.29			0.13
Uniform Delay, d1	54.1	55.8			54.1	52.3		5.9	7.5			4.7
Progression Factor	1.00	1.00			1.00	1.00		0.96	0.87			1.53
Incremental Delay, d2	1.6	3.3			0.7	0.0		0.1	0.3			0.0
Delay (s)	55.8	59.1			54.8	52.4		5.7	6.8			7.2
Level of Service	E	E			D	D		A	A			A
Approach Delay (s)		58.1			53.9				6.7			
Approach LOS		E			D				A			
Intersection Summary												
HCM 2000 Control Delay			15.0				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		16.0			
Intersection Capacity Utilization			63.1%				ICU Level of Service		B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

38: International Blvd & S 192nd St

11/16/2023

























Movement	SBT	SBR	SBR2
Lane Configurations	↑↑	←	→
Traffic Volume (vph)	1096	228	89
Future Volume (vph)	1096	228	89
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.0	5.0	
Lane Util. Factor	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	1.00	0.85	
Flt Protected	1.00	1.00	
Satd. Flow (prot)	3471	1553	
Flt Permitted	1.00	1.00	
Satd. Flow (perm)	3471	1553	
Peak-hour factor, PHF	0.94	0.94	0.94
Adj. Flow (vph)	1166	243	95
RTOR Reduction (vph)	0	19	0
Lane Group Flow (vph)	1166	319	0
Confl. Peds. (#/hr)			15
Heavy Vehicles (%)	4%	4%	4%
Turn Type	NA	Prot	
Protected Phases	2	2	
Permitted Phases			
Actuated Green, G (s)	97.6	97.6	
Effective Green, g (s)	97.6	97.6	
Actuated g/C Ratio	0.70	0.70	
Clearance Time (s)	5.0	5.0	
Vehicle Extension (s)	4.0	4.0	
Lane Grp Cap (vph)	2419	1082	
v/s Ratio Prot	c0.34	0.21	
v/s Ratio Perm			
v/c Ratio	0.48	0.30	
Uniform Delay, d1	9.7	8.1	
Progression Factor	1.38	1.44	
Incremental Delay, d2	0.4	0.4	
Delay (s)	13.8	12.0	
Level of Service	B	B	
Approach Delay (s)	13.1		
Approach LOS	B		
Intersection Summary			

HCM 6th Signalized Intersection Summary

39: Des Moines Memorial Dr & S 200th St

11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	278	138	39	142	85	31	272	29	319	613	19
Future Volume (veh/h)	15	278	138	39	142	85	31	272	29	319	613	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	16	296	147	41	151	90	33	289	31	339	652	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	3	3	3	4	4	4	2	2	2
Cap, veh/h	397	342	170	197	571	727	196	456	49	503	738	23
Arrive On Green	0.02	0.29	0.29	0.04	0.31	0.31	0.03	0.28	0.28	0.16	0.41	0.41
Sat Flow, veh/h	1781	1179	585	1767	1856	1537	1753	1634	175	1781	1805	55
Grp Volume(v), veh/h	16	0	443	41	151	90	33	0	320	339	0	672
Grp Sat Flow(s),veh/h/ln	1781	0	1764	1767	1856	1537	1753	0	1809	1781	0	1860
Q Serve(g_s), s	0.5	0.0	20.4	1.4	5.3	2.8	0.9	0.0	13.3	11.3	0.0	28.7
Cycle Q Clear(g_c), s	0.5	0.0	20.4	1.4	5.3	2.8	0.9	0.0	13.3	11.3	0.0	28.7
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.10	1.00		0.03
Lane Grp Cap(c), veh/h	397	0	511	197	571	727	196	0	505	503	0	761
V/C Ratio(X)	0.04	0.00	0.87	0.21	0.26	0.12	0.17	0.00	0.63	0.67	0.00	0.88
Avail Cap(c_a), veh/h	780	0	720	544	757	881	549	0	1055	631	0	1084
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	0.0	28.9	22.5	22.4	12.8	18.7	0.0	27.1	18.1	0.0	23.5
Incr Delay (d2), s/veh	0.0	0.0	8.0	0.5	0.2	0.1	0.4	0.0	1.3	2.0	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	9.6	0.6	2.2	1.0	0.4	0.0	5.7	4.5	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	0.0	36.9	23.0	22.6	12.9	19.1	0.0	28.4	20.1	0.0	29.9
LnGrp LOS	B	A	D	C	C	B	B	A	C	C	A	C
Approach Vol, veh/h		459			282			353			1011	
Approach Delay, s/veh		36.3			19.6			27.5			26.6	
Approach LOS		D			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.9	28.9	6.6	31.4	7.7	40.1	8.1	29.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	20.0	50.0	20.0	35.0	20.0	50.0	20.0	35.0				
Max Q Clear Time (g_c+I1), s	13.3	15.3	2.5	7.3	2.9	30.7	3.4	22.4				
Green Ext Time (p_c), s	0.6	2.0	0.0	1.1	0.0	4.4	0.1	2.4				
Intersection Summary												
HCM 6th Ctrl Delay				27.9								
HCM 6th LOS				C								

HCM Signalized Intersection Capacity Analysis

40: Military Rd S & I-5 NB Off/On Ramp

11/16/2023
























Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	224	51	282	159	476	173
Future Volume (vph)	224	51	282	159	476	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9		5.9	5.9	5.9	5.9
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1728		1769	1863	1863	1560
Flt Permitted	0.96		0.22	1.00	1.00	1.00
Satd. Flow (perm)	1728		403	1863	1863	1560
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	233	53	294	166	496	180
RTOR Reduction (vph)	6	0	0	0	0	76
Lane Group Flow (vph)	280	0	294	166	496	104
Confl. Peds. (#/hr)			2			2
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot		D.P+P	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases			6			6
Actuated Green, G (s)	23.5		53.3	62.3	34.8	58.3
Effective Green, g (s)	23.5		53.3	62.3	34.8	58.3
Actuated g/C Ratio	0.23		0.53	0.62	0.35	0.58
Clearance Time (s)	5.9		5.9	5.9	5.9	5.9
Vehicle Extension (s)	3.5		3.0	3.5	3.5	3.5
Lane Grp Cap (vph)	403		464	1152	643	903
v/s Ratio Prot	c0.16		c0.12	c0.09	c0.27	0.03
v/s Ratio Perm			0.22			0.04
v/c Ratio	0.69		0.63	0.14	0.77	0.12
Uniform Delay, d1	35.3		16.1	8.0	29.4	9.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3		2.8	0.1	5.9	0.1
Delay (s)	40.6		18.9	8.1	35.3	9.6
Level of Service	D		B	A	D	A
Approach Delay (s)	40.6			15.0	28.5	
Approach LOS	D			B	C	
Intersection Summary						
HCM 2000 Control Delay			26.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.70			
Actuated Cycle Length (s)			100.7		Sum of lost time (s)	21.7
Intersection Capacity Utilization			70.9%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM 6th Signalized Intersection Summary

41: 24th Ave S & S 208th St




















11/02/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	16	25	28	3	25	3	302	53	55	785	12
Future Volume (veh/h)	29	16	25	28	3	25	3	302	53	55	785	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	32	18	27	31	3	27	3	332	58	60	863	13
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	7	7	7	4	4	4	4	4	4	2	2	2
Cap, veh/h	301	71	106	291	17	156	361	1261	218	591	1639	25
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.00	0.42	0.42	0.04	0.46	0.46
Sat Flow, veh/h	1319	646	970	1333	158	1419	1753	2979	515	1781	3583	54
Grp Volume(v), veh/h	32	0	45	31	0	30	3	193	197	60	428	448
Grp Sat Flow(s),veh/h/ln	1319	0	1616	1333	0	1577	1753	1749	1744	1781	1777	1860
Q Serve(g_s), s	0.9	0.0	1.0	0.9	0.0	0.7	0.0	2.9	2.9	0.8	6.9	6.9
Cycle Q Clear(g_c), s	1.6	0.0	1.0	1.9	0.0	0.7	0.0	2.9	2.9	0.8	6.9	6.9
Prop In Lane	1.00		0.60	1.00		0.90	1.00		0.29	1.00		0.03
Lane Grp Cap(c), veh/h	301	0	177	291	0	173	361	741	739	591	813	851
V/C Ratio(X)	0.11	0.00	0.25	0.11	0.00	0.17	0.01	0.26	0.27	0.10	0.53	0.53
Avail Cap(c_a), veh/h	977	0	1005	975	0	981	1229	1958	1954	1413	1990	2083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	16.4	17.3	0.0	16.2	6.5	7.5	7.5	6.2	7.8	7.8
Incr Delay (d2), s/veh	0.2	0.0	0.7	0.2	0.0	0.5	0.0	0.3	0.3	0.1	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	0.3	0.0	0.2	0.0	0.8	0.8	0.2	1.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	17.1	17.4	0.0	16.7	6.5	7.8	7.8	6.2	8.5	8.5
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h	77			61			393			936		
Approach Delay, s/veh	17.1			17.1			7.8			8.4		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	22.9		10.3	5.6	24.3		10.3				
Change Period (Y+Rc), s	5.5	5.9		5.9	5.5	5.9		5.9				
Max Green Setting (Gmax), s	20.0	45.0		25.0	20.0	45.0		25.0				
Max Q Clear Time (g_c+I1), s	2.8	4.9		3.6	2.0	8.9		3.9				
Green Ext Time (p_c), s	0.1	3.6		0.3	0.0	9.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	9.0											
HCM 6th LOS	A											

HCM Signalized Intersection Capacity Analysis

42: International Blvd & S 208th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	88	1	77	5	1	17	31	21	471	4	22	15
Future Volume (vph)	88	1	77	5	1	17	31	21	471	4	22	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			5.0	5.0			5.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	0.95			1.00
Frpb, ped/bikes	1.00	0.96		1.00	0.98			1.00	1.00			1.00
Flpb, ped/bikes	0.99	1.00		0.98	1.00			1.00	1.00			1.00
Frt	1.00	0.85		1.00	0.86			1.00	1.00			1.00
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00			0.95
Satd. Flow (prot)	1721	1497		1616	1468			1719	3431			1770
Flt Permitted	0.75	1.00		0.70	1.00			0.95	1.00			0.95
Satd. Flow (perm)	1351	1497		1199	1468			1719	3431			1770
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	90	1	79	5	1	17	32	21	481	4	22	15
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	90	80	0	5	3	0	0	53	485	0	0	37
Confl. Peds. (#/hr)	6		18	18		6		7		25		25
Heavy Vehicles (%)	4%	4%	4%	9%	9%	9%	5%	5%	5%	5%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	Prot	NA		Prot	Prot
Protected Phases		8			4		1	1	6		5	5
Permitted Phases	8			4								
Actuated Green, G (s)	17.2	17.2		17.2	17.2			9.3	98.2			8.1
Effective Green, g (s)	17.2	17.2		17.2	17.2			9.3	98.2			8.1
Actuated g/C Ratio	0.12	0.12		0.12	0.12			0.07	0.70			0.06
Clearance Time (s)	6.5	6.5		6.5	6.5			5.0	5.0			5.0
Vehicle Extension (s)	4.0	4.0		4.0	4.0			4.0	4.0			4.0
Lane Grp Cap (vph)	165	183		147	180			114	2406			102
v/s Ratio Prot		0.05			0.00			c0.03	0.14			0.02
v/s Ratio Perm	c0.07			0.00								
v/c Ratio	0.55	0.44		0.03	0.02			0.46	0.20			0.36
Uniform Delay, d1	57.7	56.9		54.1	54.0			63.0	7.3			63.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00			0.94
Incremental Delay, d2	4.6	2.3		0.1	0.1			4.0	0.2			2.7
Delay (s)	62.3	59.2		54.2	54.0			67.0	7.5			62.4
Level of Service	E	E		D	D			E	A			E
Approach Delay (s)		60.8			54.1				13.3			
Approach LOS		E			D				B			
Intersection Summary												
HCM 2000 Control Delay			16.0			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			16.5			
Intersection Capacity Utilization			62.9%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

42: International Blvd & S 208th St

11/16/2023























Movement	SBT	SBR	SBR2
Lane Configurations	↑↑	←	→
Traffic Volume (vph)	958	215	31
Future Volume (vph)	958	215	31
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	5.0	5.0	
Lane Util. Factor	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	1.00	0.85	
Flt Protected	1.00	1.00	
Satd. Flow (prot)	3539	1583	
Flt Permitted	1.00	1.00	
Satd. Flow (perm)	3539	1583	
Peak-hour factor, PHF	0.98	0.98	0.98
Adj. Flow (vph)	978	219	32
RTOR Reduction (vph)	0	20	0
Lane Group Flow (vph)	978	231	0
Confl. Peds. (#/hr)			7
Heavy Vehicles (%)	2%	2%	2%
Turn Type	NA	Prot	
Protected Phases	2	2	
Permitted Phases			
Actuated Green, G (s)	97.0	97.0	
Effective Green, g (s)	97.0	97.0	
Actuated g/C Ratio	0.69	0.69	
Clearance Time (s)	5.0	5.0	
Vehicle Extension (s)	4.0	4.0	
Lane Grp Cap (vph)	2452	1096	
v/s Ratio Prot	c0.28	0.15	
v/s Ratio Perm			
v/c Ratio	0.40	0.21	
Uniform Delay, d1	9.1	7.7	
Progression Factor	0.93	1.06	
Incremental Delay, d2	0.4	0.4	
Delay (s)	8.9	8.6	
Level of Service	A	A	
Approach Delay (s)	10.4		
Approach LOS	B		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

43: Pacific Hwy S & S 216th St

11/16/2023

												
Movement	EBU	EBL	EBT	EBR	WBL2	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	61	63	406	227	118	297	61	11	146	370	110	43
Future Volume (vph)	61	63	406	227	118	297	61	11	146	370	110	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0			6.0	6.7	6.7	
Lane Util. Factor		1.00	1.00	1.00	1.00	0.95			1.00	0.95	1.00	
Frpb, ped/bikes		1.00	1.00	0.97	1.00	0.99			1.00	1.00	0.95	
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	
Frt		1.00	1.00	0.85	1.00	0.97			1.00	1.00	0.85	
Flt Protected		0.95	1.00	1.00	0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)		1770	1863	1536	1770	3426			1736	3471	1471	
Flt Permitted		0.95	1.00	1.00	0.95	1.00			0.95	1.00	1.00	
Satd. Flow (perm)		1770	1863	1536	1770	3426			1736	3471	1471	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	61	63	406	227	118	297	61	11	146	370	110	43
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	92	0
Lane Group Flow (vph)	0	124	406	227	118	344	0	0	157	370	18	0
Confl. Peds. (#/hr)		21		15	15		21		40		14	
Confl. Bikes (#/hr)							1					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	4%	4%	4%	2%
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Prot	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	8		5	5	2		1
Permitted Phases				4							2	
Actuated Green, G (s)		14.6	32.0	32.0	14.3	32.0			14.1	20.8	20.8	
Effective Green, g (s)		14.6	32.0	32.0	14.3	32.0			14.1	20.8	20.8	
Actuated g/C Ratio		0.11	0.25	0.25	0.11	0.25			0.11	0.16	0.16	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0			6.0	6.7	6.7	
Vehicle Extension (s)		3.5	4.0	4.0	3.5	4.0			3.5	4.0	4.0	
Lane Grp Cap (vph)		198	458	378	194	843			188	555	235	
v/s Ratio Prot		c0.07	c0.22		0.07	0.10			c0.09	c0.11		
v/s Ratio Perm				0.15							0.01	
v/c Ratio		0.63	0.89	0.60	0.61	0.41			0.84	0.67	0.07	
Uniform Delay, d1		55.1	47.2	43.3	55.2	41.1			56.8	51.3	46.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2		6.3	18.7	3.1	5.6	0.4			26.7	6.2	0.6	
Delay (s)		61.4	65.9	46.4	60.8	41.5			83.5	57.6	47.0	
Level of Service		E	E	D	E	D			F	E	D	
Approach Delay (s)			59.4			46.3				62.1		
Approach LOS			E			D				E		
Intersection Summary												
HCM 2000 Control Delay			56.1			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			28.7			
Intersection Capacity Utilization			83.1%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

43: Pacific Hwy S & S 216th St

11/16/2023























Movement	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	138	767	242	45
Future Volume (vph)	138	767	242	45
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)	6.0	6.7	6.7	
Lane Util. Factor	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	0.93	
Flpb, ped/bikes	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	
Satd. Flow (prot)	1770	3539	1475	
Flt Permitted	0.95	1.00	1.00	
Satd. Flow (perm)	1770	3539	1475	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00
Adj. Flow (vph)	138	767	242	45
RTOR Reduction (vph)	0	0	133	0
Lane Group Flow (vph)	181	767	154	0
Confl. Peds. (#/hr)	14			40
Confl. Bikes (#/hr)				
Heavy Vehicles (%)	2%	2%	2%	2%
Turn Type	Prot	NA	Perm	
Protected Phases	1	6		
Permitted Phases			6	
Actuated Green, G (s)	25.1	31.9	31.9	
Effective Green, g (s)	25.1	31.9	31.9	
Actuated g/C Ratio	0.19	0.25	0.25	
Clearance Time (s)	6.0	6.7	6.7	
Vehicle Extension (s)	3.5	4.0	4.0	
Lane Grp Cap (vph)	341	868	361	
v/s Ratio Prot	0.10	0.22		
v/s Ratio Perm			0.10	
v/c Ratio	0.53	0.88	0.43	
Uniform Delay, d1	47.2	47.3	41.3	
Progression Factor	1.00	1.00	1.00	
Incremental Delay, d2	1.8	12.7	3.7	
Delay (s)	48.9	59.9	45.0	
Level of Service	D	E	D	
Approach Delay (s)		54.9		
Approach LOS		D		
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

44: Military Rd S & S 216th St

11/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	151	288	25	214	6	162	197	20	15	352	125
Future Volume (vph)	200	151	288	25	214	6	162	197	20	15	352	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	1.00		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1680		1770	1855		1752	1819		1770	1789	
Flt Permitted	0.42	1.00		0.24	1.00		0.22	1.00		0.57	1.00	
Satd. Flow (perm)	786	1680		442	1855		406	1819		1054	1789	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	206	156	297	26	221	6	167	203	21	15	363	129
RTOR Reduction (vph)	0	43	0	0	1	0	0	2	0	0	8	0
Lane Group Flow (vph)	206	410	0	26	226	0	167	222	0	15	484	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	37.8	35.1		38.8	23.3		48.2	46.2		48.2	37.3	
Effective Green, g (s)	37.8	35.1		38.8	23.3		48.2	46.2		48.2	37.3	
Actuated g/C Ratio	0.37	0.34		0.38	0.23		0.47	0.45		0.47	0.37	
Clearance Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	431	578		216	423		335	823		512	654	
v/s Ratio Prot	c0.07	c0.24		0.00	0.12		c0.05	0.12		0.00	c0.27	
v/s Ratio Perm	0.11			0.04			0.18			0.01		
v/c Ratio	0.48	0.71		0.12	0.53		0.50	0.27		0.03	0.74	
Uniform Delay, d1	23.2	29.0		21.6	34.6		18.2	17.4		14.4	28.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	4.0		0.3	1.3		1.2	0.2		0.0	4.4	
Delay (s)	24.0	33.0		21.8	35.9		19.3	17.6		14.4	32.5	
Level of Service	C	C		C	D		B	B		B	C	
Approach Delay (s)		30.2			34.4			18.3			32.0	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			28.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			102.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			78.2%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX B. FUTURE MULTIMODAL CONDITIONS

CITY OF SEATAC TRANSPORTATION MASTER PLAN



FUTURE MULTIMODAL CONDITIONS

CITY OF SEATAC TRANSPORTATION MASTER PLAN

AUGUST 2024

PREPARED FOR:

CITY OF SEATAC



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DOCUMENT DESCRIPTION

CLIENT	City of SeaTac
DKS Project / Proposal Number	24089-000
Project / Proposal Name	City of SeaTac 2024 Transportation Master Plan Update
Related Task / WBS Number	Task 6 – Analysis of Travel Forecasts
Document Name	Future Multimodal Conditions Summary Memo
File Path	
Date Document Issued	

VERSION CONTROL

VERSION NUMBER	DATE	DESCRIPTION OF CHANGE	AUTHOR
1-0	08/13/2024	Draft Memo for City Review	CT+others
1-1	09/13/2024	Finalized For Public Review Draft	DKS Associates

PREPARED FOR CITY OF SEATAC



PREPARED BY DKS ASSOCIATES



TOOLE DESIGN



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INTRODUCTION

This Future Multimodal Conditions report contains information and analysis of the City of SeaTac's transportation system forecasted for the year 2044. This report covers the possible growth scenarios analyzed using the new travel demand model, discusses future transportation forecasts for all modes of travel, and identifies the multimodal projects needed to accommodate the planned growth while achieving the larger vision for the City.

The report is divided into eight main sections:

- Anticipated Growth,
- Background Projects,
- Mode Share,
- Traffic Volumes,
- Traffic Operations,
- Active Transportation,
- Freight, and
- Transit.

This report follows the Existing Conditions Report created for the City in January 2024, which summarized the same set of multimodal conditions for the 2023 base year. The scope of the analyses generally covers the City limits, as shown in Figure 1.

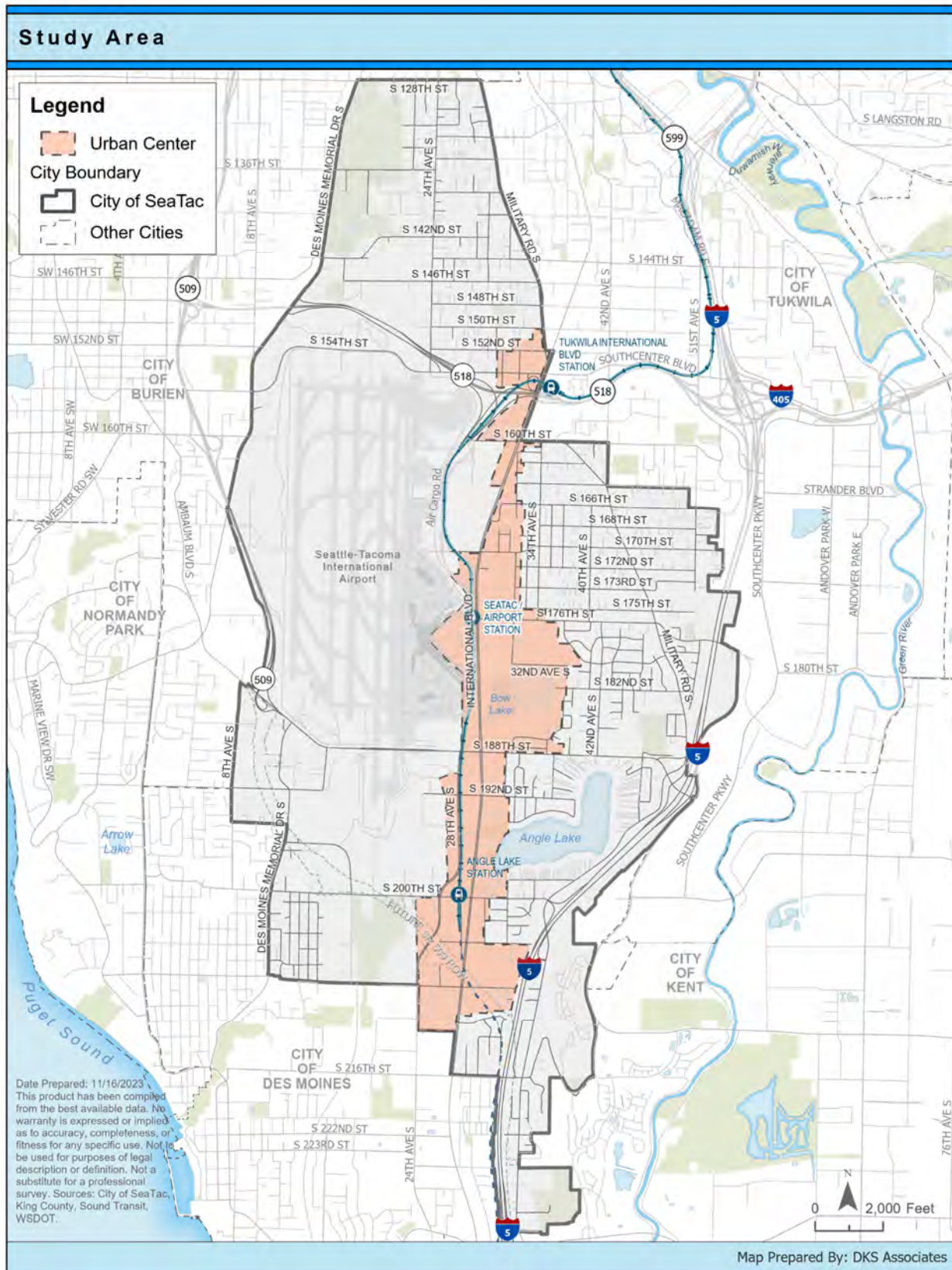


FIGURE 1: STUDY AREA

ANTICIPATED GROWTH

GROWTH SCENARIOS

The City's draft land use element explains the overall vision for land use in 2044. The goal is to focus growth within centers, urban villages, and smaller scale mixed use areas. Most of SeaTac's growth would be focused within these areas to support community health, equity, economic vitality, and citywide transit access. Figure 2 illustrates the areas of planned growth in SeaTac as defined in the Comprehensive Plan's Land Use Element.

With these goals in mind, three different growth scenarios were considered for the future 2044 horizon year:

- Alternative 1: Meets mandated Housing and Employment Targets with growth focused in the Urban Center
- Alternative 2: Alternative 1 + Neighborhood Villages
- Alternative 3: Alternative 2 + Corner Stores and Neighborhood Corridors

Neighborhood Villages are City-designated areas outside of the Urban Center (the City's designated Urban Growth Center) that provide access to everyday needs and contain a range of moderately scaled housing options. Corner Stores provide convenience services to adjacent residential areas and smaller scaled housing compatible with lower density residential areas. Neighborhood Corridors provide services and small to moderately scaled housing options along key corridors.

Alt 1 is considered the "no action" scenario, where the target amount of growth is achieved for housing and employment within the City. No Neighborhood Villages, Corner Stores, or Neighborhood Corridors are included in this alternative.

Alt 2 builds upon Alt 1, adding in designated Neighborhood Villages.

Alt 3 builds further upon Alt 2, adding Corner Store locations and additional density along Neighborhood Corridors. High-level outcomes from the travel demand model showed that all three alternatives have similar results in terms of mode share, total volume, truck volume, and overall delay. See Appendix.

This report focuses on Alternative 3 for the evaluation of future conditions as it reflects the highest intensity growth with the intent of identifying the greatest needs/impacts of growth.

SEACAST TRAVEL DEMAND MODEL

A new travel demand model for the City of SeaTac was created from the Puget Sound Regional Council (PSRC) SoundCast Activity-Based Travel Demand Model¹ in collaboration with the Port of Seattle. This localized version of the PSRC model -- the SeaCast model-- uses a custom zone and network structure for higher resolution within SeaTac and incorporates a customized model for the Sea-Tac Airport.

¹ <https://www.psrc.org/activity-based-travel-model-soundcast>, Accessed 7/25/2024.

Activity-based travel demand models derive travel demand from the daily activity patterns of a simulated population. Activity-based models represent each person's daily activity and travel choices. Behaviors and decisions around activities form the basis of these models.² In contrast, trip-based or four-step models estimate aggregate travel demand for each geographic zone directly from zonal land use data. Among other advantages, activity-based models produce more detailed information across a broader set of performance metrics and are therefore more useful in assessing policies and outcomes around equity, for example.

The base year for the SeaCast model is 2018 to match the PSRC SoundCast model and the forecast year is 2044 for all three growth scenario alternatives. The base year model was calibrated using segment counts from a variety of data sources which were collected between 2013 and 2023.

BACKGROUND PROJECTS

In addition to land use assumptions and anticipated growth, the development of a future 2044 scenario incorporates planned regional and local projects. The following describes the major projects which are assumed to be completed by 2044.

SR 509 COMPLETION PROJECT

SR 509 currently terminates at Des Moines Memorial Drive S/S 188th Street, west of Sea-Tac Airport. The SR 509 Completion Project will extend SR 509 south and east towards a new interchange with I-5.³ The extension will be a tolled expressway and will include interchange ramps at 24th Avenue S and the new Airport South Access Expressway. The anticipated completion date is 2028.

AIRPORT SOUTH ACCESS EXPRESSWAY

Under current plans, the Airport South Access Expressway project will construct a new two-lane limited access arterial between the Sea-Tac Airport roadway system (including the existing Airport Expressway) and the SR 509 extension at 24th Avenue S.⁴ Based on PSRC's modeling assumptions, the roadway will intersect at-grade with S 188th Street and S 200th Street, and the roadway will terminate via an interchange with SR 509. This project is included in the future 2044 model to align with PSRC's Regional Transportation Plan. The currently anticipated completion date is 2032.

LINK LIGHT RAIL EXTENSIONS

The Angle Lake Light Rail Station in SeaTac is currently the end of the line for Sound Transit's Link Light Rail service. Sound Transit plans to extend their light rail service in two phases:

² [Activity-Based Travel Demand Models: A Primer](#), Strategic Highway Research Program 2 Report S2-C46-RR-1, Transportation Research Board of the National Academies, 2015

³ <https://wsdot.wa.gov/construction-planning/search-projects/sr-509-completion-project>, Accessed 7/25/2024.

⁴ [Regional Transportation Plan 2022-2050, Appendix D2: Regional Capacity Project List](#), Puget Sound Regional Council.

- Federal Way Link Light Rail Extension⁵
- Tacoma Dome Link Light Rail Extension⁶

The Federal Way Link Extension will extend the light rail from its current terminus to Federal Way, then the Tacoma Dome Link Extension will extend it further from Federal Way to Tacoma Dome where it will connect to the Sounder (S Line), Amtrak (Cascades and Coast Starlight), and the Tacoma Link Light Rail (T Line).

The Federal Way extension is currently in the design and construction phase, while the Tacoma Dome extension is in the planning phase. Service is anticipated to start for Federal Way in 2026, then in Tacoma Dome in 2035. Both projects extend Sound Transit's 1 Line further south, adding eight miles to reach Federal Way and 10 additional miles to reach Tacoma Dome.

PREVIOUSLY ADOPTED SEATAC PLANS

A summary of all of the relevant plans completed by the City is available in the Existing Plans Summary memorandum. The following are very brief summaries of these existing plans. These plans indicate the level of planning, study, and care that SeaTac has taken to address multimodal needs throughout the City. These plans laid the groundwork for this needs assessment and the Transportation Master Plan.

INTERNATIONAL BOULEVARD PEDESTRIAN SAFETY STUDY

The City of SeaTac led a project to identify pedestrian safety countermeasures for the International Boulevard corridor with City limits, from S 152nd Street to S 216th Street.⁷ The project identified factors for pedestrian safety, analyzed costs and benefits, and developed a process for selecting countermeasures.

ANGLE LAKE DISTRICT STATION AREA PLAN

The Angle Lake District Station Area Plan was created to optimize the economic opportunities of the Angle Lake Station on Sound Transit's Link Light Rail alignment.⁸ The plan informs infrastructure improvements and code development to support a pedestrian-friendly and transit-oriented community.

⁵ <https://www.soundtransit.org/system-expansion/federal-way-link-extension>, Accessed 8/5/2024.

⁶ <https://www.soundtransit.org/system-expansion/tacoma-dome-link-extension>, Accessed 8/5/2024.

⁷ <https://www.seatacwa.gov/government/city-departments/public-works/ib-pedestrian-crossings-safety-plan>, Accessed 7/25/2024.

⁸ Angle Lake District Station Area Plan, Adopted July 2015.

ADA TRANSITION PLAN

The Americans with Disabilities Act (ADA) Self-Evaluation and Transition Plan (2018) established the City of SeaTac's ongoing commitment as an all-inclusive community to providing equal access to those with disabilities.

PERMIT PARKING PROGRAM

The City of SeaTac Parking Permit Program aims to manage parking in congested neighborhoods. This program was established in response to resident feedback about a lack of on-street parking in the McMicken neighborhood.

CITY CENTER PLAN UPDATE

The City Center Plan Update Phase 1 Project established an updated vision for the city center area and documented a consensus about a path forward for the district. The concept for this district involves two sub-areas with distinct characteristics:

- an urban, airport-serving, mixed-use district along International Boulevard, and
- a residential area stepping down in intensity to meet the single-family neighborhoods at the eastern-most boundary.

Phase 2 of this project aims to complete a sub-area plan that identifies how to implement the vision from Phase 1. Phase 2 is currently underway with community outreach.

MILITARY ROAD S FIVE-WAY INTERSECTION STUDY

This project studied the five-way intersection of Military Road S, S 164th Street, and 42nd Avenue S to determine a configuration that will improve mobility and safety for people driving, walking, and biking through the intersection, while also serving as a potential community hub. The project team's recommendation for the installation of a roundabout has been incorporated into the City's Transportation Improvement Project (TIP) list.

S 200TH STREET CORRIDOR STUDY

This project investigates recommendations from the City's Transportation Master Plan (TMP), which calls for the S 200th Street corridor to be converted from a four-lane roadway to one lane in each direction with a center turn-lane, bicycle lanes, and improved pedestrian facilities.

Recommendations from the project team advocate for either of the options below:

- Option 1: Add bike lanes, wider sidewalks, a two-way left turn-lane, and revise access to I-5
- Option 2: Keep existing configuration (four-lane roadway), acquire right-of-way to expand sidewalks and add a bike lane, and add roundabouts at intersections with Military Road S and 32nd Avenue S

Additional conversations with the community and stakeholders are needed to determine the best treatment along S 200th Street.

LOCAL ROAD SAFETY PLAN

The local road safety plan (LRSP) provides a basis for systematic safety improvements in the City of SeaTac. It creates a framework to identify and understand safety issues, then uses the knowledge gained to recommend improvements through a prioritized list of projects. Crash analysis revealed trends including the high share of Killed/Severe Injury (KSI) crashes that involved pedestrians and fixed objects. The LRSP applied countermeasures to locations where high-risk factors are present, resulting in a set of eight countermeasure-based projects and twelve corridor-based projects, including cost estimates.

FUTURE TRIP CHARACTERISTICS

MODE SHARE

There are seven primary modes⁹ that SeaTac residents utilize to travel in the SeaCast model:

- Walking
- Biking
- Transit
- TNC (Transportation Network Company, or ride-sharing companies)
- SOV (Single Occupancy Vehicle, or driving alone)
- HOV2 (High Occupancy Vehicle with two persons traveling)
- HOV3+ (High Occupancy Vehicle with three or more persons, not including transit)

The daily travel mode shares are shown in Figure 3 for SeaTac residents by trip type.

⁹ School Bus is an additional mode but is not considered since its mode share never exceeded 0.26% for any growth alternative for any trip purpose.

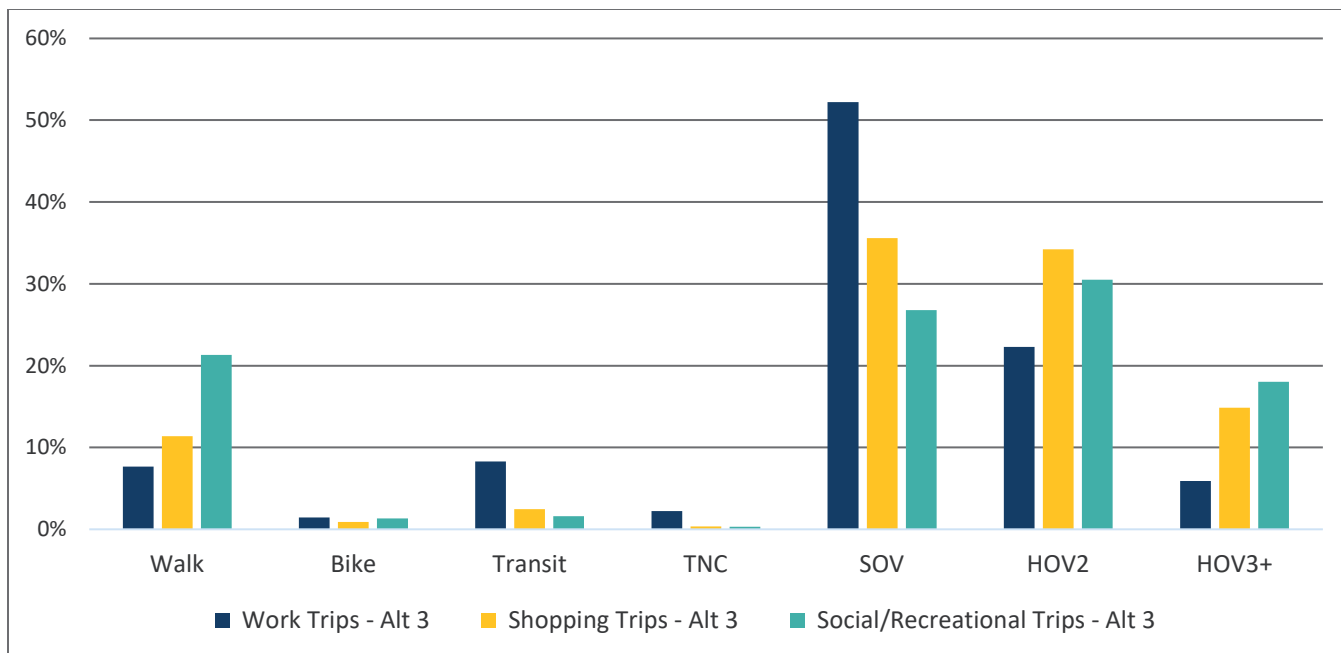


FIGURE 3: DAILY MODE SHARE FOR SEATAC RESIDENTS BY TRIP TYPE

As shown, SOV is the most common mode for work trips, SOV and HOV2 are the most common modes for shopping trips, and HOV2, SOV, and walking are all common modes for social/recreational trips. Bike trips and TNC trips are consistently the least popular modes for any trip type.

TRIP LENGTH AND DURATION

Figure 4 and Figure 5 show the average daily trip length and duration, respectively, for residents of SeaTac based on different trip types. Each trip type is further divided into two travel modes: transit or automobile.



FIGURE 4: AVERAGE DAILY TRIP LENGTH FOR SEATAC RESIDENTS BY TRIP TYPE & MODE

As shown, trip lengths are consistently longer for transit users compared to automobile users. Shopping trips tended to be the shortest trip type, while work trips were among the longest. Work trip lengths do not appear to be longer for low-income or transit-dependent residents, regardless of travel mode, compared to all-resident work trips. Transportation equity appears to be balanced.

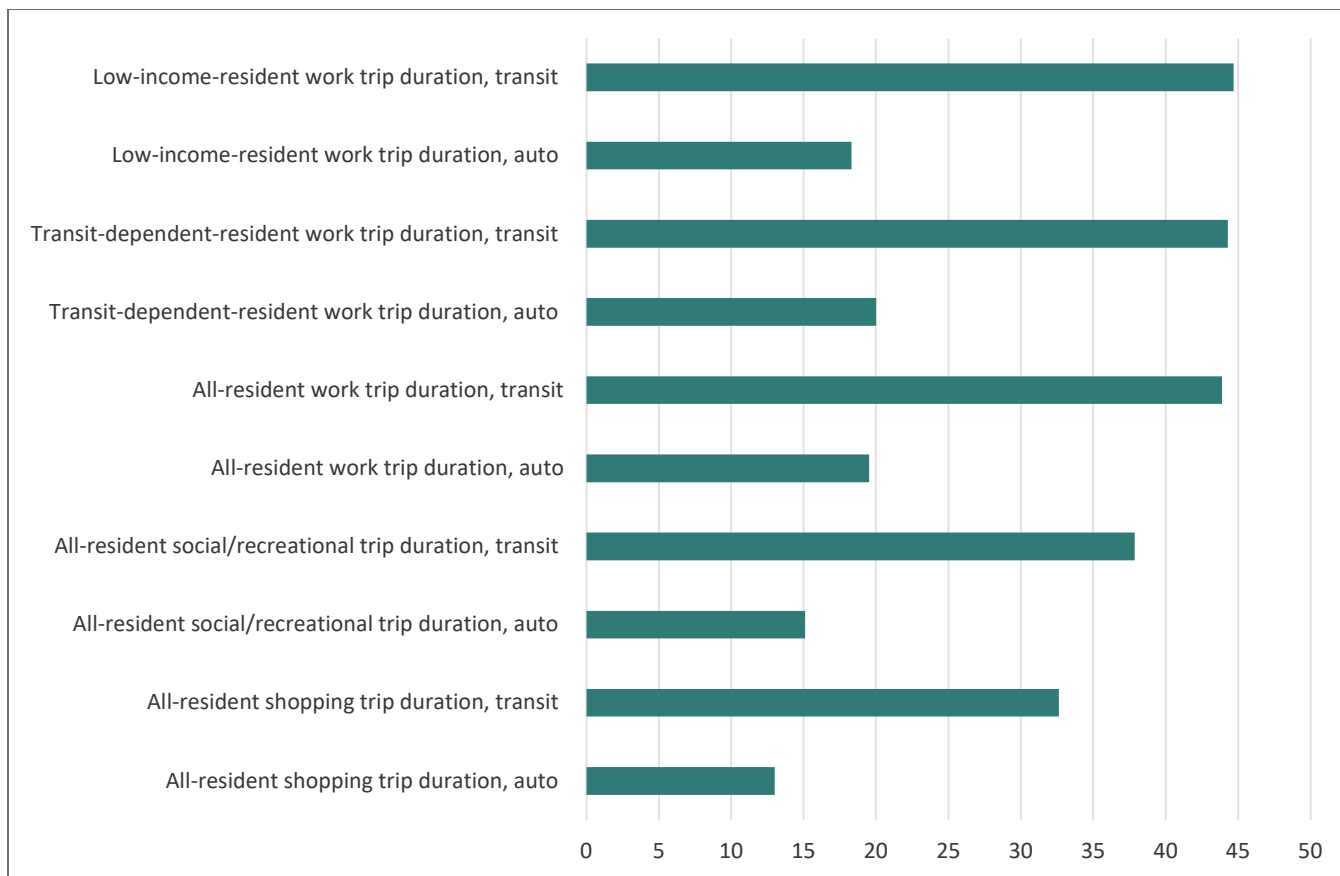


FIGURE 5: AVERAGE DAILY TRIP DURATION FOR SEATAC RESIDENTS BY TRIP TYPE & MODE

Trip durations generally mirror the same trends as the trip length trends shown in Figure 4, but automobile travel times are noticeably lower for low-income and all-resident work trip cohorts. Additionally, the trip duration for transit users for social/recreational purposes is considerably higher in relation to both auto users and the average length of these trips. Again, transportation equity for low-income and transit-dependent residents appears to be balanced with overall all-resident trip durations.

TRAFFIC VOLUMES

DAILY VOLUMES

Average Daily Traffic (ADT) is the amount of motorized traffic on a roadway segment over a 24-hour period. Daily volumes from the SeaCast model are estimated as the sum of traffic from each of the 12 time periods¹⁰ for which the model assigns traffic to the roadway network. To provide a

¹⁰ Time periods are as follows: 5AM-6AM, 6AM-7AM, 7AM-8AM, 8AM-9AM, 9AM-10AM, 10AM-2PM, 2PM-3PM, 3PM-4PM, 4PM-5PM, 5PM-6PM, 6PM-8PM, and 8PM-5AM.

relative overview of daily traffic volumes, data from the Alternative 3 scenario representing 2044 demand is mapped in Figure 6.

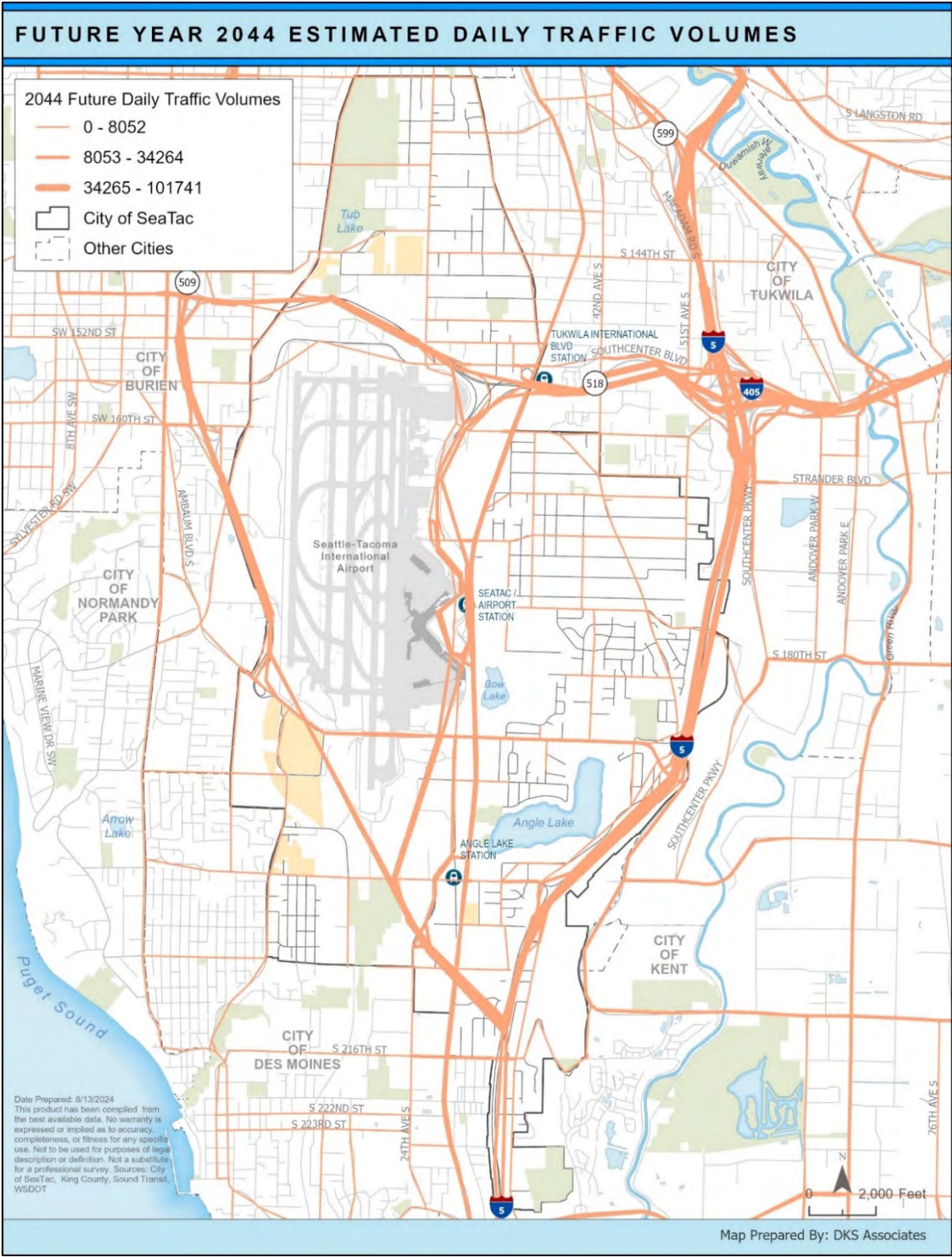


FIGURE 6: 2044 FORECASTED DAILY TRAFFIC VOLUMES

As shown, the highest-volume corridors for vehicles are I-5, SR 518, SR 509 (including the extension), International Boulevard (SR 99), the new Airport South Access Expressway, and S 188th Street. The SR 509 extension and South Access Expressway are both well utilized in future forecasts, preventing additional demand or even decreasing demand on SeaTac's local roadways.

Decreases in daily volume are forecasted for the northbound direction of International boulevard from S 200th Street to S 182nd Street/Arrivals Drive, the eastbound and westbound directions of S 188th Street between SR 509 and International Boulevard, the westbound direction of S 200th Street between 26th Avenue S and Military Road S, and the eastbound direction of S 200th Street from International Boulevard to I-5. Travel patterns here show a shift to using the SR 509 extension and South Access Expressway.

Growth is forecasted for International Boulevard in the southbound direction, primarily south of S 182nd Street/Arrivals Drive. Northbound volume growth on International Boulevard is primarily on the section north of S 170th Street. For east-west corridors, growth is forecasted on S 188th Street but only east of International Boulevard. There is also growth shown on S 200th Street west of the new South Access Expressway. All other corridors see only modest changes in daily traffic.

AFTERNOON PEAK HOUR VOLUMES

The afternoon peak hour is typically the highest volume period that the transportation network will experience. The afternoon peak hour usually occurs between 4 PM and 6 PM on a typical Tuesday, Wednesday, or Thursday when schools are in session. The maximum demand during this period is typically used to determine the needed size of roadway facilities and intersections, as well as the need for traffic signals. The PM peak hour in SeaTac was identified as 4 PM to 5 PM.

Peak hour intersection volumes are also used to measure the intersection's performance and assess the adequacy of the intersection's capacity. Using the turning movement counts collected at the 44 study intersections, the 2018 base year SeaCast model, and the 2044 future year Alternative 3 SeaCast model, forecasted turning movement volumes were estimated for all study intersections in accordance with NCHRP 765 methodology.¹¹

Figure 7 depicts the raw model output peak hour volumes on links throughout the City. Figure 8 in the next section shows the total post-processed PM peak hour approach volumes at each study intersection.

Volume growth was observed on Des Moines Memorial Drive S between the SR 518 interchange and S 160th Street. Traffic utilizes the new SR 509 extension, which causes lower demand on S 188th Street/Des Moines Memorial Drive S from SR 509 to International Boulevard especially in the eastbound direction.

International Boulevard volumes increase mostly between S 154th Street and S 176th Street. The Airport South Access Expressway diverts growth away from International Boulevard, and in

¹¹ <https://nap.nationalacademies.org/catalog/22366/analytical-travel-forecasting-approaches-for-project-level-planning-and-design>, Accessed 8/9/2024.

particular northbound left turns from International Boulevard near the airport see significant decreases.

A moderate amount of growth is forecasted for S 188th Street east of International Boulevard, including at the interchange with I-5. No other major travel patterns within the City were significantly altered according to the PM peak hour forecasts.

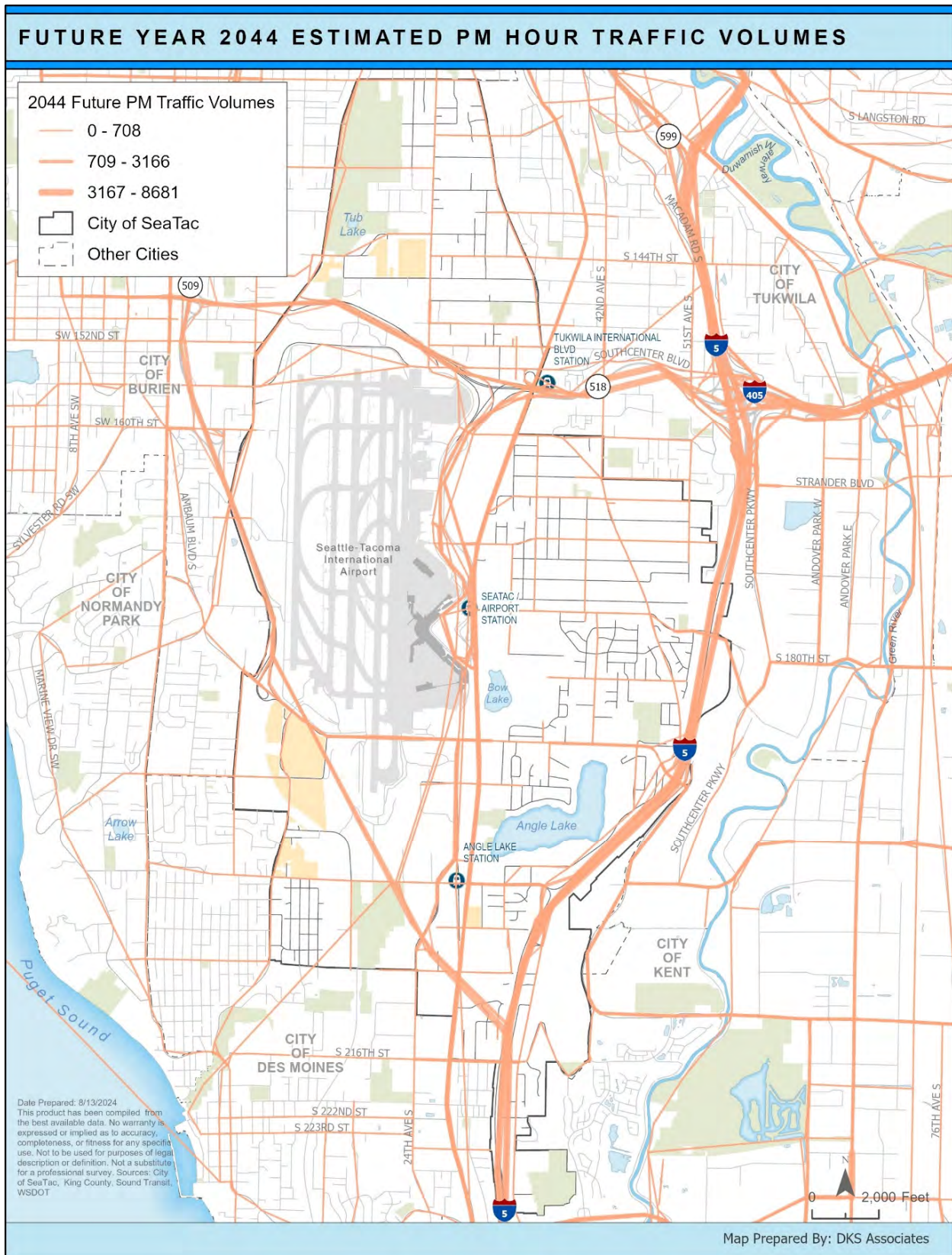


FIGURE 7: FUTURE (2044) PM PEAK HOUR VOLUMES

INTERSECTION LEVEL OF SERVICE

Traffic operations analyses provide valuable insight into current and predicted levels of vehicular congestion on the arterial roadway network. This traffic operational analysis is based on the forecasted PM peak hour volumes described in the previous section. Currently planned intersection and roadway improvements are included in the analysis model.

The study intersection results are shown in Figure 8 and listed in Table 1.

Intersection Level of Service (LOS) is a performance measure commonly used to provide an overview of how each intersection operates overall. The LOS provides a “report card” rating of letters A through F based on average vehicle delay through the intersection. LOS A indicates free flow conditions with minimal delay traveling through an intersection while LOS F indicates excessive vehicle delay and demand greater than capacity. LOS thresholds for signalized and unsignalized intersections are specified in the Highway Capacity Manual.¹² Level of service and delay are reported for the overall intersection at signalized intersections, for the worst major and minor approaches (critical movements) at two-way stop-controlled (TWSC) intersections, and for the worst approach (critical movement) at all-way stop-control (AWSC) intersections.

¹² Highway Capacity Manual, 7th Edition, A Guide for Multimodal Mobility Analysis, The National Academies, 2022.

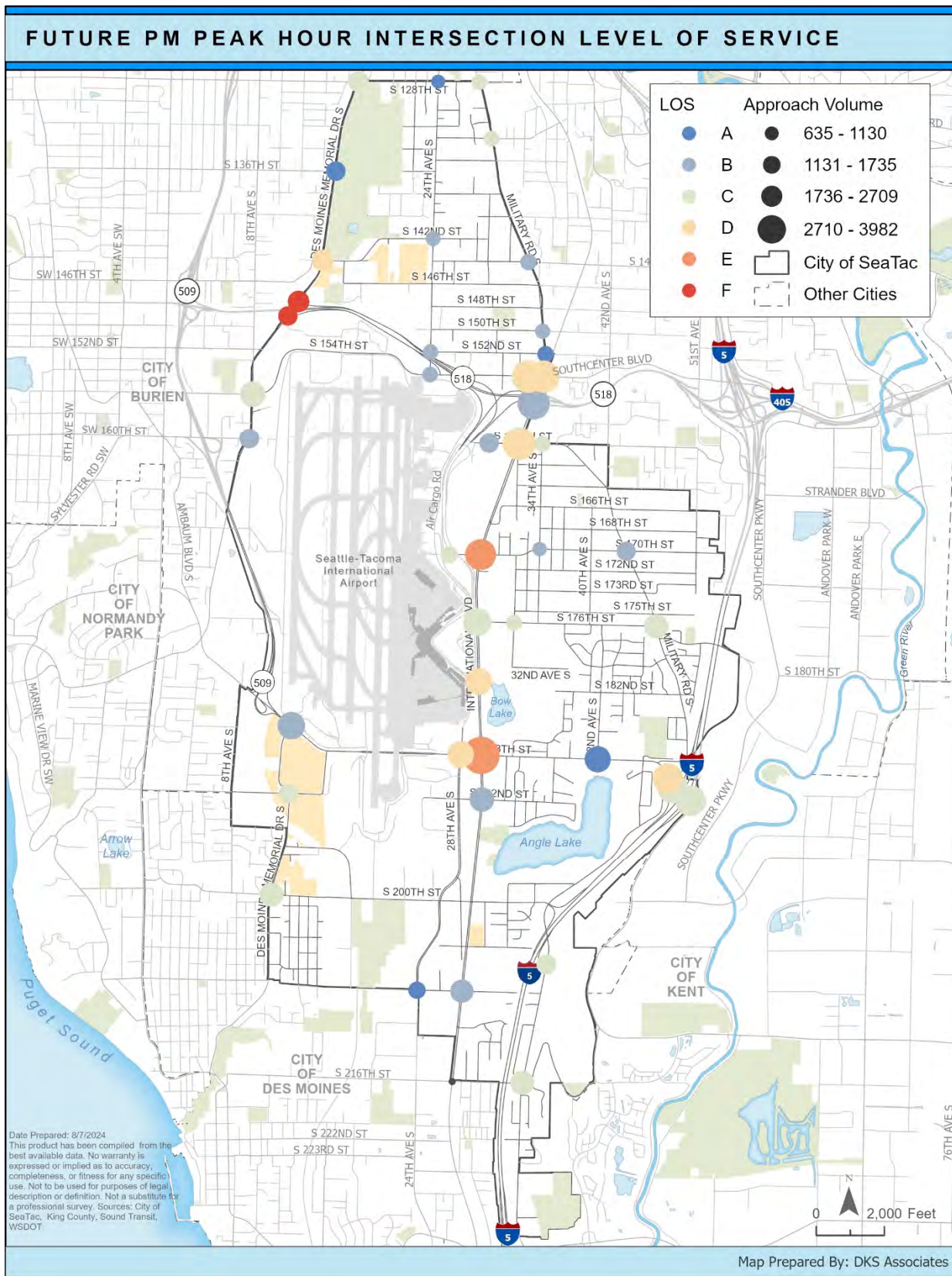


FIGURE 8: FUTURE (2044) PM PEAK HOUR INTERSECTION VOLUMES & LOS

TABLE 1: FUTURE PM PEAK HOUR INTERSECTION LEVEL OF SERVICE (2044)

INTERSECTION	CONTROL TYPE	LOS ^a	DELAY ^a	CRITICAL MOVEMENT
1 DES MOINES MEMORIAL DR & S 128TH ST	Signal	C	22	N/A
2 24TH AVE S & S 128TH ST	Signal	A	6	N/A
3 MILITARY RD S & S 133RD ST	AWSC	C	16	SB
4 DES MOINES MEMORIAL DR & S 136TH ST	Signal	A	9	N/A
5 24TH AVE S & S 142ND ST	AWSC	B	11	NB
6 DES MOINES MEMORIAL DR & S 144TH ST	Signal	D	44	N/A
7 MILITARY RD S & S 144TH ST	AWSC	B	13	SB
8 DES MOINES MEMORIAL DR & SR 518 OFF RAMP	TWSC	A/F	0/170	NB/WB
9 DES MOINES MEMORIAL DR & SR 518 OFF RAMP/SR 518 ON RAMP	TWSC	A/F	9/151	SB/EB
10 MILITARY RD S & S 150TH ST	AWSC	B	15	SB
11 24TH AVE S & S 152ND ST	TWSC	A/B	8/14	SB/WB
12 MILITARY RD S & S 152ND ST	Signal	A	8	N/A
13 AIR CARGO RD/24TH AVE S & S 154TH ST	Signal	A	10	N/A
14 SR 518 OFF RAMP & S 154TH ST	Signal	A	8	N/A
15 INTERNATIONAL BLVD & S 154TH ST	Signal	D	39	N/A
16 DES MOINES MEMORIAL DR & S 156TH ST	Signal	C	23	N/A
17 INTERNATIONAL BLVD & SR 518 ON RAMP	Signal	B	12	N/A
18 DES MOINES MEMORIAL DR & S 160TH ST	Signal	B	12	N/A
19 RENTAL CAR FACILITY/PORT GROUND LOT & S 160TH ST	Signal	B	16	N/A
20 INTERNATIONAL BLVD & S 160TH ST	Signal	D	37	N/A
21 34TH AVE S & S 160TH ST	TWSC	A/C	9/22	WB/NB
22 PORT CELL LOT/AIRPORT EXP SB OFF RAMP & S 170TH ST	Signal	C	29	N/A
23 INTERNATIONAL BLVD & S 170TH ST	Signal	E	70	N/A
24 34TH AVE S & S 170TH ST	AWSC	B	11	EB
25 MILITARY RD S & S 170TH ST	Signal	B	13	N/A
26 INTERNATIONAL BLVD & S 176TH ST	Signal	C	35	N/A
27 34TH AVE S & S 176TH ST	TWSC	A/C	8/16	WB/SB
28 MILITARY RD S & S 176TH ST	Signal	C	26	N/A
29 INTERNATIONAL BLVD & S 182ND ST	Signal	D	46	N/A
30 DES MOINES MEMORIAL DR S/STARLING DR & S 188TH ST	Signal	B	19	N/A
31 28TH AVE S & S 188TH ST	Signal	D	54	N/A
32 INTERNATIONAL BLVD & S 188TH ST	Signal	E	57	N/A
33 S 188TH ST & 42ND AVE S	Signal	A	10	N/A
34 MILITARY RD S & S 188TH ST	Signal	D	44	N/A
35 I-5 ON RAMP/I-5 OFF RAMP & S 188TH ST	Signal	C	26	N/A
36 I-5 OFF RAMP/I-5 ON RAMP & S 188TH ST	Signal	C	26	N/A

INTERSECTION	CONTROL TYPE	LOS ^a	DELAY ^a	CRITICAL MOVEMENT
37 DES MOINES MEMORIAL DR S & S 192ND ST	Signal	C	21	N/A
38 INTERNATIONAL BLVD & S 192ND ST	Signal	B	15	N/A
39 DES MOINES MEMORIAL DR & S 200TH ST	Signal	C	29	N/A
40 MILITARY RD S & I-5 NB OFF/ON RAMP	Signal	C	30	N/A
41 24TH AVE S & S 208TH ST	Signal	A	10	N/A
42 INTERNATIONAL BLVD & S 208TH ST	Signal	B	15	N/A
43 PACIFIC HWY S & S 216TH ST	Signal	E	55	N/A
44 MILITARY RD S & S 216TH ST	Signal	C	35	N/A

^a LOS E or worse are shown in bold and red.

As shown, the following stop-controlled intersections operate at LOS F for the worst approach:

- Des Moines Memorial Drive S & SR 518 Off Ramp (#8)
- Des Moines Memorial Drive S & SR 518 Off Ramp/SR 518 On Ramp (#9)

Both intersections are under WSDOT jurisdiction (with a LOS D standard) but are expected to operate at LOS F on the off-ramp approaches. The interchange is currently a three-quarter configuration, with no westbound on-ramp from Des Moines Memorial Drive S to SR 518. There is a project identified to reconstruct the Des Moines Memorial Drive S interchange at SR 518, known as SR 518 at Des Moines Memorial Drive S Interchange Phase II - Westbound Ramps, which will add an on-ramp from Des Moines Memorial Drive S to westbound SR 518 thus completing a full-diamond interchange.¹³

This project was identified in the SR 518 Corridor Planning Study by WSDOT in 2020, which anticipated a completion year of 2030. The two interchange intersections were noted candidates for signalization or roundabout improvements.¹⁴ The City of Burien also noted the westbound on-ramp as a project in their six-year Transportation Improvement Program.¹⁵ When Phase II of the SR 518 at Des Moines Memorial Drive S Interchange project is completed, the intersections are expected to operate at LOS C or better.

Additionally, two signalized intersections on International Boulevard/SR 99 operate at LOS E: at S 170th Street and at S 188th Street. International Boulevard, north of S 204th Street, is not a Highway of Statewide Significance.¹⁶ WSDOT policy at these intersections is to maintain a LOS of "E Mitigated" which means, "Congestion should be mitigated (such as transit) when p.m. peak hour LOS falls below LOS 'E'..."¹⁷ This indicates that mitigation is not required at these locations.

¹³ [Regional Transportation Plan 2022-2050, Appendix D2: Regional Capacity Project List](#), Puget Sound Regional Council.

¹⁴ SR 518 Corridor Planning Study: SR 509 to I-5, WSDOT, May 2020

¹⁵ [Six-Year Transportation Improvement Program, 2024-2029](#), City of Burien, Washington.

¹⁶ <https://geo.wa.gov/datasets/WSDOT::wsdot-highways-of-statewide-significance/about>, Accessed 8/6/2024.

¹⁷ <https://geo.wa.gov/datasets/WSDOT::wsdot-level-of-service-standard-for-state-routes/about>, Accessed 8/6/2024.

Lastly, the intersection of Pacific Highway and S 216th Street also operates at LOS E. This intersection is not within the City of SeaTac but is shown in this analysis for informational purposes only.

CONCURRENCY CORRIDOR TRAVEL SPEED

SeaTac tracks concurrency based on a minimum travel speed on its concurrency corridors. There are 17 concurrency corridors, two of which are exempt from the standards and are tracked for informational purposes only. The concurrency corridors are shown in Figure 9.

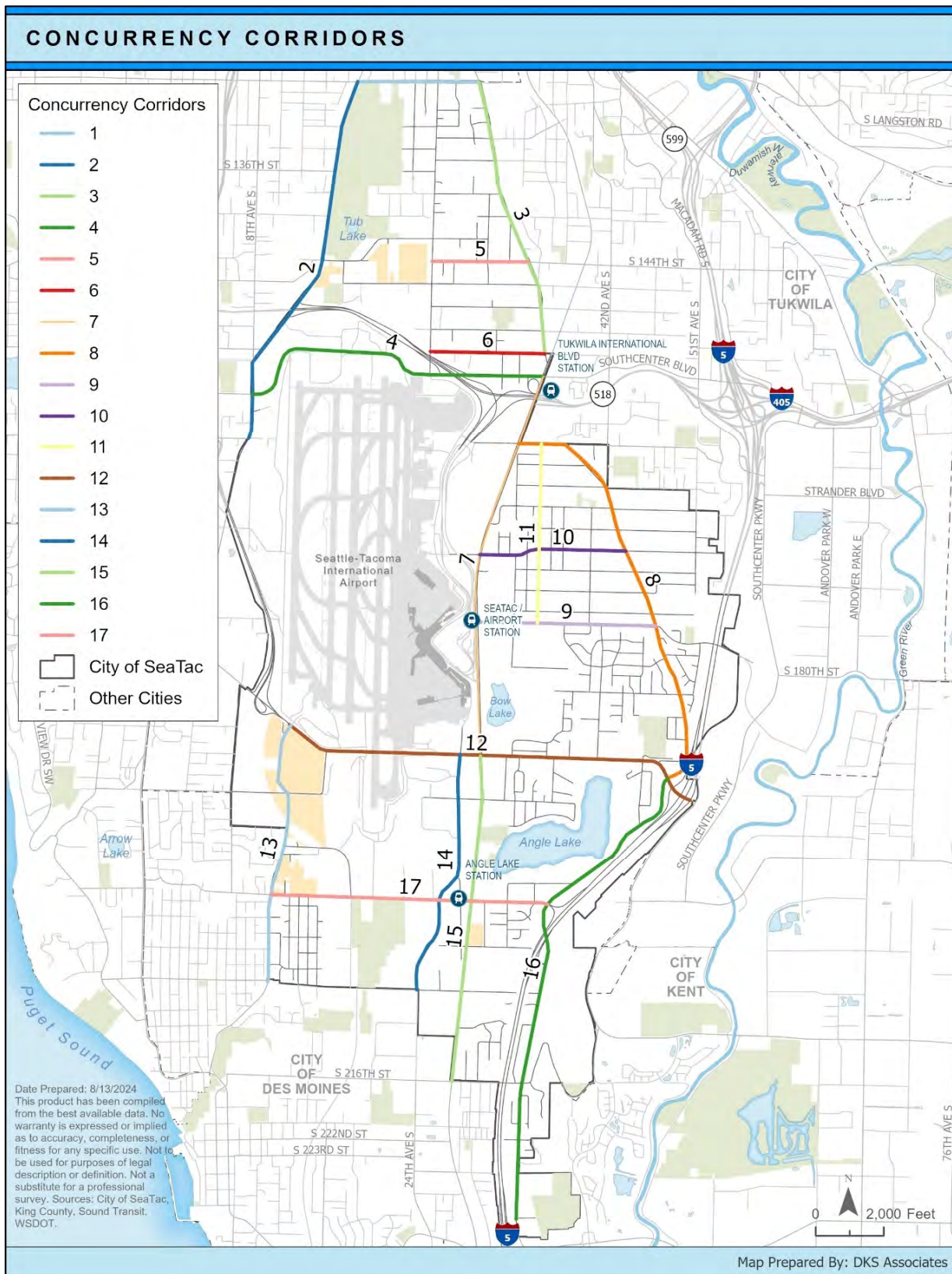


FIGURE 9: CONCURRENCY CORRIDORS

To estimate what the future concurrency corridor speeds may be, the City's current Concurrency Impact Estimator spreadsheet tool was used. The tool is used to keep track of new developments and assign their newly generated PM peak hour traffic onto the City's concurrency corridors. The tool uses a speed/volume curve to estimate the "concurrency balance" on each corridor, i.e. how many trips can be added to the corridor before the concurrency test fails.

Total PM peak hour volume growth was used at the study intersections to determine an average volume growth for the entire corridor. The results are shown in Table 2. Exempt corridors are shaded in grey. Where volumes decreased in 2044 compared to the 2023 turning movement counts, values are shown as negative numbers.

TABLE 2: FUTURE (2044) FORECASTED CONCURRENCY BALANCE

CORRIDOR	EXTENTS	DIRECTION	CONCURRENCY BALANCE (3/13/2024)	2023-2044 VOLUME GROWTH (AVERAGE)	2044 FORECASTED CONCURRENCY BALANCE
1- S 128th St	DMM Dr to Military	EB	176	-29	205
		WB	1119	2	1117
2-Des Moines M Dr	128th to 160th	NB	408	102	306
		SB	633	104	529
3-Military Rd S	152nd to 128th	NB	624	14	611
		SB	478	6	472
4 - S 154th St	DMM Dr to IB	EB	546	62	484
		WB	1010	37	974
5- S 144th St	24th to Military Rd	EB	409	18	391
		WB	352	1	351
6- S 152nd St	24th to Military Rd	EB	263	11	252
		WB	312	14	298
7 - International Blvd	154th to 188th	NB	1018	113	905
		SB	542	141	401
8 - Military Rd S	IB to 188th	NB	493	35	458
		SB	338	43	295
9 - S 176th St	IB to Military Rd	EB	557	60	497
		WB	750	79	671
10 - S 170th St	IB to Military Rd	EB	700	48	652
		WB	556	43	513
11 - 34th Ave S	160th to 176th	NB	677	37	640
		SB	667	20	647
12 - S 188th St	I5 NB Ramp to DMM Dr	EB	580	-114	694
		WB	414	59	355
13 - Des Moines M Dr	188th to 208th	NB	674	10	664
		SB	520	-176	696
14 - 24/26/28 Ave S	188th to 208th	NB	1712	90	1622
		SB	1287	-153	1440
15 -International Blvd	188th to 216th	NB	877	-83	960
		SB	838	-95	933
16 - Military Rd S	188th to 228th	NB	440	98	342
		SB	381	7	374
17 - S 200th St	DMM Dr to Military Rd	EB	342	84	258
		WB	415	59	356

As shown, all corridors maintain a positive concurrency balance in the future 2044 forecast, therefore the concurrency test is expected to pass.

ACTIVE TRANSPORTATION

The policies in the documents listed earlier in the “Previously Adopted SeaTac Plans” section and the proposals in the upcoming Comprehensive Plan update are in support of increased walking and biking on facilities for all ages and abilities. Using updated data from these various documents, a bicycle and pedestrian facility needs assessment was conducted for the full City roadway network.

PEDESTRIAN AND BICYCLE NEEDS ASSESSMENT

For the needs assessment, the existing pedestrian network analyses were reviewed to identify remaining network implementation needs. There are many street segment and intersection projects identified in both the LRSP and the ADA Transition Plan that still need to be completed. The proposed pedestrian projects were aggregated and included in the Pedestrian Segment and Intersection Needs Assessment Map (See Figure 10). The pedestrian network is typically developed through public projects and private development frontage improvements, designed to King County Road Standards as amended by the City of SeaTac.

Beyond currently proposed projects, the maps identify additional pedestrian infrastructure needs to fill missing gaps in the sidewalk network and improve intersections to better support pedestrian safety and reduce stress. For assessing intersection needs, the evaluation looked at where additional intersections are needed to facilitate pedestrian crossings between intersections with traffic control and/or traffic calming elements. The evaluation also considered ADA improvements needed at crossings, as previously identified in the City’s ADA Transition Plan.

As illustrated in Figure 11, the bicycle network in the City is less developed than the pedestrian network. The assessment found that some road segments lack bicycle facilities, while several existing facilities do not meet current best practices for an all ages and abilities network. For example, there are some bike lanes that do not provide enough of a barrier to reduce the level of stress that a cyclist experiences along the facility – typically a combination of the speed and proximity of vehicles in the adjacent lane. There are also stress reduction opportunities for improving bicycle facilities and adding traffic calming elements on local roads with lower traffic volumes and speeds. In addition to the needs for linear facilities, intersection adjustments are required to facilitate safe bicycle crossings, especially across arterials.

The following maps depict the results of this assessment of bicycle and pedestrian infrastructure. The scope of this assessment included all public roads within the City of SeaTac. A summary list of the identified segments and intersections shown on the maps is also available as a reference.

These maps identify all segments and intersections that meet the following criteria:

- Segments already identified for active transportation projects under previous planning efforts
- Segments with no existing facilities
- Segments with existing facilities below Level of Traffic Stress 2 (LTS 2) threshold

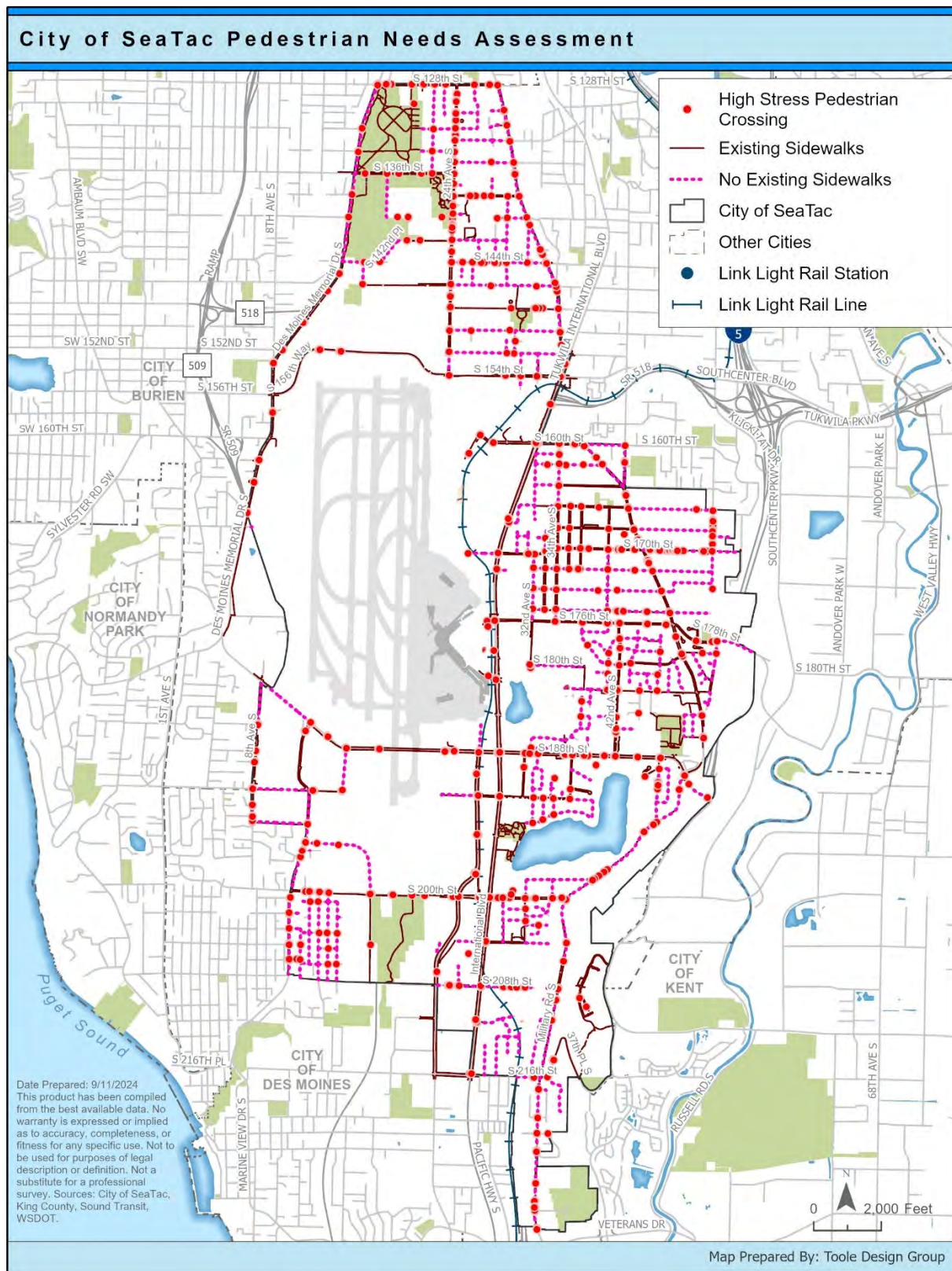
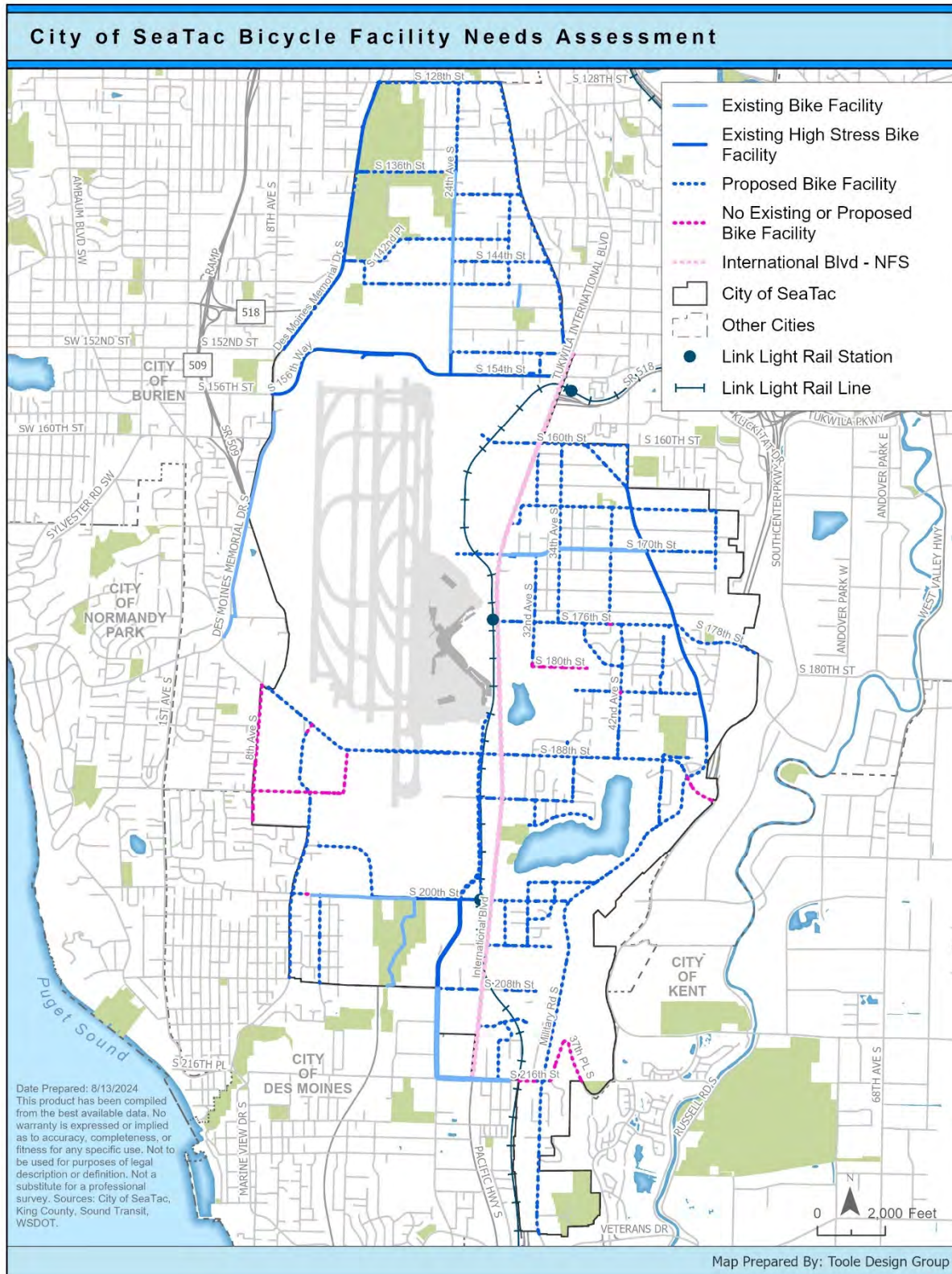


FIGURE 10: PEDESTRIAN SEGMENT AND INTERSECTION NEEDS ASSESSMENT



Note: NFS- Needs Further Study

FIGURE 11: BICYCLE SEGMENT NEEDS ASSESSMENT

ADDRESSING PEDESTRIAN AND BICYCLE NEEDS

The segments and intersections identified in the needs assessment will be used to inform the development of a project list to improve the City's active transportation network. The project list will include both projects to fill gaps in the pedestrian and bicycle network and projects to improve existing facilities to bring them up to all ages and abilities standards.

For next steps, existing TIP projects and program lists will be combined and reviewed to look for overlap with the identified bicycle and pedestrian needs from the assessment. Based on this evaluation, the updated project list will include recommended changes to current planned projects and any new project recommendations. New projects could include additional studies on corridors where speed reduction, space allocation, and bicycle facility treatments appropriate for the land use context of each roadway. Some corridors need to have further study to allow for coordination with the Port of Seattle and/or WSDOT – especially International Boulevard in the context of WSDOT Complete Street Requirements to identify potential speed reduction, space reallocation, and level of traffic stress analysis to inform project alternatives, as described below.

These recommended updates and additions will be based on policies identified from previous City planning efforts and studies, including the 2022 Local Road Safety Plan, and consideration of national best practices and state, regional and federal requirements. Incorporating these best practices and requirements into the evaluation will help ensure that all projects included on the final list are eligible and meet the priorities for state and federal funding sources. Updated best practices and requirements include:

- Since 2022, all projects constructed on state highways routed over city streets with an estimated cost of \$500,000 must now incorporate the principles of Complete Streets¹⁸, as defined by WSDOT. Under these new standards, all bicycle and pedestrian facilities must offer LTS 1 or 2. Information on the criteria for achieving LTS 1 or 2 is provided in WSDOT's Designing for Level of Traffic Stress Bulletin #2022-01¹⁹, with detailed information on criteria for separation from traffic, facility widths, and buffer types.
- In 2024, WSDOT published an Active Transportation Programs Design Guide²⁰, which provides detailed information and guidance on the types of pedestrian and bicycle facilities and treatments that are favored for funding in the state Pedestrian and Bicycle Program and Safe Routes to School funding competitions.
- Under the ADA, the U.S. Access Board recently produced updated Public Right-of-Way Accessibility Guidelines (PROWAG)²¹ requirements, which were adopted in 2024.

For the future, it will be important to incorporate updated state and federal requirements and best practices into the City of SeaTac's local road standards. The current road standards do not

¹⁸ <https://wsdot.wa.gov/construction-planning/complete-streets>, Accessed 8/7/2024.

¹⁹ <https://wsdot.wa.gov/sites/default/files/2022-06/DesignBulletin2022-01.pdf>, Accessed 8/7/2024.

²⁰ https://wsdot.wa.gov/sites/default/files/2024-02/WSDOT-Active-Transportation-Programs-Design-Guide_0.pdf, Accessed 8/13/2024.

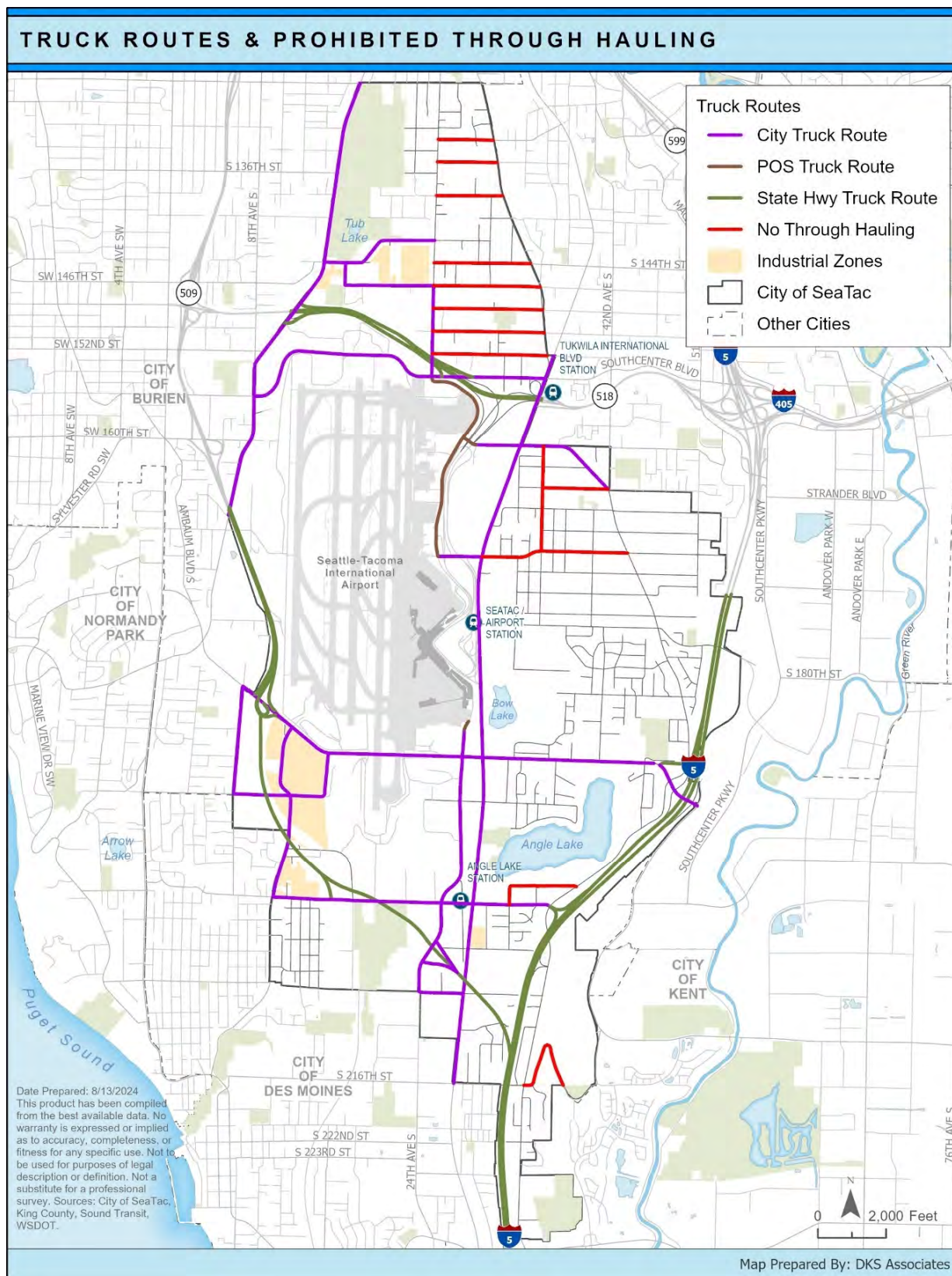
²¹ <https://www.access-board.gov/prowag/>, Accessed 8/13/2024.

explicitly include bike facility design guidance to reduce levels of stress and support all ages and abilities. A mix of protected bike lanes, shared use paths, and neighborhood greenways is needed.

Finally, as large parcels get redeveloped the land use code should support active transportation connections that are required in coordination with building access, parcel access roads, and/or maintenance roads to be constructed by the developer to and through the site. Enhancing network connectivity will help ensure that pedestrians and bicyclists are able to access important destinations within Urban Centers and Neighborhood Villages, including transit stops, neighborhood services, grocery stores and parks.

FREIGHT

The City's freight transportation system consists of designated City Truck Routes, Port of Seattle Truck Routes, and State Highway Truck Routes. In addition, the City enforces No Through Hauling Routes, where through traffic is prohibited for trucks. A map showing the truck routes and truck prohibitions is shown in Figure 12.



INCREASED VOLUMES

The SeaCast model is capable of forecasting travel demand for different vehicle classes, including trucks. Future truck volumes consist of heavy and medium trucks, while light trucks are excluded for the purposes of this analysis.²² Forecasted truck volumes for both daily and the PM peak hour are shown, respectively, in Figure 13 and Figure 14.

²² "Medium trucks are defined as single unit, six or more tires, two to four axles and 16,000 to 52,000 lbs. gross vehicle weight and heavy trucks are defined as double or triple unit, combinations, five or more axles, and greater than 52,000 lbs. gross vehicle weight." [PSRC SoundCast Wiki](#), Accessed 8/13/2024.



FIGURE 13: ESTIMATED FUTURE 2044 DAILY TRUCK VOLUMES

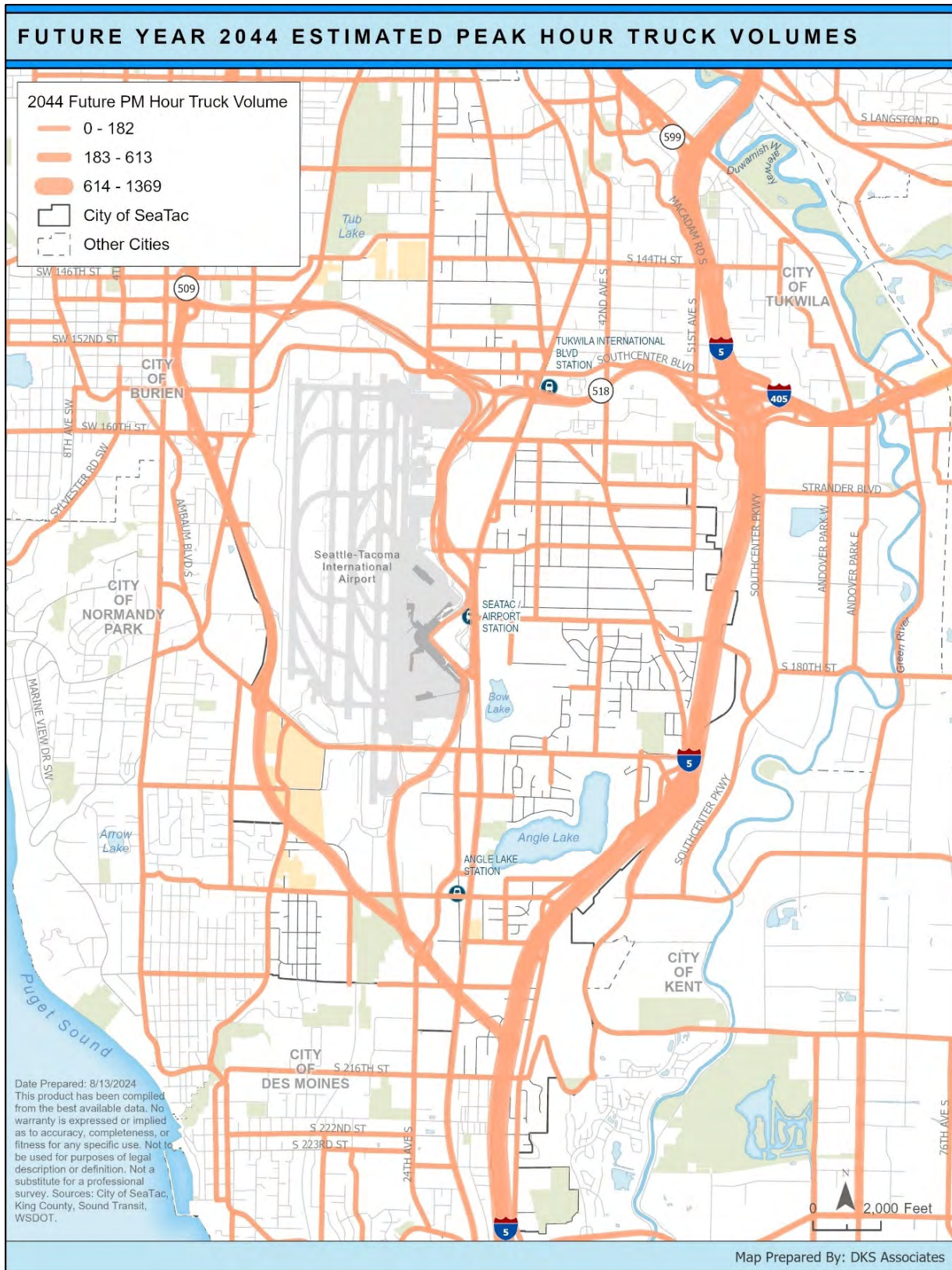


FIGURE 14: ESTIMATED FUTURE 2044 PM PEAK HOUR TRUCK VOLUMES

As shown, the truck demand is highest for highways and major arterials. The SR 509 extension and Airport South Access Expressway both attract a significant number of truck trips, lessening the demand on International Boulevard south of S 182nd Street/Arrivals Drive.

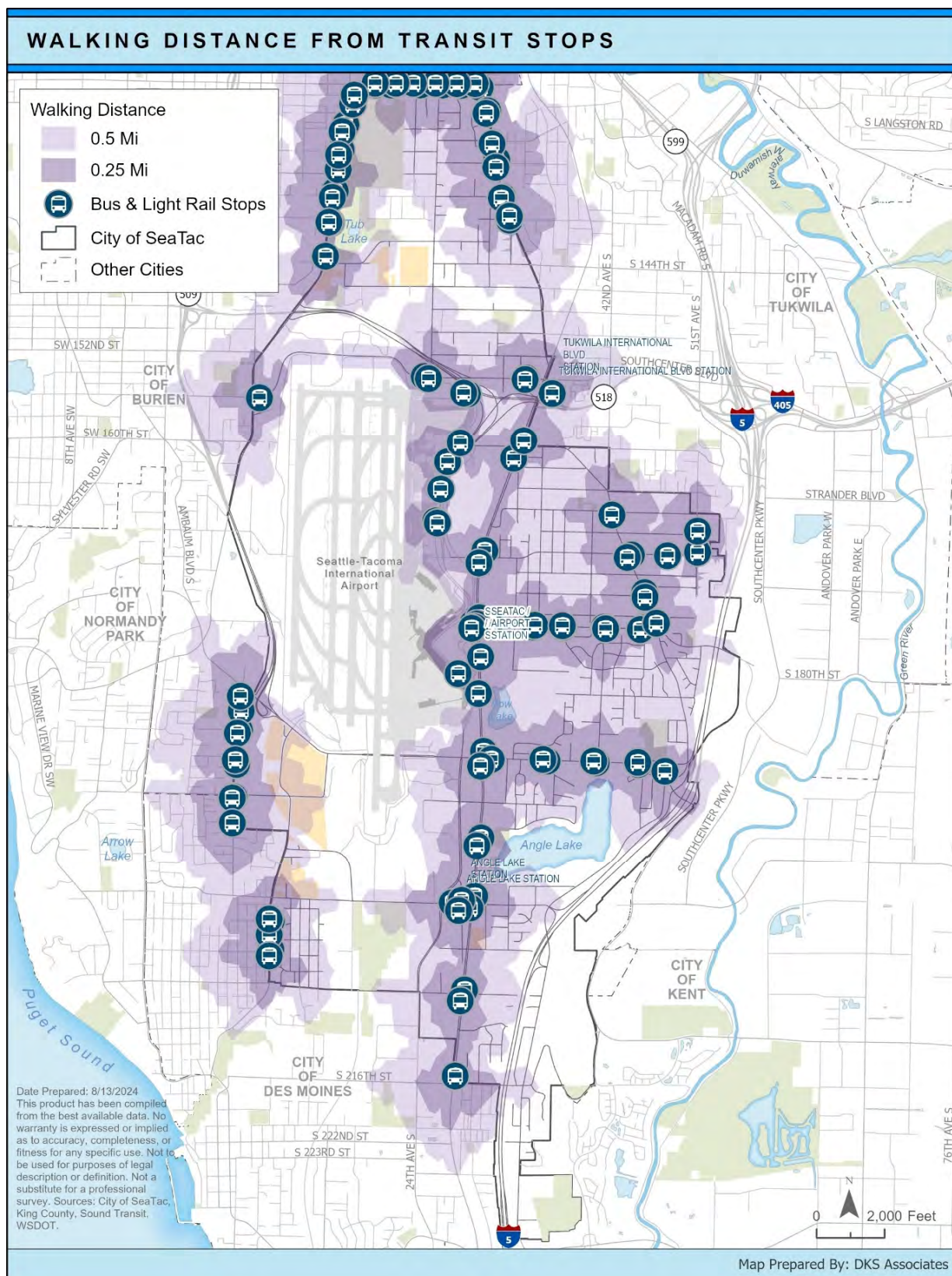
All other City streets showed similar levels of truck traffic in the future 2044 forecasts compared to the base year model.

Of note are the trucks utilizing routes that are designated No Through Hauling routes. All designated No Through Hauling routes are utilized by at least some trucks in the SeaCast model. These prohibited routes are particularly dense between S 128th Street and S 154th Street, where there are no through routes allowed to the east of the industrial area located southwest of 24th Avenue S and S 142nd Street. Since the east-west through routes in this area are all prohibited and the roadways that are not prohibited do not connect between 24th Avenue S and Military Road S, there is effectively a 1.6-mile stretch where no truck connectivity is allowed located adjacent to the industrial area. This indicates that a truck route better serving the connection between Tukwila and the northern industrial area may be needed, such as 24th Avenue S and S 128th Street.

The other industrial areas appear to be well-connected by the designated truck routes.

TRANSIT

Transit service in SeaTac is provided by King County Metro and Sound Transit. King County Metro operates several bus routes, including the A Line and F Line RapidRide (bus rapid transit) routes. Sound Transit operates the Link Light Rail 1 Line as well as the 560 and 574 bus routes. The current walksheds for these routes cover most of the City's area, as shown in Figure 15.



FUTURE SERVICE

King County Metro (KCM) identified SeaTac as one of three areas within the County for focused improvements to the transportation equity gap. No additional RapidRide bus rapid transit lines are proposed as candidates for the 2050 horizon within the City of SeaTac, however more frequent service lines are planned for segments of S 128th Street, Military Road, Des Moines Memorial Drive S, SR 518, Airport Expressway, S 176th Street/S 178th Street, S 188th Street, S 200th Street, and 24th Avenue S. KCM aims to decrease travel time between Federal Way and SeaTac to 25 minutes, a 50% reduction compared to 2019. Travel time between SeaTac and Redmond is expected to drop by 21% to only 1 hour and 15 minutes.²³

Sound Transit's Stride bus rapid transit is planned to have the S1 Line between Bellevue and Burien stop at the Tukwila International Boulevard station.²⁴ This line will connect to the Burien Transit Center and the Bellevue Transit Center.

The SeaCast travel demand model assumes the following additional transit segments will be operational by 2044:

- Bus route on 24th Avenue S from City limits to S 144th Street and on S 144th Street to Military Road S
- Bus route on 42nd Avenue S between Southcenter Boulevard and Military Road S
- Bus route S 170th Street between International Boulevard and Military Road S
- Bus route 42nd Avenue S between S 176th Street and S 188th Street
- Bus route S 178th Street east of Military Road S
- Bus route Military Road S from S 176th Street to S 200th Street
- Bus route Des Moines Memorial Drive S from S 188th Street to S 200th Street
- Bus route S 200th Street from 1st Avenue S to Military Road S
- Link Light Rail Extension from Angle Lake Station to Federal Way and Tacoma Dome

The following bus route segments are assumed to be removed in 2044:

- S 170th Street from Military Road S to 51st Avenue S and 51st Avenue S from S 170th Street to S 164th Street
- 8th Avenue S from SR 509/Des Moines Memorial Drive S to S 200th Street
- Des Moines Memorial Way S between S 200th Street and SR 509/S 216th Place
- S 216th Street/35th Avenue S/37th Place S/40th Place S east of Military Road S

To determine where transit may be lacking in the future, the 0.5-mile and 0.25-mile walksheds around transit stops assumed in the 2044 SeaCast model scenario are shown in Figure 16. The walksheds were calculated as distances along the roadway network. Walksheds for frequent (15-minute headways or less) transit line stops are shown in Figure 17.

²³ Metro Connects: King County Metro Long-Range Plan, November 17, 2021

²⁴ [Sound Transit Stride S1 Line](#), Accessed 7/30/2024.

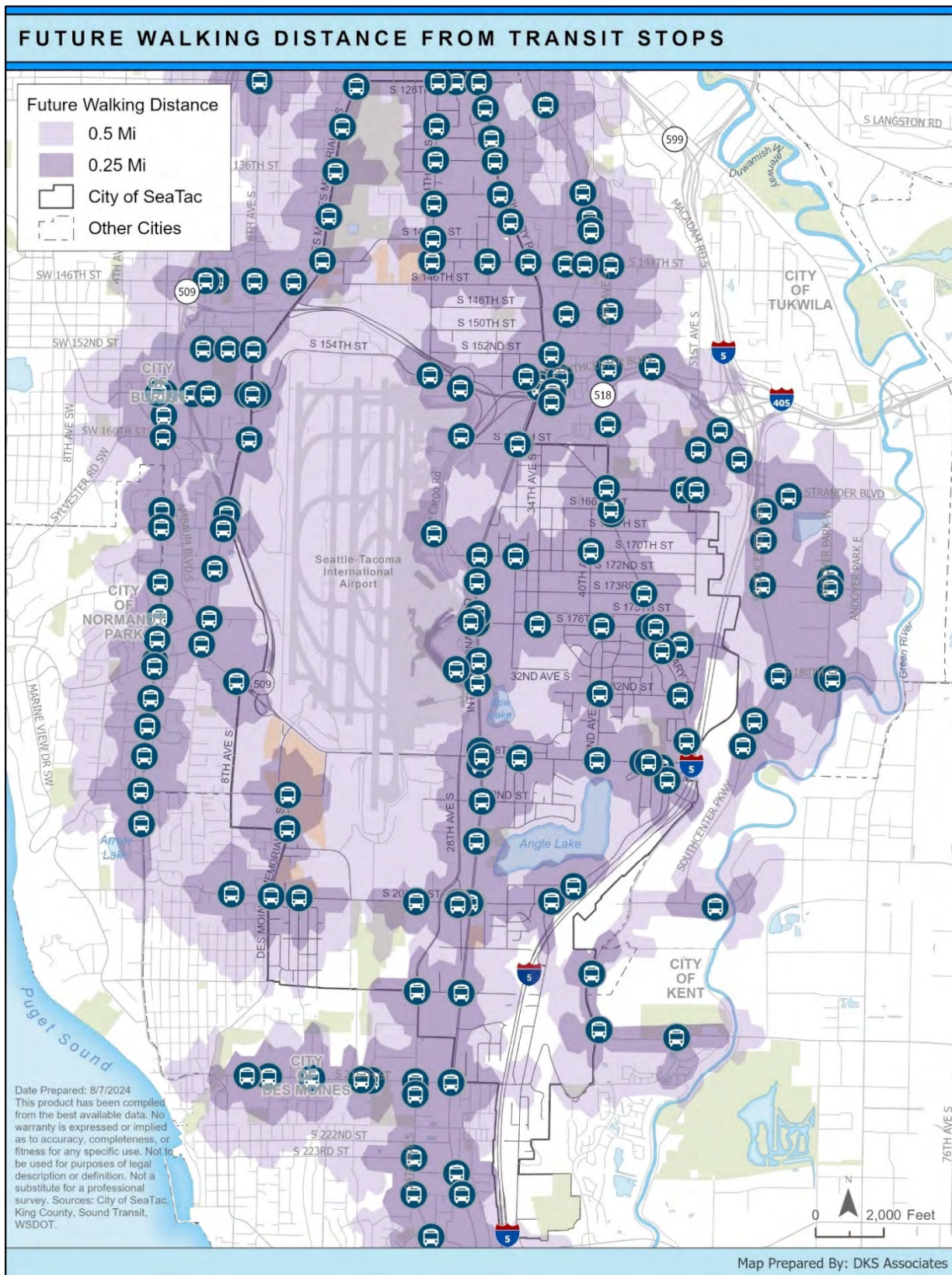


FIGURE 16: FUTURE 0.5-MILE AND 0.25-MILE WALKSHEDS FROM ALL TRANSIT STOPS

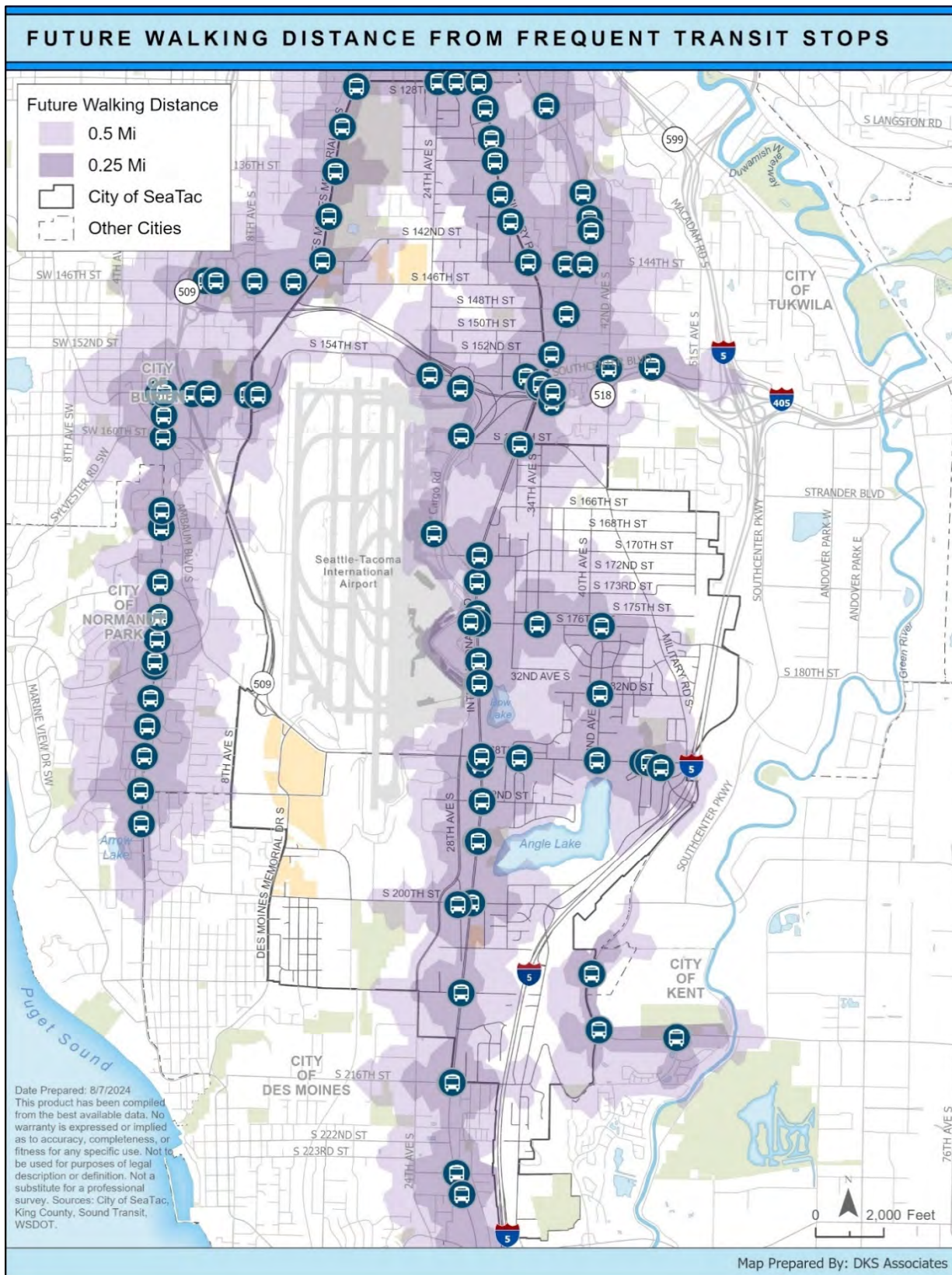


FIGURE 17: FUTURE 0.5-MILE AND 0.25-MILE WALKSHEDS FROM FREQUENT TRANSIT STOPS

As shown, there are four main area outside of the 0.5-mile walksheds to frequent transit:

- Near S 142nd Street and S 146th Street along 24th Avenue S
- From S 164th Street through S 172nd Place by Military Road S (mostly east of Military Road S)
- West of 18th Avenue S near S 200th Street towards the city limits at Des Moines Memorial Drive
- The stretch of Military Road S located on the east side of I-5

There is future transit assumed for 24th Avenue S, Military Road S, S 164th Street, and S 200th Street, as shown in Figure 16, but each of the lines serving those segments have headways greater than 15 minutes. Looking at the walksheds for all transit stops (not just frequent service) the only areas beyond a 0.5-mile walking distance are located near Military Road S east of I-5 in the southern part of the City.

SUMMARY

Key findings from the future multimodal conditions analysis of the City of SeaTac's transportation system are highlighted below with respect to traffic operations, active transportation, freight, and transit services.

- Traffic Operations
 - Two WSDOT intersections are forecasted to operate below LOS standards: Des Moines Memorial Drive & SR 518 Westbound Off Ramp and Des Moines Memorial Drive & SR 518 Eastbound Ramps, which operate at LOS F. Phase II of the Des Moines Memorial Drive S Interchange Project is expected to bring these intersections to LOS C or better.
 - Two intersections on International Boulevard (S 170th Street and S 188th Street) are forecast to operate at LOS E but will not require mitigation per WSDOT standards.
- Active Transportation
 - The assessment shows several road segments that are missing sidewalks and bicycle facilities or have existing facilities that need improvements to meet all ages and abilities standards. Some corridors need to have further study to allow for coordination with the Port of Seattle and/or WSDOT to identify potential speed reduction, space reallocation, and level of traffic stress analysis to inform project alternatives.
 - Many intersections need to be adjusted to improve pedestrian safety and provide better access to key destinations through more frequent crossings and ADA upgrades.
 - Next steps will include any needed recommendations for additional projects or amendments to current projects in order to bring the pedestrian and roadway network in alignment with local policies, current best practices, and state, regional and federal requirements.
 - Future updates to the City road standards and land use code should include support for advancing active transportation connectivity, safety and access opportunities.
- Freight
 - The SeaCast model assigns trucks to all prohibited truck route segments. The area east of the northern industrial zone appears to be lacking truck connections with Tukwila.
- Transit

- The City is expected to be well-served by transit in 2044 with nearly all residents having access to a transit stop within a 0.5-mile walking distance. However, frequent transit (with headways of 15 minutes or less) is not forecasted for some neighborhoods, particularly the west edge of Riverton Heights, McMicken Heights, Maywood, and Grandview.

APPENDIX



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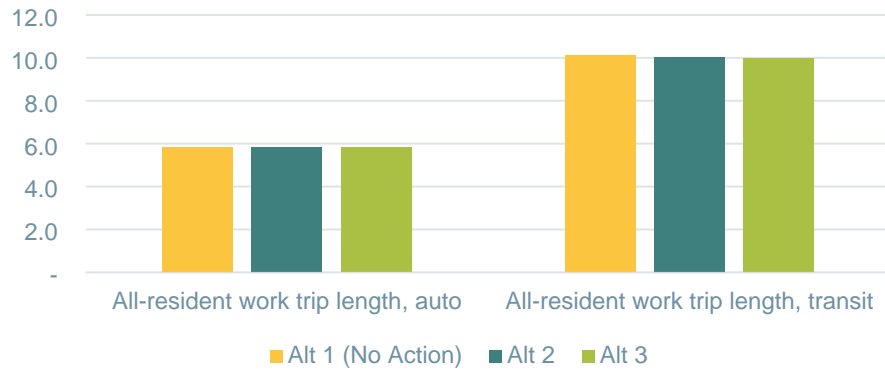
AN EMPLOYEE-OWNED COMPANY

CONTENTS

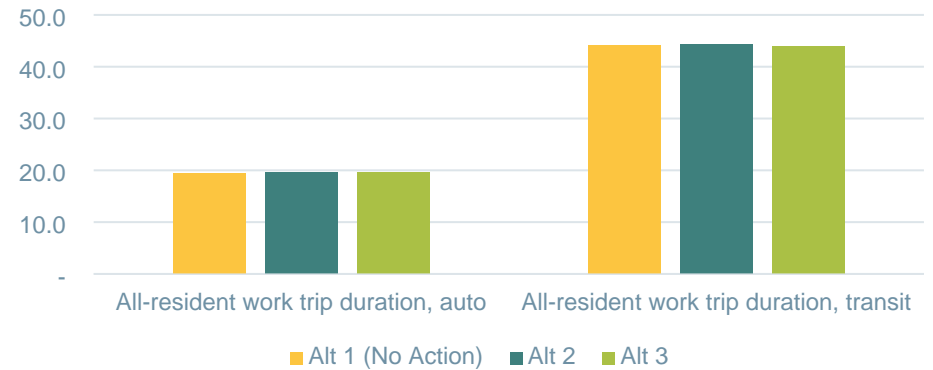
SECTION 1. FUTURE ALTERNATIVES ANALYSIS RESULTS

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Access to Opportunity: All-Resident
Average Work Trip Length (mi)



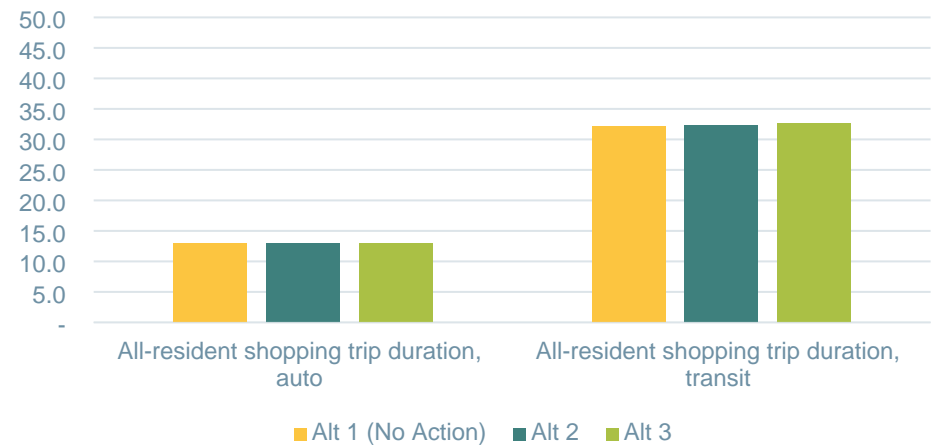
Access to Opportunity: All-Resident Average
Work Trip Duration (min)



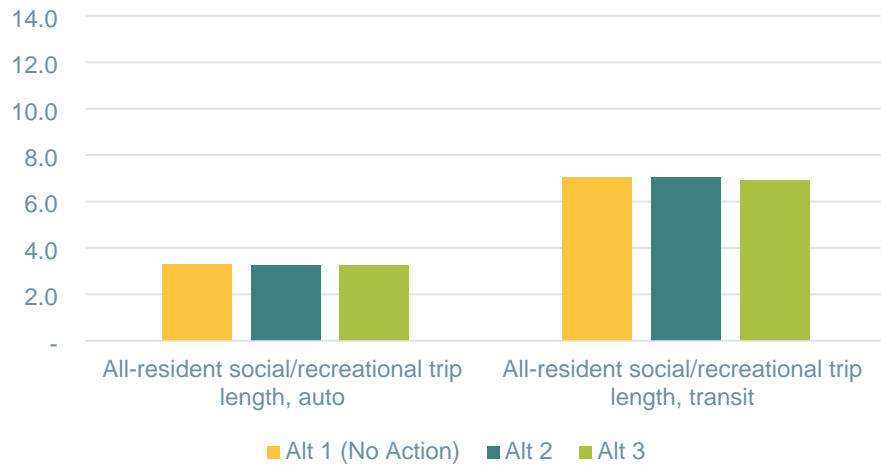
Access to Opportunity, All-Resident
Average Shopping Trip Length (mi)



Access to Opportunity, All-Resident Average
Shopping Trip Duration (min)



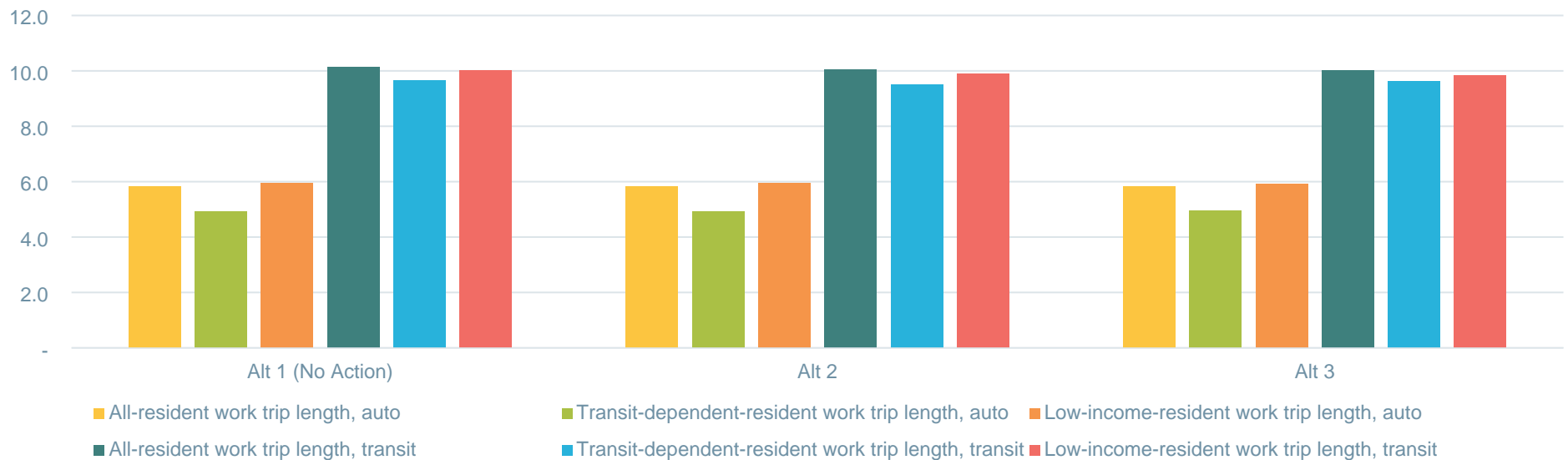
Access to Opportunity, All-Resident
Average Soc/Rec Trip Length (mi)



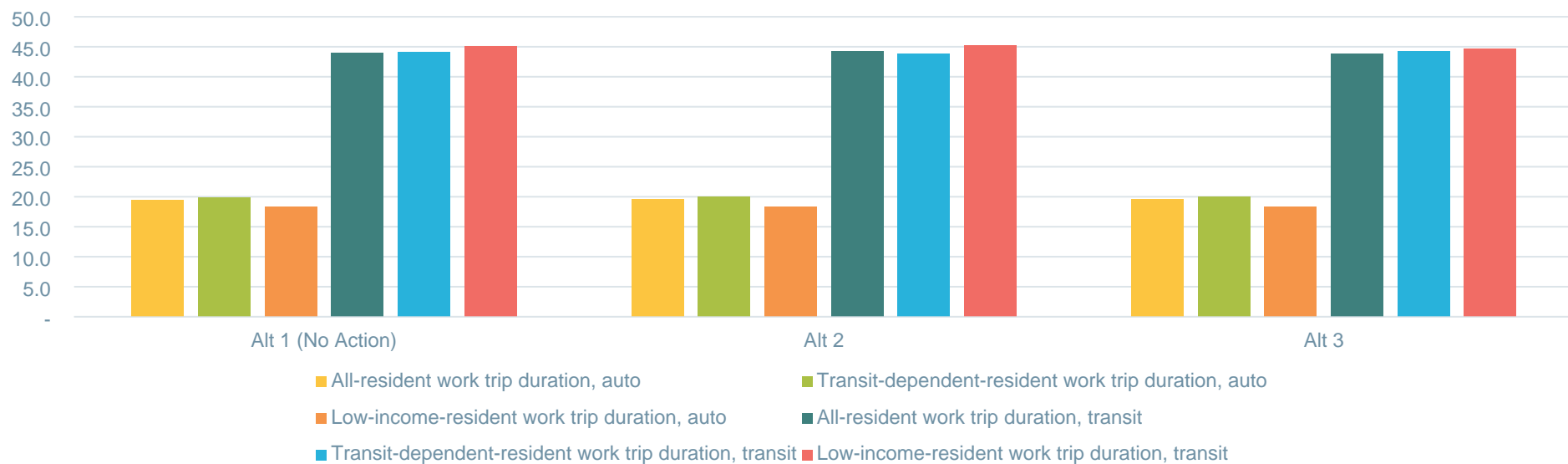
Access to Opportunity, All-Resident Average
Soc/RecTrip Duration (min)



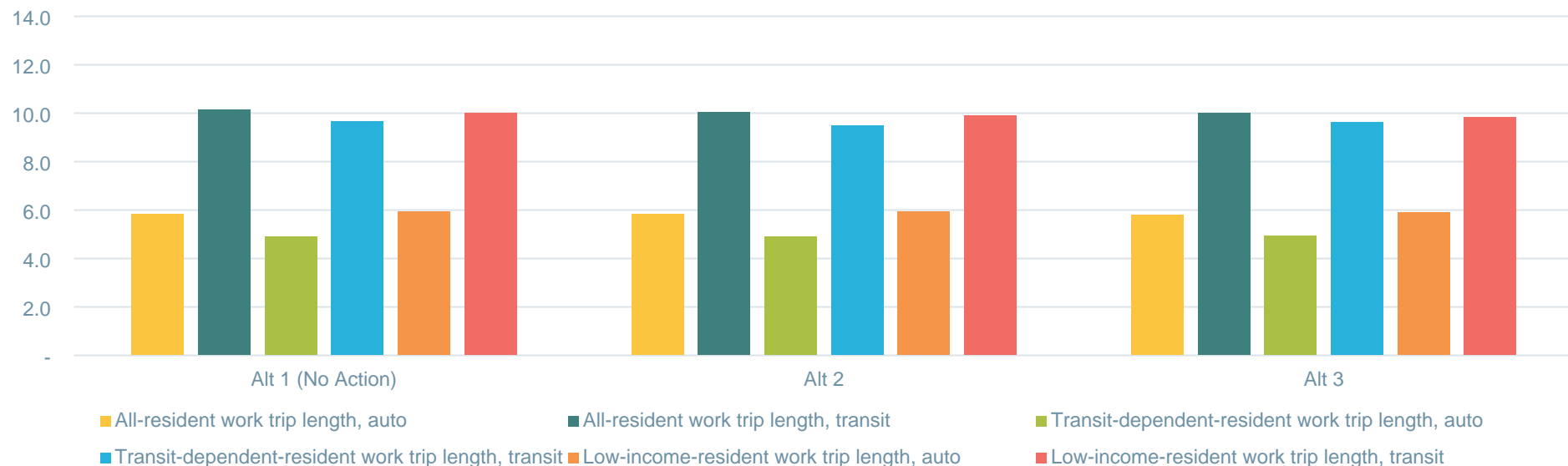
Access to Opportunity, Equity Residents Average Work Trip Length (mi) V1



Access to Opportunity, Equity Residents Average Work Trip Duration (min) V1



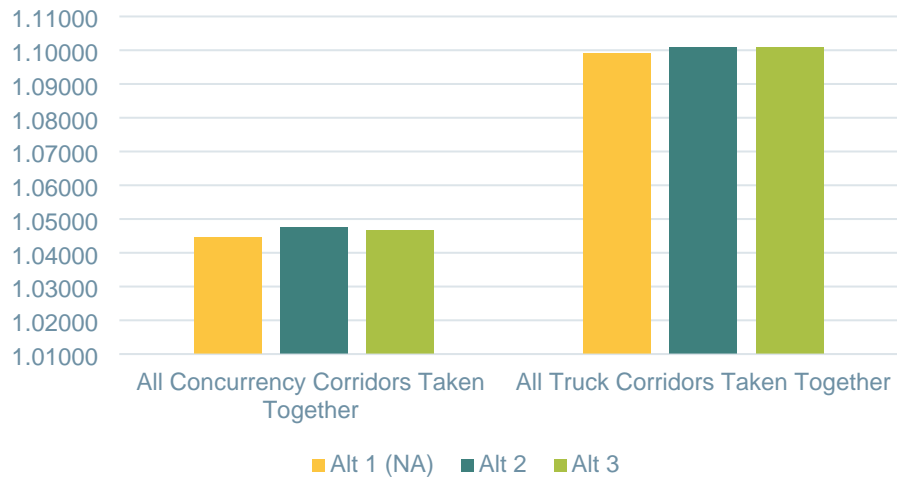
Access to Opportunity, Equity Residents Average Work Trip Length (mi)V2



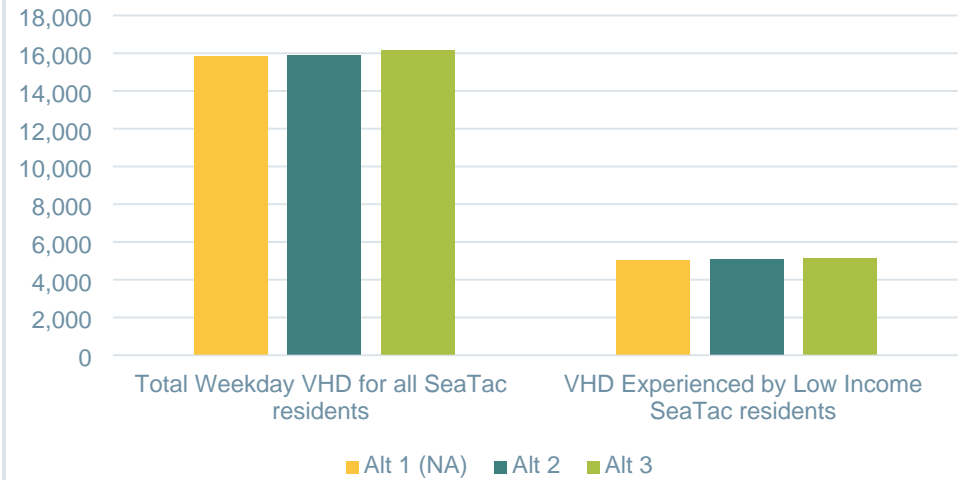
Access to Opportunity, Equity Residents Average Work Trip Duration (min)V2

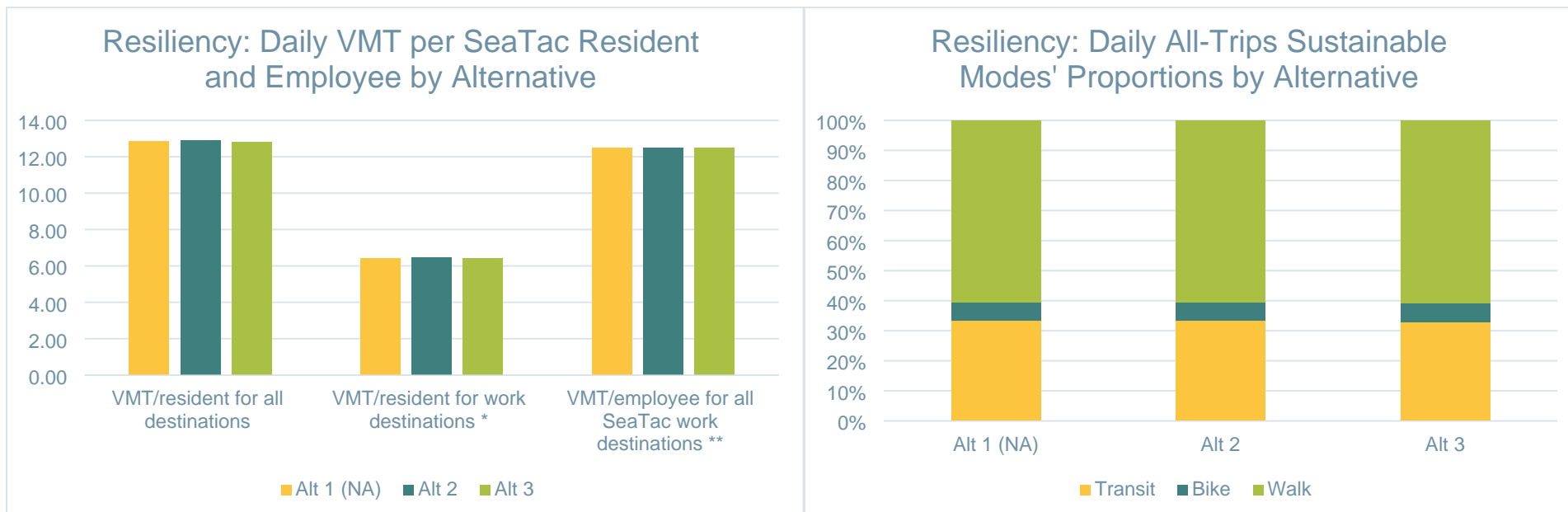


Multi-Modal Transport: Delay Index* for SeaTac Concurrency and Truck Corridors



Multi-Modal Transport: Vehicle-Hours of Delay (VHD) by Alternative on SeaTac Roads





ACCESS TO OPPORTUNITY: AVERAGE TRIP LENGTH (MILES) AND DURATION (MINUTES) FOR SEATAC RESIDENTS BY RESIDENT TYPE, MODE AND ALTERNATIVE:

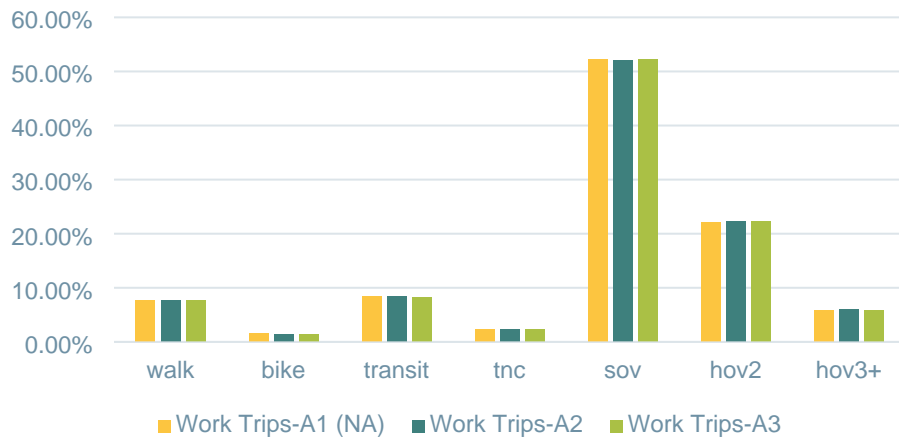
MARKET SEGMENT	ALT 1 (NO ACTION)	ALT 2	ALT 3
ALL-RESIDENT SHOPPING TRIP LENGTH, AUTO	2.8	2.7	2.7
ALL-RESIDENT SHOPPING TRIP LENGTH, TRANSIT	6.2	6.3	6.3
ALL-RESIDENT SHOPPING TRIP DURATION, AUTO	13.0	13.0	13.0
ALL-RESIDENT SHOPPING TRIP DURATION, TRANSIT	32.2	32.3	32.6
ALL-RESIDENT SOCIAL/RECREATIONAL TRIP LENGTH, AUTO	3.3	3.3	3.3
ALL-RESIDENT SOCIAL/RECREATIONAL TRIP LENGTH, TRANSIT	7.1	7.0	6.9
ALL-RESIDENT SOCIAL/RECREATIONAL TRIP DURATION, AUTO	15.2	15.1	15.1
ALL-RESIDENT SOCIAL/RECREATIONAL TRIP DURATION, TRANSIT	38.1	37.9	37.9
ALL-RESIDENT WORK TRIP LENGTH, AUTO	5.8	5.8	5.8
ALL-RESIDENT WORK TRIP LENGTH, TRANSIT	10.1	10.1	10.0
TRANSIT-DEPENDENT-RESIDENT WORK TRIP LENGTH, AUTO	4.9	4.9	4.9
TRANSIT-DEPENDENT-RESIDENT WORK TRIP LENGTH, TRANSIT	9.7	9.5	9.6
LOW-INCOME-RESIDENT WORK TRIP LENGTH, AUTO	5.9	5.9	5.9
LOW-INCOME-RESIDENT WORK TRIP LENGTH, TRANSIT	10.0	9.9	9.8
ALL-RESIDENT WORK TRIP DURATION, AUTO	19.5	19.6	19.5

MARKET SEGMENT	ALT 1 (NO ACTION)	ALT 2	ALT 3
ALL-RESIDENT WORK TRIP DURATION, TRANSIT	44.0	44.3	43.9
TRANSIT-DEPENDENT-RESIDENT WORK TRIP DURATION, AUTO	19.9	20.0	20.0
TRANSIT-DEPENDENT-RESIDENT WORK TRIP DURATION, TRANSIT	44.1	43.8	44.3
LOW-INCOME-RESIDENT WORK TRIP DURATION, AUTO	18.3	18.4	18.3
LOW-INCOME-RESIDENT WORK TRIP DURATION, TRANSIT	45.0	45.2	44.7

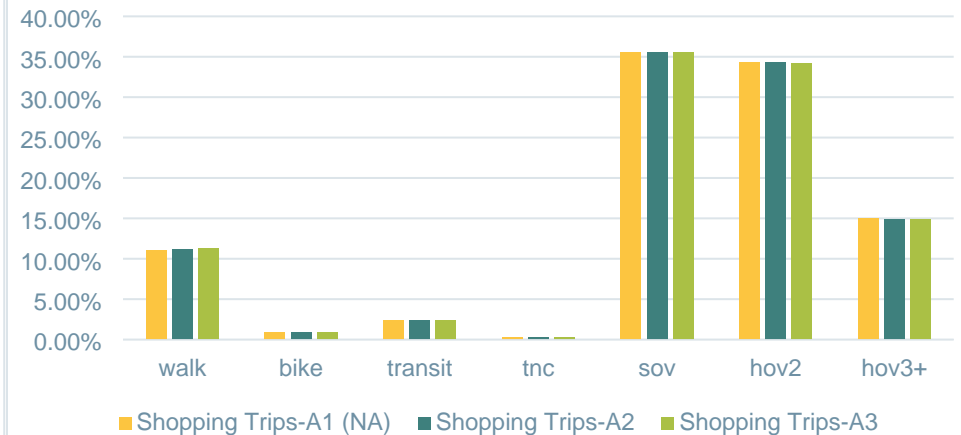
MULTI-MODAL TRANSPORT: DAILY MODE SHARES FOR SEATAC RESIDENTS BY TRIP PURPOSE:

TRIP PURPOSE AND ALTERNATIVE	WALK	BIKE	TRANSIT	TNC	SOV	HOV2	HOV3+	SCHOOL BUS
WORK TRIPS-A1 (NA)	7.66%	1.51%	8.38%	2.25%	52.17%	22.17%	5.85%	0.01%
WORK TRIPS-A2	7.65%	1.39%	8.41%	2.27%	52.03%	22.29%	5.95%	0.01%
WORK TRIPS-A3	7.66%	1.43%	8.28%	2.24%	52.19%	22.30%	5.90%	0.01%
SHOPPING TRIPS-A1 (NA)	11.11%	0.94%	2.41%	0.35%	35.64%	34.31%	14.99%	0.26%
SHOPPING TRIPS-A2	11.14%	0.93%	2.47%	0.37%	35.60%	34.35%	14.89%	0.25%
SHOPPING TRIPS-A3	11.37%	0.90%	2.47%	0.34%	35.59%	34.23%	14.86%	0.24%
SOCIAL/RECREATIONAL TRIPS-A1 (NA)	20.87%	1.32%	1.60%	0.31%	27.05%	30.59%	18.11%	0.17%
SOCIAL/RECREATIONAL TRIPS-A2	21.20%	1.32%	1.60%	0.30%	27.04%	30.57%	17.81%	0.15%
SOCIAL/RECREATIONAL TRIPS-A3	21.32%	1.33%	1.59%	0.31%	26.78%	30.49%	18.04%	0.15%

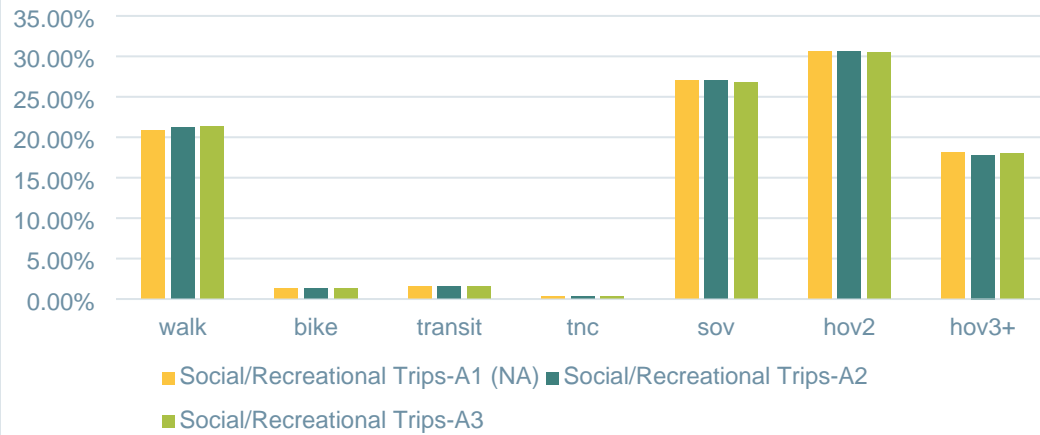
Multi-Modal Transport: Daily Work Trip Mode Shares for SeaTac Residents by Alternative



Multi-Modal Transport: Daily Shopping Trip Mode Shares for SeaTac Residents by Alternative



Multi-Modal Transport: Daily Social/Recreational Trip Mode Shares for SeaTac Residents by Alternative



MULTI-MODAL TRANSPORT: DELAY INDEX* FOR SEATAC CONCURRENCY AND FREIGHT CORRIDORS BY ALTERNATIVE:

CORRIDOR	ALT 1 (NA)	ALT 2	ALT 3
ALL CONCURRENCY CORRIDORS TAKEN TOGETHER	1.04456	1.04738	1.04672
ALL TRUCK CORRIDORS TAKEN TOGETHER	1.09891	1.10073	1.10071

MULTI-MODAL TRANSPORT: VEHICLE-HOURS OF DELAY (VHD) BY ALTERNATIVE ON SEATAC ROADS:

TRAVELING GROUP	ALT 1 (NA)	ALT 2	ALT 3
TOTAL WEEKDAY VHD FOR ALL SEATAC RESIDENTS	15,824	15,884	16,137
VHD EXPERIENCED BY LOW INCOME SEATAC RESIDENTS	5,003	5,066	5,111

SUSTAINABILITY: DAILY VMT PER SEATAC RESIDENT AND EMPLOYEE BY ALTERNATIVE:

MEASURE	ALT 1 (NA)	ALT 2	ALT 3
VMT/RESIDENT FOR ALL DESTINATIONS	12.87	12.88	12.80
VMT/RESIDENT FOR WORK DESTINATIONS *	6.42	6.45	6.43
VMT/EMPLOYEE FOR ALL SEATAC WORK DESTINATIONS **	12.48	12.49	12.48

* WORK DESTINATION MAY BE INSIDE OR OUTSIDE SEATAC

** EMPLOYEE HOME LOCATION MAY BE INSIDE OR OUTSIDE SEATAC

SUSTAINABILITY: DAILY ALL-TRIPS SUSTAINABLE MODES' PROPORTIONS BY ALTERNATIVE:

SUSTAINABLE MODE	ALT 1 (NA)	ALT 2	ALT 3
TRANSIT	33.35%	33.31%	32.99%
BIKE	6.25%	6.13%	6.12%
WALK	60.40%	60.56%	60.89%

SOUTH ACCESS ROAD DAILY VOLUMES BY ALTERNATIVE:

SOUTH ACCESS ROAD DAILY VOLUMES BY ALTERNATIVE	ALT 1 (NB) DLY VEH	ALT 1 (NB) DLY TRK	ALT 2 DLY VEH	ALT 2 (NB) DLY TRK	ALT 3 DLY VEH	ALT 3 (NB) DLY TRK
NORTHBOUND S. 200TH TO AIRPORT	9,650	822	9,641	822	9,607	822
SOUTHBOUND AIRPORT TO S. 200TH	8,827	844	8,822	845	8,889	844

SR 509 EXTENSION DAILY VOLUMES BY ALTERNATIVE:

SR 509 EXTENSION DAILY VOLUMES BY ALTERNATIVE	ALT 1 (NB) DLY VEH	ALT 1 (NB) DLY TRK	ALT 2 DLY VEH	ALT 2 (NB) DLY TRK	ALT 3 DLY VEH	ALT 3 (NB) DLY TRK
NORTHBOUND BETWEEN S. 200TH AND DES MOINES MEMORIAL DR.	28,285	4,612	28,188	4,555	28,461	4,611
SOUTHBOUND BETWEEN DES MOINES MEMORIAL DR. AND S. 200TH	26,935	3,407	26,956	3,371	27,048	3,389

2044 FORECAST TOTAL DAILY SEACAST SCREENLINE VEHICLE VOLUMES BY ALTERNATIVES WITH SOUTH ACCESS:

NO	SCREENLINE	BASEYEAR	A1: NO BUILD	A1-BASEYEAR	A2	A2-A1	A3	A3-A1
85	S of SEA Airport	309,935	295,051	(14,884)	296,151	1,099	296,869	1,817
83	N of S 160th St	160,854	214,740	53,886	216,092	1,352	215,806	1,066
86	N of S 200th St *	257,054	225,636	(31,418)	226,605	969	225,494	(142)
68	W of I- 5	189,339	182,311	(7,028)	184,509	2,199	183,046	736
63	W of SR 99	106,310	103,038	(3,272)	104,174	1,136	101,670	(1,367)
80	S of S 128th St	80,553	105,579	25,026	105,610	31	105,666	87
82	N of SEA Airport	39,057	47,763	8,706	48,232	469	48,109	346
84	Expy/SR 99/Cargo N of S 170th St	59,933	77,101	17,168	76,741	(360)	77,165	64
81	S of S 144th St	45,946	52,367	6,421	52,311	(56)	52,932	565
61	W of Des Moines Mem'l N of 176th	17,008	22,067	5,059	22,241	174	22,428	361
62	W of 24th Ave S	25,515	27,459	1,945	27,546	87	27,795	336
69	E of Des Moines Mem'l S of 188th	5,441	9,430	3,989	9,488	58	9,389	(42)

*Excludes SR 509 Extension

APPENDIX C. PUBLIC OUTREACH SUMMARY DATA

CITY OF SEATAC TRANSPORTATION MASTER PLAN

CITY OF SEATAC

TRANSPORTATION MASTER PLAN

PUBLIC ENGAGEMENT SUMMARY

PREPARED FOR



PREPARED BY



SEATAC TMP PUBLIC ENGAGEMENT SUMMARY

DATE: Sept 6, 2024

TO: City of SeaTac

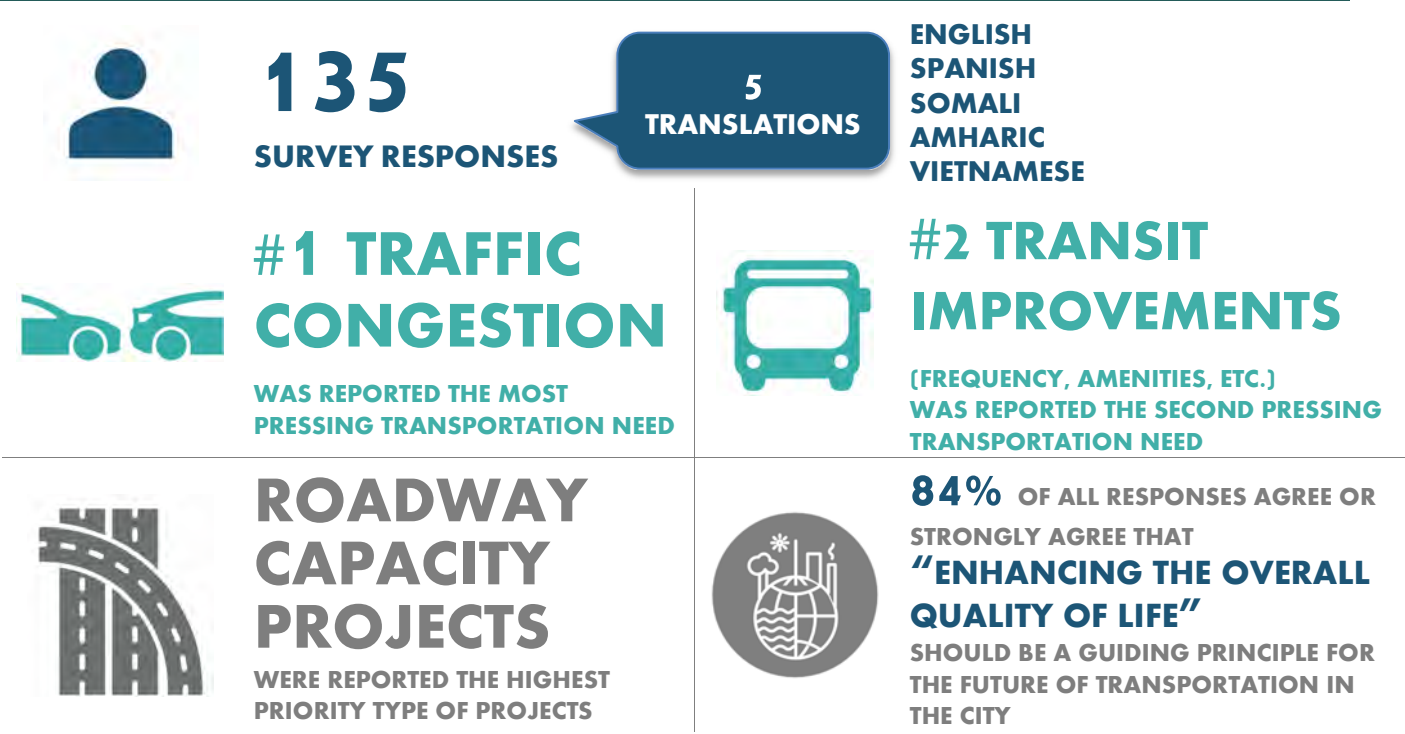
FROM: Wintana Miller, Veronica Sullivan, Alexander Emmons, DKS Associates

SUBJECT: City of SeaTac Transportation Master Plan Public Engagement Project #23089-000 Summary

BACKGROUND

City of SeaTac is currently developing the Transportation Master Plan to enhance the transportation network in the city. As part of this project, the project team conducted an online survey and three in-person workshops in three areas of the city. The following document summarizes the survey results and workshops comments received regarding the Transportation Master Plan (TMP) efforts.

SURVEY HIGHLIGHTS



WORKSHOP HIGHLIGHTS

The team conducted three workshops in different areas of SeaTac:



1 **South Neighborhoods**
Madrona Elementary School
August 7, 2024
18 Attendees



2 **Central Neighborhoods**
McMicken Heights Elementary School
August 14, 2024
34 Attendees



3 **North Neighborhoods**
Sea-Tac Community Center
August 21, 2024
22 Attendees

Tell us about you!

► How old are you?

14 and under 15-19 20-29 30-39 40-49 50-59 60 and over

Where do you live?

SeaTac Burien Des Moines Kent Tukwila Other

► Where do you work?

SeaTac Burien Des Moines Kent Tukwila Other

Getting Around

► What do you hope to see for the future of transportation in the City? (select all that apply)

Reduced Speeds

Frequent Transit Service

Better Transit Stop Amenities (Shelter, Garbage, Seating)

Safer Bike Facilities (Bike Lanes, Bike Signal, etc.)

More Street Lighting

More Pedestrian Facilities (Sidewalks, Trails, Benches, etc.)

More Traffic Calming (Speed Bumps, Narrow Lanes, etc.)

More Speed Cameras

Reduced Traffic Congestion (Traffic Jam)

More Enforcement of Traffic Safety Laws (Speeding, Parking on Bike Lanes, etc.)

► What is the most pressing transportation need? (pick one)

Need for Better Transit Service

Need for Better Lower-cost Bicycle & Pedestrian Facilities

Access to Jobs

Access to Goods & Services

Safety

Traffic Congestion

Parking

WORKSHOP COMMENT HIGHLIGHTS



55 **WRITTEN COMMENTS**



SAFETY

WAS REPORTED THE MOST PRESSING TRANSPORTATION NEED



23 **PEDESTRIAN RELATED COMMENTS**



14

BIKE RELATED COMMENTS



5 **SPEEDING CONCERN COMMENTS**



6

COMMENTS REQUESTING IMPROVED LIGHTING

WORKSHOP COMMENTS

The project team prepared a series of maps and posters to display existing and proposed pedestrian and bike facilities within each of the three workshop areas. See Appendix A for the outreach materials used during the workshop.

This section provides a summary of the comments received based on each map, followed by a category of “other” that were not related to pedestrian or bicycle concerns.

Table 1: Comments Received on Bike Facilities

<p>WORKSHOP 1: SOUTH (See Figure 1 in Appendix A)</p> <ul style="list-style-type: none">• Along Military Rd S, consider adding a shared use path.• Consider adding separated bike lanes or shared use paths around the City’s Urban Villages.
<p>WORKSHOP 2: CENTRAL (See Figure 2 in Appendix A)</p> <ul style="list-style-type: none">• Along S 170th St, remove the bike lane to provide parking.• Consider adding bike trails in McMicken Heights Park.• Consider adding a curb separating bike lanes from the rest of traffic.• Along 34th Ave S, consider adding a bike lane.
<p>WORKSHOP 3: NORTH (See Figure 3 in Appendix A)</p> <ul style="list-style-type: none">• Consider increasing bike infrastructure along International Boulevard.• Consider providing more lighting along International Boulevard.• Consider ways to make biking along S 154th St and SR 99 safer.• There has not been a return on investment with the bike lanes.• Consider adding bike lanes to connect Central and North SeaTac, particularly near urban villages.• Consider adding a bike lane along Interurban Trail.• Consider reducing investment on bike infrastructure.• Consider ways to encourage people to use bike infrastructure properly.



Table 2: Comments Received from Pedestrian Facilities Map

WORKSHOP 1: SOUTH (See Figure 4 in Appendix A)

- Along 12th Pl S, consider adding sidewalks and street lighting.
- Along Des Moines Memorial Dr S, consider adding seating throughout the route, particularly around transit stops.
- Along 32nd Ave S, consider adding sidewalks to improve access to transit stops.
- Along Military Rd S, consider adding pedestrian sidewalks and transit facilities.
- Consider improving the connectivity of the sidewalk along Military Rd S.
- Consider adding new trees for future sidewalk project opportunities to improve tree canopy.
- Consider ways to make this route more accessible, particularly for people with disabilities, by adding lighting and ADA ramp to transit services.
- Along the curve between 35th Ave S and 37th Ave S, consider widening streets, adding barriers or lighting, creating a separated trail, or other methods to make this area safer for pedestrians. There is an existing steep curve downhill from 35th Ave S to 37th Pl S.

WORKSHOP 2: CENTRAL (See Figure 5 in Appendix A)

- Along 34th Ave S, consider adding a sidewalk.
- Along Military Rd S, consider adding a sidewalk to connect to the light rail station.
- Along S 180th St, consider adding cameras.
- From S 180th St to 41st Ave S, consider adding a connection.
- Along S 182nd St and the proposed sidewalks, consider adding an asphalt path connection.
- Along 51st Ave S, consider adding sidewalks and lighting.
- Consider ways to make the sidewalks along S 166th St and S 168th St feel safer.
- Along S 173rd St and between Military Road S and 35th Ave S, consider adding sidewalks.
- Consider adding a transit shuttle to the service community center and North SeaTac Park.
- Consider adding sidewalks near Glacier Middle School.
- Consider adding crosswalks along S 154th St.
- Consider adding East-West sidewalk access and a 4-way stop along S 133rd St.
- Consider increasing sidewalks that run east-west.
- Consider increasing pedestrian infrastructure along Military Rd S.

WORKSHOP 3: NORTH (See Figure 6 in Appendix A)

- Consider increasing pedestrian infrastructure along International Boulevard.

Table 3: Other Comments Received from Workshop Events

WORKSHOP 1: SOUTH

- Along S 200th St, with particular focus on the SeaTac/Des Moines Creek Park, consider ways to reduce car break-ins.
- Would like to see MetroFlex as an on-demand transit service in the City of SeaTac, it would be a fast, convenient, affordable transit using an app on your phone.
- Along S 200th St, between 1st Ave S and SR 99, consider adding transit service.
- Consider providing transit service that prioritizes seniors.
- Along 30th Ave S, there is concern for the new development that includes 700 units and 700 parking spots.

WORKSHOP 2: CENTRAL

- Consider providing transportation that can pick up and drop off on corners of neighborhoods.
- Along 34th Ave S, speeding is a concern.
- Along 42nd Ave S, speeding is common.
- Along 35th Ave S and S 170th St, cars frequently race.
- Around Bow Lake, check accessibility.
- Along S 180th St & 32nd Ave S., speeding is common.
- Consider adding a separated trail to Klickitat Drive from 53rd Ave S
- Consider reducing investments on bike infrastructure. People rarely bike in SeaTac.
- Along 32nd Ave S, speeding is a concern even though there are speed bumps.
- Along S 173rd St, speed occurs; consider adding traffic calming measures.

WORKSHOP 3: NORTH

- Consider increasing residential and retail density around transit.
- Around the S 152nd St school bus drop off, consider adding pedestrian amenities.
- The exit to S 154th St from SR 518 backs up significantly.



ADDITIONAL WORKSHOP POSTERS

In addition to the pedestrian and bike facilities maps, the project team displayed a sticker survey at the workshops to collect brief demographic data (Figure 1) and their thoughts about the future of transportation (Figure 2). Figure 1 revealed the majority of the workshop attendees that we spoke to lived in SeaTac and were aged 60 and over. Figure 2 revealed that safety was the most pressing transportation need and there were a variety of future amenities requested; more pedestrian facilities, more street lighting and more enforcement of traffic safety laws.



Figure 1. Demographic Data Sticker Poster.

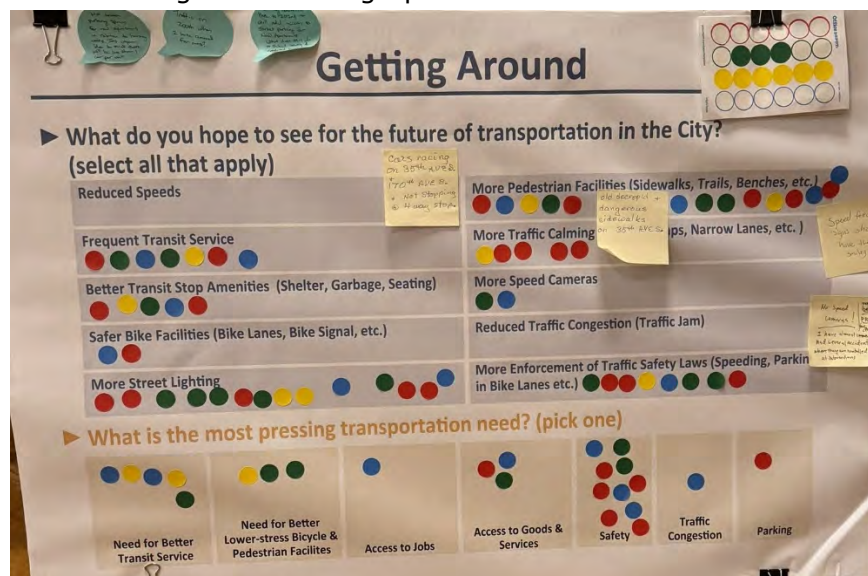
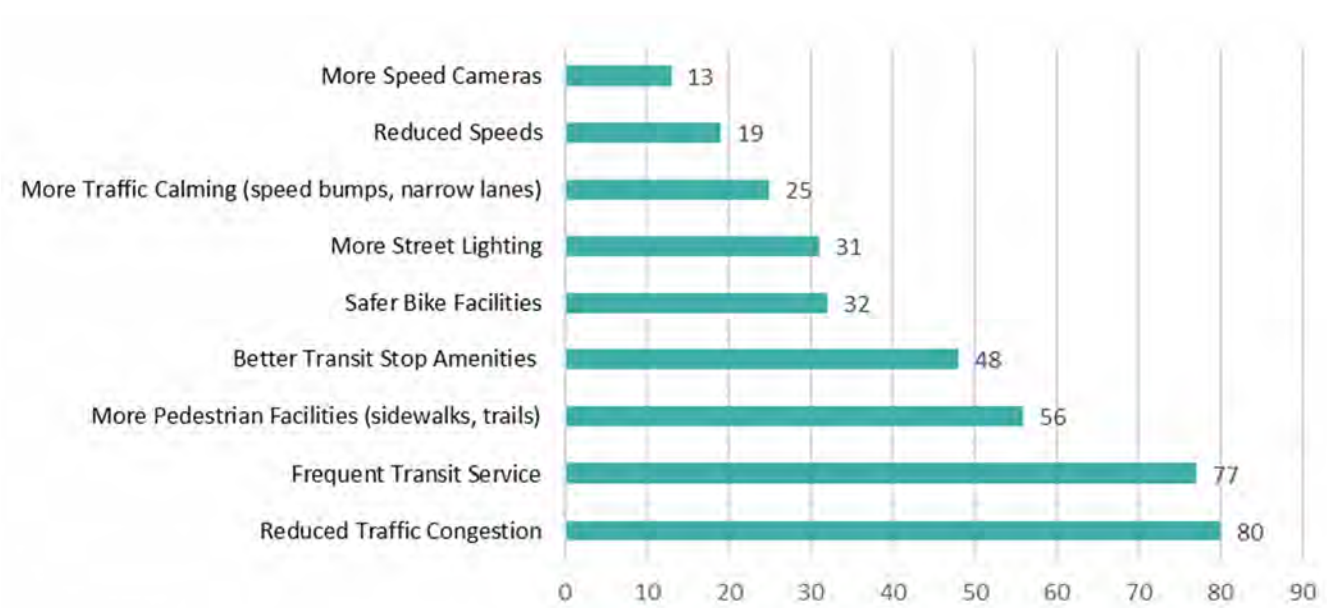


Figure 2. Transportation Preferences Sticker Poster.

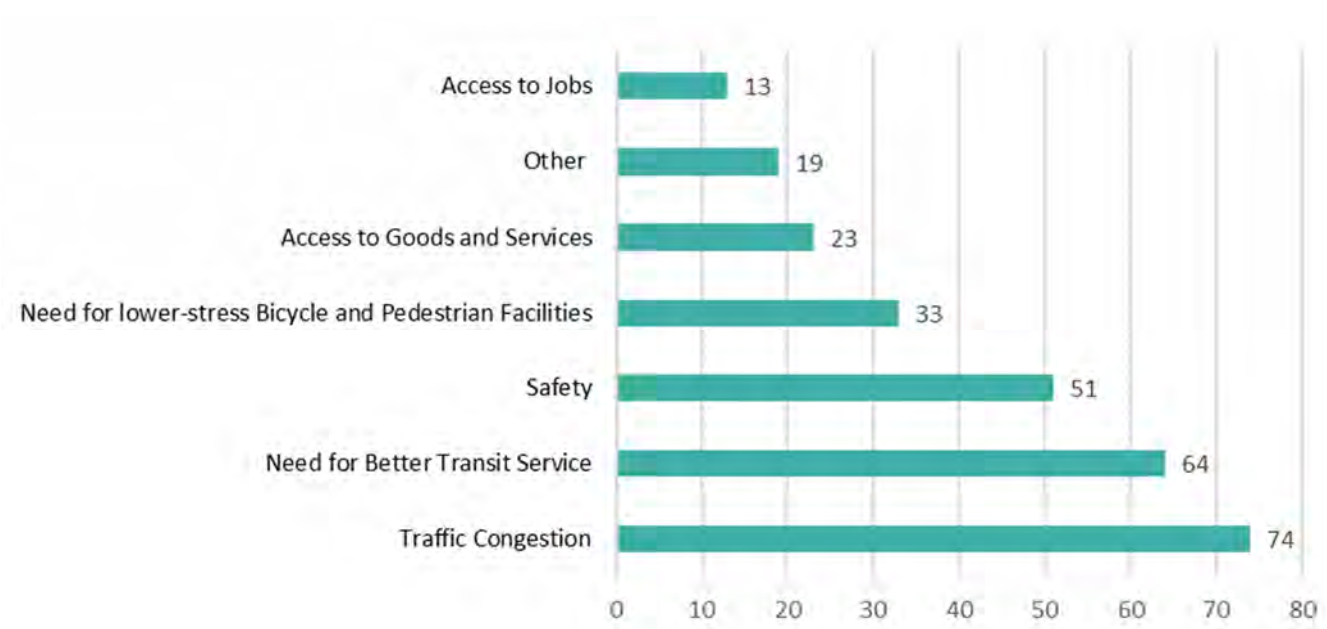
SURVEY RESPONSES

The following section provides the summary of results of the survey responses. The survey questions can be found in Appendix B.

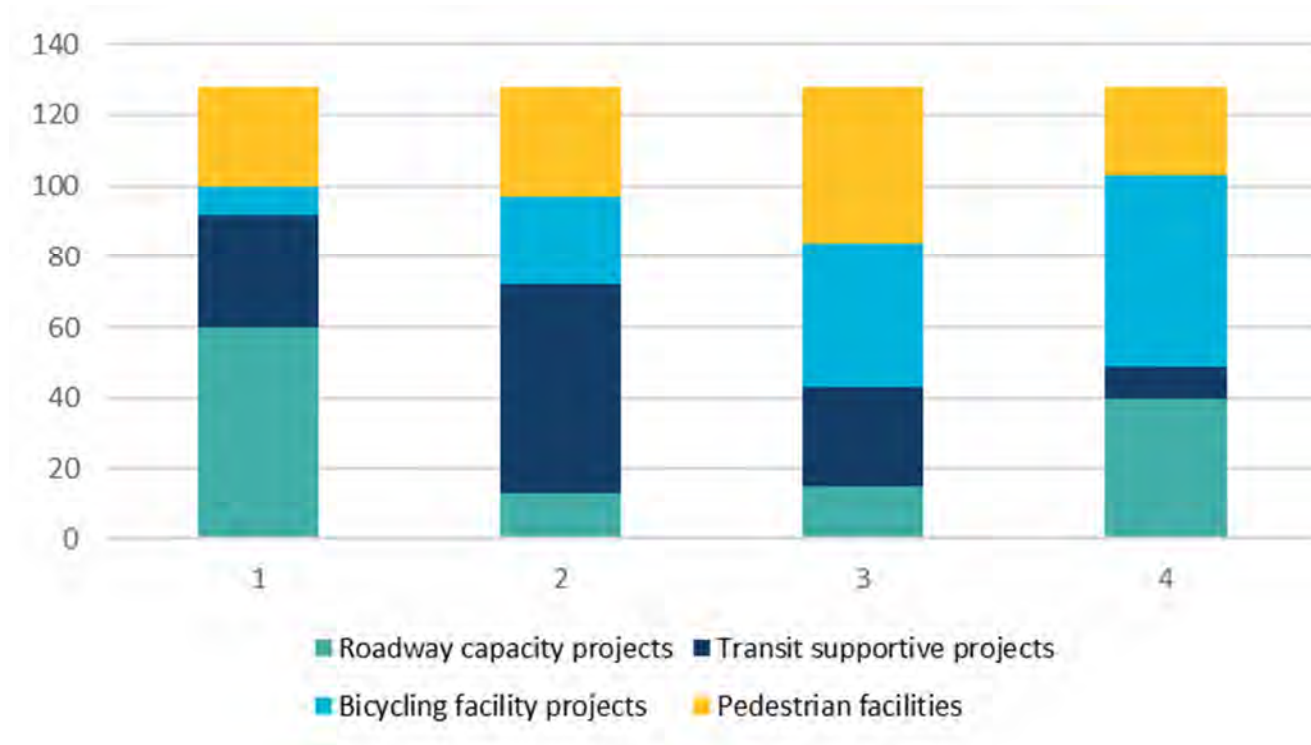
Question 1: What do you hope to see for the future of transportation in the City? (Check all that apply)



Question 2: What is the most pressing transportation need? (select up to three)



Question 3: Transportation funding is limited. How would you prioritize the following types of projects? (Click and drag options in highest priority at the top to the lowest priority at the bottom)



Question 4: What is the most important factor for you to consider when you are allocating funding? (104 comments received)



**23 REDUCE
TRAFFIC
CONGESTION**
COMMENTS



**21 TRANSIT
IMPROVEMENT**
COMMENTS



**11 SAFETY
IMPROVEMENT**
COMMENTS

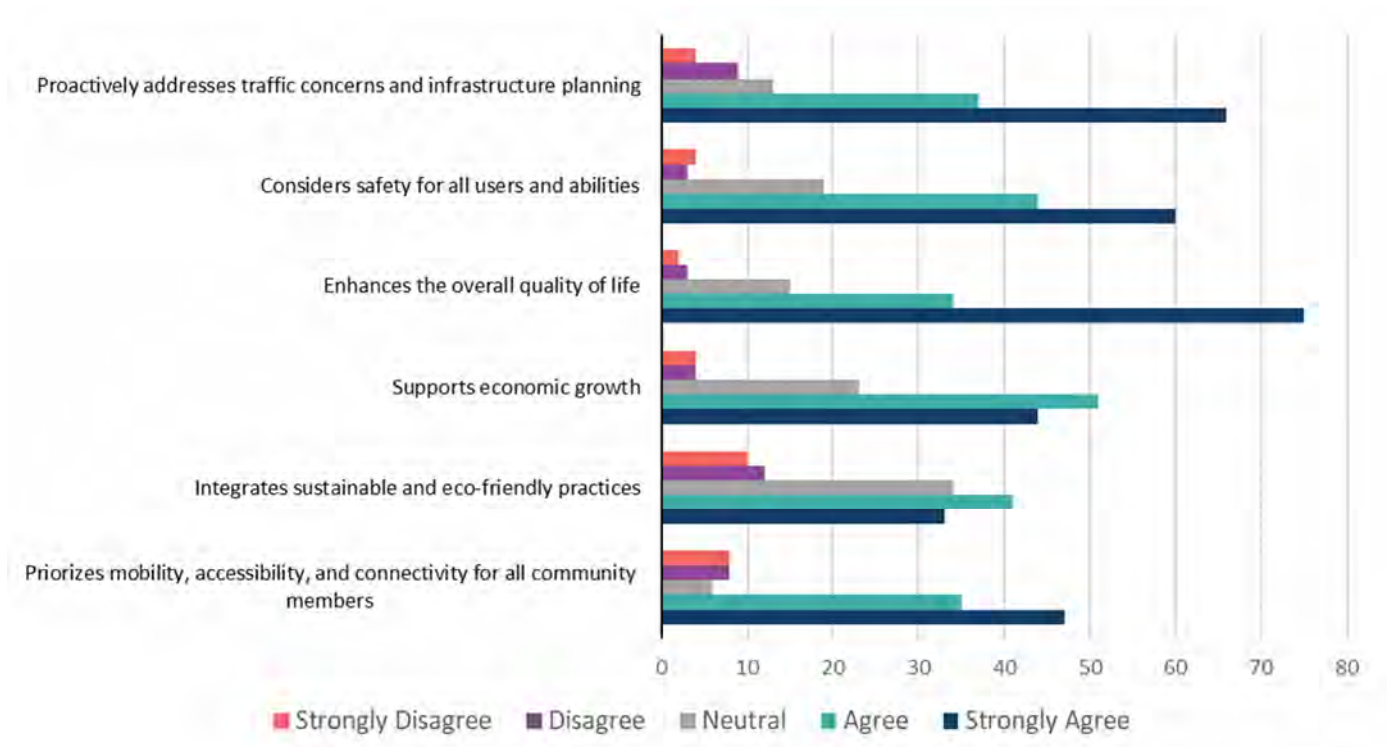


**7 IMPROVE
BIKE FACILIITES**
COMMENTS

Other notable comments:

- Keeping passengers safe while using stations and riding public transit.
- Improve access to SeaTac.
- Relocate homeless encampments.
- Provide safe streets for bikes and pedestrians. This has been neglected for too long. We don't want wider streets.
- Safety and accessibility/walkability.
- Focus on rebuilding roads to add curbs, gutters, landscaping buffers from traffic, wide sidewalks, pedestrian-scale lighting, and bike lanes or multi-use trails when space is available.
- Sustainability, not just in terms of the environment, but in terms of how long the improvements will last. Roads for cars last much less time than investments in public transit or cycling infrastructure.
- Need more and later night transit for late arriving flights.
- Our transportation projects should contribute to the long-term vision of the community we want, not just address symptoms of failure.
- Connect roads for in & out traffic from SeaTac airport with clear directional signs.
- That we don't lose tree canopy in the process. Green stormwater infrastructure.
- Better regional coordination for the entire metro area.

Question 5: What are your thoughts on the proposed guiding principles for the future of transportation in the city?

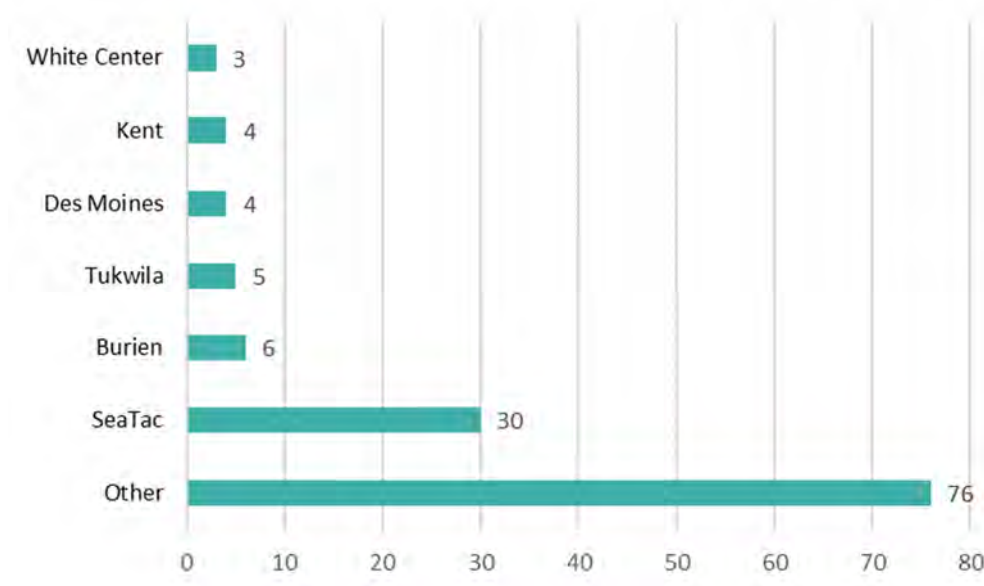


Question 6: Is there anything else you would like to let the team know about?

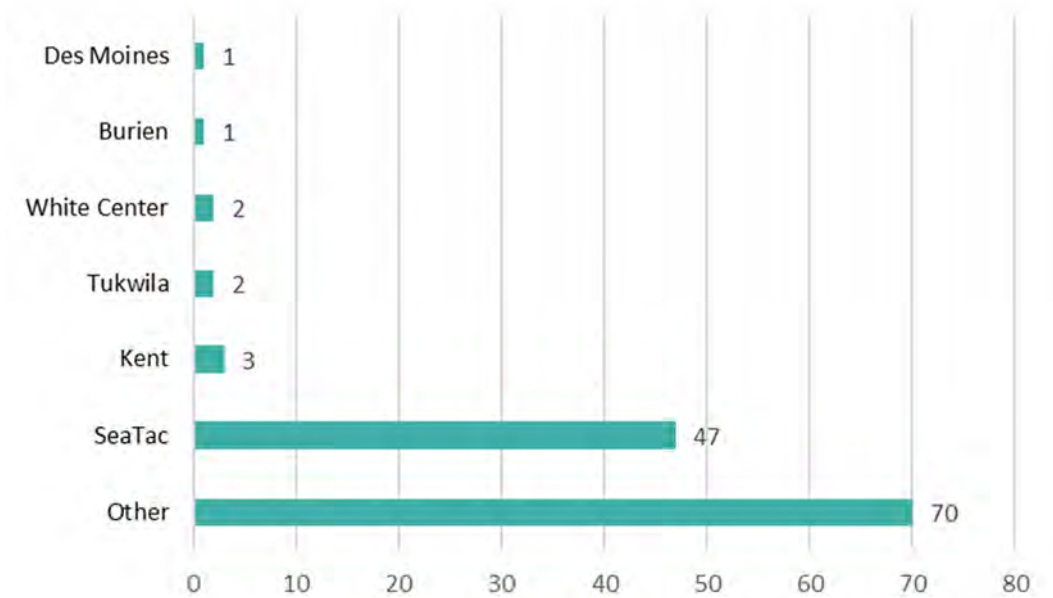
Notable comments received:

- More reversible lanes on highways due to commuting demands/patterns.
- Please improve public transit and build a great walkable waterfront like Kaohsiung, Taiwan.
- It would be great to have a common outdoor space for residents.
- Better access to SeaTac Airport for airport employees. Pretty sad the south lot was closed 15 yrs ago and still nothing has been done with it. Adds 15 mins of travel for everyone south of the airport.
- Fix and maintain what we have.
- More bike connected paths.
- More places SAFE to walk alone as a woman or with children that's in SeaTac and nature (vs just walking around my cement/paved neighborhood.)
- Please work on keeping bushes and plant growth trimmed on sidewalks. Finish sidewalk going down the hill on 176th, between military and I-5 on the south side. I am scared when I have to travel along that route. Also don't forget about those of us In SeaTac in the far north. My cul-de-sac is almost pitch black and needs more lighting and sidewalks on military.
- Relocate the fire station, gut all the old air freight buildings on that road, build a state of the art freight building north of the airport and build another terminal there and connect everything with a light rail system!

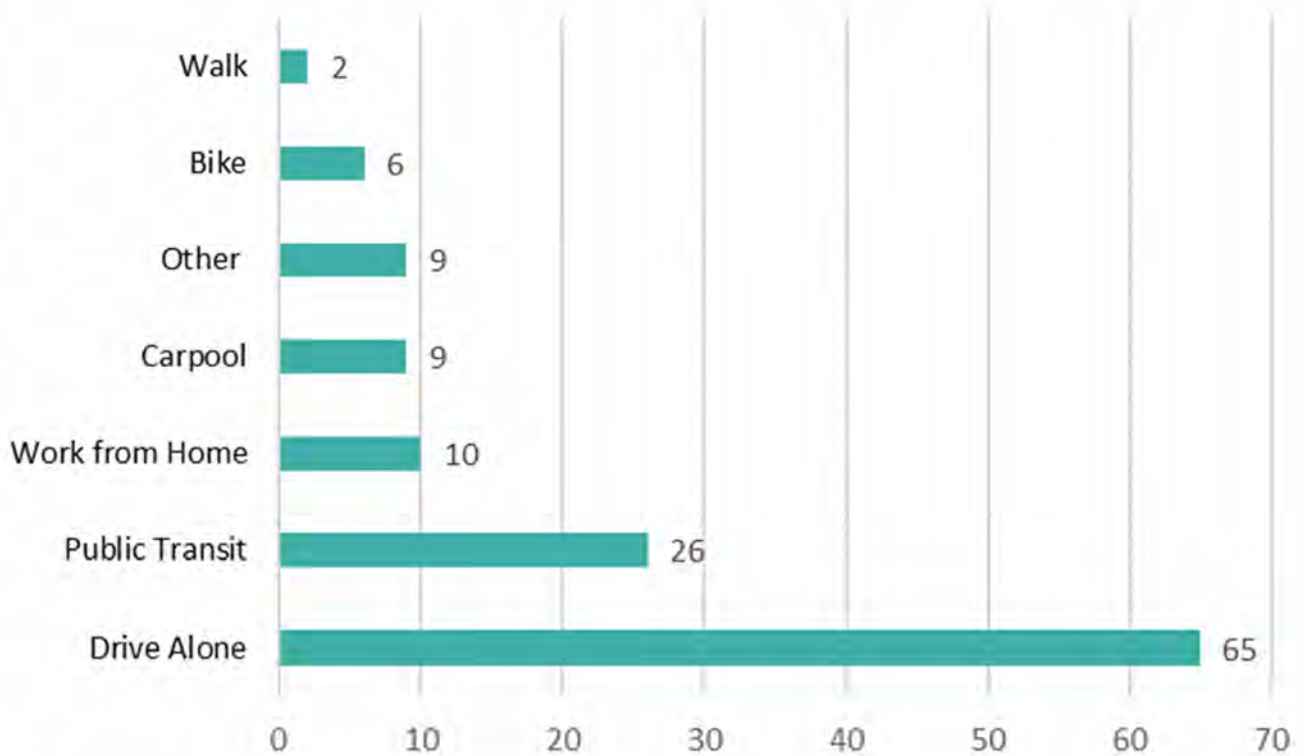
Question 7a: Where do you live?



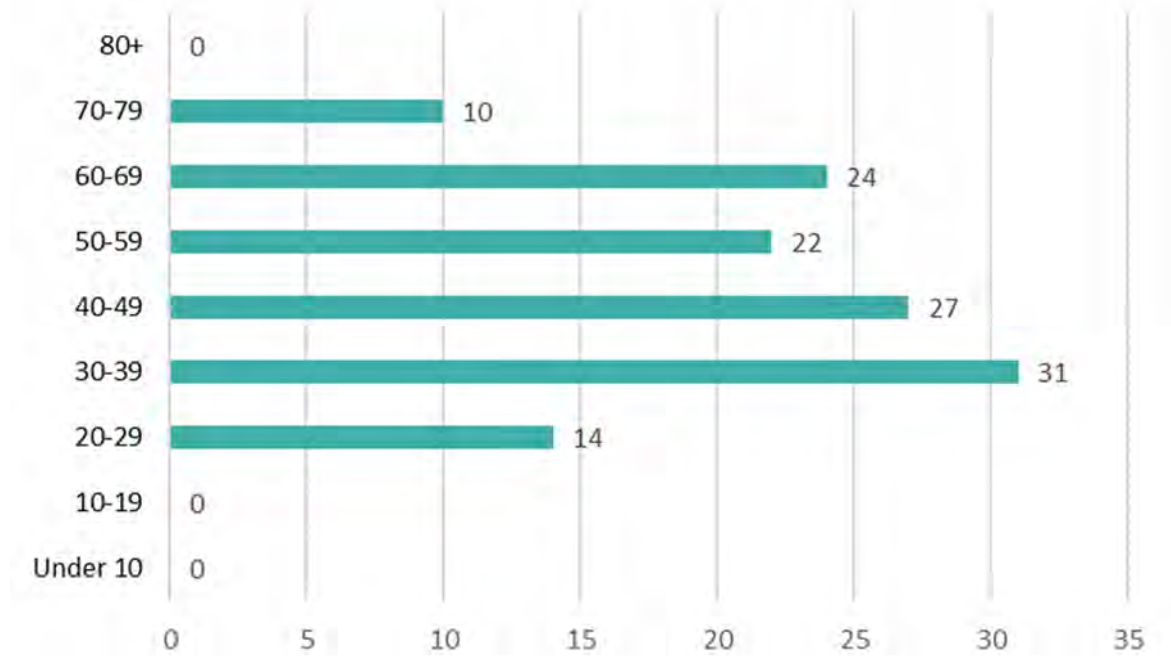
Question 7b: Where do you work?



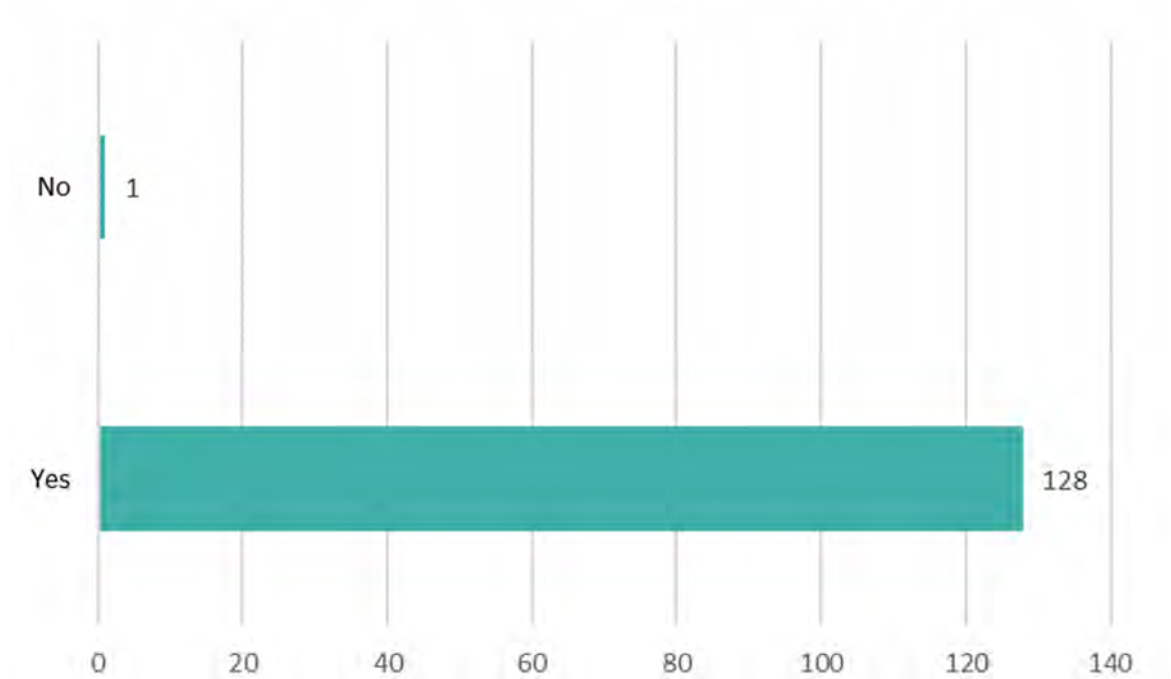
Question 7c: What is your most common mode of transportation to work?



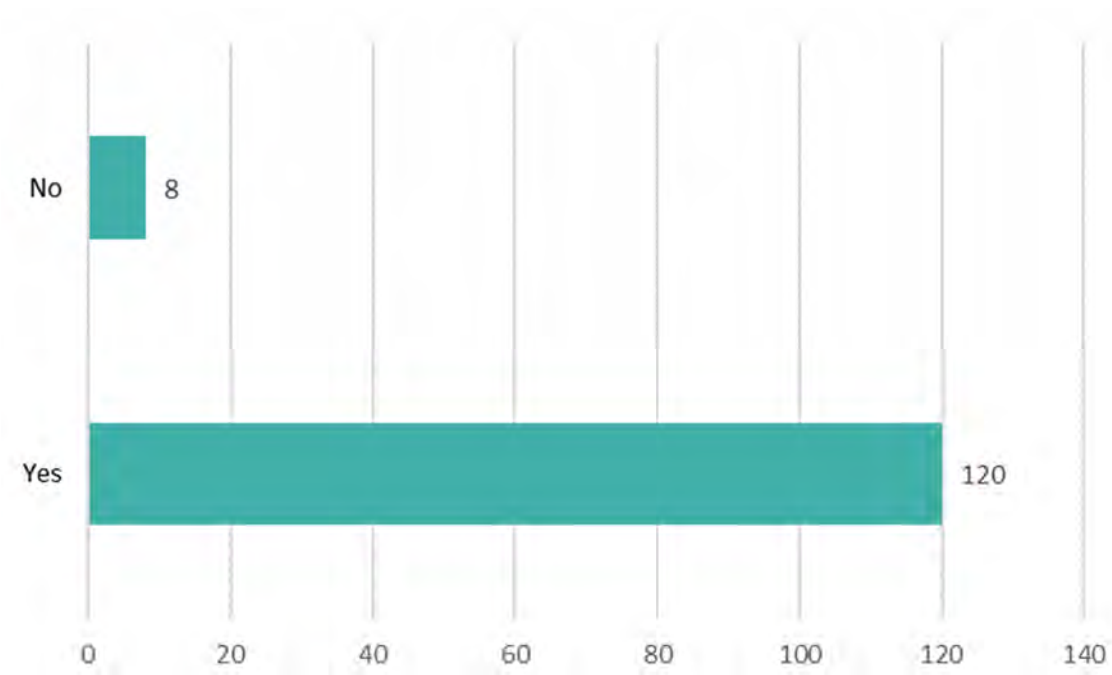
Question 7d: What is your age?



Question 7e: Do you have a driver's license?



Question 7f: Do you have your own private vehicle?



APPENDIX

APPENDIX A: WORKSHOP POSTER MATERIALS

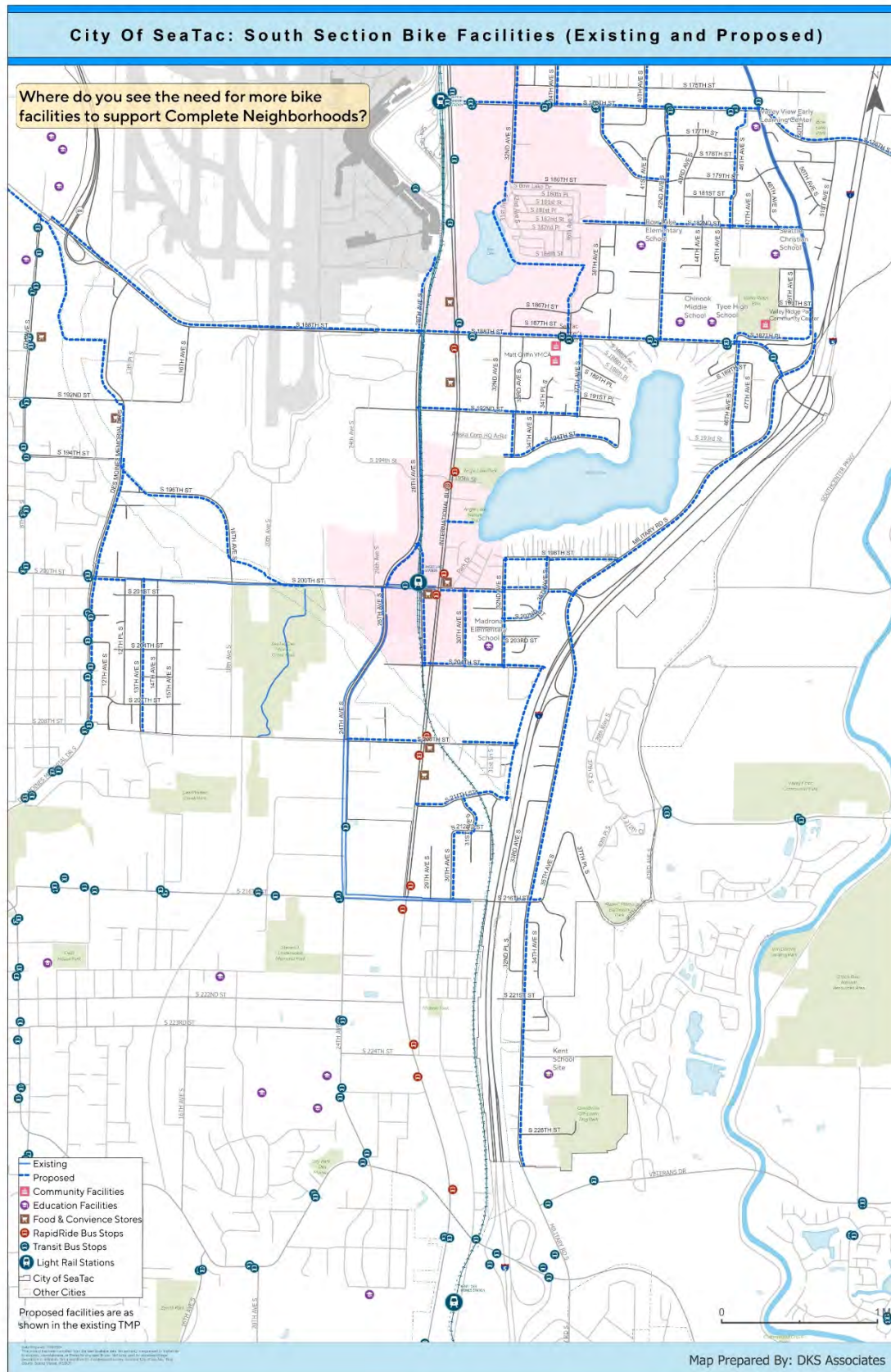


FIGURE 1. BIKE FACILITIES MAP – SOUTH NEIGHBORHOODS

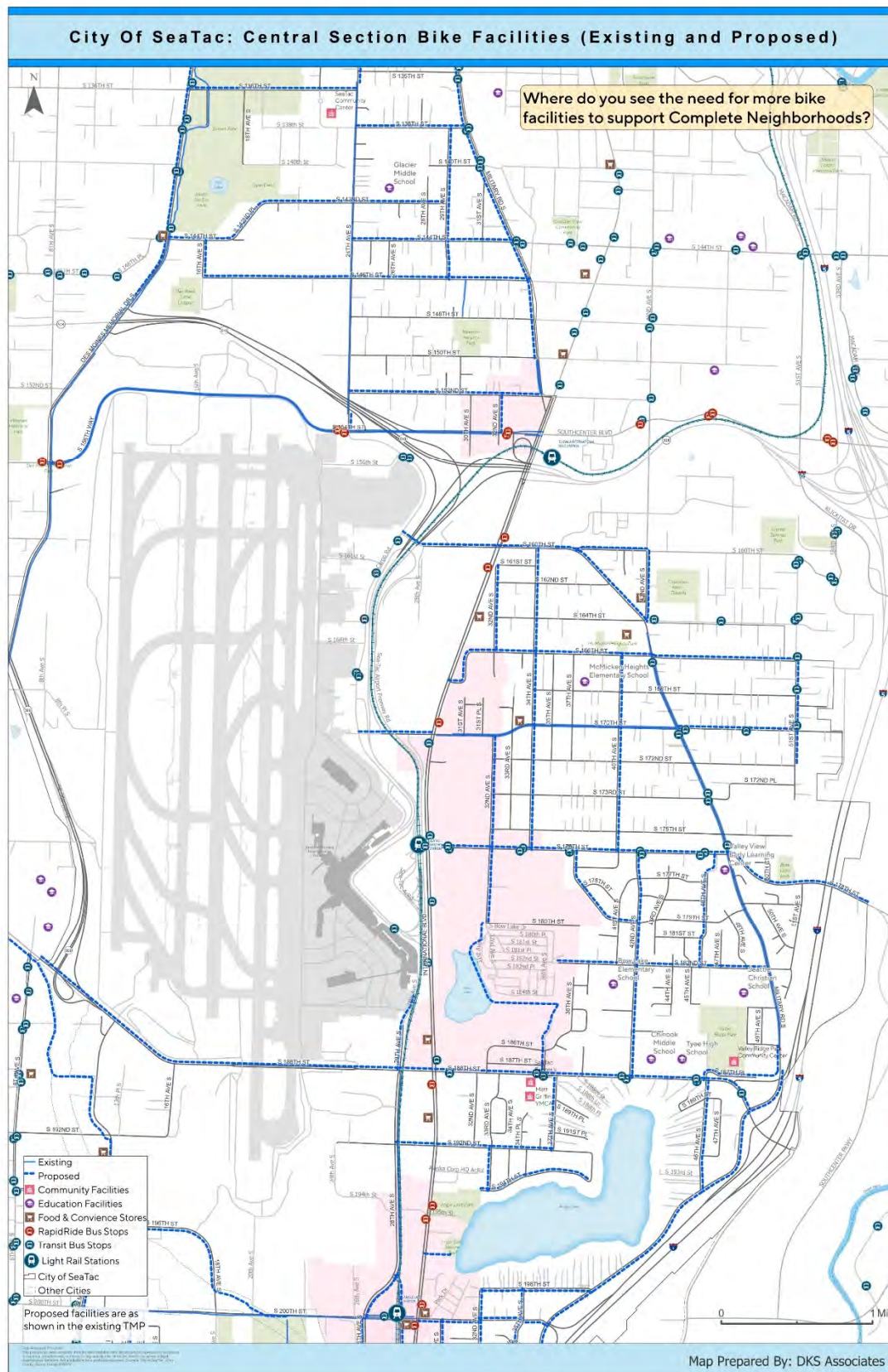


FIGURE 2. BIKE FACILITIES MAP – CENTRAL NEIGHBORHOODS

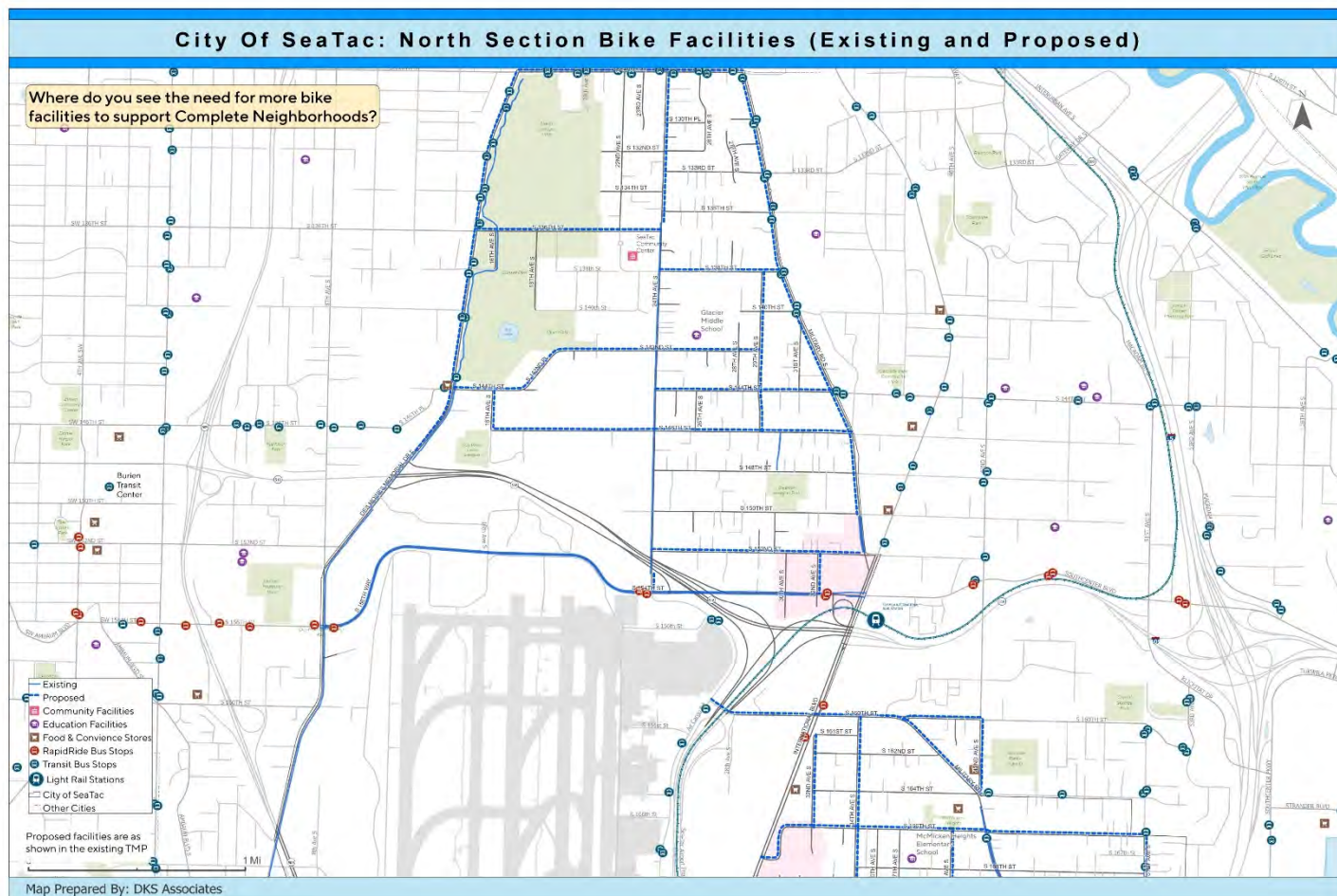


FIGURE 3. BIKE FACILITIES MAP – NORTH NEIGHBORHOODS

City Of SeaTac: South Section Pedestrian Facilities (Existing and Proposed)

Where do you see the need for more pedestrian facilities to support Complete Neighborhoods?

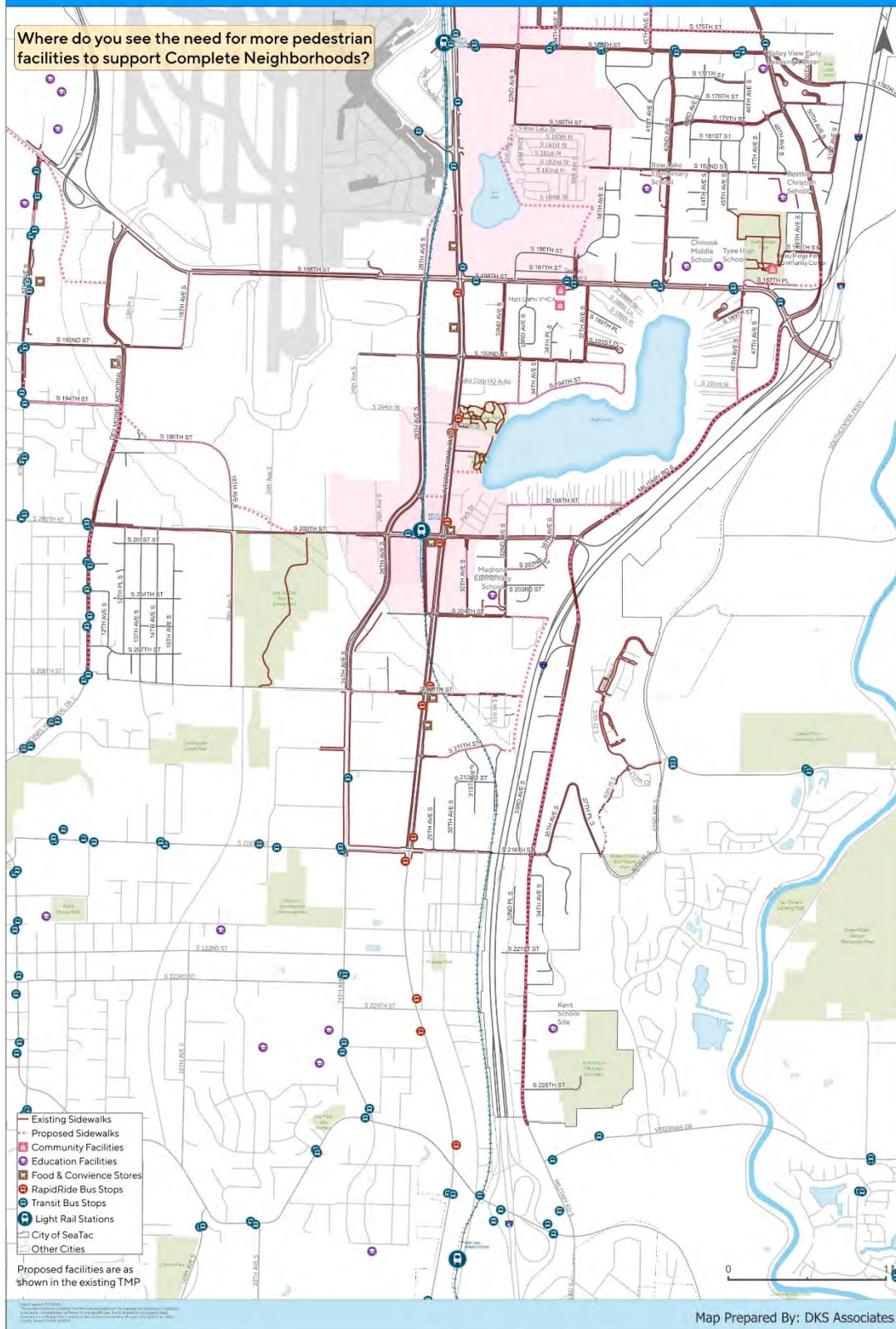


FIGURE 4. PEDESTRIAN FACILITIES MAP – SOUTH NEIGHBORHOODS

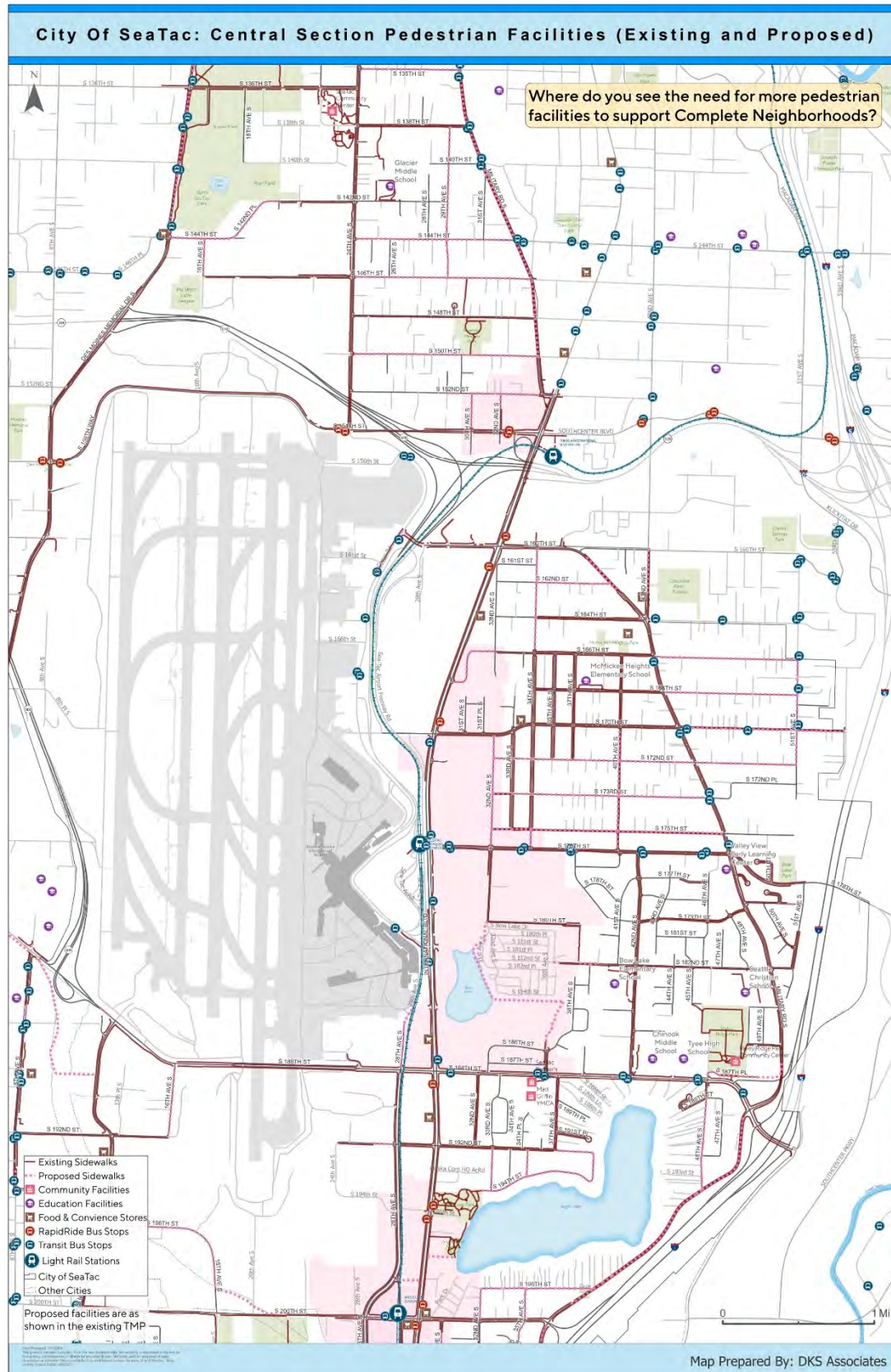


FIGURE 5. PEDESTRIAN FACILITIES MAP – CENTRAL NEIGHBORHOODS

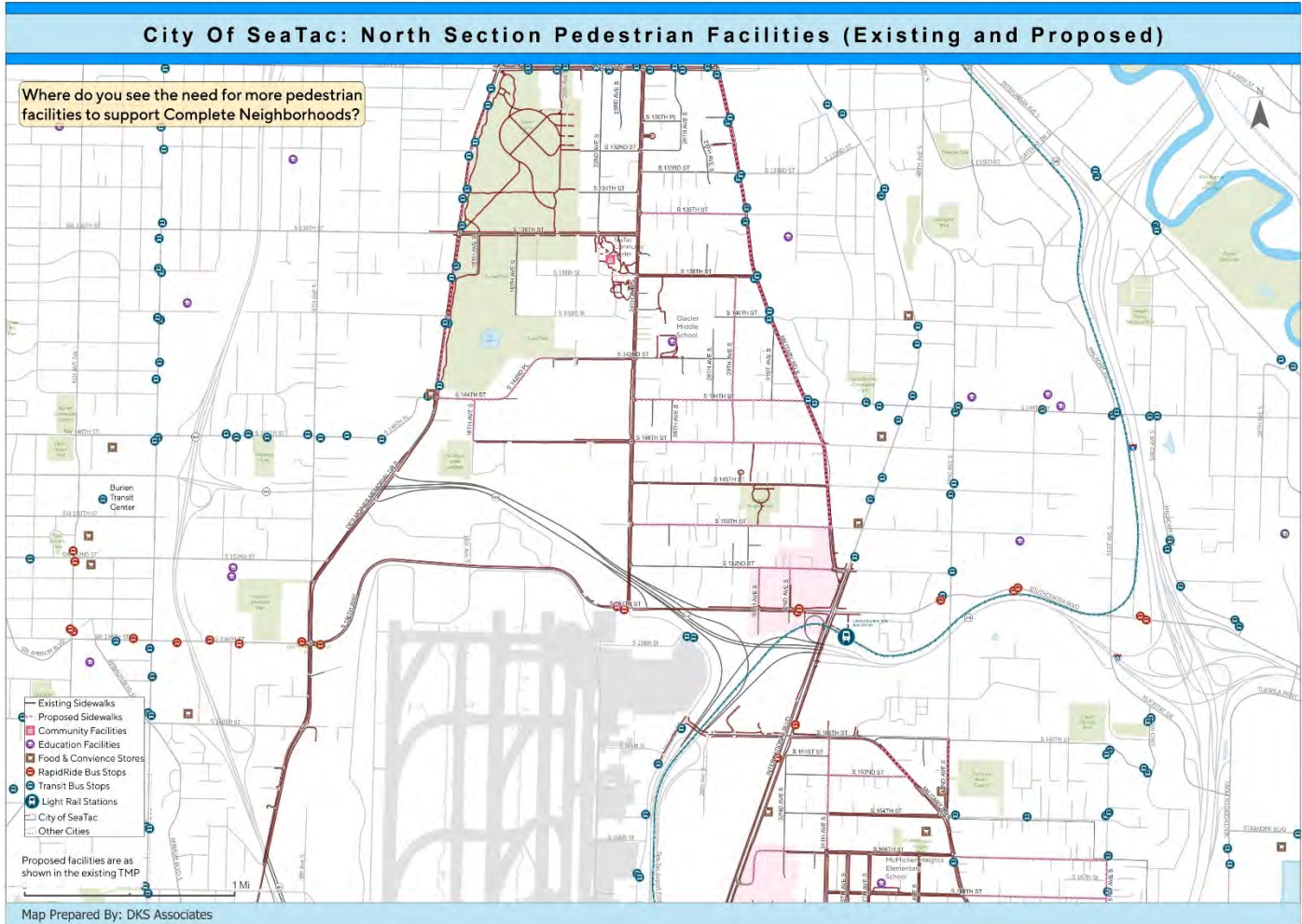


FIGURE 6. PEDESTRIAN FACILITIES MAP – NORTH NEIGHBORHOODS



FIGURE 7. PLANNING CONTEXT DIAGRAM

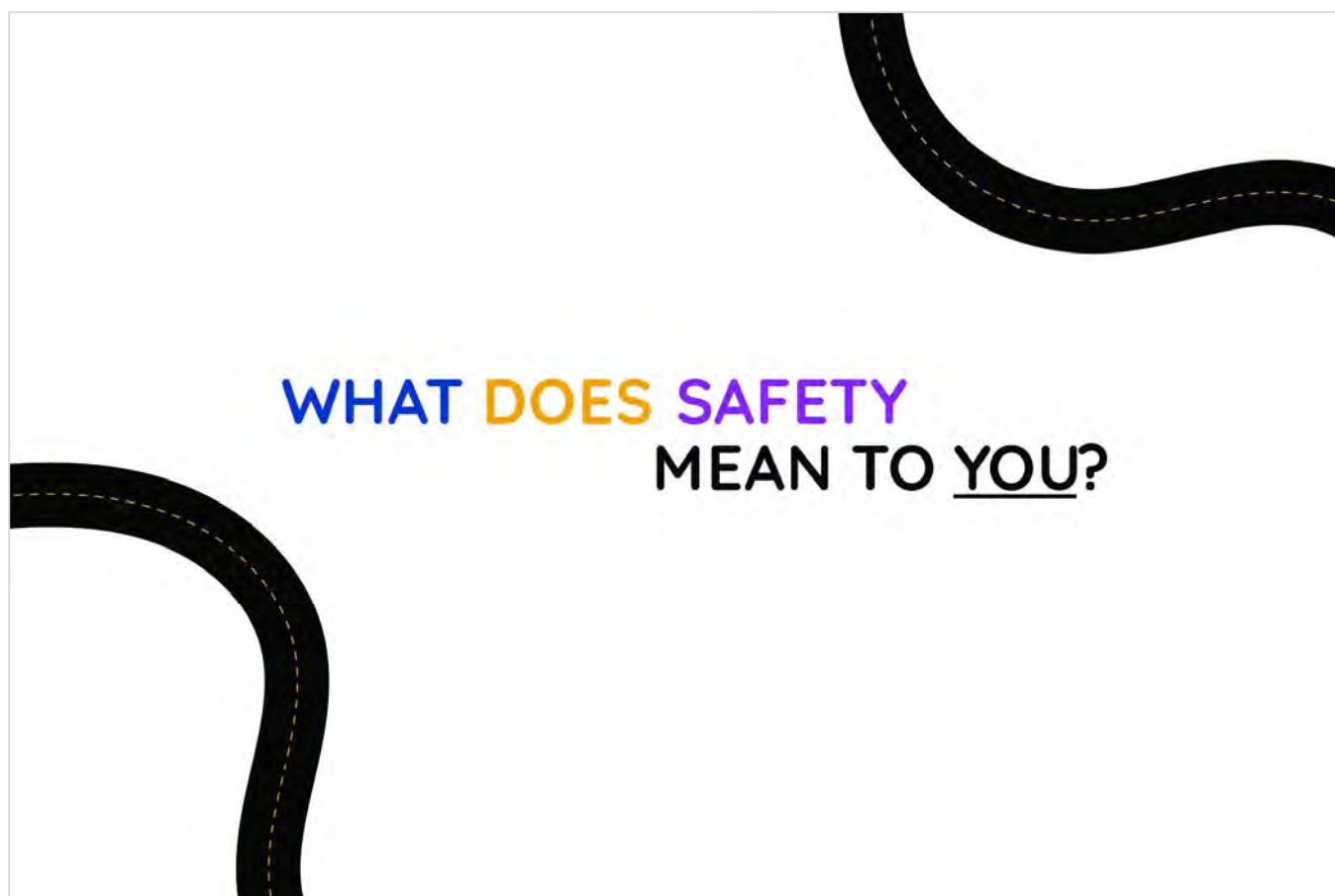


FIGURE 8. CHILDRENS COLOURING POSTER

APPENDIX B: SURVEY QUESTIONS

SEATAC SURVEY

DATE: 6.20.2024

TO: City of SeaTac

FROM: DKS Associates

SUBJECT: SeaTac Transportation Master Plan Survey Final

Project #24089-000

SURVEY

START TRANSLATION HERE

Title: SeaTac Transportation Master Plan Survey

What language would you prefer:

English

Spanish

Somali

Amharic

Vietnamese

What is SeaTac's Transportation Master Plan? The Transportation Master Plan, or "TMP," implements the transportation goals and policies in the Transportation Element of the Comprehensive Plan and guides SeaTac's transportation investment and activities.

Help us direct our vision for the Transportation Master Plan by completing the following survey questions!

For more information, visit: [SeaTac Transportation Master Plan Website](#)

1. What do you hope to see for the future of transportation in the City? (check all that apply)

Reduced speeds

Frequent transit service
Better Transit Stop Amenities (trash cans, bike racks, shelters, lighting)
Safer bike facilities
More pedestrian facilities (sidewalks, trails)
More traffic calming (speed bumps, narrow lanes)
More speed cameras
Reduced traffic congestion
More street lighting

2. What is the most pressing transportation need? (Select up to three)

Traffic congestion
Need for better transit service
Need for lower-stress bicycle and pedestrian facilities
Access to jobs
Access to goods and services
Safety
Other [please describe]

3. Transportation funding is limited. How would you prioritize the following types of projects? (Click and drag options in highest priority at the top to the lowest priority at the bottom):

- Roadway capacity projects (new roadways, added lanes, upgraded traffic signals)
- Transit-supportive projects (need to specify that City does not operate transit services) - new transit stations, bicycle and pedestrian access to stations, bus stop amenities
- Bicycling facilities - new trails, new bicycle lanes, protected bicycle lanes, protected intersections, bicycle activated traffic signals
- Pedestrian facilities - new sidewalks or multi use paths, widened sidewalks, enhanced pedestrian crossings (protected intersections, RRFBs, high visibility crosswalks, HAWKs, median refuge, etc.

4. What is the MOST important to you to consider when you are allocating transportation funding? (comment box)

5. What are your thoughts on the proposed guiding principles for the future of transportation in the city?

Prioritizes mobility, accessibility, and connectivity for all community members.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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Integrates sustainable and eco-friendly practices.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

Supports economic growth.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

Enhances the overall quality of life.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

Considers safety for all users and abilities.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

Proactively addresses traffic concerns and infrastructure planning.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

6. Is there anything else you'd like to let the team know about? *Free form - it can be hard to know what to do with this information, though.*

7. Demographic

- Where do you live?

SeaTac

Burien

Des Moines

Tukwila

White Center

Kent

Other

- Where do you work?

SeaTac

Burien

Tukwila

Kent

Renton

Seattle

Federal Way

Other

- What is your most common mode of transportation to work?

Drive alone

Carpool

Public Transit

Bike

Walk

Work from home

Other

- What is your age?

Under 10

10-19

20-29

30-39

40-49

50-59

60-69

70-79

80+

- Do you have a drivers' license?

Yes

No

- Do you have your own private vehicle?

- Yes

- No

Done!

Thank you!