

Date: December 16, 2020

To: David Tomporowski, City of SeaTac

From: Chelsea Dyess and Kendra Breiland, Fehr & Peers

**Subject: South 200<sup>th</sup> Street Corridor Study Existing Conditions and Future Trends**

SE20-0760

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## Introduction

The South 200<sup>th</sup> Street Corridor Study focuses on South 200<sup>th</sup> Street from Angle Lake Station to the intersection of Military Road South and the I-5 ramps (**Figure 1**). This study presents the opportunity to revisit assumptions of past planning efforts to confirm that the infrastructure plan along the South 200<sup>th</sup> Street corridor continues to make sense both near and long-term. The City's Transportation Master Plan (TMP) calls for the South 200<sup>th</sup> 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 (**Figure 2**). The character of the South 200<sup>th</sup> Street corridor will be greatly influenced by future projects in the area, including the SR 509 Completion Project, Federal Way Link Extension (FWLE), and construction of the South Airport Expressway, which will affect traffic circulation and patterns throughout the area.

Figure 1. South 200<sup>th</sup> Street Corridor Study Area

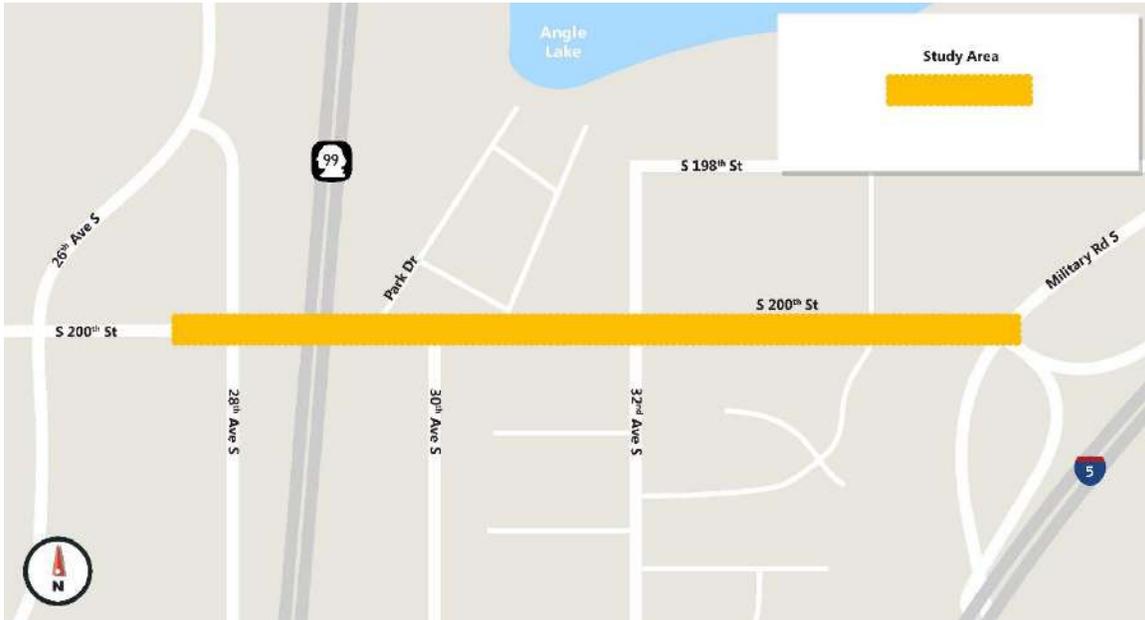
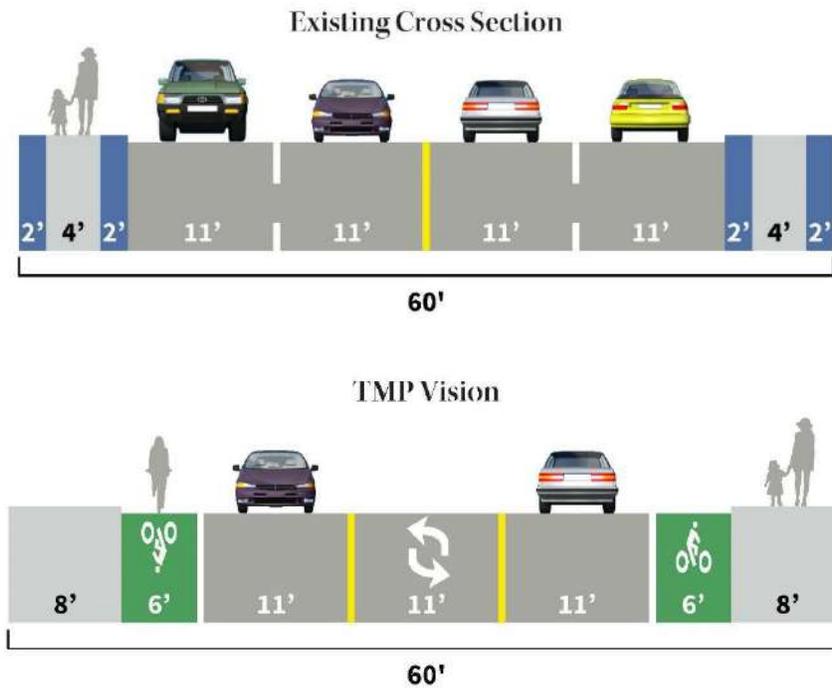


Figure 2. South 200<sup>th</sup> Street Corridor Cross Section (Existing and TMP Vision)





To provide context for the South 200<sup>th</sup> Street Corridor Study, Fehr & Peers reviewed existing plans and visited the corridor to observe current conditions. This process also included discussions with key stakeholders to provide institutional perspectives on the current context and future possibilities for the South 200<sup>th</sup> Street Corridor. Key plans and projects that informed the process, along with a list of interviewed stakeholders, are shown in **Table 1**.

Table 1. Existing Planning studies and Stakeholders

Plans and Projects
Transportation Master Plan, City of SeaTac, 2015
Angle Lake District Station Area Plan, 2013
SR 509 Completion Project Website, WSDOT, 2020
Federal Way Link Extension Project Website, Sound Transit 2020
Agency Stakeholders
King County Metro (Pierce Canser)
Port of Seattle (Daniel Alhadeff, Tom Hooper, Dave Kaplan, Nic Longo)
Sound Transit (Mara D'Angelo)
WSDOT (Thomas Noyes, Christina Strand)
Emergency Services – Police and Fire (Captain Hodgson)

The sections below describe the existing pedestrian, bicycle, transit, auto, and freight environments as well as future travel trends along the corridor.

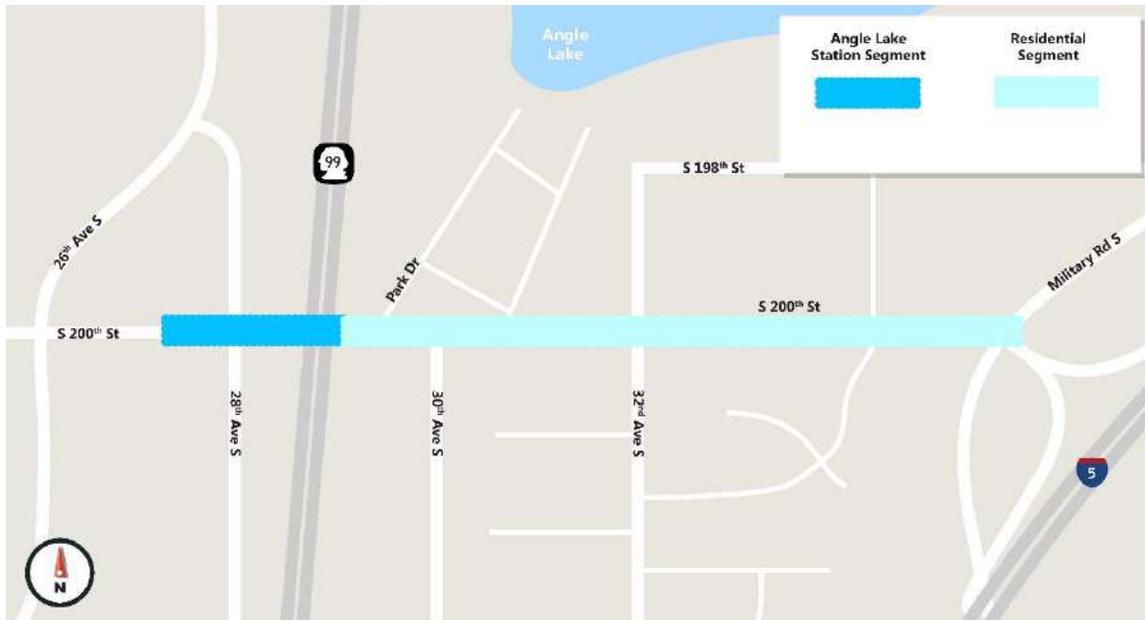
## Corridor Segments

For the purpose of describing transportation conditions, the corridor is divided into two separate segments each with their own distinct characteristics:

- The **Angle Lake Station segment** is defined as South 200<sup>th</sup> Street from 26<sup>th</sup> Avenue South to International Boulevard
- The **Residential segment** is defined as east of International Boulevard to Military Road South and I-5

The corridor has been divided into these two segments based on the distinct bicycle and pedestrian infrastructure characteristics of each and these segments are analyzed separately in portions of this memo (**Figure 3**).

Figure 3. South 200<sup>th</sup> Street Corridor Segments



## Pedestrian Environment

### Angle Lake Station Segment

Sidewalks are present along the entirety of the Angle Lake Station segment (**Figure 4**). Sidewalks directly adjacent to the station are generally greater than 5 feet wide, but narrow down to 5 feet in front of the businesses between 28<sup>th</sup> Avenue South and International Boulevard, which have parking lots and landscaped areas that abut the sidewalk (see photos on next page). This segment generally features upgraded infrastructure given recent investments that coincided with the construction of the Angle Lake Station: signalized crossings with pedestrian push buttons and crosswalks exist at all intersections, as do textured detectable warning surfaces on all ramps and at the Angle Lake Station parking garage driveway. A bike lane buffers pedestrians from vehicle traffic.

Pedestrians use the sidewalk network on this segment to connect to Angle Lake Station and RapidRide stations on International Boulevard. Pedestrians may also use this segment to connect from light rail to the Des Moines Creek trail or nearby residential areas, including the neighborhood east of International Boulevard. One improvement the City may want to consider is switching the landscaped buffer near businesses to the outside of the sidewalk, to further separate pedestrians and vehicular traffic.

Wide Sidewalks near Angle Lake Station



Narrowed Sidewalks near Businesses with Landscaped Buffers



## Residential Segment

Sidewalks are present along the entirety of the Residential Segment (**Figure 4**). Sidewalks along this segment are narrow (4-5 feet) and directly adjacent to the roadway and residential properties (see photo on next page). Overgrown vegetation has narrowed usable widths further in some locations, specifically near the intersection of South 200<sup>th</sup> Street and Military Road South (see photo on next page). The pedestrian environment along the Residential Segment can be

uncomfortable due to the narrowness of the sidewalks, lack of buffer from vehicle lanes, the number of driveways, and the overall traffic speeds and volumes on that exist South 200<sup>th</sup> Street today. Large freight vehicles also create an uncomfortable pedestrian environment due to their speed, size, noise, and proximity to pedestrians. Curb ramps exist at all intersection crossings, however detectable warning surfaces are only present at the intersection of South 200<sup>th</sup> Street and Military Road South. Crosswalks are present at both signalized intersections (32<sup>nd</sup> Avenue South and Military Road South), but not at unsignalized minor street crossings.

Residents may use this segment of South 200<sup>th</sup> Street to connect to transit or access businesses near International Boulevard. 32<sup>nd</sup> Avenue South connects the corridor with other key destinations, including Madrona Elementary School (south of the corridor) and Angle Lake Park (to the north).

To address existing sidewalks that feel unsafe, the City should consider widening sidewalks and adding a buffer between pedestrians and motor vehicles. The City should also consider upgrading sidewalks so that they are ADA compliant. These improvements would allow people to comfortably and safely connect to transit, access business, and travel around the neighborhood on foot.

#### Narrow Sidewalks on Residential Segment of South 200<sup>th</sup> Street



### Overgrown Vegetation Near Military Road South/I-5/South 200<sup>th</sup> Street



### Future Pedestrian Environment

There are a number of planned pedestrian improvements in the vicinity of the South 200<sup>th</sup> Street corridor that will improve pedestrian connectivity in the area. These planned improvements include filling sidewalk gaps and adding new trail connections (**Figure 4**). The Lake to Sound Trail extension is expected to be complete in 2022, with its southern terminus connecting to the Des Moines Creek Trail on South 200<sup>th</sup> Street.



Figure 4. Existing and Proposed Pedestrian Network





## Bicycle Environment

### Angle Lake Station Segment

A bike lane exists along the entirety of the Angle Lake Segment from International Boulevard to 26<sup>th</sup> Avenue South (**Figure 5**). On the south side of South 200<sup>th</sup> Street, the bike lane extends from the Des Moines Creek Trail to International Boulevard in the eastbound direction. Heading westbound, bicycles share with roadway with vehicles on the north side of South 200<sup>th</sup> Street between 26<sup>th</sup> Avenue South and the Des Moines Creek trail. Because of the downward grade in this direction, cyclists are able to move at the speed of traffic in connecting to the trail. Despite the presence of intermittent bike lanes, it should be noted that this portion of the corridor still presents a high-stress environment for many cyclists due to lack of dedicated facilities, buffering from vehicle traffic, or conflicts due to driveways or bus stops.

The 200<sup>th</sup> Street corridor connects to points south via bike lanes along 24<sup>th</sup>/26<sup>th</sup> Avenue South (which extend to 216<sup>th</sup> Street South) and via the Des Moines Creek trail (which connects to Des Moines Beach Park). Other than those two southern connections, there are no contiguous north-south or east-west bicycle facilities. Angle Lake Station has bicycle cages, lockers, and racks for cyclists connecting to light rail.

### Residential Segment

No formal bicycle facilities exist on the Residential Segment of the corridor. This segment of South 200<sup>th</sup> Street is characterized by high vehicle speeds and volumes (as noted during the corridor site visit), which would not provide a comfortable shared-roadway experience for cyclists connecting to the bike facilities west of International Boulevard. To address bicycle needs, the City has proposed adding bike lanes on this segment of South 200<sup>th</sup> Street. The City is considering traffic calming measures for South 200<sup>th</sup> Street, as part of this study, to ensure that the cycling environment on this segment is both comfortable and safe.

Bike Lane on South 200<sup>th</sup> Street facing west towards Angle Lake Station



### Future Bicycle Environment

Beyond the potential bicycle facilities on South 200<sup>th</sup> Street and the Lake to Sound Trail extension, the City has proposed additional bicycle infrastructure that may improve connections to and from South 200<sup>th</sup> Street (**Figure 5**). Bike lanes are supplemented with proposed neighborhood bikeways and bicycle boulevards that would form a more connected grid of bicycle facilities in the area. Neighborhood bikeways and bicycle boulevards take advantage of quiet, low volume roadways to provide bicycle facilities for cyclists of all abilities and would complement the City's existing infrastructure and proposed bike lanes. These facilities would also enable additional, low-stress connections to Angle Lake Station. Bike facilities are also proposed along South 200<sup>th</sup> Street west of the study area to Des Moines Memorial Drive, which would provide a contiguous east-west connection. Envisioned improvements on Military Road South could provide a direct north-south connection from South 200<sup>th</sup> Street to the rest of the City. It is recommended that the City consider implementing dedicated, low-stress bicycle facilities along the corridor to tie into the proposed network of bikeways and bike boulevards. These facilities may look different along various portions of the corridor, given the unique characteristics of South 200<sup>th</sup> Street east and west of International Boulevard.



Figure 5. Existing and Proposed Bicycle Network





## Transit

The South 200<sup>th</sup> Street corridor is served by three transit routes (**Table 2**).

Table 2. Existing Transit Routes

Route	Agency	Description	Span	Frequency
Link Light Rail	Sound Transit	Angle Lake to University of Washington	All Day	Peak: 7 minutes Off Peak: 15 minutes
RapidRide A Line	King County Metro	Federal Way TC to Tukwila International Boulevard Station	All Day	All Day: 10 minutes
Route 635	King County Metro	Angle Lake Station to the Des Moines Marina District	5AM – 7PM	Peak: 15 minutes Off Peak: 30 minutes

As of today, the Angle Lake Station is the southernmost terminus of the Link Light Rail system. Angle Lake Station is an elevated platform that is served by a 1,160-space parking garage, a pedestrian plaza, and a vacant retail space that will likely be occupied in the upcoming years. In 2019, the Link Light Rail system had 80,900 average weekday boardings, with 4,350 boardings at Angle Lake Station<sup>1</sup>. RapidRide A Line serves the 200<sup>th</sup> Street Corridor, with far side stations on International Boulevard, just north and south of South 200<sup>th</sup> Street. RapidRide A Line Stations consist of bus shelters, electronic signage, and off-board payment (see photo on the next page). The southbound RapidRide A line travels in a dedicated HOV lane beginning at South 200<sup>th</sup> Street. In 2019, the average daily boardings for RapidRide A line were 10,300, with 745 of those boardings occurring at the stops at International Boulevard/South 200<sup>th</sup> Street<sup>2</sup>. Route 635 is a Community Shuttle, with 90 daily riders, that provides service between Angle Lake Station and the Des Moines Marina District<sup>3</sup>. A bus bay exists at Angle Lake Station on the north side of South 200<sup>th</sup> Street (see photo on the next page). Transit routes and stops near South 200<sup>th</sup> Street are shown in **Figure 7**. Both the RapidRide A Line and Link Light Rail provide South 200<sup>th</sup> Street with valuable regional transit connections that are frequent and reliable. The Angle Lake District Station Area Plan, adopted in 2015, established a community vision to guide future development around the station. Vacant parcels near the station, owned by Sound Transit, are slated for redevelopment and will provide a mix of uses that support transit and multimodal transportation through strategic urban planning efforts<sup>4</sup>. It is recommended that planning efforts along the

<sup>1</sup> Service Delivery Performance Report Q3 2019, Sound Transit

<sup>2</sup> 2019 average total number of boardings, King County Metro

<sup>3</sup> Period Averages for September 2018 to March 2019: 2019 System Evaluation, King County Metro

<sup>4</sup> Angle Lake District Station Area Plan, 2015

South 200<sup>th</sup> Street corridor align with the station area vision to strengthen connections to the robust transit infrastructure that currently exists.

Northbound RapidRide A Line Station at International Boulevard/South 200<sup>th</sup> Street



Route 635 Bus Bay at Angle Lake Station



## Future Transit

The Federal Way Link Extension (FWLE) project, opening in 2024, will extend light rail from Angle Lake Station to the Federal Way Transit Center (**Figure 7**). The extension includes three new stations: Kent/Des Moines, South 272<sup>nd</sup> Street, and Federal Way Transit Center and will have a projected daily ridership of 29,000 – 34,000<sup>5</sup>. In conjunction with the SR 509 Completion Project, Sound Transit is building a new SR 99 bridge near South 208<sup>th</sup> Street, a half-mile south of the South 200<sup>th</sup> Street corridor, which will travel over SR 509 (**Figure 6**). Bridge construction began in late 2020, with a target completion in 2022<sup>6</sup>.

Figure 6. Future Light Rail Bridge Configuration, WSDOT



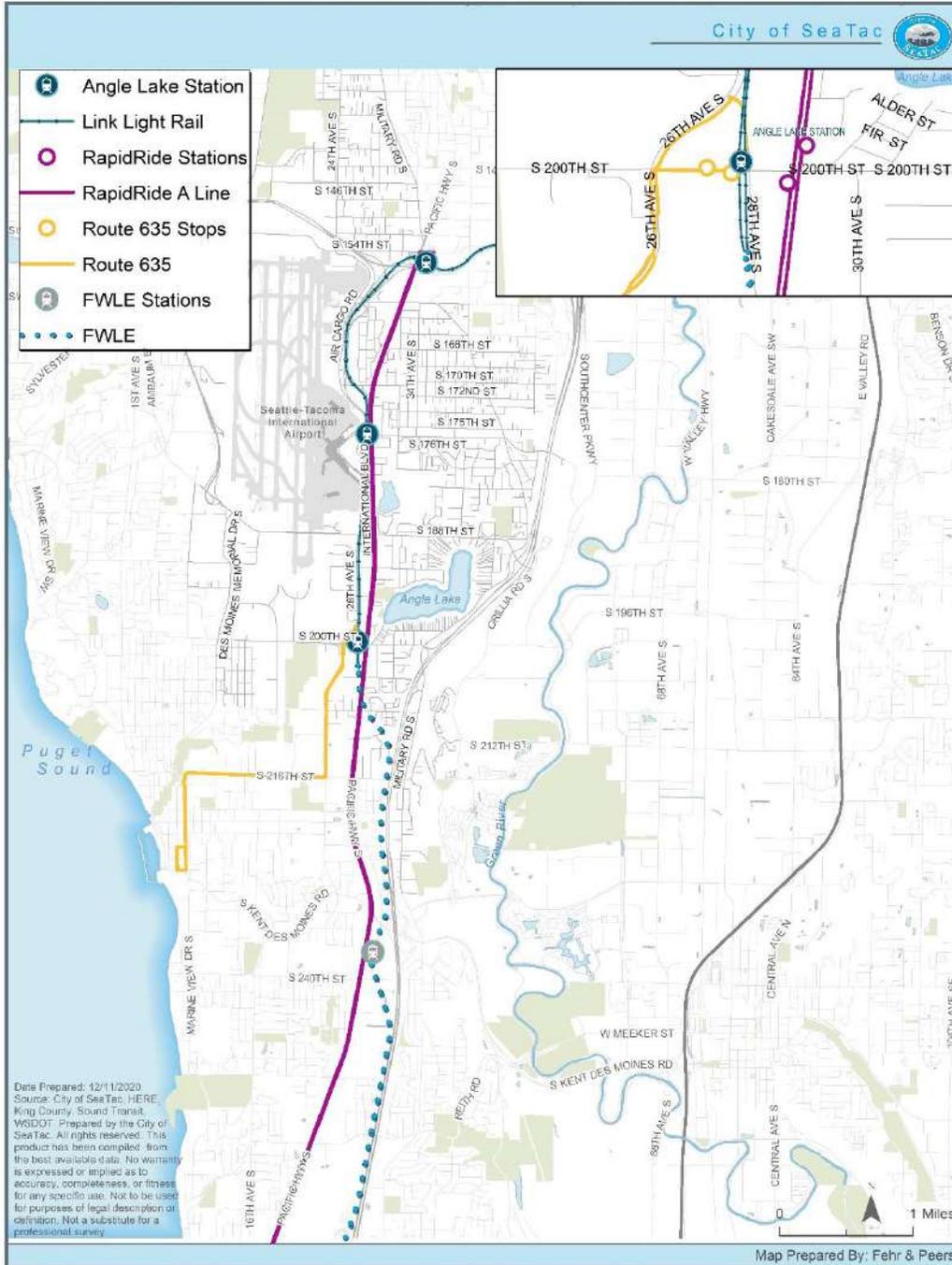
As proposed in METRO CONNECTS, King County Metro's long-range vision, a new local bus route may serve South 200<sup>th</sup> Street from Normandy Park to the Rainier Beach light rail station by 2040. The new route would travel along South 200<sup>th</sup> Street and then turn north onto Military Road South. The proposed route would expand mobility options for residents on South 200<sup>th</sup> Street.

<sup>5</sup> Federal Way Link Extension Project Website, Sound Transit

<sup>6</sup> SR 509 Completion Project Website, WSDOT



Figure 7. Existing Transit Routes and Future FWLE





## Vehicle

### Existing Travel Trends

The South 200<sup>th</sup> Street Corridor has four signalized intersections:

- 28<sup>th</sup> Avenue South/South 200<sup>th</sup> Street
- International Boulevard/South 200<sup>th</sup> Street
- 32<sup>nd</sup> Avenue South/ South 200<sup>th</sup> Street
- Military Road South/I-5 ramps/South 200<sup>th</sup> Street

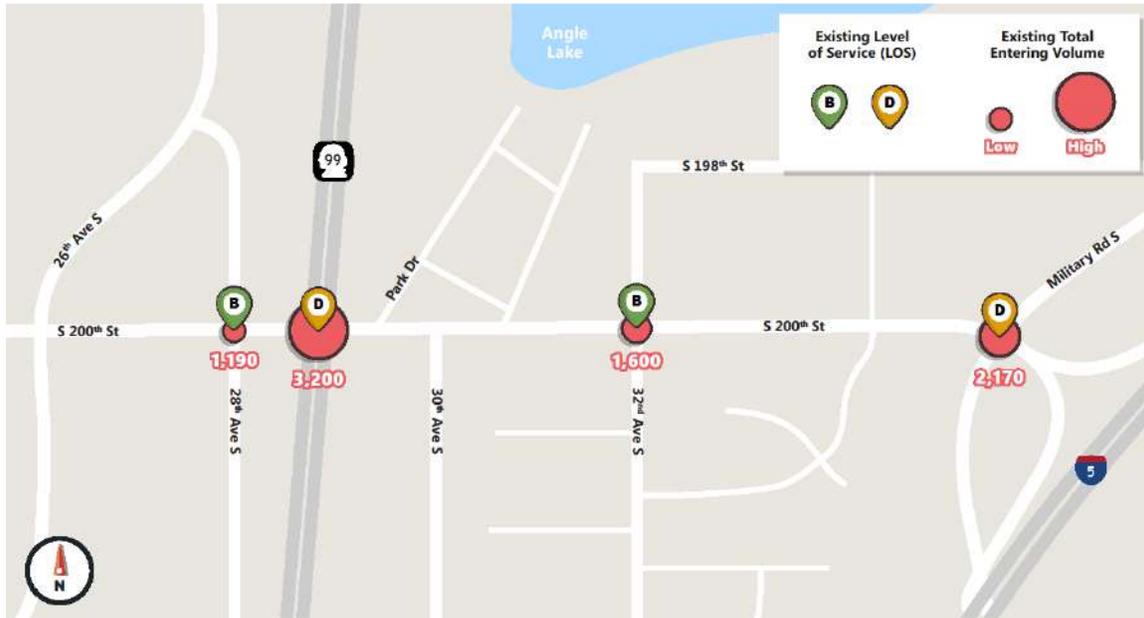
The posted speed limit along the South 200<sup>th</sup> Street corridor is 25mph, however, observations suggest that vehicles frequently travel faster than the posted speed. The International Boulevard/South 200<sup>th</sup> Street intersection sees the highest volumes during PM peak hour, although this is largely driven by the high volume of southbound traffic on International Boulevard (**Figure 8**).<sup>7</sup> In the PM peak period, eastbound volumes range from 450-1,050 vehicles per hour with volumes highest in the eastern portion of the corridor as vehicles approach the intersection of Military Rd South/I-5 ramps, since I-5 attracts a higher level of regional traffic and freight movement. While the Military Rd South/I-5 ramps intersection overall has acceptable (LOS D) operations during the PM peak hour, the eastbound movement accessing the freeway can be backed up and vehicles have been observed merging from the right turn lane to the through lane to bypass the lengthy queue to access the on-ramp. This behavior contributes to increased delay on the eastbound approach of South 200<sup>th</sup> Street/Military Road/I-5. Ramp meters have been recently installed at the I-5 on ramp to control traffic using the on-ramp to access I-5 south.

Overall, the speed and volume of traffic along South 200<sup>th</sup> Street are concerns for residents, since their property is directly adjacent to the roadway itself and they experience the negative impacts of traffic, in terms of damaged mailboxes and signs, noise, discomfort, difficulty backing out of their driveways, and crossing the street.

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<sup>7</sup> 2019 PM Peak Hour Traffic Counts from IDAX data. Timings collected on site in June 2020.

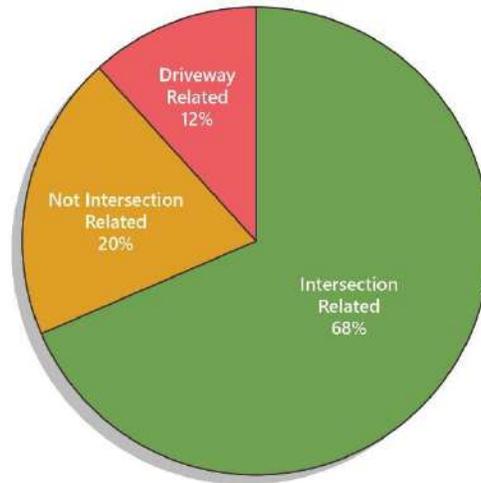
Figure 8. Total Entering Volume and Intersection Delay at Signalized Intersections, PM Peak Hour



### Collisions

Location and severity of collision were analyzed using 2017-2019 WSDOT data. During the three-year period, there were 162 collisions on or near the South 200<sup>th</sup> Street corridor. Of those collisions, 13 (8%) were minor injury and 2 (1%) were serious injury. There were no fatalities reported along the corridor. Nearly two-thirds of crashes on the South 200<sup>th</sup> Street Corridor are intersection related (**Figure 9**), with hotspots at International Boulevard and Military Road South/I-5 ramps. Driveways also present a safety issue for the corridor. Driveways connect directly onto South 200<sup>th</sup> Street, which not only affects mobility and pedestrian safety but is also concern for drivers accessing residences or businesses. Data shows that twelve percent of collisions along the corridor are driveway related.

Figure 9. Types of Collision near South 200<sup>th</sup> Street Corridor



### Freight

The South 200<sup>th</sup> Street corridor sits at the hub of regional freight activities – connecting major regional routes like International Boulevard, Military Road South, and I-5. Industrial uses west of International Boulevard generate freight trips that involve vehicles of all sizes – from smaller box trucks to semi-trucks. While South 200<sup>th</sup> Street is not a major corridor for the Port of Seattle (the Port estimates that only 4% of Port of Seattle traffic uses South 200<sup>th</sup> Street), the level of freight movement currently observed east of 30<sup>th</sup> Avenue South is in stark contrast with the residential nature of this portion of the corridor (see photo on next page). Planning for the future of the South 200<sup>th</sup> Street will depend heavily on the ability of regional transportation projects, like the SR 509 Completion Project, to divert vehicle and freight movement away from the corridor.

Freight on South 200<sup>th</sup> Street Looking East Towards I-5





## Future Travel Trends

The SR 509 Completion Project will extend SR 509 to I-5 near Tukwila and add a new access point near Seattle-Tacoma International Airport. The SR 509 Completion project will also add a half-diamond interchange at 24<sup>th</sup>/28<sup>th</sup> Avenue, south of South 200<sup>th</sup> Street. The interchange will act as an interim access point until the Port of Seattle's full vision for a South Airport Expressway is realized. The half-diamond interchange will have a southbound on-ramp and a northbound off-ramp to and from SR 509 to 24<sup>th</sup>/28<sup>th</sup> Avenue (**Figure 10**). The SR 509 Completion Project will enhance the freight network between industrial sites and the Port of Seattle and is anticipated to reduce congestion on local roads, including South 200<sup>th</sup> Street. The expansion of SR 509 would provide an alternate route for vehicles and freight connecting to I-5. The City has completed construction of the project connecting 24<sup>th</sup> Avenue South to 28<sup>th</sup> Avenue South, with interim access ramps and SR 509 expansion slated for completion in 2028. The Port of Seattle's South Airport Expressway is a long-term project that will ultimately replace the interim airport access with a grade separated expressway connecting to Seattle-Tacoma International Airport. To accommodate the SR 509 expansion, South 208<sup>th</sup> Street will no longer directly connect to International Boulevard. A new roadway segment will be built at South 206<sup>th</sup> Street from South 208<sup>th</sup> Street to restore the connection to International Boulevard. The new segment will connect to S 204<sup>th</sup> Street and 34<sup>th</sup> Avenue South (**Figure 11**).



Figure 10. Proposed SR 509 Right-of-Way, Interim Access Ramps, Capital Improvements, and South Access Expressway

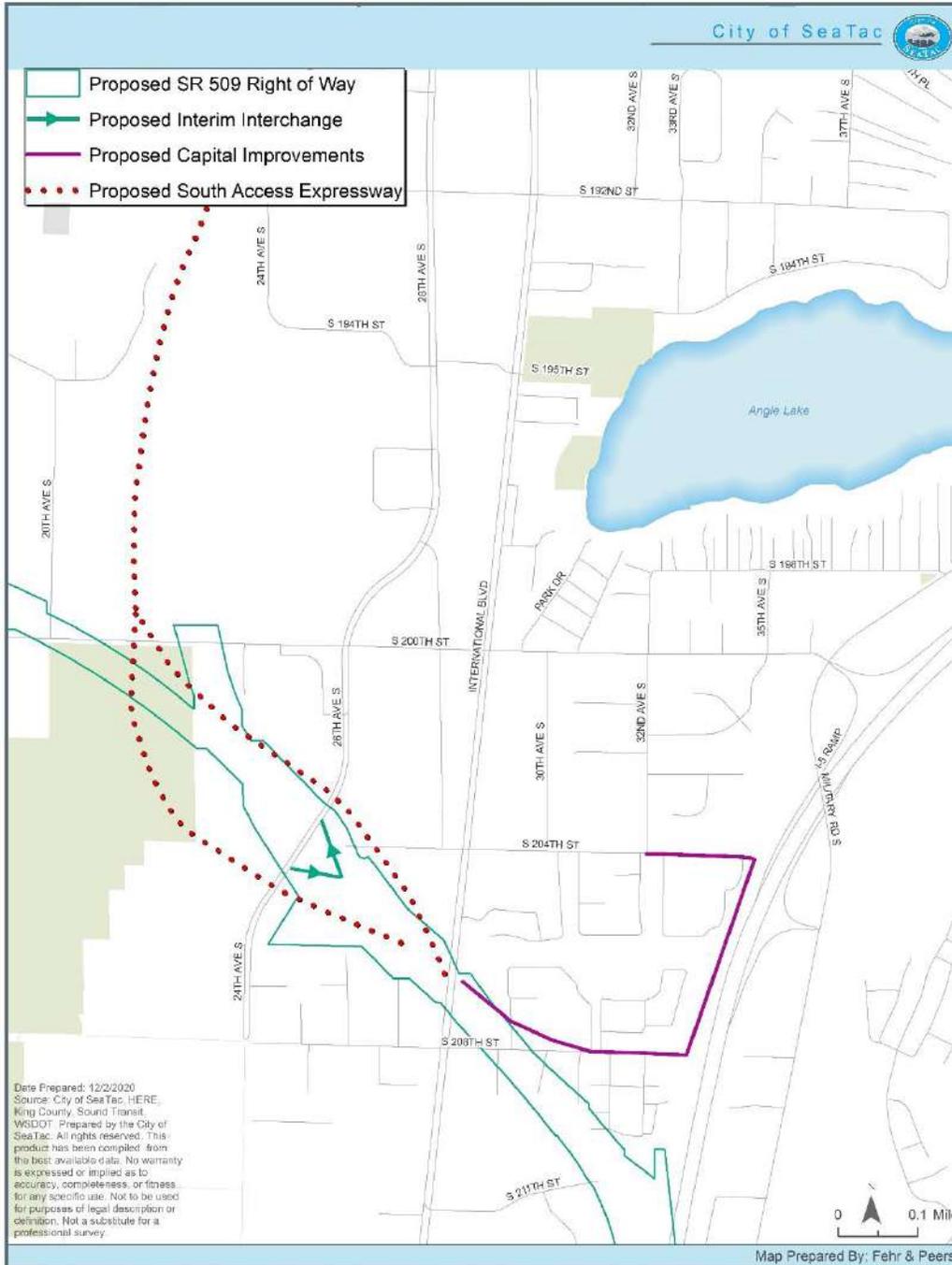


Figure 11. SR 509 Alignment, Interim Ramps, and Capital Improvements (WSDOT)<sup>8</sup>



Completion of the SR 509 project is expected to result in a reduction in overall traffic along the South 200<sup>th</sup> Street Corridor, presenting potential opportunities to modify its character to a quieter street with more complete multimodal facilities. As part of this analysis, the base (2014) and future year (2040) PSRC regional models were referenced to preliminarily analyze potential changes in volumes on South 200<sup>th</sup> Street. **Figure 12** and **Figure 13** show no change or a decrease in volumes along the corridor in the PM peak period, except for the segment nearest I-5, which shows a modest increase in volume. Further modeling will be completed as part of the South 200<sup>th</sup> Street Corridor Study. Land use and transportation assumptions within the study area will be confirmed for the Base Year, Future 2040 No Build Model, and up to three 2040 action scenarios.

<sup>8</sup> Puget Sound Gateway Program SR 509 Completion Project, WSDOT 2017

Figure 12. PM Peak Volumes on South 200<sup>th</sup> Street (PSRC Regional Model, 2014)



Figure 13. PM Peak Volumes on South 200<sup>th</sup> Street (PSRC Regional Model, 2040)





## Parking

The Angle Lake Station has an elevated parking structure that can accommodate 1,160 vehicles. As of 2019, the parking garage was fully occupied on most weekdays, usually full by 7:30 AM<sup>9</sup>. There are Pick-Up/Drop-Off locations on 28<sup>th</sup> Avenue South and at the Route 635 bus bay south of Angle Lake Station. There is no on-street parking on South 200<sup>th</sup> Street.

## Future Opportunities and Challenges

The South 200<sup>th</sup> Corridor Study presents an opportunity to reexamine past planning efforts to ensure that they are consistent with existing and future conditions of the corridor. The completion of SR 509 and the expansion of light rail to Federal Way present the opportunity to reimagine the South 200<sup>th</sup> Street corridor. The corridor currently has dual identities: it serves a residential neighborhood, with single family homes that directly access the corridor; but it is also an important connection between regional freight and mobility corridors, like International Boulevard, Military Road, and I-5. Upcoming regional investments, like the SR 509 completion, are expected to shift traffic away from South 200<sup>th</sup> Street and may provide the opportunity to enhance the pedestrian and bicycle environment and create a more comfortable, multimodal corridor that enhances connections to transit, new development, and local businesses. Potential challenges include limited right-of-way and existing housing concerns, specifically the proximity of single-family homes to the South 200<sup>th</sup> Street corridor. Due to the regional importance of the corridor, stakeholders should be involved during and beyond the corridor study planning process. Potential corridor options should be evaluated to ensure that there will be no adverse effects or spill back on major corridors (I-5, Interim 509 Ramps, SR 509, and International Boulevard) identified by WSDOT and the Port of Seattle.

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<sup>9</sup> South King County Lots, Sound Transit 2020