



# West Kitsap Way Planning Study



## Appendix A

### Existing Transportation Conditions



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# Existing Transportation Conditions

This appendix describes the existing characteristics and conditions of the corridor including public input and review of street conditions, stormwater, and pavement conditions.

## Public Input

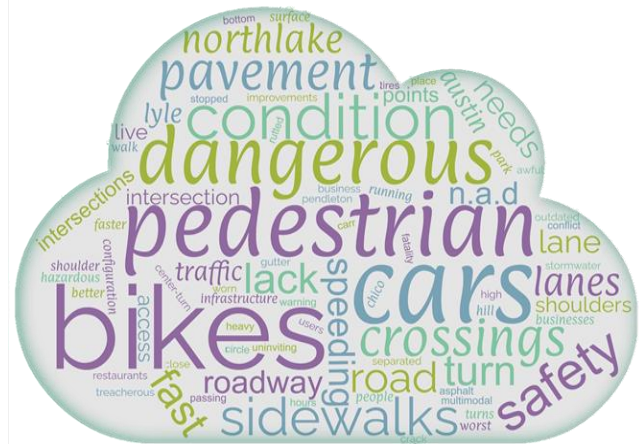
As part of the outreach process for the project, the first on-line open house (December 2022) presented the results of the existing conditions analysis. The open house, using an open-ended questionnaire format, collected public input about the existing issues, concerns, and thoughts about Kitsap Way. This public input was a valuable to confirm corridor issues and to identify additional public concerns and issues. Some of the concerns frequently identified by the community included:

- Travel speeds
- Lack of pedestrian facilities
- Poor roadway conditions
- Unsafe intersections
- Access to driveways and parking
- Lack of bike lanes
- Concerns about traffic congestion and noise due to construction
- Concerns about water runoff and flooding

The community also was given an opportunity for expressing ideas for improvements.

- Adding turn lanes
- Improved pedestrian and bicycle facilities
- Reducing speed limit and crash prevention
- Adding or improving transit stops
- Improving ADA accessibility
- Providing separation between vehicles and pedestrians

This public input was used to inform the development of the corridor and in the development of the corridor analysis and alternatives. Details of the public outreach process are included in **Appendix G: Community Outreach Summary**.



The word cloud shows which words were mentioned most in the public comments.

## Street Characteristics

The western portion of Kitsap Way is a minor arterial street with a 35 mile-per-hour (mph) posted speed limit. There are three main segments of the corridor described below:



- ◆ **Between Northlake Way and Harlow Drive** – This segment has one-to-two travel lanes in each direction with a center turn lane to provide access to adjacent properties. This area, also known as the Kitsap Junction, encompasses the business/commercial center of the community. At the north end of the corridor, Kitsap Way splits at the Northlake Way/Chico Way intersection, becoming two-lane roadways.
- ◆ **Between Harlow Drive and Wilmont Street** – This segment is representative of the majority of Kitsap Way. The roadway has four-lane section with two 10.5-foot travel lanes in each direction and a narrow 5-foot center painted median. The lack of a center left turn lane requires left turning vehicles to stop in the travel lane while waiting for a gap in traffic. Intersections along this corridor include Lakehurst Drive NW, Austin Drive/Lyle Avenue, Burchfield Drive, and Crawford Drive. Between Burchfield Street and Wilmont Drive there is continuous 5-6 percent roadway grade for approximately half a mile.
- ◆ **Between Wilmont Street to the SR 3 Interchange** – Approaching the SR 3 Interchange intersections, Kitsap Way widens to five lanes to allow for left turn lanes at the northbound and southbound SR 3 intersections. The interchange area includes bicycle lanes and sidewalks.

East of the interchange, Kitsap Way becomes State Route 310 with 4 travel lane lanes, a center turn lane, and bicycle lanes and sidewalks.

## Intersection Traffic Control and Channelization

Except for the interchange intersections, most study intersections are stop-controlled for the minor approach. The intersection at Northlake Way NW / Chico Way NW – Kitsap Way is uncontrolled, with only a yield for left turn movements from Kitsap Way to Northlake Way NW. Most corridor intersections do not have left turn lanes, requiring left turning vehicles make turns from the inner travel lane. Figure A-1 shows the traffic control and channelization for the study intersections.

**Figure A-1. Existing Channelization**



## Traffic Volumes

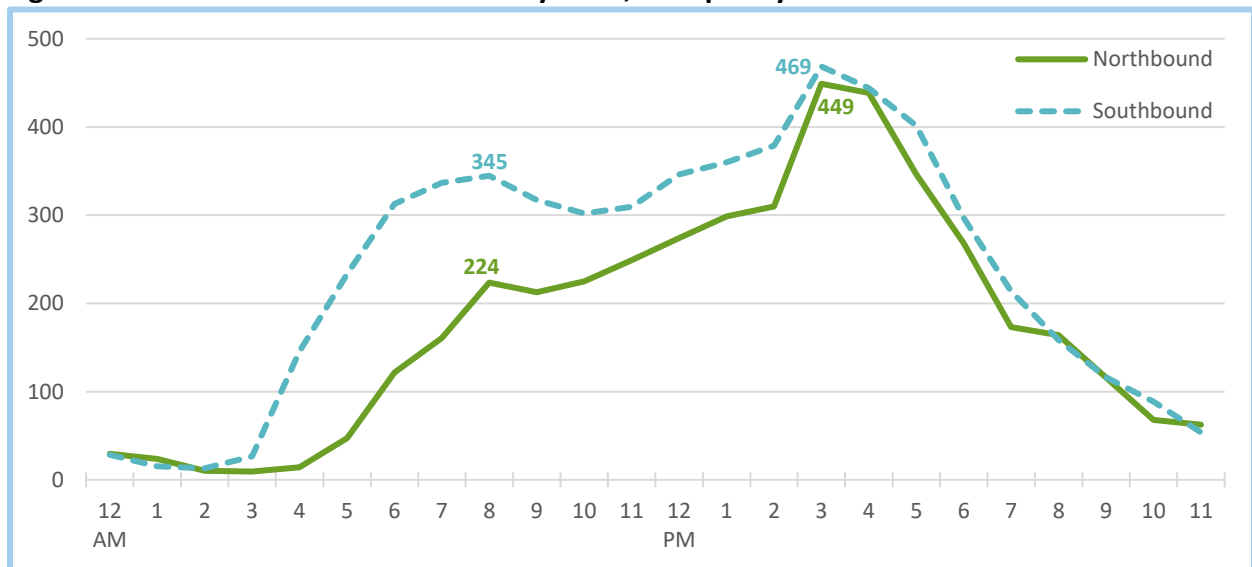
Data collection for this analysis, conducted in June 2022 included daily directional traffic volumes on Kitsap Way and AM and PM peak hour turning movement counts at ten study intersections.

### Daily Vehicle Volumes

Approximately 10,000 vehicles per day use Kitsap Way, south of Burchfield Drive. With two lanes in each direction, Kitsap Way has an estimated capacity of more than 30,000 vehicles per day, meaning that it has excess capacity.

The daily volumes can also provide information on the directional patterns of traffic flow during the day. Traffic volumes are higher in the southbound direction during both AM and PM peak hours. Total volume during the PM peak hour is 60% higher than the AM peak hour. **Figure A-2** shows the existing traffic volume profiles for westbound and eastbound traffic on Kitsap Way.

**Figure A-2: Mid-Week Vehicle Volume by Hour, Kitsap Way at Burchfield Drive**

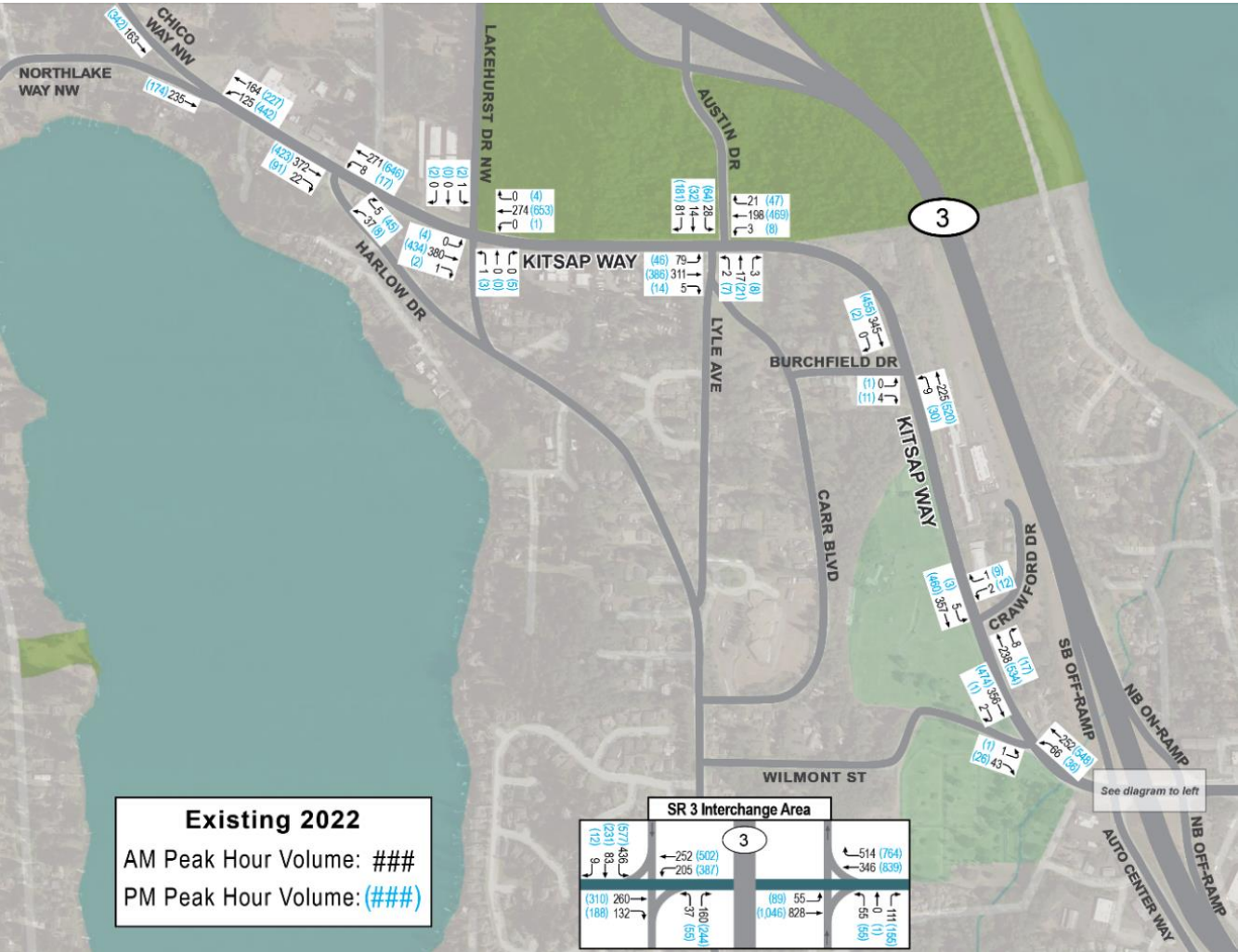




Peak Hour Intersection Vehicle Volumes

Traffic turning movement counts were collected in June 2022 during the morning (AM) and afternoon (PM) peak periods. In the study area, the AM peak hour of traffic volumes occurs between 7:30 AM and 8:30 AM and the PM peak hour occurs approximately between 3:30 PM and 4:30 PM. **Figure A-3** shows the AM and PM hour vehicle turning movement volumes at the study intersections.

**Figure A-3. Existing AM and PM Peak Hour Traffic Volumes**



## Intersection Level of Service Criteria

Intersection level of service (LOS) is a measurement of the traffic flow or traffic congestion at an intersection. Intersection LOS is defined by the average seconds of delay experienced by vehicles traveling through the intersection. The intersection LOS ranges from A to F, with LOS A assigned when minimal delays are present and LOS F when lengthy delays occur. Table A-1 shows the LOS criteria for signalized and unsignalized intersections.

**Table A-1. LOS Criteria for Intersections**

Level of Service	Signalized Intersections Average Delay per Vehicle (seconds)	Stop-Sign Controlled Intersections Average Delay per Vehicle (seconds)
A	0 to 10	0 to 10
B	10 to 20	10 to 15
C	20 to 35	15 to 25
D	35 to 55	25 to 35
E	55 to 80	35 to 50
F	> 80	> 50

Highway Capacity Manual, 6th Edition

The PM peak hour typically carries the highest vehicle volumes and experiences the longer delays. Under existing conditions, all study intersections operate at LOS D or better during both the AM and PM peak hours. **Table A-2** shows the existing AM and PM peak hour intersection LOS and delay at the study intersections.

**Table A-2. Existing Intersection LOS and Delay (Seconds)**

Intersection	Traffic Control	Existing	
		AM Peak Hour	PM Peak Hour
Northlake Way NW-Chico Way NW / Kitsap Way	Yield	A (8)	A (10)
Harlow Drive / Kitsap Way	Stop Sign	B (12)	B (14)
Lakehurst Drive NW / Kitsap Way	Stop Sign	B (14)	C (16)
Austin Drive-Lyle Avenue / Kitsap Way	Stop Sign	C (17)	D (33)
Kitsap Way / Burchfield Drive	Stop Sign	A (9)	B (11)
Kitsap Way / Crawford Drive	Stop Sign	A (7)	B (14)
Kitsap Way / Wilmont Street	Stop Sign	A (10)	B (10)
SR 3 Southbound Off-Ramp-Auto Center Way / Kitsap Way	Signal	C (27)	E (70)
SR 3 Northbound Ramps / Kitsap Way	Signal	B (18)	C (27)

Note: LOS calculated using HCM 6th Edition methodology. Side-street stop delay is calculated for the worst stop-controlled approach.



## Travel Speeds

The posted speed limit on Kitsap Way is 35 mph. Speed data for Kitsap Way was collected at two locations: east of Harlow Drive and south of Burchfield Drive. The Harlow Drive location captures speeds as drivers enter/exit the commercial area, while the Burchfield Drive location records speeds as drivers navigate the large curve on Kitsap Way. Higher speeds were measured at Burchfield Drive and some key findings of the speed study there are:

- More than 26% of drivers travel 10+ mph over the posted speed limit.
- Almost 7% of drivers travel 15+ mph over the posted speed limit.
- Speeds are slightly higher in the northbound direction.

**Table A-3. Vehicle Speeds on Kitsap Way**

Count Location and Direction	Average Speed (mph)	85th Percentile Speed (mph)
Harlow Dr - Westbound	40.8	45.4
Harlow Dr – Eastbound	41.2	46.0
Burchfield Dr – Northbound	42.3	47.6
Burchfield Dr - Southbound	41.9	46.8

## Non-Motorized Facilities

Kitsap Way has limited pedestrian facilities with only 3 small segments of sidewalks scattered throughout the corridor, totaling less than 800 feet. People walking along on West Kitsap Way must use the shoulder areas of the roadway and walk next to vehicle traffic. The 8-foot to 12-foot paved shoulders on both sides of the street are wide, but they do not provide a comfortable walking environment as shoulders are also used by bicycles, for vehicle parking, and by vehicles entering and exiting the flow of traffic at driveways and intersections.

Level of stress is an indicator of how comfortable users are when using pedestrian and bicycle facilities. LTS scores range from low street (LTS 1) to high stress (LTS 4). The analysis follows WSDOT Design Bulletin Designing for Level of Traffic Stress (#2022-01). Under existing conditions, with two travel lanes in each direction without bike lanes or sidewalks and higher vehicle speeds, Kitsap Way has a LTS score of 4. Desired LTS scores are 2 or less.

This project will provide an opportunity to extend and connect the non-motorized transportation system. The City of Bremerton Comprehensive Plan has identified the West Kitsap Way corridor as a part of its Priority Pedestrian network and includes the extension of

### **Kitsap Way By the Numbers:**

- **23** Rating by walkscore.com indicating that most trips require a car.
- **4** The Level of Traffic Stress (LTS) score. Only a small percentage of people feel comfortable walking or biking along the street.

bicycle facilities on Kitsap Way between the SR 3 interchange and Austin Way.

To the north of the Chico Way/Northlake Way intersection, Kitsap County has designated Chico Way as a bicycle route. From the SR 3/Kitsap Way intersection to the east, there are existing or planned bicycle lanes and sidewalks that connect to Downtown and the Ferry Terminal.

## **Transit Routes and Access**

Kitsap Transit Route 212 runs between the Bremerton Transportation Center and Silverdale Transit Center via Kitsap Way, Austin Drive, and Chico Way. There is no transit service on Kitsap Way, west of Austin Drive.

Monday through Friday, Route 212 operates 30 buses in each direction with 30-minute headways, approximately 6:00 AM to 8:30 PM. Saturday service operates 22 buses with 30-minute headways, from approximately 8:30 AM to 6:30 PM. There is no Sunday service, although restoration of Sunday service is planned in the future. Route 212 also serves West Bremerton Transit Center, located on Auto Center Way, and provide connections to three other routes (20, 24, and 26) that serve south, north, and central Bremerton respectively.

Kitsap Way is also served by two Worker/Driver buses that serve the Naval Shipyard in Bremerton. Worker/Driver bus program uses workers at the Naval Shipyard as drivers on specific routes that serve park and ride lots and other selected stops. People who do not work at the shipyard can still ride the buses, departing at a stop before the shipyard gates, such as the Washington State Ferry terminal.

**Figure A-4** shows the existing sidewalks, bike, and transit facilities in the vicinity of the study area.

## **Pavement Condition**

A frequent complaint about the Kitsap Way corridor is the pavement's condition. The roadway was constructed with a series of concrete panels and many of which have a fair to poor condition rating. The joints between panels create bumpy and noisy vehicle travel, and visible cracking has occurred along the joints where an asphalt overlay was applied. Pavement rankings from 2017 study show the Pavement Condition Index (PCI) ratings are all below 65 (on a 100 scale) with the worst segment just east of Austin Drive. The low PCI scores and overall roadway conditions requires roadway reconstruction and lower-cost overlay or restoration options are not viable for Kitsap Way.

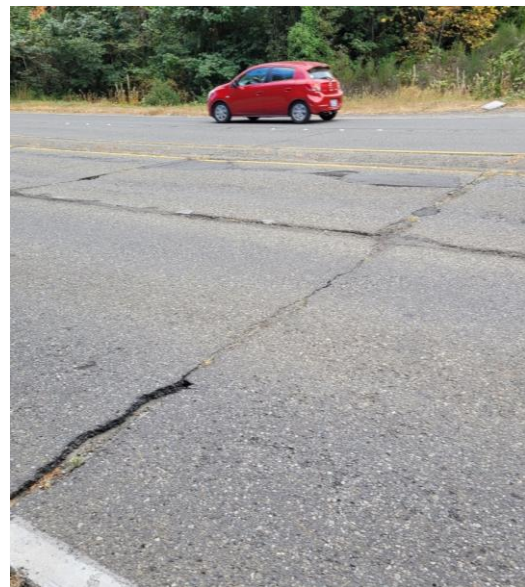
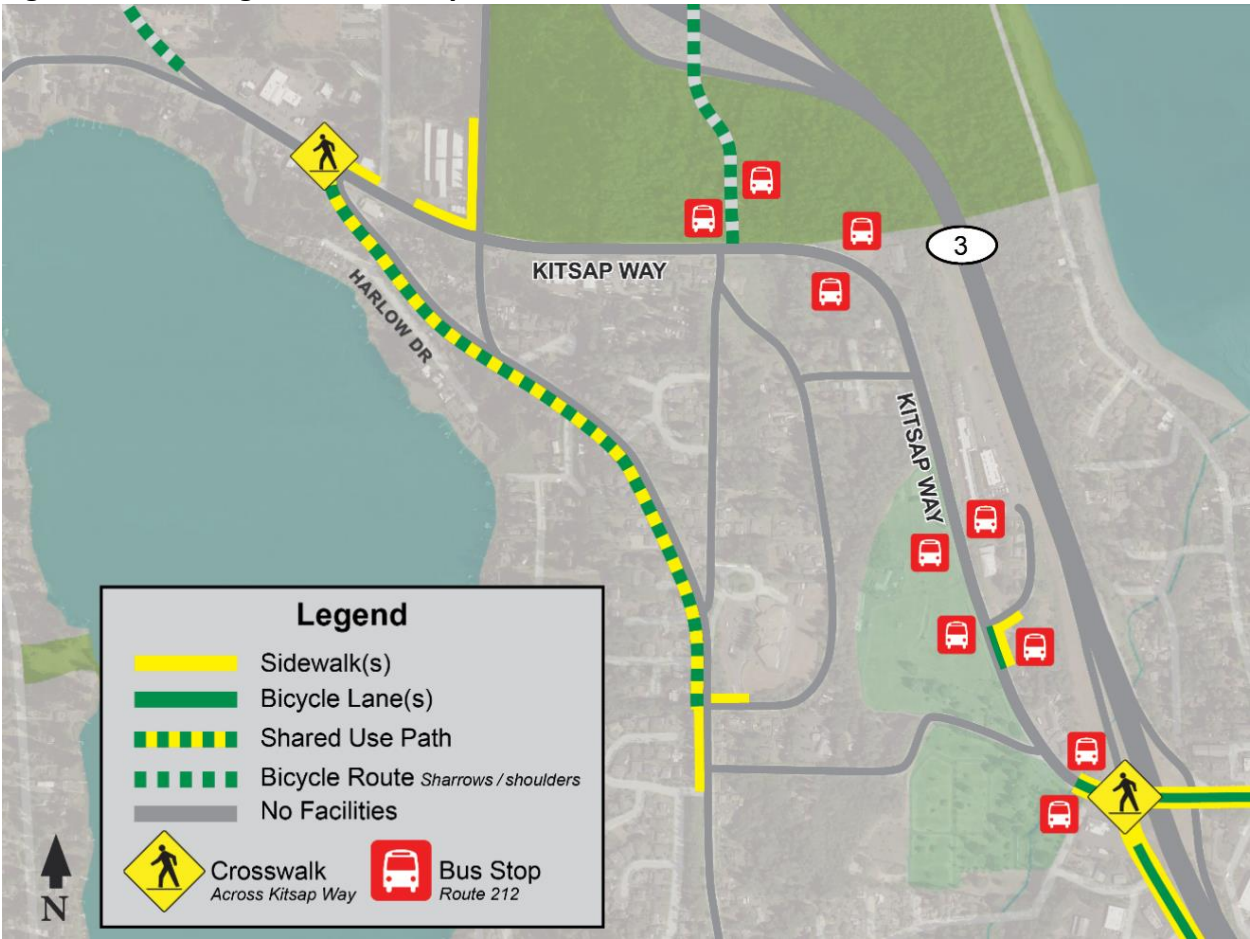


Figure A-4. Existing Sidewalks, Bicycle and Transit Facilities





## **Property Access and Parking**

Most of Kitsap Way does not have public parking and vehicles park in private parking areas for businesses and residential homes. Some informal parking was observed in along shoulder areas and the roadway's right of way is frequently used for business parking within the Kitsap Junction. Near Austin Drive, there is an informal park-and-ride area along Kitsap Way where approximately 15 vehicles can park for up to 10 hours.

### **Kitsap Junction**

Within Kitsap Junction, much of the roadway is devoted to access to property. This creates multiple access points where vehicle-vehicle, vehicle-pedestrians, and vehicle-bicycles conflicts can occur. For example, within the Kitsap Junction approximately 70 percent of the frontage is devoted to access to either parking or to parking areas. This creates multiple points where turning vehicles may conflict, potentially resulting in a crash. Within the district, businesses frequently use city right of way for parking.



### **Residential and Commercial Driveways**

There are multiple driveways with direct access to the corridor, particularly along the south and west side of Kitsap Way. These properties typically do not have an alternative access to other streets and must make turning movements to and from Kitsap Way. In addition, some driveways along the corridor have geometric issues such as steep grades or potential sight distance issues.

## **Roadway Geometrics**

Geometrics refers to the features that affect the safety and operations of a roadway such as the channelization, horizontal and vertical curvature, street alignment, and sight distance.

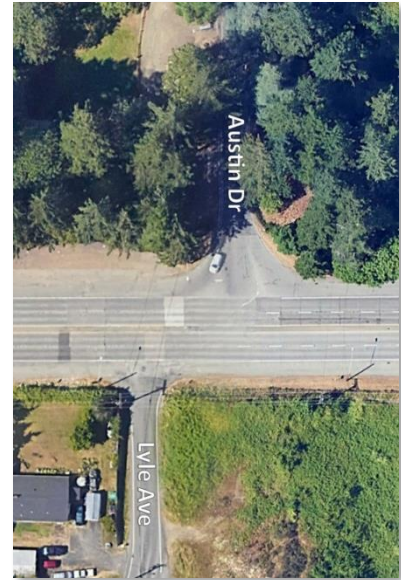
### **Kitsap Way**

The design of Kitsap Way has multiple travel lanes, sweeping curves, wide shoulder areas, and long straight segments with steep grades. There are no pedestrian or bicycle facilities. While the travel lanes are a narrow 10.5 feet wide, the overall design tends to encourage higher speeds. The lack of left turn lanes at intersections requires vehicles to turn from the through travel lane.

## Side Streets

There are multiple issues related to the geometrics of side streets along the corridor. Northlake Way NW and Wilmont Street are not perpendicularly aligned with Kitsap Way allowing vehicles to travel at higher speeds and “cutting the corner” at these intersections. Other streets such as Lakehurst Drive, Lyle Avenue, and Burchfield Drive have steep approaching grades that may affect a driver’s sight lines or vehicle stopping distances when wet or icy.

Side street approaches from the opposite direction are traditionally aligned to form a compact intersection. At the Kitsap Way/Lyle Avenue-Austin Drive intersection (shown at right), the side street approaches are offset by approximately 80 feet. While the two approaches function as a single intersection, the offset requires vehicles crossing or making left turns at the intersection to travel on a longer diagonal path, potentially reducing intersection safety and operations.



## Sight Distance

Sight distance is the driver’s ability to see approaching vehicles and determine if there is a sufficient gap in traffic to make a maneuver. Trees, foliage, topography, and the roadway’s geometrics limit sight distances. Between the intersections at Austin Drive and Burchfield Drive, Kitsap Way makes a 90-degree turn making it difficult to maintain sight lines for approaching driveways and roadways on the south and west sides of Kitsap Way.

For example, the photo to the right shows limited sight distance to the north at the intersection of Kitsap Way and Burchfield Drive. Drivers must pull to the edge of the travel lane to see approaching vehicles.



## Crash Data

The study evaluated reported crash data during the five-year period from January 1, 2015 to December 31, 2019 for segments and intersections on Kitsap Way, from Chico Way NW to the SR 3 Interchange. During this time there were a total of 150 reported crashes, with 114 crashes (75 percent) occurring at or related to intersections and 36 occurring on road segments between intersections. Most (54 percent) of the crashes occurred at the SR 3 interchange where the combination of vehicle volumes and congestion are highest. Overall, the most common types of crashes are rear-end crashes and angle crashes, each with 35 percent of the total. Sideswipe crashes and fixed object crashes together make up another 23 percent of crashes. **Table A-4** summarizes the reported crashes that occurred at intersections by location and type.

**Table A-4. Kitsap Way Historical Crash Data by Intersection (5 Years 2015-2019)**

Intersection	Rear-End	Side-swipe	Angle	Ped/Bike	Other	5-Year Total
Northlake Way/Chico Way-Kitsap Way	2	1	3			6
Harlow Dr/Kitsap Way	1		3	1		5
Lakehurst Dr/Kitsap Way	1	1				2
Austin Dr, Lyle Ave/Kitsap Way	5		4			9
Burchfield Dr/Kitsap Way	5 (1)					5 (1)
Wilmont St/Kitsap Way	2		3 (1)		1	6 (1)
SR 3 SB Offramp/Kitsap Way	14	8	8		2	32
SR 3 NB Ramps/Kitsap Way	16	2	21	1	9	49
<b>Totals:</b>	<b>46</b>	<b>12</b>	<b>42</b>	<b>2</b>	<b>12</b>	<b>114</b>

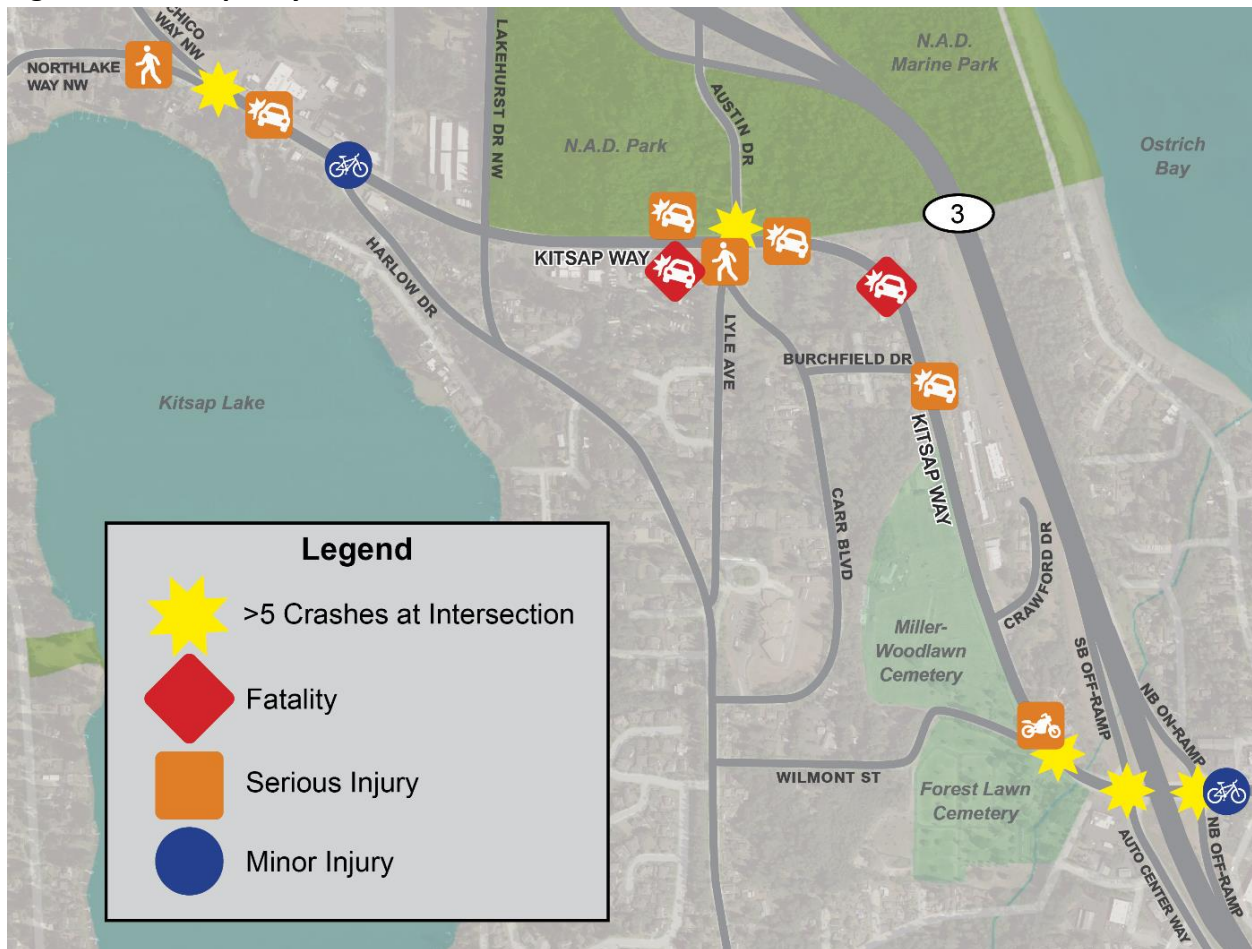
Numbers in parentheses are severe or fatal crashes.

Source: WSDOT data from 1/1/2015 to 12/31/2019. ADT: Average Daily Traffic

There were four severe crashes resulting in suspected serious injury or death, on Kitsap Way during the study period. Two of these crashes, including a fatality, occurred just west of Lyle Avenue/Austin Drive. **Figure A-5** shows the locations of injury, bicycle, and pedestrian crashes along the corridor, including four severe crashes that occurred after the study period (in 2021 and 2022).



Figure A-5. Kitsap Way Crashes



## Summary of Existing Conditions Analysis

Results of the analysis of existing conditions are summarized below:

- Lack of left turn lanes at intersections contribute to corridor crashes.
- Existing roadway design encourages high vehicle speeds.
- The road has daily traffic of about 10,000 and a capacity of 30,000 vehicles.
- Lack of non-motorized facilities discourages use by pedestrians and bicycles.
- Limited access control creates conflicts for motorized and non-motorized users.
- Pavement condition is unacceptable and rebuild of roadway is anticipated.
- Corridor lacks effective stormwater facilities and treatment.