

# Indianola Community Traffic Study

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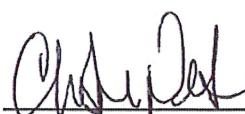
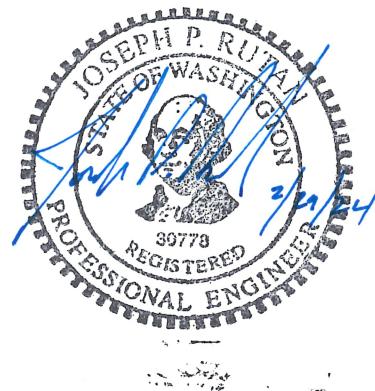
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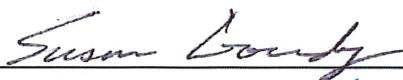


**CERTIFICATION**

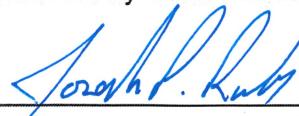
The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.



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## List of Abbreviations

AASHTO	American Association of State Highway Transportation Officials
FHWA	Federal Highway Administration
LOS	Level of Service
ADT	Average Daily Traffic
MUTCD	Manual on Uniform Traffic Control Devices
NCHRP	National Cooperative Highway Research Program
WSDOT	Washington State Department of Transportation

## Executive Summary

On November 7, 2023, Commissioner Christine Rolfs and members from the Kitsap County Commissioner's Office, Public Works, and the Kitsap County Sheriff's Office Traffic Safety Division attended a community meeting in Indianola, WA. The purpose of the meeting was to discuss citizen concerns pertaining to area speeding, intersection operations, and pedestrian safety. Primary concerns raised at the meeting by citizens included:

- intersection visibility at Indianola Road and Kitsap Street,
- intersection visibility at Indianola Road and South Kingston Road,
- speed limits on Indianola Road from west of Kitsap Street thru Evergreen Avenue,
- inconsistent speed limits on Seaview Avenue,
- need for speed humps to control speeding on Indianola Road, Kitsap Street, Kingston Street, Gerald Cliff Drive, and William Rogers Road,
- need for additional signing on Indianola Road,
- need for all-way stop control at the Indianola Road and Kitsap Street intersection,
- need for all-way stop control at the Indianola Road and South Kingston Road intersection,
- need for marked crosswalk across Indianola Road at the Kitsap Street intersection,
- flare on southwest corner of Indianola Road at Kitsap Street intersection promotes high speed right-turn movements,
- pedestrian safety on Kitsap Street south of Indianola Road.

The purpose of this study is to address the concerns listed above. This traffic study evaluated intersection control warrants at 2 intersections, reviewed minimum qualifying criteria for speed hump installation on multiple roadways, confirmed intersection line of sight distances at 2 intersections, and reviewed the design of the right-turn corner at the Indianola Road and Kitsap Street intersection. This study also reviewed the Indianola Road speed limits, Indianola Road collision history, and Indianola Road roadway signing. The recommended actions resulting from the analysis and review of the community concerns are presented in Table 1.

**Table 1 - Recommended Actions**

Item	Recommendation
Indianola Rd Speed Limits	Change the posted speed limit on Indianola Road, beginning at 400 feet north of Kitsap St, continuing south to 135 feet south of NE Evergreen Ave, to 30 mph (see Appendix E for Indianola Road Speed Limit Maps)
Indianola Rd Additional Signing	Install orange diamonds on the Indianola Rd 30 mph speed limit signs in the eastbound direction west of Kitsap St. Continue community conversation on types of Indianola welcome signage.
Seaview Ave Speed Limit	Extend the 20-mph speed limit zone on Seaview Avenue to the entire length of the roadway.
Indianola Rd Marked Crosswalk	Evaluate crosswalk warrants for marked crosswalk across Indianola Rd at Kitsap St during peak pedestrian season (summer of 2024).
Speed Humps	Indianola Rd, Kitsap St, Kingston St, Gerald Cliff Dr, and William Rogers Rd are not eligible for speed hump installation based on Kitsap County Road Standards minimum qualifying criteria. Currently, these roads either do not have 25% of the existing traffic travelling at least 10-mph over the posted speed limit, or the grade exceeds 8%.
Intersection Traffic Control	Retain 2-way stop control at Indianola Rd & Kitsap St. intersection. Retain 2-way stop control at Indianola Rd & South Kingston Rd intersection. Continue to monitor locations.
Traffic Safety	No action - currently, there are no roadway segments, intersections or driveways within the Indianola community that are included in the County 2017-2021 Safety Lists warranting mitigation. Continue to monitor collision patterns.
Intersection Operations	No action - the stop-controlled approaches on Kitsap Street at the Indianola Road intersection are operating at acceptable levels of service. Continue to monitor intersection operations.
Intersection Geometry	Retain current intersection geometry at the Indianola Rd & Kitsap St intersection to accommodate transit bus turn maneuvers.
Indianola Rd Intersection Visibility	No action - no additional warning signs or supplemental advisory speed plaques are recommended based on roadway geometry.

## 1 Introduction

On November 7, 2023, Commissioner Christine Rolfs and members from the Kitsap County Commissioner's Office, Public Works, and the Kitsap County Sheriff's Office Traffic Safety Division attended a community meeting in Indianola, WA. The purpose of the meeting was to discuss citizen concerns pertaining to area speeding, intersection operations, and pedestrian safety. Primary concerns raised at the meeting by citizens included:

- intersection visibility at Indianola Road and Kitsap Street,
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- speed limits on Indianola Road from west of Kitsap Street thru Evergreen Avenue,
- inconsistent speed limits on Seaview Avenue,
- need for speed humps to control speeding on Indianola Road, Kitsap Street, Kingston Street, Gerald Cliff Drive, and William Rogers Road,
- need for additional signing on Indianola Road,
- need for all-way stop control at the Indianola Road and Kitsap Street intersection,
- need for all-way stop control at the Indianola Road and South Kingston Road intersection,
- need for marked crosswalk across Indianola Road at the Kitsap Street intersection,
- flare on southwest corner of Indianola Road at Kitsap Street intersection promotes high speed right-turn movements,
- pedestrian safety on Kitsap Street south of Indianola Road.

The purpose of this study is to address the concerns listed above. This traffic study will evaluate intersection control warrants at 2 intersections, review minimum qualifying criteria for speed hump installation on multiple roadways, confirm intersection line of sight distances at 2 intersections, and review the design of the right-turn corner at the Indianola Road and Kitsap Street intersection. This study will also review the Indianola Road speed limits, Indianola Road collision history, and Indianola Road roadway signing.

## 2 Background

Indianola is a small rural community in unincorporated Kitsap County. The community is located on the north shore of Port Madison on the Port Madison Indian Reservation, home of the Suquamish Indian Tribe. Figure 1 is a vicinity map.



Figure 1 - Vicinity Map

The current population of Indianola is around 3,600 people. Development of the community began in 1916 with the construction of a ferry dock. At that time, the primary means of reaching the community was via the water. In 1939 a road was completed that connected Indianola to Suquamish. The area around Indianola is primarily zoned rural reserve or tribal land. Figure 2 shows a zoning map of the area.

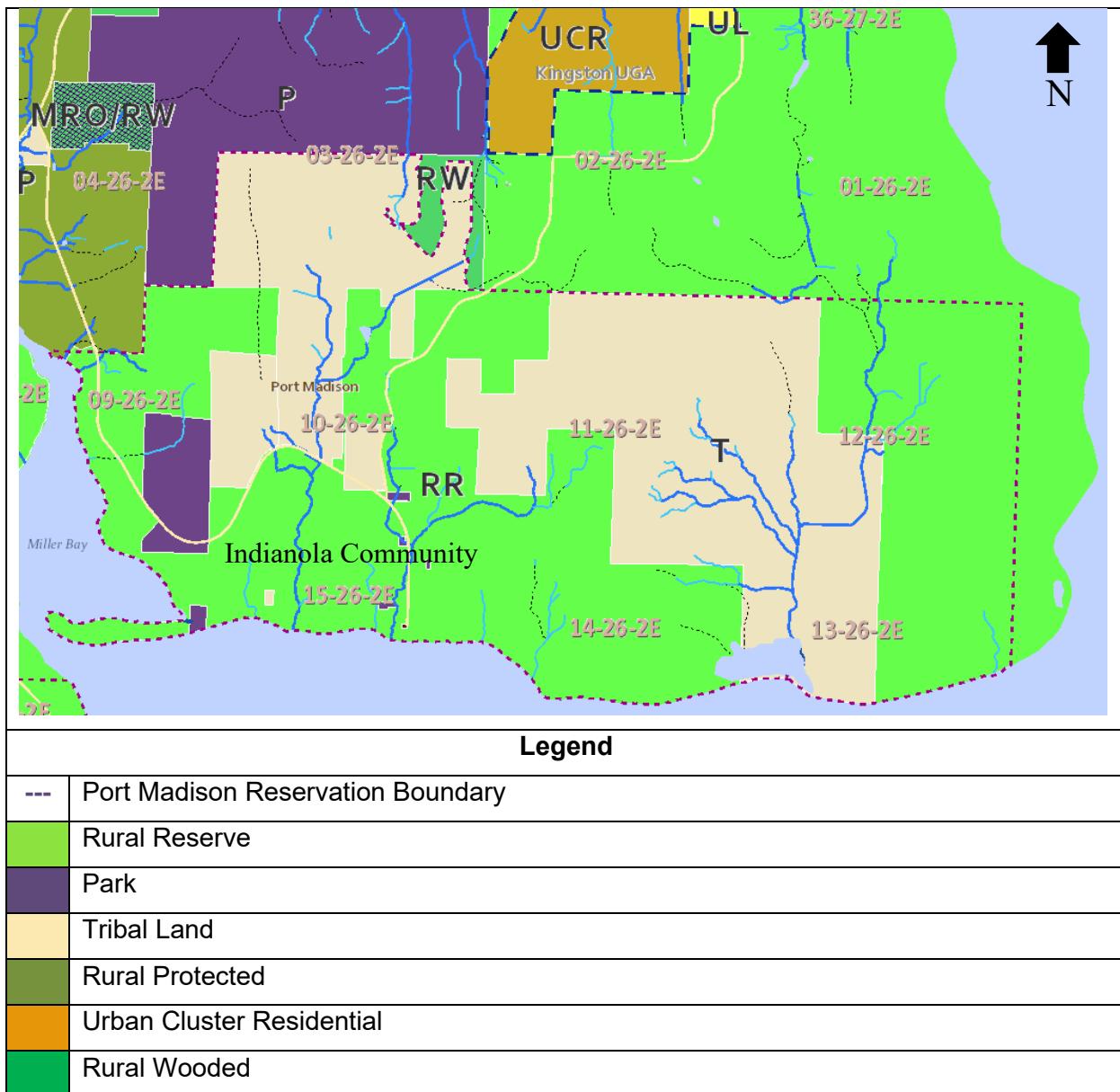


Figure 2 - Zoning Map

## 2.1 Community Access

Today, access to the Indianola community is served by Indianola Road and South Kingston Road. Indianola Road extends from Miller Bay Road to Shore Drive for a total distance of 3.230 miles. Indianola Road is a two-lane roadway with a federal functional classification of rural minor collector. South Kingston Road extends from Indianola Road to West Kingston Road for a total distance of 3.857 miles. South Kingston Road is a two-lane roadway with a federal functional classification of rural minor collector. All other roadways within the Indianola community are considered rural local roads. Figure 3 shows the WSDOT Functional Classification Map for the Indianola community.

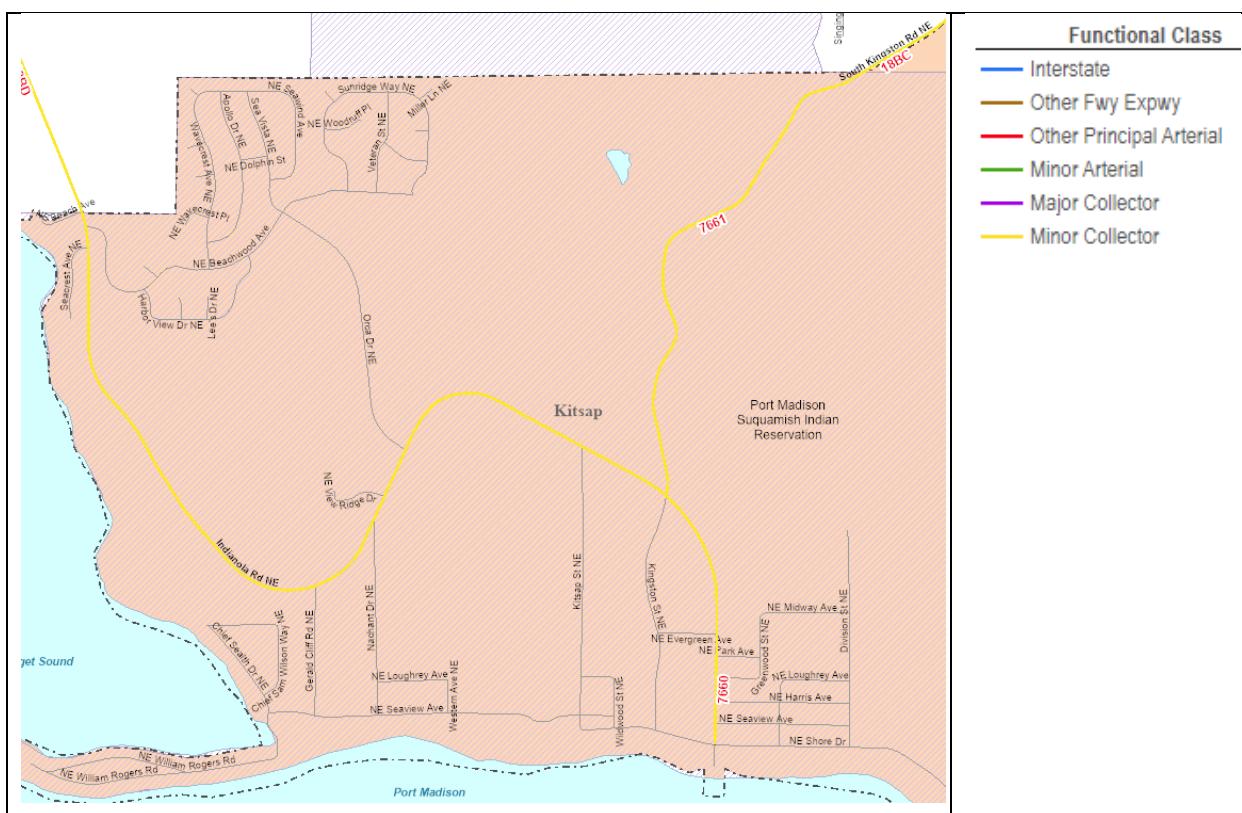
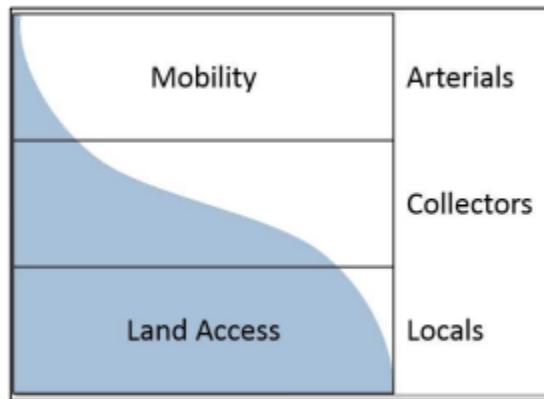


Figure 3 - WSDOT Functional Classification Map

Functional classification is the grouping of highways, roads, and streets by the character of service they provide. All public roads are classified in accordance with Federal Highway Administrative directives. The primary functions of roads are to provide for mobility and access and the functional classification system creates a hierarchy of classified roads (see Figure 4).



**Figure 4 - Traffic Mobility Versus Access**

Arterials are on the upper end of the scale and designed to provide a high degree of mobility and little direct property access for the longer trip length and are generally designed for higher speeds. On the other end of the scale are local roads which provide a high degree of access by way of numerous driveways to adjacent lots and have lower design speeds. Collectors serve a dual function by accommodating shorter trips and by feeding the arterials. Collector roads generally have more traffic on them, and the speed limits can be higher than local roads.

## **2.2 Bicycle/Pedestrian/Transit**

The Kitsap County Non-Motorized Facilities Plan identifies opportunities for bikers, walkers, and all persons with "connections within communities" and "connections between communities". The Plan goals are:

- Recognize mobility needs of everyone,
- Identify differences between rural and urban areas,
- Make connections within communities (i.e., schools, parks, and services),
- Make connections between communities within Kitsap County,
- Promote recreational uses.

The Kitsap County Non-Motorized Facility Plan identifies Indianola Road and South Kingston Road as non-motorized routes.

Presently, Kitsap Transit operates Route #302 along Indianola Road, Kitsap Street, and Shore Drive within the Indianola community.

No studies were conducted to count average daily pedestrian or bicycle volumes on Indianola Road within the study area due to time of year the study is being performed. Kitsap County Traffic Division is planning to perform counts during the summer months in 2024.

### 3 Indianola Community Concerns

This section of the study will address the various concerns raised by community members regarding speeding and speed limits, collision history, intersection visibility, intersection control, pedestrian safety, and roadway signing.

#### 3.1 Speed Humps

There was a good deal of interest at the November 7, 2023, community meeting for speed tables throughout the community of Indianola. Indianola Road is classified as a minor collector and not eligible for speed humps per the Kitsap County Road Standards Section 9. The Neighborhood Traffic Calming Program applies to local roadways. The County performed standard 24-hour speed studies from November 14, 2023, to November 15, 2023, on the following roads based on citizen requests:

- Kitsap Street South of Indianola Road
- Kingston Street south of Indianola Road
- Gerald Cliff Drive
- William Rogers Road

Gerald Cliff Drive is not eligible for speed hump installations due to the longitudinal slope exceeding the maximum allowed of 8%.

Speed data collected on Kitsap Street, Kingston Street and William Rogers Road did not satisfy the minimum qualifying criteria for speed hump installation. 25% of the existing traffic traveling on the roads must be traveling at least 10-mph over the posted speed limits to qualify for speed humps. Also, the average daily traffic (ADT) must be between 200-3000 vehicles. Table 2 below summarizes that speed study data collected on the roadways. Appendix A contains the speed studies performed on the roadways.

**Table 2 - Speed Data Summary**

Road Name	Location	Average Daily Traffic Volume	Posted Speed (mph)	85 <sup>th</sup> percentile speed (mph)	25% traveling 10 mph over posted?
Kitsap St	South of Fir St	271	25	28.3	0%
Kingston St	South of Spruce St	143	25	21.7	0%
Gerald Cliff Dr	North of Seaview Ave	432	25	30.0	3.5%
Will Rogers Rd	7298	195	25	22.4	0%

For more information on the Kitsap County Neighborhood Traffic Calming Program see Section 9.5 of the Kitsap County Road Standards.

### **3.2 Seaview Avenue Speed Limits**

The posted speed limit on Seaview Avenue between Chief Sealth Drive/William Rogers Road and Gerald Cliff Road is 25 mph. A speed study was performed on November 14, 2023, to November 15, 2023, on Seaview Avenue west of Gerald Cliff Drive. The speed study indicated that the 85<sup>th</sup> percentile speed was 24.0 mph, the mean speed was 19.6 mph, and the 10-mile pace speed was 15 to 24 mph. Based on the data collected, it is recommended that the speed limit for this section of Seaview Avenue be reduced to 20 mph to match the posted speed limit on Seaview Avenue east of Gerald Cliff Drive.

### **3.3 Intersection Traffic Control**

The local community also expressed a great deal of interest in converting the two-way stop control to all-way stop control at the intersections of Indianola Road and Kitsap Street and Indianola Road and South Kingston Road. The Traffic Division evaluated the intersections for all-way stop control installation based on guidance from the Manual on Traffic Control Devices. The Manual on Uniform Traffic Control Devices (MUTCD) for streets and highways is a document issued by the Federal Highway Administration of the United States Department of Transportation to specify the standards by which traffic signs, road surface markings, and signals are designed, installed, and used. The MUTCD states that Yield and Stop signs should not be used for speed control.

Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multiway stops are road users expecting other road users to stop. For this reason, multiway stop control is used where the volume of traffic on the intersecting roads is approximately equal, or where a multiway stop is an interim measure that can be justified based on reported crashes in a 12-month period that are susceptible to correction by multiway stop installation.

Recently collected traffic volumes and collision data was evaluated to determine if the locations meet the MUTCD criteria for change in intersection control. Based on MUTCD guidance, all-way stop control is not warranted at either intersection. Appendix B contains the multi-way stop analysis worksheets. The County will continue to monitor the need for change in intersection traffic control.

### **3.4 Traffic Safety**

The Kitsap County Comprehensive Plan is a 20-year blueprint for local policy, planning, and capital facility investment. The plan includes County vision statements, goals, objectives, policies, and implementing actions. The adopted framework is intended to guide the day-to-day decisions of elected officials and local government staff. The Transportation element of the plan includes transportation policies to reduce transportation-related deaths and serious injury crashes to support Washington's Target Zero objectives. Target Zero is a data-driven, long-term plan to identify priorities and solutions, create goals and develop a common understanding among the agencies working to keep Washingtonians safe. The Washington State Department of Transportation (WSDOT) along with other agencies use it to:

- Set statewide priorities over the next three to four years.
- Identify different strategies for addressing each emphasis area and factor.

- Help guide federal and state project funding toward the highest priorities and most effective strategies.
- Monitor statewide outcomes for each priority area.

Kitsap County Traffic Division supports the Comprehensive Plan be reviewing all reported roadway collisions annually. The review encompasses a 5-year period and includes a systemic analysis and detailed review of specific safety locations. The county traffic safety efforts are aligned with *The Washington State Strategic Highway Safety Plan 2019* and Target Zero Priorities. By identifying locations with calculated risk factors and proactively applying known countermeasures for focused collision types, the County's goal is to reduce the number and severity of all roadway collisions. Countermeasures can range from low-cost mitigation to capital projects. The County uses a multi-step prioritization process to develop high priority intersection, segment, and driveway safety lists that are then used to prioritize projects in the 6-Year Transportation Improvement Project scoring. Currently, there are no roadway segments, intersections or driveways within the Indianola community that are included in the County 2017-2021 Safety Lists.

All reported motor vehicle collisions from April 13, 2018, to April 13, 2023, that occurred on Indianola Road between Miller Bay Road and Shore Avenue were analyzed by type and frequency. Within the 40-mph posted speed limit section of Indianola Road from Miller Bay Road to 400 feet north of Kitsap Street, there were a total of 16 collisions; 7 fixed-object, 5 rear-end, 2 opposite direction, 1 deer, and 1 angle. Review of contributing circumstances indicated that none of the collisions were speed related, 4 were driving under the influence, 2 inattentions, 1 over centerline, 1 illness, 1 following too close, and 7 other or no contributing circumstance listed.

For the same period, there were a total of 4 collisions on Indianola Road from 400 feet north of Kitsap Street to Shore Avenue. This section of Indianola Road has posted speeds of 35, 30 and 20 mph. One of the collisions was angle, 2 was rear-end, and 1 was fixed object. The contributing circumstances included 1 speeding, 1 driving under the influence, 1 distracted driving, and 1 improper maneuver. Based on the safety review, no new safety mitigation is supported at this time. Appendix C contains a table that summarizes the Indianola Road 5-year collision history. The County will continue to monitor roadway safety.

### **3.5 Intersection Operations**

The Traffic Division monitors the operations of the Indianola Road at South Kingston Road intersection. Peak hour turning movement data is collected on a 3- to 5-year cycle. The intersection was counted most recently on October 7, 2019, and is due to be recounted in 2024. The stop control on the South Kingston Road approach was operating at an acceptable level of service (LOS) B during the 2019 PM peak hour.

24-hour traffic counts were recently collected on all legs of the South Kingston Road and Indianola Road intersection. Comparison of the PM peak hour volumes from the 2023 counts to those collected in 2019 show no significant change in volumes. Based on no significant changes in traffic volumes, it can be concluded that the intersection currently operates at an acceptable LOS. Appendix D contains the 2019 intersection LOS report.

The intersection of Indianola Road at Kitsap Street is not currently monitored by the County. The Traffic Division currently only monitors higher functional intersections (arterial/arterial, arterial/collector, and collector/collector). 24-hour traffic counts were recently collected on all legs of the Indianola Road at Kitsap Street intersection. The data collection showed that the PM

peak hour traffic on the Kitsap Street approaches to Indianola Road is significantly lower than PM peak hour traffic on the South Kingston Road approach to Indianola Road. Therefore, it is safe to conclude that the stop-controlled approaches on Kitsap Street at the Indianola Road intersection are operating at acceptable levels of service. County will continue to monitor intersection operations as the Arborwood development to the north of Indianola is built out.

### **3.6 *Intersection Geometry***

At the community meeting a request was made to tighten up the turning radius on the southwest corner of the Indianola Road at Kitsap Street intersection to slow the speed of turning vehicles. The geometric design of an intersection requires identifying and addressing the needs of all intersection users. The corner radius must meet the needs of the largest vehicle making the turn on a regular basis.

Kitsap Transit uses Kitsap Street for the Kingston/Suquamish Fast Ferry Route #302. Within the Indianola community, Route #302 runs east on Indianola Road, south on Kitsap Street, east on Shore Drive, and north on Indianola Road. The pavement radius on the southwest corner of the Indianola Road and Kitsap Street intersection is designed to accommodate the turning movements of the transit bus. Reducing the corner radius would result in the transit bus encroaching into oncoming travel lanes or roadway shoulder to make the right turn at the intersection.

Based on the largest vehicle making the right turn on a regular basis, no change to the corner radius on the southwest corner of the Indianola Road at Kitsap Street intersection is recommended at this time.

### **3.7 *Kitsap Street Pedestrian Safety***

Several citizens at the community meeting also expressed concern over their ability to safely walk on local roads in Indianola. Kitsap Street approaching the intersection of Indianola Road was of particular concern. Kitsap Street south of Indianola is a local rural road with 20-feet of asphalt pavement and 0–2-foot gravel shoulders.

A request was made for wider shoulders on Kitsap Street approaching Indianola Road so that pedestrians could walk opposite direction of traffic without being surprised by a right turning vehicle from Indianola Road. Any widening of the shoulder would require extensive grading and redesign of the ditches on both sides of the roadway. Also, Kitsap Street does not appear to be constructed to the center of the right of way (see Figure 5 and Figure 6 below) and widening of the shoulders may require land acquisition.

Any roadway or shoulder widening outside of regular roadway maintenance activities would result in a capital project. All proposed capital projects must be scored and compete against all other county projects for available funding as part of the 6-Year Transportation Improvement Program.



**Figure 5 - Kitsap Street south of Indianola Road**



**Figure 6 - Indianola Road at Kitsap Street Intersection**

A 24-hour traffic count was performed on Kitsap Street south of Indianola Road from November 14, 2023, to November 15, 2023. The count showed Kitsap Street has an average daily traffic volume of 376 vehicles. The count also showed that the 85<sup>th</sup> percentile speed is 28.3 mph. Based on this information, Kitsap Street is considered a very low volume, low speed roadway per AASHTO guidelines. Roadways with low volumes and familiar users encourage slow speeds and respectful meeting and passing events with a narrow roadway.

### ***3.8 Indianola Road Marked Crosswalk***

The County has received requests for a marked crosswalk with supplemental rectangular rapid flashing beacons across Indianola Road at the Kitsap Street intersection. The citizens feel the Indianola community would greatly benefit from the marked crosswalk and it would remind drivers to slow down.

The County relies on the Manual of Uniform Traffic Control Devices (MUTCD) for guidance on the use of traffic control devices on all county roadways. It is the national standard for signing, markings, and traffic control devices. The MUTCD is clear about overuse of signs and inappropriate use of markings and traffic control devices. Installation of unwarranted signs, markings or traffic control devices only leads to drivers ignoring appropriately installed signing, markings, and traffic control devices.

The County has a practice of marking crosswalks when warranted. Crosswalks are not a safety device. The placement of marked crosswalks at uncontrolled intersections is not always a good idea and can give pedestrians a false sense of safety. They should be installed to direct pedestrians where to cross and should connect to a pedestrian access route. Minimum pedestrian crossing volumes must be met before crosswalk markings are considered. The County will perform a pedestrian count during the peak of the summer months in 2024 to determine if a marked crosswalk across Indianola Road at Kitsap Street can be supported.

### ***3.9 Indianola Road Intersection Visibility***

Sight distance is the length of roadway ahead that is visible to the driver. Two different sight distance types, stopping and intersection, were measured at the intersections of Indianola Road at Kitsap Street and Indianola Road at South Kingston Road.

Stopping sight distance is the distance required for a vehicle traveling at or near the design speed to react and stop before reaching an object in its path. The driver approaching an intersection should have an unobstructed view of the entire intersection for a sufficient distance to permit the driver to react and to stop, if necessary, to avoid potential collisions.

Intersection sight distance is defined as the distance a motorist can see approaching vehicles from a stop position on the minor approach of an intersection. A driver entering an intersection from a minor approach should have an unobstructed view of the major roadway approach for a sufficient distance to permit the driver on the minor road to anticipate and avoid potential collisions.

To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable. However, they are not always achievable. If the available intersection sight distance for the entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. When stopping sight distance for the major road is not available, then cross street

warning signs with appropriate speed advisory plaques are installed to warn approaching drivers of the conditions.

The stopping sight distances along Indianola Road were measured using methods published in the AASHTO A Policy on Geometric Design of Highways and Streets. The stopping sight distance is the sum of the brake reaction distance and the braking distance. Values are based on an object height of 2.0 feet and a driver's eye height of 3.5 feet. A summary of the measurements and standards are in Tables 3 and 4.

**Table 3 - Indianola Road at Kitsap Street Stopping Sight Distance**

Approach Direction	Posted Speed (mph)	Grade (%)	AASHTO Stopping Sight Distance* (ft)	Measured Stopping Sight Distance (ft)	Sufficient? (Yes/No)
Westbound Indianola Road	35	+3%	237	688	Yes
Eastbound Indianola Road	35	+6%	229	278	Yes

\*Recommended sight distance minimums taken from *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2018

**Table 4 - Indianola Road at South Kingston Road Stopping Sight Distance**

Approach Direction	Posted Speed (mph)	Grade (%)	AASHTO Stopping Sight Distance* (ft)	Measured Stopping Sight Distance (ft)	Sufficient? (Yes/No)
Westbound Indianola Road	30	+6%	184	436	Yes
Eastbound Indianola Road	30	-6%	215	342	Yes

\*Recommended sight distance minimums taken from *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2018

Intersection sight distance was evaluated using the methods published in the Kitsap County Road Standards and AASHTO's A Policy on Geometric Design of Highways and Streets. When evaluating the sight distance at an intersection, AASHTO recommends using a minimum setback distance from the travel way to the driver's vantage point of 14.5 feet, an eye height of 3.5 feet and an object height of 3.5 feet. At existing intersections WSDOT allows the setback to be reduced to a minimum of 10 feet. Table 5 and Table 6 include a summary of the two intersection sight distance measurements and standards for the stop-controlled approaches measured from 10 feet back of edge of travel lane.

**Table 5 - Indianola Road at Kitsap Street Intersection Sight Distance**

Approach	Turn Maneuver	Intersection Sight Distance		AASHTO Stopping Sight Distance	Sufficient? (Yes/No)
		AASHTO* 35 mph	Measured Distance (10-ft setback)		
Northbound Kitsap Street	Left	390	807	237	Yes
	Thru/right	335	280	229	Yes
Southbound Kitsap Street	Left	390	325	229	Yes
	Thru/right	335	786	237	Yes

\*Recommended sight distance minimums taken from *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2018

**Table 6 - Indianola Road at South Kingston Road Intersection Sight Distance**

Approach	Turn Maneuver	Intersection Sight Distance		AASHTO Stopping Sight Distance	Sufficient? (Yes/No)
		AASHTO* 30 mph	Measured Distance (10-ft setback)		
Northbound Kingston Street	Left	335	326	184	Yes
	Thru/right	290	495	215	Yes
Southbound S. Kingston Road	Left	335	314	215	Yes
	Thru/right	290	225	184	Yes

\*Recommended sight distance minimums taken from *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2018

While the desired AASHTO intersection sight distances are not achieved for all movements, the measured intersection sight distances do exceed the major roadway stopping sight distances. Advance intersection warning signs with supplemental speed advisory plaques are not required on the Indianola Road approaches at either intersection.

There is an existing intersection warning sign with a supplemental 30 mph speed plaque installed in the eastbound direction on Indianola Road approaching the Kitsap Street intersection. The purpose of the sign (see Figure 7) is to advise drivers of an appropriate travel speed for the limited available sight distance. This sign was likely installed when Indianola Road had the 40-mph speed limit on this section of the roadway. The 30-mph speed advisory speed plaque can be removed.



Figure 7 - Intersection Warning Sign

The MUTCD states that the use of intersection warning signs shall be based on an engineering study or engineering judgement. The use of warning signs should be kept to a minimum as the unnecessary use of warning signs tends to breed disrespect for all signs. Warning signs are used to call attention to an unexpected condition. In addition to the intersection warning sign on Indianola Road west of Kitsap Street, the County has also installed an intersection warning sign on eastbound Indianola Road west of Kingston Street. No supplemental speed advisory plaque is required on this sign.

Based on the intersection sight distance and stopping sight distance conditions at the Indianola Road at Kitsap Street, and Indianola Road at South Kingston Road intersections, no additional warning signs or supplemental advisory speed plaques are recommended at this time.

### **3.10 Indianola Road Speed Limits**

In 1976 the speed limit for the entire length of Indianola Road was 40 mph. In 1985 the section from South Kingston Road to south of Shore Drive was lowered to 20 mph. In 2013 at the community's request and with their support, the Traffic Division reviewed the speed limits on Indianola Road and implemented the following speed limits:

- 35 mph from Kitsap Street to South Kingston Road
- 30 mph from South Kingston Road to 135 feet south of Evergreen Avenue

The decision to adjust the posted speed limit up from 20 mph to 30 and 35 mph was to address the speed differentials between the posted speeds and the 85<sup>th</sup> percentile speeds measured from speed studies. The speed data collected showed the 85<sup>th</sup> percentile speeds were 13 to 18 mph over the posted speeds. Table 7 summarizes the speed data collected over the years at multiple locations along Indianola Road.

**Table 7 - Indianola Road Speed Data**

<b>Location</b>	<b>Year</b>	<b>Average Daily Traffic Volume</b>	<b>Posted Speed (mph)</b>	<b>85<sup>th</sup> Percentile Speed (mph)</b>
North of Spruce Street	2018	1772	30	37.5
	2009	1661	20	35.4
	2012	1431	20	32.9
	2023	1444	30	39.6
South of South Kingston Road	2012	2211	20	37.5
	2015	2630	35	39.4
	2019	2634	35	39.6
	2023	2384	35	40.5
West of South Kingston Road	2012	2493	40	48.8
	2023	2716	40	47.7
West of Kitsap Street	2019	2984	40	47.4
	2023	2654	40	47.1
North of Nachant Drive				

Many community members have expressed a desire to lower the posted speed limits on Indianola Road once again. A misconception from many citizen complaints is the expectation that if the speed limit is lowered, it will stop the speeding. That is rarely the case. Studies show that lowering the speed limit 5 to 10 mph generally only lowers the average speed about 2 mph. Speed data listed in Table 7 shows that lower speed limits did not result in driver compliance to the posted speed limit signs, and changing speed limits did not significantly change driver behavior. Artificially low speed limits lead to poor compliance, large variations in traffic stream speeds, and create more conflicts and passing maneuvers that can lead to accidents.

The County uses the Engineering Approach to set a rational speed limit. The Engineering Method is based on the 85<sup>th</sup> percentile speed with adjustments for roadside development, accident experience, and roadside geometrics. Setting the speed limits based on the 85<sup>th</sup> percentile speed was originally based on safety. Drivers tend to select operating speeds based on the visual scene presented to them. Speed limits are only meaningful if most motorists comply voluntarily and that occurs only if a speed limit is reasonable.

Speed limit signs must be placed correctly to ensure a speed limit is enforceable and to encourage compliance. The preferred location for the beginning and ending points of speed zones is where there are changes in roadside development. It is also important to encompass important road intersections, major land use generators, or residential developments. The length of a speed zone should a minimum of 0.2-0.5 miles. Currently the 35-mph speed zone transition length is 0.19 miles, and the 30-mph speed zone transition length is 0.38 miles.

Upon review of the Indianola Road speed studies, the roadway geometry, and length of the current 35-mph speed transition zone, consideration should be given to lowering the posted speed, beginning 400 feet north of Kitsap Street, continuing south to 135 feet south of Evergreen Avenue to 30 mph. This change will result in a single speed transition zone of 30-mph for a total length of 0.56 miles. Appendix E contains existing and proposed Indianola Road speed limits maps.

### **3.11 Indianola Road Additional Signing**

Several citizens at the November 7, 2023, community meeting requested additional signing along Indianola Road in the vicinity of the Kitsap Street and South Kingston Road intersections. The County heard complaints about the sign sequencing and lack of “Hidden Drive” signs on Indianola Road along this stretch of road.

The Traffic Division reviewed all signs and their sequencing on this stretch of Indianola Road for compliance with the MUTCD guidance. The MUTCD does not include “Hidden Drive” signs as they are not universally understood.

The County has installed a radar speed sign on Indianola Road south of Spruce Avenue at the transition from the 30 mph to 20 mph speed zone. Before the installation of an additional radar speed sign, other lower cost mitigations must be warranted and tried. The Traffic Division has a practice of implementing improvements incrementally based on need and priority. To call attention to changes in the posted speed limits on Indianola Road, orange diamonds will be installed on the 30 mph speed limit signs.

Members of the community have expressed ideas about various types of gateway community signage. The County will continue conversations with the community and Suquamish Tribe for types of Indianola welcome signage.

## 4 Recommended Actions

The purpose of this study was to address the concerns listed above. This traffic study evaluated intersection control warrants at 2 intersections, reviewed minimum qualifying criteria for speed hump installation on multiple roadways, confirmed intersection line of sight distances at 2 intersections, and reviewed the design of the right-turn corner at the Indianola Road and Kitsap Street intersection. This study also reviewed the Indianola Road speed limits, Indianola Road collision history, and Indianola Road roadway signing. The recommended actions resulting from the analysis and review of the community concerns are presented in Table 8.

**Table 8 - Recommended Actions**

Item	Recommendation
Indianola Rd Speed Limits	Change the posted speed limit on Indianola Road, beginning at 400 feet north of Kitsap St, continuing south to 135 feet south of NE Evergreen Ave, to 30 mph (see Appendix E for Indianola Road Speed Limit Maps)
Indianola Rd Additional Signing	Install orange diamonds on the Indianola Rd 30 mph speed limit signs in the eastbound direction west of Kitsap St. Continue community conversation on types of Indianola welcome signage.
Seaview Ave Speed Limit	Extend the 20-mph speed limit zone on Seaview Avenue to the entire length of the roadway.
Indianola Rd Marked Crosswalk	Evaluate crosswalk warrants for marked crosswalk across Indianola Rd at Kitsap St during peak pedestrian season (summer of 2024).
Speed Humps	Indianola Rd, Kitsap St, Kingston St, Gerald Cliff Dr, and William Rogers Rd are not eligible for speed hump installation based on Kitsap County Road Standards minimum qualifying criteria. Currently, these roads either do not have 25% of the existing traffic travelling at least 10-mph over the posted speed limit, or the grade exceeds 8%.
Intersection Traffic Control	Retain 2-way stop control at Indianola Rd & Kitsap St. intersection. Retain 2-way stop control at Indianola Rd & South Kingston Rd intersection. Continue to monitor locations.
Traffic Safety	No action - currently, there are no roadway segments, intersections or driveways within the Indianola community that are included in the County 2017-2021 Safety Lists warranting mitigation. Continue to monitor collision patterns.
Intersection Operations	No action - the stop-controlled approaches on Kitsap Street at the Indianola Road intersection are operating at acceptable levels of service. Continue to monitor intersection operations.
Intersection Geometry	Retain current intersection geometry at the Indianola Rd & Kitsap St intersection to accommodate transit bus turn maneuvers.
Indianola Rd Intersection Visibility	No action - no additional warning signs or supplemental advisory speed plaques are recommended based on roadway geometry.

## 5 References

1. *Design Manual*. Washington State Department of Transportation, September 2021.
2. *Kitsap County Non-Motorized Facility Plan*. Kitsap County Public Works, Port Orchard, Washington, April 2015.
3. *Kitsap County Road Standards*. Kitsap County Public Works, 2020 edition.  
<http://www.kitsapgov.com/pw/pdf/Final%20Road%20Standards.pdf>
4. *Manual on Uniform Traffic Control Devices*. Federal Highway Administration, 2009 edition.
5. *A Policy on Geometric Design of Highways and Streets*. American Association of State Highway Transportation Officials, 2018.
6. *Roadside Design Guide*. American Association of State Highway Transportation Officials, 2011.
7. *Methods and Practices for Setting Speed Limits: An Informational Report*. ITE, 2012.
8. *Small Town and Rural Multimodal Networks*, FHWA, December 2016.

## **Appendix A. Speed Studies**



## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 24

Location: Geralds Cliff Dr. N. of Seaview Ave.

	Northbound Volume	Southbound Volume	Total Volume
12:00 - 12:59	15	15	30
13:00 - 13:59	20	28	48
14:00 - 14:59	18	15	33
15:00 - 15:59	18	11	29
16:00 - 16:59	29	22	51
17:00 - 17:59	7	20	27
18:00 - 18:59	3	13	16
19:00 - 19:59	4	4	8
20:00 - 20:59	0	2	2
21:00 - 21:59	1	5	6
22:00 - 22:59	1	3	4
23:00 - 23:59	0	0	0
00:00 - 00:59	0	0	0
01:00 - 01:59	0	0	0
02:00 - 02:59	0	0	0
03:00 - 03:59	2	0	2
04:00 - 04:59	2	1	3
05:00 - 05:59	4	1	5
06:00 - 06:59	2	4	6
07:00 - 07:59	21	7	28
08:00 - 08:59	18	17	35
09:00 - 09:59	21	14	35
10:00 - 10:59	20	16	36
11:00 - 11:59	11	18	29
<b>Totals</b>	<b>217</b>	<b>216</b>	<b>433</b>
AM Peak Time	09:03 - 10:02	10:16 - 11:15	08:35 - 09:34
AM Peak Volume	25	20	42
PM Peak Time	15:51 - 16:50	13:10 - 14:09	15:58 - 16:57
PM Peak Volume	30	29	51

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 24

Location: Geralds Cliff Dr. N. of Seaview Ave.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
12:00 - 12:59	0	0	14	12	4	0	0	0	0	0	0	0	0	0	0	30
13:00 - 13:59	0	7	24	11	4	2	0	0	0	0	0	0	0	0	0	48
14:00 - 14:59	1	5	10	16	0	0	0	0	0	0	0	0	0	0	0	32
15:00 - 15:59	1	2	10	12	2	1	1	0	0	0	0	0	0	0	0	29
16:00 - 16:59	1	5	19	21	4	1	0	0	0	0	0	0	0	0	0	51
17:00 - 17:59	0	2	10	9	4	2	0	0	0	0	0	0	0	0	0	27
18:00 - 18:59	0	0	2	6	6	2	0	0	0	0	0	0	0	0	0	16
19:00 - 19:59	0	0	1	5	2	0	0	0	0	0	0	0	0	0	0	8
20:00 - 20:59	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
21:00 - 21:59	0	1	1	3	0	0	0	1	0	0	0	0	0	0	0	6
22:00 - 22:59	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	4
23:00 - 23:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
04:00 - 04:59	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
05:00 - 05:59	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	5
06:00 - 06:59	0	0	3	1	1	1	0	0	0	0	0	0	0	0	0	6
07:00 - 07:59	2	5	10	6	3	1	1	0	0	0	0	0	0	0	0	28
08:00 - 08:59	0	4	14	11	5	1	0	0	0	0	0	0	0	0	0	35
09:00 - 09:59	2	4	6	16	6	1	0	0	0	0	0	0	0	0	0	35
10:00 - 10:59	0	4	13	15	4	0	0	0	0	0	0	0	0	0	0	36
11:00 - 11:59	2	5	8	12	2	0	0	0	0	0	0	0	0	0	0	29
<b>Totals</b>	<b>9</b>	<b>48</b>	<b>147</b>	<b>164</b>	<b>49</b>	<b>12</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>432</b>						
<b>Percent of Total</b>	<b>2.1</b>	<b>11.1</b>	<b>34.0</b>	<b>38.0</b>	<b>11.3</b>	<b>2.8</b>	<b>0.5</b>	<b>0.2</b>	<b>0.0</b>	<b>100</b>						
<b>Percent of AM</b>	<b>3.4</b>	<b>14.0</b>	<b>30.7</b>	<b>36.9</b>	<b>12.3</b>	<b>2.2</b>	<b>0.6</b>	<b>0.0</b>	<b>100</b>							
<b>Percent of PM</b>	<b>1.2</b>	<b>9.1</b>	<b>36.4</b>	<b>38.7</b>	<b>10.7</b>	<b>3.2</b>	<b>0.4</b>	<b>0.4</b>	<b>0.0</b>	<b>100</b>						

Standard Deviation: 5.6 MPH

Ten Mile Pace: 20 to 29 MPH

85th Percentile: 30.0 MPH

Mean Speed: 25.3 MPH

Percent in Ten Mile Pace: 72.0%

15th Percentile: 20.2 MPH

Median Speed: 25.4 MPH

90th Percentile: 32.1 MPH

Modal Speed: 27.5 MPH

95th Percentile: 34.3 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 2

Location: 7298 Will Rodgers Rd.

	Westbound Volume	Eastbound Volume	Total Volume
12:00 - 12:59	6	10	16
13:00 - 13:59	11	9	20
14:00 - 14:59	10	8	18
15:00 - 15:59	6	7	13
16:00 - 16:59	11	12	23
17:00 - 17:59	10	4	14
18:00 - 18:59	5	2	7
19:00 - 19:59	1	4	5
20:00 - 20:59	1	0	1
21:00 - 21:59	3	1	4
22:00 - 22:59	2	1	3
23:00 - 23:59	0	0	0
00:00 - 00:59	0	0	0
01:00 - 01:59	0	0	0
02:00 - 02:59	0	0	0
03:00 - 03:59	0	0	0
04:00 - 04:59	1	1	2
05:00 - 05:59	0	1	1
06:00 - 06:59	2	0	2
07:00 - 07:59	2	10	12
08:00 - 08:59	6	9	15
09:00 - 09:59	5	6	11
10:00 - 10:59	6	8	14
11:00 - 11:59	10	4	14
Totals	98	97	195
AM Peak Time	10:26 - 11:25	07:22 - 08:21	07:40 - 08:39
AM Peak Volume	10	11	17
PM Peak Time	16:15 - 17:14	12:15 - 13:14	16:15 - 17:14
PM Peak Volume	14	12	26

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 2

Location: 7298 Will Rodgers Rd.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
12:00 - 12:59	2	11	2	1	0	0	0	0	0	0	0	0	0	0	0	16
13:00 - 13:59	8	7	4	1	0	0	0	0	0	0	0	0	0	0	0	20
14:00 - 14:59	7	8	3	0	0	0	0	0	0	0	0	0	0	0	0	18
15:00 - 15:59	8	1	3	1	0	0	0	0	0	0	0	0	0	0	0	13
16:00 - 16:59	6	13	3	1	0	0	0	0	0	0	0	0	0	0	0	23
17:00 - 17:59	4	8	1	1	0	0	0	0	0	0	0	0	0	0	0	14
18:00 - 18:59	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0	7
19:00 - 19:59	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	5
20:00 - 20:59	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
21:00 - 21:59	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
22:00 - 22:59	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
23:00 - 23:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 - 05:59	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:00 - 06:59	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
07:00 - 07:59	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	12
08:00 - 08:59	3	9	3	0	0	0	0	0	0	0	0	0	0	0	0	15
09:00 - 09:59	1	4	6	0	0	0	0	0	0	0	0	0	0	0	0	11
10:00 - 10:59	3	4	6	1	0	0	0	0	0	0	0	0	0	0	0	14
11:00 - 11:59	0	9	5	0	0	0	0	0	0	0	0	0	0	0	0	14
Totals	50	95	43	7	0	0	0	0	0	0	0	0	0	0	0	195
Percent of Total	25.6	48.7	22.1	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of AM	18.3	49.3	31.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of PM	29.8	48.4	16.9	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100

Standard Deviation: 5.2 MPH      Ten Mile Pace: 15 to 24 MPH      85th Percentile: 22.4 MPH  
Mean Speed: 17.0 MPH      Percent in Ten Mile Pace: 70.8%  
Median Speed: 17.5 MPH      15th Percentile: 10.8 MPH  
Modal Speed: 17.5 MPH      90th Percentile: 23.5 MPH  
95th Percentile: 24.6 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 5

Location: Indianola Rd. W. of Kitsap St.

	Eastbound Volume	Westbound Volume	Total Volume
11:00 - 11:59	91	92	183
12:00 - 12:59	104	108	212
13:00 - 13:59	107	98	205
14:00 - 14:59	90	112	202
15:00 - 15:59	113	106	219
16:00 - 16:59	148	97	245
17:00 - 17:59	135	81	216
18:00 - 18:59	80	49	129
19:00 - 19:59	57	33	90
20:00 - 20:59	43	18	61
21:00 - 21:59	35	16	51
22:00 - 22:59	17	6	23
23:00 - 23:59	7	3	10
00:00 - 00:59	4	6	10
01:00 - 01:59	4	1	5
02:00 - 02:59	3	2	5
03:00 - 03:59	1	2	3
04:00 - 04:59	3	9	12
05:00 - 05:59	12	30	42
06:00 - 06:59	24	66	90
07:00 - 07:59	46	124	170
08:00 - 08:59	73	113	186
09:00 - 09:59	94	96	190
10:00 - 10:59	63	94	157
Totals	1354	1362	2716
AM Peak Time	09:06 - 10:05	06:56 - 07:55	08:53 - 09:52
AM Peak Volume	96	127	199
PM Peak Time	16:13 - 17:12	14:31 - 15:30	16:20 - 17:19
PM Peak Volume	160	117	265

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 5

Location: Indianola Rd. W. of Kitsap St.

Posted Speed: 40

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	0	0	1	15	46	80	29	11	0	0	0	0	1	0	183
12:00 - 12:59	0	0	0	1	4	58	101	39	9	0	0	0	0	0	0	212
13:00 - 13:59	0	0	0	3	9	63	83	39	7	1	0	0	0	0	0	205
14:00 - 14:59	0	0	0	1	14	60	86	31	5	3	2	0	0	0	0	202
15:00 - 15:59	0	0	0	0	13	52	97	46	10	0	1	0	0	0	0	219
16:00 - 16:59	0	2	2	1	12	77	101	39	9	1	1	0	0	0	0	245
17:00 - 17:59	0	0	0	1	9	58	89	50	8	0	0	0	0	1	0	216
18:00 - 18:59	0	0	1	1	5	33	63	20	3	1	0	2	0	0	0	129
19:00 - 19:59	0	0	0	1	2	22	33	23	7	2	0	0	0	0	0	90
20:00 - 20:59	0	0	0	0	3	10	22	16	6	3	1	0	0	0	0	61
21:00 - 21:59	0	0	0	1	1	15	19	12	3	0	0	0	0	0	0	51
22:00 - 22:59	0	0	0	0	2	4	8	7	2	0	0	0	0	0	0	23
23:00 - 23:59	0	0	0	0	0	3	4	2	0	0	1	0	0	0	0	10
00:00 - 00:59	0	0	0	0	0	1	7	1	1	0	0	0	0	0	0	10
01:00 - 01:59	0	0	0	0	1	1	0	2	1	0	0	0	0	0	0	5
02:00 - 02:59	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	5
03:00 - 03:59	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	3
04:00 - 04:59	0	0	0	0	1	2	3	1	3	2	0	0	0	0	0	12
05:00 - 05:59	0	0	0	0	1	4	19	12	6	0	0	0	0	0	0	42
06:00 - 06:59	0	0	0	1	1	21	33	23	9	1	0	0	0	0	0	89
07:00 - 07:59	1	0	0	1	6	50	74	32	4	2	0	0	0	0	0	170
08:00 - 08:59	0	0	1	1	7	37	88	40	11	0	0	1	0	0	0	186
09:00 - 09:59	0	0	0	0	5	43	87	45	9	0	0	1	0	0	0	190
10:00 - 10:59	0	0	1	1	11	34	78	25	6	0	0	1	0	0	0	157
<b>Totals</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>15</b>	<b>122</b>	<b>696</b>	<b>1178</b>	<b>536</b>	<b>130</b>	<b>16</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2715</b>
<b>Percent of Total</b>	<b>0.0</b>	<b>0.1</b>	<b>0.2</b>	<b>0.6</b>	<b>4.5</b>	<b>25.6</b>	<b>43.4</b>	<b>19.7</b>	<b>4.8</b>	<b>0.6</b>	<b>0.3</b>	<b>0.2</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>100</b>
<b>Percent of AM</b>	<b>0.1</b>	<b>0.0</b>	<b>0.2</b>	<b>0.5</b>	<b>4.6</b>	<b>22.9</b>	<b>44.9</b>	<b>20.2</b>	<b>5.8</b>	<b>0.5</b>	<b>0.1</b>	<b>0.3</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>100</b>
<b>Percent of PM</b>	<b>0.0</b>	<b>0.1</b>	<b>0.2</b>	<b>0.6</b>	<b>4.4</b>	<b>27.4</b>	<b>42.5</b>	<b>19.5</b>	<b>4.1</b>	<b>0.7</b>	<b>0.4</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>100</b>

Standard Deviation: 5.5 MPH      Ten Mile Pace: 35 to 44 MPH      85th Percentile: 47.7 MPH  
 Mean Speed: 42.3 MPH      Percent in Ten Mile Pace: 69.0%  
 Median Speed: 42.2 MPH      15th Percentile: 36.9 MPH  
 Modal Speed: 42.5 MPH      90th Percentile: 49.0 MPH  
 95th Percentile: 50.9 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 1

Location: Kingston St. S. of Indianola Rd.

	Northbound Volume	Southbound Volume	Total Volume
11:00 - 11:59	4	7	11
12:00 - 12:59	11	11	22
13:00 - 13:59	3	8	11
14:00 - 14:59	8	9	17
15:00 - 15:59	12	13	25
16:00 - 16:59	7	18	25
17:00 - 17:59	8	9	17
18:00 - 18:59	3	8	11
19:00 - 19:59	1	7	8
20:00 - 20:59	3	4	7
21:00 - 21:59	0	1	1
22:00 - 22:59	0	0	0
23:00 - 23:59	0	1	1
00:00 - 00:59	0	0	0
01:00 - 01:59	0	0	0
02:00 - 02:59	0	0	0
03:00 - 03:59	0	0	0
04:00 - 04:59	1	0	1
05:00 - 05:59	0	0	0
06:00 - 06:59	3	1	4
07:00 - 07:59	6	2	8
08:00 - 08:59	12	6	18
09:00 - 09:59	11	12	23
10:00 - 10:59	6	5	11
Totals	99	122	221
AM Peak Time	08:04 - 09:03	08:27 - 09:26	08:48 - 09:47
AM Peak Volume	14	13	27
PM Peak Time	14:45 - 15:44	14:21 - 15:20	14:36 - 15:35
PM Peak Volume	13	19	29

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 1

Location: Kingston St. S. of Indianola Rd.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	4	2	5	0	0	0	0	0	0	0	0	0	0	0	11
12:00 - 12:59	0	6	11	5	0	0	0	0	0	0	0	0	0	0	0	22
13:00 - 13:59	0	0	6	5	0	0	0	0	0	0	0	0	0	0	0	11
14:00 - 14:59	0	9	6	2	0	0	0	0	0	0	0	0	0	0	0	17
15:00 - 15:59	3	7	10	4	1	0	0	0	0	0	0	0	0	0	0	25
16:00 - 16:59	1	11	10	3	0	0	0	0	0	0	0	0	0	0	0	25
17:00 - 17:59	0	1	10	5	1	0	0	0	0	0	0	0	0	0	0	17
18:00 - 18:59	1	2	4	4	0	0	0	0	0	0	0	0	0	0	0	11
19:00 - 19:59	0	1	4	2	1	0	0	0	0	0	0	0	0	0	0	8
20:00 - 20:59	0	2	3	2	0	0	0	0	0	0	0	0	0	0	0	7
21:00 - 21:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:00 - 22:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00 - 23:59	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 - 05:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 - 06:59	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
07:00 - 07:59	0	2	5	0	1	0	0	0	0	0	0	0	0	0	0	8
08:00 - 08:59	1	7	6	4	0	0	0	0	0	0	0	0	0	0	0	18
09:00 - 09:59	1	5	12	4	1	0	0	0	0	0	0	0	0	0	0	23
10:00 - 10:59	2	3	4	2	0	0	0	0	0	0	0	0	0	0	0	11
<b>Totals</b>	<b>10</b>	<b>61</b>	<b>97</b>	<b>48</b>	<b>5</b>	<b>0</b>	<b>221</b>									
<b>Percent of Total</b>	<b>4.5</b>	<b>27.6</b>	<b>43.9</b>	<b>21.7</b>	<b>2.3</b>	<b>0.0</b>	<b>100</b>									
<b>Percent of AM</b>	<b>6.6</b>	<b>27.6</b>	<b>42.1</b>	<b>21.1</b>	<b>2.6</b>	<b>0.0</b>	<b>100</b>									
<b>Percent of PM</b>	<b>3.4</b>	<b>27.6</b>	<b>44.8</b>	<b>22.1</b>	<b>2.1</b>	<b>0.0</b>	<b>100</b>									

Standard Deviation: 4.9 MPH      Ten Mile Pace: 15 to 24 MPH      85th Percentile: 27.0 MPH  
Mean Speed: 21.9 MPH      Percent in Ten Mile Pace: 71.5%  
Median Speed: 22.0 MPH      15th Percentile: 16.9 MPH  
Modal Speed: 22.5 MPH      90th Percentile: 28.2 MPH  
95th Percentile: 29.3 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 3

Location: Kingston St. S. of Spruce Ave.

	Northbound Volume	Southbound Volume	Total Volume
11:00 - 11:59	4	7	11
12:00 - 12:59	12	9	21
13:00 - 13:59	2	4	6
14:00 - 14:59	5	8	13
15:00 - 15:59	5	8	13
16:00 - 16:59	1	8	9
17:00 - 17:59	7	7	14
18:00 - 18:59	3	5	8
19:00 - 19:59	2	6	8
20:00 - 20:59	1	0	1
21:00 - 21:59	0	1	1
22:00 - 22:59	0	0	0
23:00 - 23:59	0	1	1
00:00 - 00:59	0	0	0
01:00 - 01:59	0	0	0
02:00 - 02:59	0	0	0
03:00 - 03:59	0	0	0
04:00 - 04:59	0	0	0
05:00 - 05:59	0	0	0
06:00 - 06:59	2	0	2
07:00 - 07:59	3	1	4
08:00 - 08:59	6	5	11
09:00 - 09:59	5	9	14
10:00 - 10:59	3	3	6
Totals	61	82	143
AM Peak Time	08:48 - 09:47	09:10 - 10:09	08:48 - 09:47
AM Peak Volume	7	11	16
PM Peak Time	12:00 - 12:59	14:22 - 15:21	12:00 - 12:59
PM Peak Volume	12	15	21

## Daily Total Classes Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 3

Location: Kingston St. S. of Spruce Ave.

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
11:00 - 11:59	0	7	1	0	2	0	1	0	0	0	0	0	0	11
12:00 - 12:59	0	19	1	0	0	0	1	0	0	0	0	0	0	21
13:00 - 13:59	0	6	0	0	0	0	0	0	0	0	0	0	0	6
14:00 - 14:59	0	7	2	1	3	0	0	0	0	0	0	0	0	13
15:00 - 15:59	0	12	0	0	1	0	0	0	0	0	0	0	0	13
16:00 - 16:59	0	8	0	0	1	0	0	0	0	0	0	0	0	9
17:00 - 17:59	0	12	1	0	1	0	0	0	0	0	0	0	0	14
18:00 - 18:59	0	7	1	0	0	0	0	0	0	0	0	0	0	8
19:00 - 19:59	0	7	1	0	0	0	0	0	0	0	0	0	0	8
20:00 - 20:59	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00 - 21:59	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00 - 22:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00 - 23:59	0	1	0	0	0	0	0	0	0	0	0	0	0	1
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 - 05:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 - 06:59	0	1	0	0	1	0	0	0	0	0	0	0	0	2
07:00 - 07:59	0	2	0	1	1	0	0	0	0	0	0	0	0	4
08:00 - 08:59	0	8	0	0	1	2	0	0	0	0	0	0	0	11
09:00 - 09:59	0	11	2	0	0	0	1	0	0	0	0	0	0	14
10:00 - 10:59	0	6	0	0	0	0	0	0	0	0	0	0	0	6
Totals	0	116	9	2	11	2	3	0	0	0	0	0	0	143
Percent of Total	0.0	81.1	6.3	1.4	7.7	1.4	2.1	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of AM	0.0	72.9	6.3	2.1	10.4	4.2	4.2	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of PM	0.0	85.3	6.3	1.1	6.3	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	100

### Truck Summary:

Total Trucks: 18

% Trucks: 12.6

AM % Trucks: 20.8

PM % Trucks: 8.4

Classification Scheme: FHWA (ID: 1)

#1	Motorcycles - 2 Axles	#6	Single Unit Truck - 3 Axles	#11	Multi-Unit - 5 Axles or Less
#2	Passenger Cars - 2 Axles	#7	Single Unit - 4 Axles	#12	Multi-Unit - 6 Axles
#3	Pickup Trucks, Vans - 2 Axles	#8	Single Unit - 4 Axles or Less	#13	Multi-Unit - 7 Axles or More
#4	Buses	#9	Double Unit - 5 Axles		
#5	Single Unit - 2 Axles, 6 Tires	#10	Double Unit - 6 Axles or More		

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 3

Location: Kingston St. S. of Spruce Ave.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	6	2	3	0	0	0	0	0	0	0	0	0	0	0	0	11
12:00 - 12:59	6	14	1	0	0	0	0	0	0	0	0	0	0	0	0	21
13:00 - 13:59	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	6
14:00 - 14:59	5	6	1	1	0	0	0	0	0	0	0	0	0	0	0	13
15:00 - 15:59	1	9	1	1	1	0	0	0	0	0	0	0	0	0	0	13
16:00 - 16:59	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
17:00 - 17:59	1	8	4	1	0	0	0	0	0	0	0	0	0	0	0	14
18:00 - 18:59	1	6	1	0	0	0	0	0	0	0	0	0	0	0	0	8
19:00 - 19:59	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	8
20:00 - 20:59	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
21:00 - 21:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:00 - 22:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00 - 23:59	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 - 05:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 - 06:59	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:00 - 07:59	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
08:00 - 08:59	5	4	2	0	0	0	0	0	0	0	0	0	0	0	0	11
09:00 - 09:59	4	8	2	0	0	0	0	0	0	0	0	0	0	0	0	14
10:00 - 10:59	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
Totals	33	80	24	5	1	0	0	0	0	0	0	0	0	0	0	143
Percent of Total	23.1	55.9	16.8	3.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of AM	33.3	47.9	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of PM	17.9	60.0	15.8	5.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100

Standard Deviation: 5.1 MPH      Ten Mile Pace: 15 to 24 MPH      85th Percentile: 21.7 MPH  
Mean Speed: 17.1 MPH      Percent in Ten Mile Pace: 72.7%  
Median Speed: 17.4 MPH      15th Percentile: 11.3 MPH  
Modal Speed: 17.5 MPH      90th Percentile: 23.2 MPH  
95th Percentile: 24.7 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 19

Location: Kitsap St. N. of Indianola Rd.

	Southbound Volume	Northbound Volume	Total Volume
11:00 - 11:59	3	7	10
12:00 - 12:59	2	2	4
13:00 - 13:59	6	5	11
14:00 - 14:59	0	6	6
15:00 - 15:59	6	8	14
16:00 - 16:59	7	12	19
17:00 - 17:59	5	8	13
18:00 - 18:59	0	6	6
19:00 - 19:59	2	3	5
20:00 - 20:59	0	3	3
21:00 - 21:59	0	0	0
22:00 - 22:59	0	3	3
23:00 - 23:59	0	0	0
00:00 - 00:59	0	1	1
01:00 - 01:59	0	1	1
02:00 - 02:59	0	0	0
03:00 - 03:59	0	0	0
04:00 - 04:59	0	0	0
05:00 - 05:59	1	0	1
06:00 - 06:59	3	2	5
07:00 - 07:59	9	5	14
08:00 - 08:59	5	0	5
09:00 - 09:59	7	9	16
10:00 - 10:59	3	5	8
Totals	59	86	145
AM Peak Time	08:42 - 09:41	09:01 - 10:00	08:42 - 09:41
AM Peak Volume	11	11	19
PM Peak Time	15:36 - 16:35	16:05 - 17:04	16:05 - 17:04
PM Peak Volume	8	14	21

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 19

Location: Kitsap St. N. of Indianola Rd.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
12:00 - 12:59	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
13:00 - 13:59	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
14:00 - 14:59	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
15:00 - 15:59	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	14
16:00 - 16:59	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	19
17:00 - 17:59	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	13
18:00 - 18:59	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
19:00 - 19:59	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
20:00 - 20:59	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
21:00 - 21:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00 - 22:59	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
23:00 - 23:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:00 - 00:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00 - 01:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 - 05:59	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:00 - 06:59	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
07:00 - 07:59	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
08:00 - 08:59	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
09:00 - 09:59	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
10:00 - 10:59	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Totals	139	6	0	0	0	0	0	0	0	0	0	0	0	0	0	145
Percent of Total	95.9	4.1	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	100
Percent of AM	96.7	3.3	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	100
Percent of PM	95.2	4.8	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	100

Standard Deviation: 3.2 MPH      Ten Mile Pace: 15 to 24 MPH      85th Percentile: 13.8 MPH  
Mean Speed: 10.3 MPH      Percent in Ten Mile Pace: 4.1%  
Median Speed: 10.2 MPH      15th Percentile: 6.5 MPH  
Modal Speed: 10.0 MPH      90th Percentile: 14.4 MPH  
95th Percentile: 14.9 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 25

Location: Kitsap St. S. of Fir St.

	Southbound Volume	Northbound Volume	Total Volume
11:00 - 11:59	8	6	14
12:00 - 12:59	10	17	27
13:00 - 13:59	13	10	23
14:00 - 14:59	14	12	26
15:00 - 15:59	11	7	18
16:00 - 16:59	18	8	26
17:00 - 17:59	10	12	22
18:00 - 18:59	6	7	13
19:00 - 19:59	7	4	11
20:00 - 20:59	5	1	6
21:00 - 21:59	4	1	5
22:00 - 22:59	2	1	3
23:00 - 23:59	2	0	2
00:00 - 00:59	1	0	1
01:00 - 01:59	0	0	0
02:00 - 02:59	1	0	1
03:00 - 03:59	0	0	0
04:00 - 04:59	1	0	1
05:00 - 05:59	1	1	2
06:00 - 06:59	2	2	4
07:00 - 07:59	7	11	18
08:00 - 08:59	5	10	15
09:00 - 09:59	6	10	16
10:00 - 10:59	8	9	17
Totals	142	129	271
AM Peak Time	11:00 - 11:59	07:03 - 08:02	07:03 - 08:02
AM Peak Volume	8	13	20
PM Peak Time	15:33 - 16:32	12:06 - 13:05	16:22 - 17:21
PM Peak Volume	21	18	30

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 25

Location: Kitsap St. S. of Fir St.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	5	5	3	1	0	0	0	0	0	0	0	0	0	0	14
12:00 - 12:59	1	5	10	9	2	0	0	0	0	0	0	0	0	0	0	27
13:00 - 13:59	2	5	7	6	3	0	0	0	0	0	0	0	0	0	0	23
14:00 - 14:59	2	7	7	8	2	0	0	0	0	0	0	0	0	0	0	26
15:00 - 15:59	1	3	7	6	1	0	0	0	0	0	0	0	0	0	0	18
16:00 - 16:59	4	8	9	5	0	0	0	0	0	0	0	0	0	0	0	26
17:00 - 17:59	2	4	11	4	1	0	0	0	0	0	0	0	0	0	0	22
18:00 - 18:59	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	13
19:00 - 19:59	1	2	3	5	0	0	0	0	0	0	0	0	0	0	0	11
20:00 - 20:59	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0	6
21:00 - 21:59	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
22:00 - 22:59	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3
23:00 - 23:59	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
00:00 - 00:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 - 05:59	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
06:00 - 06:59	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	4
07:00 - 07:59	0	3	11	4	0	0	0	0	0	0	0	0	0	0	0	18
08:00 - 08:59	1	3	6	3	2	0	0	0	0	0	0	0	0	0	0	15
09:00 - 09:59	0	5	5	5	1	0	0	0	0	0	0	0	0	0	0	16
10:00 - 10:59	0	4	5	6	2	0	0	0	0	0	0	0	0	0	0	17
Totals	15	63	103	73	17	0	0	0	0	0	0	0	0	0	0	271
Percent of Total	5.5	23.2	38.0	26.9	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of AM	1.1	23.6	42.7	24.7	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of PM	7.7	23.1	35.7	28.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100

Standard Deviation: 5.5 MPH      Ten Mile Pace: 20 to 29 MPH      85th Percentile: 28.3 MPH  
Mean Speed: 22.6 MPH      Percent in Ten Mile Pace: 64.9%  
Median Speed: 22.8 MPH      15th Percentile: 17.0 MPH  
Modal Speed: 22.5 MPH      90th Percentile: 29.3 MPH  
95th Percentile: 30.9 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 4

Location: Kitsap St. S. of Indianola Rd. 319.1

	Southbound Volume	Northbound Volume	Total Volume
11:00 - 11:59	10	5	15
12:00 - 12:59	10	19	29
13:00 - 13:59	14	11	25
14:00 - 14:59	20	15	35
15:00 - 15:59	15	12	27
16:00 - 16:59	24	9	33
17:00 - 17:59	23	14	37
18:00 - 18:59	10	9	19
19:00 - 19:59	10	2	12
20:00 - 20:59	7	0	7
21:00 - 21:59	6	3	9
22:00 - 22:59	2	1	3
23:00 - 23:59	2	0	2
00:00 - 00:59	1	0	1
01:00 - 01:59	0	0	0
02:00 - 02:59	1	0	1
03:00 - 03:59	0	2	2
04:00 - 04:59	0	0	0
05:00 - 05:59	1	7	8
06:00 - 06:59	2	7	9
07:00 - 07:59	9	20	29
08:00 - 08:59	8	19	27
09:00 - 09:59	9	17	26
10:00 - 10:59	11	9	20
Totals	195	181	376
AM Peak Time	07:39 - 08:38	07:04 - 08:03	07:04 - 08:03
AM Peak Volume	11	22	32
PM Peak Time	15:33 - 16:32	12:07 - 13:06	16:42 - 17:41
PM Peak Volume	28	21	40

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 4

Location: Kitsap St. S. of Indianola Rd. 319.1

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	2	6	6	1	0	0	0	0	0	0	0	0	0	0	15
12:00 - 12:59	0	5	11	10	3	0	0	0	0	0	0	0	0	0	0	29
13:00 - 13:59	2	2	11	6	3	1	0	0	0	0	0	0	0	0	0	25
14:00 - 14:59	1	9	14	9	2	0	0	0	0	0	0	0	0	0	0	35
15:00 - 15:59	1	2	17	7	0	0	0	0	0	0	0	0	0	0	0	27
16:00 - 16:59	1	9	16	5	2	0	0	0	0	0	0	0	0	0	0	33
17:00 - 17:59	2	4	23	6	2	0	0	0	0	0	0	0	0	0	0	37
18:00 - 18:59	1	5	8	5	0	0	0	0	0	0	0	0	0	0	0	19
19:00 - 19:59	2	2	4	4	0	0	0	0	0	0	0	0	0	0	0	12
20:00 - 20:59	0	1	2	4	0	0	0	0	0	0	0	0	0	0	0	7
21:00 - 21:59	0	1	4	3	1	0	0	0	0	0	0	0	0	0	0	9
22:00 - 22:59	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3
23:00 - 23:59	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
00:00 - 00:59	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00 - 03:59	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00 - 04:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 - 05:59	1	0	2	3	2	0	0	0	0	0	0	0	0	0	0	8
06:00 - 06:59	0	3	4	1	1	0	0	0	0	0	0	0	0	0	0	9
07:00 - 07:59	1	4	16	8	0	0	0	0	0	0	0	0	0	0	0	29
08:00 - 08:59	3	5	11	6	1	1	0	0	0	0	0	0	0	0	0	27
09:00 - 09:59	2	7	8	7	2	0	0	0	0	0	0	0	0	0	0	26
10:00 - 10:59	0	4	9	4	3	0	0	0	0	0	0	0	0	0	0	20
<b>Totals</b>	<b>17</b>	<b>68</b>	<b>170</b>	<b>96</b>	<b>23</b>	<b>2</b>	<b>0</b>	<b>376</b>								
<b>Percent of Total</b>	<b>4.5</b>	<b>18.1</b>	<b>45.2</b>	<b>25.5</b>	<b>6.1</b>	<b>0.5</b>	<b>0.0</b>	<b>100</b>								
<b>Percent of AM</b>	<b>5.1</b>	<b>19.6</b>	<b>42.0</b>	<b>25.4</b>	<b>7.2</b>	<b>0.7</b>	<b>0.0</b>	<b>100</b>								
<b>Percent of PM</b>	<b>4.2</b>	<b>17.2</b>	<b>47.1</b>	<b>25.6</b>	<b>5.5</b>	<b>0.4</b>	<b>0.0</b>	<b>100</b>								

Standard Deviation: 5.2 MPH      Ten Mile Pace: 20 to 29 MPH      85th Percentile: 28.3 MPH  
 Mean Speed: 23.0 MPH      Percent in Ten Mile Pace: 70.7%  
 Median Speed: 23.0 MPH      15th Percentile: 17.9 MPH  
 Modal Speed: 22.5 MPH      90th Percentile: 29.3 MPH  
 95th Percentile: 31.2 MPH

## Daily Vehicle Volume Report

Study Date: Monday, 05/15/2023 / Tuesday, 05/16/2023

Unit ID: 4

Location: Kitsap St. S. of Fir St.

	Northbound Volume	Southbound Volume	Total Volume
11:00 - 11:59	5	8	13
12:00 - 12:59	17	8	25
13:00 - 13:59	9	8	17
14:00 - 14:59	7	5	12
15:00 - 15:59	12	8	20
16:00 - 16:59	11	12	23
17:00 - 17:59	3	13	16
18:00 - 18:59	10	8	18
19:00 - 19:59	7	2	9
20:00 - 20:59	5	5	10
21:00 - 21:59	0	2	2
22:00 - 22:59	2	2	4
23:00 - 23:59	1	3	4
00:00 - 00:59	0	0	0
01:00 - 01:59	0	0	0
02:00 - 02:59	1	0	1
03:00 - 03:59	0	0	0
04:00 - 04:59	0	1	1
05:00 - 05:59	3	0	3
06:00 - 06:59	4	3	7
07:00 - 07:59	10	5	15
08:00 - 08:59	18	14	32
09:00 - 09:59	9	8	17
10:00 - 10:59	6	4	10
Totals	140	119	259
AM Peak Time	07:39 - 08:38	07:51 - 08:50	07:57 - 08:56
AM Peak Volume	20	14	32
PM Peak Time	12:04 - 13:03	17:07 - 18:06	12:02 - 13:01
PM Peak Volume	18	15	29

## Daily Northbound Speeds (MPH)

Study Date: Monday, 05/15/2023 / Tuesday, 05/16/2023

Unit ID: 4

Location: Kitsap St. S. of Fir St.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	5
12:00 - 12:59	0	1	8	6	2	0	0	0	0	0	0	0	0	0	0	17
13:00 - 13:59	0	3	2	3	1	0	0	0	0	0	0	0	0	0	0	9
14:00 - 14:59	0	0	5	1	1	0	0	0	0	0	0	0	0	0	0	7
15:00 - 15:59	0	0	5	5	1	0	1	0	0	0	0	0	0	0	0	12
16:00 - 16:59	0	1	3	6	1	0	0	0	0	0	0	0	0	0	0	11
17:00 - 17:59	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3
18:00 - 18:59	1	2	4	2	0	1	0	0	0	0	0	0	0	0	0	10
19:00 - 19:59	0	2	3	2	0	0	0	0	0	0	0	0	0	0	0	7
20:00 - 20:59	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	5
21:00 - 21:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00 - 22:59	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
23:00 - 23:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 - 05:59	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3
06:00 - 06:59	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	4
07:00 - 07:59	0	3	1	5	1	0	0	0	0	0	0	0	0	0	0	10
08:00 - 08:59	1	4	5	6	1	1	0	0	0	0	0	0	0	0	0	18
09:00 - 09:59	0	4	1	3	1	0	0	0	0	0	0	0	0	0	0	9
10:00 - 10:59	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0	6
Totals	3	26	48	49	11	2	1	0	0	0	0	0	0	0	0	140
Percent of Total	2.1	18.6	34.3	35.0	7.9	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of AM	1.8	25.0	21.4	41.1	8.9	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of PM	2.4	14.3	42.9	31.0	7.1	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100

Standard Deviation: 5.5 MPH Ten Mile Pace: 20 to 29 MPH 85th Percentile: 29.2 MPH

Mean Speed: 24.2 MPH Percent in Ten Mile Pace: 69.3% 15th Percentile: 18.4 MPH

Median Speed: 24.2 MPH 90th Percentile: 29.8 MPH

Modal Speed: 27.5 MPH 95th Percentile: 33.0 MPH

## Daily Southbound Speeds (MPH)

Study Date: Monday, 05/15/2023 / Tuesday, 05/16/2023

Unit ID: 4

Location: Kitsap St. S. of Fir St.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	1	2	4	0	1	0	0	0	0	0	0	0	0	0	8
12:00 - 12:59	0	1	3	2	2	0	0	0	0	0	0	0	0	0	0	8
13:00 - 13:59	0	1	2	5	0	0	0	0	0	0	0	0	0	0	0	8
14:00 - 14:59	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	5
15:00 - 15:59	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	8
16:00 - 16:59	1	2	6	3	0	0	0	0	0	0	0	0	0	0	0	12
17:00 - 17:59	0	1	5	4	2	1	0	0	0	0	0	0	0	0	0	13
18:00 - 18:59	1	2	4	1	0	0	0	0	0	0	0	0	0	0	0	8
19:00 - 19:59	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
20:00 - 20:59	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	5
21:00 - 21:59	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
22:00 - 22:59	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
23:00 - 23:59	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 - 05:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 - 06:59	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3
07:00 - 07:59	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	5
08:00 - 08:59	0	2	8	3	1	0	0	0	0	0	0	0	0	0	0	14
09:00 - 09:59	1	2	3	2	0	0	0	0	0	0	0	0	0	0	0	8
10:00 - 10:59	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	4
Totals	3	22	47	35	9	3	0	0	0	0	0	0	0	0	0	119
Percent of Total	2.5	18.5	39.5	29.4	7.6	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of AM	2.3	18.6	44.2	30.2	2.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of PM	2.6	18.4	36.8	28.9	10.5	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100

Standard Deviation: 5.4 MPH Ten Mile Pace: 20 to 29 MPH 85th Percentile: 29.1 MPH

Mean Speed: 23.8 MPH

Percent in Ten Mile Pace: 68.9%

15th Percentile: 18.3 MPH

Median Speed: 23.6 MPH

90th Percentile: 29.8 MPH

Modal Speed: 22.5 MPH

95th Percentile: 33.1 MPH

## Daily Total Speeds (MPH)

Study Date: Monday, 05/15/2023 / Tuesday, 05/16/2023

Unit ID: 4

Location: Kitsap St. S. of Fir St.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	2	4	6	0	1	0	0	0	0	0	0	0	0	0	13
12:00 - 12:59	0	2	11	8	4	0	0	0	0	0	0	0	0	0	0	25
13:00 - 13:59	0	4	4	8	1	0	0	0	0	0	0	0	0	0	0	17
14:00 - 14:59	0	0	6	3	2	1	0	0	0	0	0	0	0	0	0	12
15:00 - 15:59	0	2	7	7	3	0	1	0	0	0	0	0	0	0	0	20
16:00 - 16:59	1	3	9	9	1	0	0	0	0	0	0	0	0	0	0	23
17:00 - 17:59	1	2	6	4	2	1	0	0	0	0	0	0	0	0	0	16
18:00 - 18:59	2	4	8	3	0	1	0	0	0	0	0	0	0	0	0	18
19:00 - 19:59	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	9
20:00 - 20:59	0	2	5	2	1	0	0	0	0	0	0	0	0	0	0	10
21:00 - 21:59	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
22:00 - 22:59	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
23:00 - 23:59	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00 - 03:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 - 05:59	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3
06:00 - 06:59	0	2	1	3	1	0	0	0	0	0	0	0	0	0	0	7
07:00 - 07:59	0	4	2	8	1	0	0	0	0	0	0	0	0	0	0	15
08:00 - 08:59	1	6	13	9	2	1	0	0	0	0	0	0	0	0	0	32
09:00 - 09:59	1	6	4	5	1	0	0	0	0	0	0	0	0	0	0	17
10:00 - 10:59	0	2	4	4	0	0	0	0	0	0	0	0	0	0	0	10
Totals	6	48	95	84	20	5	1	0	0	0	0	0	0	0	0	259
Percent of Total	2.3	18.5	36.7	32.4	7.7	1.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of AM	2.0	22.2	31.3	36.4	6.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Percent of PM	2.5	16.3	40.0	30.0	8.8	1.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100

Standard Deviation: 5.5 MPH Ten Mile Pace: 20 to 29 MPH 85th Percentile: 29.2 MPH

Mean Speed: 24.0 MPH Percent in Ten Mile Pace: 69.1% 15th Percentile: 18.4 MPH

Median Speed: 23.9 MPH 90th Percentile: 29.9 MPH

Modal Speed: 22.5 MPH 95th Percentile: 33.1 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 20

Location: S. Kingston Rd. N. of Indianola Rd. 318.0

	Southbound Volume	Northbound Volume	Total Volume
11:00 - 11:59	59	48	107
12:00 - 12:59	62	68	130
13:00 - 13:59	55	53	108
14:00 - 14:59	86	76	162
15:00 - 15:59	74	68	142
16:00 - 16:59	77	65	142
17:00 - 17:59	64	56	120
18:00 - 18:59	35	40	75
19:00 - 19:59	30	24	54
20:00 - 20:59	22	14	36
21:00 - 21:59	10	14	24
22:00 - 22:59	6	3	9
23:00 - 23:59	2	1	3
00:00 - 00:59	4	4	8
01:00 - 01:59	2	1	3
02:00 - 02:59	2	2	4
03:00 - 03:59	0	2	2
04:00 - 04:59	3	2	5
05:00 - 05:59	10	11	21
06:00 - 06:59	27	26	53
07:00 - 07:59	53	52	105
08:00 - 08:59	45	59	104
09:00 - 09:59	36	58	94
10:00 - 10:59	46	48	94
Totals	810	795	1605
AM Peak Time	11:00 - 11:59	08:14 - 09:13	08:15 - 09:14
AM Peak Volume	59	71	118
PM Peak Time	14:12 - 15:11	13:46 - 14:45	14:00 - 14:59
PM Peak Volume	92	76	162

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 20

Location: S. Kingston Rd. N. of Indianola Rd. 318.0

Posted Speed: 35

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
11:00 - 11:59	0	0	0	17	43	40	6	1	0	0	0	0	0	0	0	107
12:00 - 12:59	0	0	4	22	43	51	8	1	1	0	0	0	0	0	0	130
13:00 - 13:59	0	0	2	13	46	37	10	0	0	0	0	0	0	0	0	108
14:00 - 14:59	1	1	5	24	73	40	12	2	2	1	0	0	0	1	0	162
15:00 - 15:59	0	0	7	17	71	41	4	2	0	0	0	0	0	0	0	142
16:00 - 16:59	0	0	3	33	60	37	7	1	1	0	0	0	0	0	0	142
17:00 - 17:59	0	2	2	16	53	42	4	1	0	0	0	0	0	0	0	120
18:00 - 18:59	0	0	1	4	37	28	5	0	0	0	0	0	0	0	0	75
19:00 - 19:59	0	1	2	6	28	16	1	0	0	0	0	0	0	0	0	54
20:00 - 20:59	0	0	0	3	20	10	2	0	1	0	0	0	0	0	0	36
21:00 - 21:59	0	0	0	1	9	11	2	1	0	0	0	0	0	0	0	24
22:00 - 22:59	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	9
23:00 - 23:59	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3
00:00 - 00:59	0	0	2	1	3	2	0	0	0	0	0	0	0	0	0	8
01:00 - 01:59	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	3
02:00 - 02:59	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4
03:00 - 03:59	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
04:00 - 04:59	0	0	0	0	1	2	1	0	1	0	0	0	0	0	0	5
05:00 - 05:59	0	0	0	1	5	8	7	0	0	0	0	0	0	0	0	21
06:00 - 06:59	0	0	1	5	23	16	6	2	0	0	0	0	0	0	0	53
07:00 - 07:59	0	0	2	14	43	36	10	0	0	0	0	0	0	0	0	105
08:00 - 08:59	0	0	4	24	44	26	3	1	2	0	0	0	0	0	0	104
09:00 - 09:59	1	1	1	19	37	25	9	1	0	0	0	0	0	0	0	94
10:00 - 10:59	0	1	1	15	39	31	7	0	0	0	0	0	0	0	0	94
<b>Totals</b>	<b>2</b>	<b>6</b>	<b>38</b>	<b>239</b>	<b>686</b>	<b>505</b>	<b>106</b>	<b>13</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1605</b>	
<b>Percent of Total</b>	<b>0.1</b>	<b>0.4</b>	<b>2.4</b>	<b>14.9</b>	<b>42.7</b>	<b>31.5</b>	<b>6.6</b>	<b>0.8</b>	<b>0.5</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>100</b>
<b>Percent of AM</b>	<b>0.2</b>	<b>0.3</b>	<b>2.0</b>	<b>16.7</b>	<b>40.0</b>	<b>31.0</b>	<b>8.5</b>	<b>0.8</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>100</b>
<b>Percent of PM</b>	<b>0.1</b>	<b>0.4</b>	<b>2.6</b>	<b>13.8</b>	<b>44.4</b>	<b>31.7</b>	<b>5.5</b>	<b>0.8</b>	<b>0.5</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>100</b>

Standard Deviation: 5.2 MPH

Ten Mile Pace: 30 to 39 MPH

85th Percentile: 38.9 MPH

Mean Speed: 33.9 MPH

Percent in Ten Mile Pace: 74.2%

Median Speed: 33.8 MPH

15th Percentile: 29.1 MPH

Modal Speed: 32.5 MPH

90th Percentile: 39.7 MPH

95th Percentile: 42.3 MPH

## Daily Vehicle Volume Report

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 17

Location: Seaview Ave. E. of Chief Sealth Dr.

	Westbound Volume	Eastbound Volume	Total Volume
12:00 - 12:59	12	12	24
13:00 - 13:59	24	18	42
14:00 - 14:59	14	14	28
15:00 - 15:59	12	16	28
16:00 - 16:59	20	26	46
17:00 - 17:59	15	8	23
18:00 - 18:59	10	3	13
19:00 - 19:59	4	4	8
20:00 - 20:59	1	1	2
21:00 - 21:59	4	1	5
22:00 - 22:59	3	1	4
23:00 - 23:59	0	0	0
00:00 - 00:59	0	0	0
01:00 - 01:59	0	0	0
02:00 - 02:59	0	0	0
03:00 - 03:59	0	2	2
04:00 - 04:59	0	2	2
05:00 - 05:59	1	5	6
06:00 - 06:59	5	0	5
07:00 - 07:59	3	17	20
08:00 - 08:59	13	20	33
09:00 - 09:59	13	20	33
10:00 - 10:59	13	14	27
11:00 - 11:59	18	8	26
Totals	185	192	377
AM Peak Time	10:16 - 11:15	09:03 - 10:02	08:34 - 09:33
AM Peak Volume	18	23	37
PM Peak Time	12:57 - 13:56	15:39 - 16:38	16:11 - 17:10
PM Peak Volume	25	28	47

## Daily Total Speeds (MPH)

Study Date: Tuesday, 11/14/2023 / Wednesday, 11/15/2023

Unit ID: 17

Location: Seaview Ave. E. of Chief Sealth Dr.

Posted Speed: 25

	5-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-99	Total
12:00 - 12:59	2	6	16	0	0	0	0	0	0	0	0	0	0	0	0	24
13:00 - 13:59	4	25	10	3	0	0	0	0	0	0	0	0	0	0	0	42
14:00 - 14:59	2	16	10	0	0	0	0	0	0	0	0	0	0	0	0	28
15:00 - 15:59	3	6	15	4	0	0	0	0	0	0	0	0	0	0	0	28
16:00 - 16:59	5	22	17	1	0	0	0	0	0	0	0	0	0	0	0	45
17:00 - 17:59	1	11	8	3	0	0	0	0	0	0	0	0	0	0	0	23
18:00 - 18:59	1	3	8	1	0	0	0	0	0	0	0	0	0	0	0	13
19:00 - 19:59	1	4	2	1	0	0	0	0	0	0	0	0	0	0	0	8
20:00 - 20:59	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
21:00 - 21:59	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	5
22:00 - 22:59	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	4
23:00 - 23:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:00 - 00:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 - 03:59	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00 - 04:59	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 - 05:59	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
06:00 - 06:59	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	5
07:00 - 07:59	0	11	7	2	0	0	0	0	0	0	0	0	0	0	0	20
08:00 - 08:59	3	19	10	1	0	0	0	0	0	0	0	0	0	0	0	33
09:00 - 09:59	1	18	12	2	0	0	0	0	0	0	0	0	0	0	0	33
10:00 - 10:59	3	12	9	3	0	0	0	0	0	0	0	0	0	0	0	27
11:00 - 11:59	3	12	9	2	0	0	0	0	0	0	0	0	0	0	0	26
<b>Totals</b>	<b>31</b>	<b>175</b>	<b>146</b>	<b>24</b>	<b>0</b>	<b>376</b>										
<b>Percent of Total</b>	<b>8.2</b>	<b>46.5</b>	<b>38.8</b>	<b>6.4</b>	<b>0.0</b>	<b>100</b>										
<b>Percent of AM</b>	<b>7.1</b>	<b>51.3</b>	<b>34.4</b>	<b>7.1</b>	<b>0.0</b>	<b>100</b>										
<b>Percent of PM</b>	<b>9.0</b>	<b>43.2</b>	<b>41.9</b>	<b>5.9</b>	<b>0.0</b>	<b>100</b>										

Standard Deviation:	4.4 MPH	Ten Mile Pace:	15 to 24 MPH	85th Percentile:	23.9 MPH
Mean Speed:	19.5 MPH	Percent in Ten Mile Pace:	85.4%	15th Percentile:	15.7 MPH
Median Speed:	19.5 MPH			90th Percentile:	24.5 MPH
Modal Speed:	17.5 MPH			95th Percentile:	26.0 MPH

## **Appendix B. All-Way Stop Control Worksheets**





Kitsap County Department of Public Works - Traffic Operations  
614 Division Street, MS-26, Port Orchard, WA 98366

**AWSC WARRANT ANALYSIS**

Intersection name: Indianolla & Kitsap St

Date: 11/16/2023

Major street name:

Indianolla

Number of approach lanes:

1

Posted speed (mph):

35

Minor street name:

Kitsap St

Number of approach lanes:

1

Posted speed (mph):

25

Count year:

2023

Analysis year:

2023

Annual growth rate (%):

1.5

Growth factor:

1.00

**Volumes Criteria<sup>1</sup>**

Warrant	Major	Minor <sup>2</sup>	Minor Delay
C1	300	-	-
C2	-	200	30
C3	210	140	21
D	240	160	24

<sup>1</sup>Volume criteria must be reached for the same 8 hours

<sup>2</sup>Combined vehicle, pedestrian and bicycle volumes

Peak hour: 4:30 PM

Input	Criteria
No	Yes
1	>5
10.4	>30
Yes	-

Traffic Control Signal is warranted?

Number of collisions within 12 months correctable by AWSC?

Average peak hour delay to minor street vehicle traffic?

85th percentile speed > 40 mph on major street?

	Major Total	Minor Total	Warrant C			Warrant D		
			Major	Minor	Met	Major	Minor	Met
12:00 AM	8	0	No	No	No	N/A	N/A	No
12:15 AM	7	0	No	No	No	N/A	N/A	No
12:30 AM	5	0	No	No	No	N/A	N/A	No
12:45 AM	5	0	No	No	No	N/A	N/A	No
1:00 AM	6	0	No	No	No	N/A	N/A	No
1:15 AM	5	0	No	No	No	N/A	N/A	No
1:30 AM	6	0	No	No	No	N/A	N/A	No
1:45 AM	4	0	No	No	No	N/A	N/A	No
2:00 AM	3	0	No	No	No	N/A	N/A	No
2:15 AM	3	0	No	No	No	N/A	N/A	No
2:30 AM	3	0	No	No	No	N/A	N/A	No
2:45 AM	3	2	No	No	No	N/A	N/A	No
3:00 AM	3	2	No	No	No	N/A	N/A	No
3:15 AM	3	2	No	No	No	N/A	N/A	No
3:30 AM	6	2	No	No	No	N/A	N/A	No
3:45 AM	9	0	No	No	No	N/A	N/A	No
4:00 AM	12	0	No	No	No	N/A	N/A	No
4:15 AM	12	1	No	No	No	N/A	N/A	No
4:30 AM	19	2	No	No	No	N/A	N/A	No
4:45 AM	25	3	No	No	No	N/A	N/A	No
5:00 AM	36	8	No	No	No	N/A	N/A	No
5:15 AM	57	7	No	No	No	N/A	N/A	No
5:30 AM	63	8	No	No	No	N/A	N/A	No
5:45 AM	66	13	No	No	No	N/A	N/A	No
6:00 AM	69	10	No	No	No	N/A	N/A	No
6:15 AM	77	21	No	No	No	N/A	N/A	No
6:30 AM	95	26	No	No	No	N/A	N/A	No
6:45 AM	123	27	No	No	No	N/A	N/A	No
7:00 AM	139	29	No	No	No	N/A	N/A	No
7:15 AM	154	24	No	No	No	N/A	N/A	No
7:30 AM	156	24	No	No	No	N/A	N/A	No
7:45 AM	159	22	No	No	No	N/A	N/A	No
8:00 AM	173	24	No	No	No	N/A	N/A	No
8:15 AM	171	26	No	No	No	N/A	N/A	No
8:30 AM	182	25	No	No	No	N/A	N/A	No
8:45 AM	185	28	No	No	No	N/A	N/A	No
9:00 AM	176	24	No	No	No	N/A	N/A	No

9:15 AM	176	22	No	No	No	N/A	N/A	No
9:30 AM	156	18	No	No	No	N/A	N/A	No
9:45 AM	155	12	No	No	No	N/A	N/A	No
10:00 AM	149	12	No	No	No	N/A	N/A	No
10:15 AM	145	8	No	No	No	N/A	N/A	No
10:30 AM	166	8	No	No	No	N/A	N/A	No
10:45 AM	156	9	No	No	No	N/A	N/A	No
11:00 AM	174	8	No	No	No	N/A	N/A	No
11:15 AM	183	11	No	No	No	N/A	N/A	No
11:30 AM	176	18	No	No	No	N/A	N/A	No
11:45 AM	188	17	No	No	No	N/A	N/A	No
12:00 PM	184	21	No	No	No	N/A	N/A	No
12:15 PM	182	22	No	No	No	N/A	N/A	No
12:30 PM	195	19	No	No	No	N/A	N/A	No
12:45 PM	187	21	No	No	No	N/A	N/A	No
1:00 PM	187	17	No	No	No	N/A	N/A	No
1:15 PM	192	15	No	No	No	N/A	N/A	No
1:30 PM	175	13	No	No	No	N/A	N/A	No
1:45 PM	186	13	No	No	No	N/A	N/A	No
2:00 PM	177	15	No	No	No	N/A	N/A	No
2:15 PM	165	16	No	No	No	N/A	N/A	No
2:30 PM	175	19	No	No	No	N/A	N/A	No
2:45 PM	182	19	No	No	No	N/A	N/A	No
3:00 PM	206	18	No	No	No	N/A	N/A	No
3:15 PM	230	13	No	No	No	N/A	N/A	No
3:30 PM	241	14	No	No	No	N/A	N/A	No
3:45 PM	242	13	No	No	No	N/A	N/A	No
4:00 PM	243	16	No	No	No	N/A	N/A	No
4:15 PM	253	21	No	No	No	N/A	N/A	No
4:30 PM	257	21	No	No	No	N/A	N/A	No
4:45 PM	248	22	No	No	No	N/A	N/A	No
5:00 PM	235	19	No	No	No	N/A	N/A	No
5:15 PM	202	17	No	No	No	N/A	N/A	No
5:30 PM	181	14	No	No	No	N/A	N/A	No
5:45 PM	162	10	No	No	No	N/A	N/A	No
6:00 PM	140	9	No	No	No	N/A	N/A	No
6:15 PM	114	9	No	No	No	N/A	N/A	No
6:30 PM	104	4	No	No	No	N/A	N/A	No
6:45 PM	95	5	No	No	No	N/A	N/A	No
7:00 PM	87	4	No	No	No	N/A	N/A	No
7:15 PM	88	1	No	No	No	N/A	N/A	No
7:30 PM	77	1	No	No	No	N/A	N/A	No
7:45 PM	68	0	No	No	No	N/A	N/A	No
8:00 PM	58	0	No	No	No	N/A	N/A	No
8:15 PM	61	2	No	No	No	N/A	N/A	No
8:30 PM	50	3	No	No	No	N/A	N/A	No
8:45 PM	44	3	No	No	No	N/A	N/A	No
9:00 PM	46	3	No	No	No	N/A	N/A	No
9:15 PM	36	1	No	No	No	N/A	N/A	No
9:30 PM	35	1	No	No	No	N/A	N/A	No
9:45 PM	33	1	No	No	No	N/A	N/A	No
10:00 PM	25	1	No	No	No	N/A	N/A	No
10:15 PM	23	1	No	No	No	N/A	N/A	No
10:30 PM	14	0	No	No	No	N/A	N/A	No
10:45 PM	11	0	No	No	No	N/A	N/A	No
11:00 PM	13	0	No	No	No	N/A	N/A	No
11:15 PM	10	0	No	No	No	N/A	N/A	No
11:30 PM	12	0	No	No	No	N/A	N/A	No
11:45 PM	13	0	No	No	No	N/A	N/A	No
Total		0	0	0	0	0	0	
Criteria		The same 8 hours			The same 8 hours			
Warrant Summary		Warrant A			Warrant B			
		Not Met			Not Met			
		Warrant C			Warrant D			
		Not Met			Not Met			



**Kitsap County Department of Public Works - Traffic Operations**  
**614 Division Street, MS-26, Port Orchard, WA 98366**

**AWSC WARRANT ANALYSIS**

Intersection name: **Indianolla & South Kingston**

Date: 11/16/2023

Major street name:

Indianolla

Number of approach lanes:

1
30

Posted speed (mph):

1
30

Minor street name:

South Kingston

Number of approach lanes:

1
25

Posted speed (mph):

1
25

Count year:

2023
2023

Analysis year:

2023
1.5

Annual growth rate (%):

1.00
------

Growth factor:

**Volumes Criteria <sup>1</sup>**

Warrant	Major	Minor <sup>2</sup>	Minor Delay
C1	300	-	-
C2	-	200	30
C3	210	140	21
D	240	160	24

<sup>1</sup>Volume criteria must be reached for the same 8 hours

<sup>2</sup>Combined vehicle, pedestrian and bicycle volumes

Peak hour: **3:30 PM**

Traffic Control Signal is warranted?

Input	Criteria
No	Yes
0	>5
10.4	>30
Yes	-

Number of collisions within 12 months correctable by AWSC?

Average peak hour delay to minor street vehicle traffic?

85th percentile speed > 40 mph on major street?

	Major Total	Minor Total	Warrant C			Warrant D		
			Major	Minor	Met	Major	Minor	Met
12:00 AM	3	4	No	No	No	N/A	N/A	No
12:15 AM	3	2	No	No	No	N/A	N/A	No
12:30 AM	4	3	No	No	No	N/A	N/A	No
12:45 AM	8	2	No	No	No	N/A	N/A	No
1:00 AM	9	2	No	No	No	N/A	N/A	No
1:15 AM	7	2	No	No	No	N/A	N/A	No
1:30 AM	6	2	No	No	No	N/A	N/A	No
1:45 AM	3	2	No	No	No	N/A	N/A	No
2:00 AM	2	2	No	No	No	N/A	N/A	No
2:15 AM	2	2	No	No	No	N/A	N/A	No
2:30 AM	3	0	No	No	No	N/A	N/A	No
2:45 AM	1	0	No	No	No	N/A	N/A	No
3:00 AM	1	0	No	No	No	N/A	N/A	No
3:15 AM	2	0	No	No	No	N/A	N/A	No
3:30 AM	6	1	No	No	No	N/A	N/A	No
3:45 AM	9	2	No	No	No	N/A	N/A	No
4:00 AM	12	4	No	No	No	N/A	N/A	No
4:15 AM	17	5	No	No	No	N/A	N/A	No
4:30 AM	16	8	No	No	No	N/A	N/A	No
4:45 AM	20	9	No	No	No	N/A	N/A	No
5:00 AM	31	10	No	No	No	N/A	N/A	No
5:15 AM	36	14	No	No	No	N/A	N/A	No
5:30 AM	40	19	No	No	No	N/A	N/A	No
5:45 AM	47	25	No	No	No	N/A	N/A	No
6:00 AM	50	30	No	No	No	N/A	N/A	No
6:15 AM	63	37	No	No	No	N/A	N/A	No
6:30 AM	86	40	No	No	No	N/A	N/A	No
6:45 AM	105	56	No	No	No	N/A	N/A	No
7:00 AM	121	59	No	No	No	N/A	N/A	No
7:15 AM	128	58	No	No	No	N/A	N/A	No
7:30 AM	130	64	No	No	No	N/A	N/A	No
7:45 AM	140	51	No	No	No	N/A	N/A	No
8:00 AM	154	57	No	No	No	N/A	N/A	No
8:15 AM	156	58	No	No	No	N/A	N/A	No
8:30 AM	163	57	No	No	No	N/A	N/A	No
8:45 AM	162	57	No	No	No	N/A	N/A	No
9:00 AM	158	47	No	No	No	N/A	N/A	No

9:15 AM	149	50	No	No	No	N/A	N/A	No
9:30 AM	146	42	No	No	No	N/A	N/A	No
9:45 AM	131	47	No	No	No	N/A	N/A	No
10:00 AM	118	52	No	No	No	N/A	N/A	No
10:15 AM	129	57	No	No	No	N/A	N/A	No
10:30 AM	120	63	No	No	No	N/A	N/A	No
10:45 AM	118	60	No	No	No	N/A	N/A	No
11:00 AM	124	63	No	No	No	N/A	N/A	No
11:15 AM	125	64	No	No	No	N/A	N/A	No
11:30 AM	134	64	No	No	No	N/A	N/A	No
11:45 AM	143	68	No	No	No	N/A	N/A	No
12:00 PM	152	73	No	No	No	N/A	N/A	No
12:15 PM	152	68	No	No	No	N/A	N/A	No
12:30 PM	155	62	No	No	No	N/A	N/A	No
12:45 PM	149	58	No	No	No	N/A	N/A	No
1:00 PM	135	58	No	No	No	N/A	N/A	No
1:15 PM	138	61	No	No	No	N/A	N/A	No
1:30 PM	130	75	No	No	No	N/A	N/A	No
1:45 PM	145	88	No	No	No	N/A	N/A	No
2:00 PM	140	94	No	No	No	N/A	N/A	No
2:15 PM	134	94	No	No	No	N/A	N/A	No
2:30 PM	134	92	No	No	No	N/A	N/A	No
2:45 PM	150	81	No	No	No	N/A	N/A	No
3:00 PM	161	86	No	No	No	N/A	N/A	No
3:15 PM	164	84	No	No	No	N/A	N/A	No
3:30 PM	174	90	No	No	No	N/A	N/A	No
3:45 PM	154	91	No	No	No	N/A	N/A	No
4:00 PM	155	84	No	No	No	N/A	N/A	No
4:15 PM	158	85	No	No	No	N/A	N/A	No
4:30 PM	150	79	No	No	No	N/A	N/A	No
4:45 PM	144	87	No	No	No	N/A	N/A	No
5:00 PM	139	72	No	No	No	N/A	N/A	No
5:15 PM	132	68	No	No	No	N/A	N/A	No
5:30 PM	123	52	No	No	No	N/A	N/A	No
5:45 PM	113	33	No	No	No	N/A	N/A	No
6:00 PM	111	38	No	No	No	N/A	N/A	No
6:15 PM	92	36	No	No	No	N/A	N/A	No
6:30 PM	86	34	No	No	No	N/A	N/A	No
6:45 PM	82	38	No	No	No	N/A	N/A	No
7:00 PM	62	31	No	No	No	N/A	N/A	No
7:15 PM	65	24	No	No	No	N/A	N/A	No
7:30 PM	54	31	No	No	No	N/A	N/A	No
7:45 PM	51	30	No	No	No	N/A	N/A	No
8:00 PM	53	25	No	No	No	N/A	N/A	No
8:15 PM	43	22	No	No	No	N/A	N/A	No
8:30 PM	46	14	No	No	No	N/A	N/A	No
8:45 PM	35	10	No	No	No	N/A	N/A	No
9:00 PM	24	10	No	No	No	N/A	N/A	No
9:15 PM	20	8	No	No	No	N/A	N/A	No
9:30 PM	14	7	No	No	No	N/A	N/A	No
9:45 PM	12	4	No	No	No	N/A	N/A	No
10:00 PM	11	6	No	No	No	N/A	N/A	No
10:15 PM	13	6	No	No	No	N/A	N/A	No
10:30 PM	11	6	No	No	No	N/A	N/A	No
10:45 PM	9	6	No	No	No	N/A	N/A	No
11:00 PM	10	2	No	No	No	N/A	N/A	No
11:15 PM	8	4	No	No	No	N/A	N/A	No
11:30 PM	5	4	No	No	No	N/A	N/A	No
11:45 PM	5	4	No	No	No	N/A	N/A	No
Total		0	0	0	0	0	0	0
Criteria		The same 8 hours			The same 8 hours			
Warrant Summary		Warrant A			Warrant B			
		Not Met			Not Met			
		Warrant C			Warrant D			
		Not Met			Not Met			

## **Appendix C. Indianola Road 5-Year Collision History**



## Indianola Road 5-Year Collision History

Mile Post	MPH	Date	Severity	Location	Collision Type	Contributing Circumstance
0.095	40	6/5/19	Injury	Not at intersection	Fixed object	DUI
0.189	40	11/25/20	PDO	Not at intersection	Fixed object	Other
0.655	40	3/10/22	Injury	Not at intersection	Fixed object	Illness
0.940	40	12/21/18	PDO	Not at intersection	Rear-end	Inattention
0.949	40	12/03/22	PDO	Beachwood Ct	Angle	None
0.990	40	12/6/19	Injury	Seacrest Ave	Opposite direction	Over center line
1.000	40	10/18/19	PDO	Not at intersection	Deer	None
1.018	40	6/03/20	PDO	Not at intersection	Fixed object	DUI
1.249	40	7/6/19	PDO	Not at intersection	Rear-end	Other
1.355	40	8/1/20	PDO	Not at intersection	Fixed object	None
1.836	40	3/8/20	Injury	Gerald Cliff Dr	Opposite direction	DUI
1.838	40	9/17/22	PDO	Gerald Cliff Dr	Rear-end	Follow too close
1.949	40	2/9/22	PDO	Nachant Dr	Rear-end	DUI
2.157	40	11/25/18	Injury	Orca Dr	Rear-end	Inattention
2.157	40	2/4/22	PDO	Orca Dr	Fixed object	Other
2.252	40	6/6/22	PDO	Not at intersection	Fixed object	Other
2.564	35	4/13/23	Injury (serious)	Kitsap St	Angle	Speed
2.741	30	8/14/19	Injury	South Kingston Rd	Rear-end	Distracted
3.106	20	12/24/18	PDO	Not at intersection	Fixed object	DUI
3.224	20	3/16/19	PDO	Shore Dr	Rear-end	Improper backing

PDO = Property Damage Only



## **Appendix D. LOS Report**



## Intersection

Int Delay, s/veh 4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	83	9	1	37	13	1	3	2	27	6	36
Future Vol, veh/h	65	83	9	1	37	13	1	3	2	27	6	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	80	80	80	35	35	35	82	82	82
Heavy Vehicles, %	3	3	3	7	7	7	7	7	7	3	3	3
Mvmt Flow	79	101	11	1	46	16	3	9	6	33	7	44

Major/Minor	Major1	Major2		Minor1		Minor2						
Conflicting Flow All	62	0	0	112	0	0	347	329	107	328	326	54
Stage 1	-	-	-	-	-	-	265	265	-	56	56	-
Stage 2	-	-	-	-	-	-	82	64	-	272	270	-
Critical Hdwy	4.13	-	-	4.17	-	-	7.17	6.57	6.27	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.263	-	-	3.563	4.063	3.363	3.527	4.027	3.327
Pot Cap-1 Maneuver	1535	-	-	1447	-	-	598	582	934	623	591	1010
Stage 1	-	-	-	-	-	-	729	680	-	954	846	-
Stage 2	-	-	-	-	-	-	914	832	-	732	684	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1535	-	-	1447	-	-	542	549	934	586	558	1010
Mov Cap-2 Maneuver	-	-	-	-	-	-	542	549	-	586	558	-
Stage 1	-	-	-	-	-	-	689	643	-	902	845	-
Stage 2	-	-	-	-	-	-	866	831	-	678	646	-

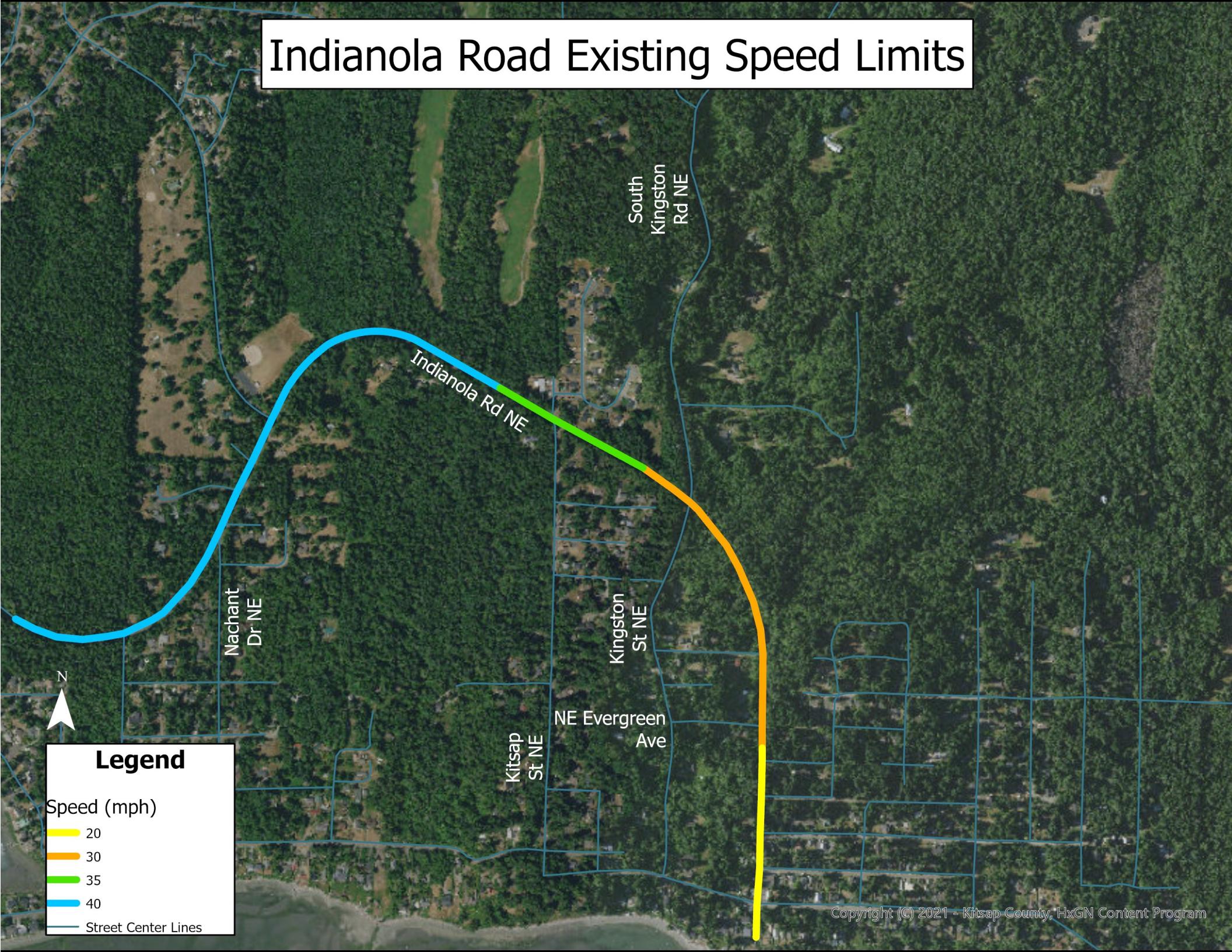
Approach	EB	WB		NB		SB		
HCM Control Delay, s	3.1	0.1		10.8		10.4		
HCM LOS				B		B		
<hr/>								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	635	1535	-	-	1447	-	-	746
HCM Lane V/C Ratio	0.027	0.052	-	-	0.001	-	-	0.113
HCM Control Delay (s)	10.8	7.5	0	-	7.5	0	-	10.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.4



## **Appendix E. Indianola Road Speed Limit Maps**



# Indianola Road Existing Speed Limits





# Indianola Road Proposed Speed Limits

