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# Executive Summary

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### Why did we study the SR 160 Long Lake Road SE intersection?

The Washington State Department of Transportation (WSDOT) identified the intersection of State Route (SR) 160 (Sedgwick Road SE) and Long Lake Road Southeast as a safety concern through the WSDOT Target Zero Highway Safety Plan due to the crash type, the frequency and the number of serious injury crashes. In 2010 and again in 2016 this intersection was on the Intersection Analysis Location (IAL) list. In the fall of 2016, WSDOT began the SR 160 Long Lake Road SE Study with the study limits being SR 160 from Phillips Road to Mayvolt Road/Lake Valley Road (shown in the Study Area Map). The goal of the study was to identify solutions to reduce or eliminate serious injury crashes occurring at the intersection. The WSDOT study team and the stakeholder committee developed a needs statement to guide the study. The needs statement reads, “SR 160 and Long Lake Road SE is an at-grade two-way stop intersection that is experiencing a number of severe injury crashes. The need of the study is to develop potential solutions to improve the safety at the intersection in a way that will balance local and regional needs while also managing highway performance”.

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## STUDY NEED

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### Study Area Map



## How was the study conducted?

WSDOT staff working with a stakeholder committee and local community members developed and evaluated five potential alternatives in this study process. The stakeholder committee included representatives from Kitsap County, Kitsap Transit, the US Navy, the Suquamish Tribe and WSDOT Headquarters and Olympic Region. WSDOT held two stakeholder committee meetings to develop and evaluate potential alternatives. The committee also aided with establishing four criteria (improves safety, improves operations, cost and multimodal), for evaluating each alternative. As part of the study, two public meetings occurred, which provided an opportunity to gather input and share information with local community members. Chapter 4, Appendix B and Appendix C contain more information about the community engagement efforts.

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## PROCESS

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## What alternatives were considered?

The study evaluated five intersection improvement alternatives:

- Roundabout at the intersection of SR 160 and Long Lake Road.
- Roundabouts at two intersections, SR 160 and Phillips Road and SR 160 and Mayvolt Road/Lake Valley Road. Access is limited at the SR 160 and Long Lake Road intersection to right-in and right-out only.
- Install a new traffic signal with additional channelization at the intersection of SR 160 and Long Lake Road.
- Long Lake Road Bridge over SR 160 with ramps connecting to SR 160.
- Speed limit reduction on SR 160 and installation of permanent radar signs.

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## ALTERNATIVES

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Reduces crash potential, improves operations, cost and multimodal are the four evaluation criteria that were used to measure and rank the alternatives. This information was presented to the stakeholder committee to aid in the alternative evaluation and ranking process.

Safety and traffic operations analyses were performed for each alternative. The safety analysis applied crash data information from January 2011 to December 2015 to calculate an expected crash reduction. The traffic operations analysis examined the existing year 2016 and forecast year 2036 traffic volumes in the morning and afternoon peak hours at each of the three intersections along SR 160 (Phillips Road, Long Lake Road and Mayvolt/Lake Valley Roads) to determine which alternative performs with the least amount of delay. The results of the

safety and traffic analyses were used in the evaluation and ranking process for determining the recommended solution.

Determining if an alternative is feasible in terms of cost and how the alternative accommodates all modes of transportation was also part of the evaluation and ranking process in the study. Chapter 3 in the report describes in more detail the process used to evaluate and rank the five alternatives.

### **What is the final recommendation?**

The recommended alternative chosen by WSDOT and the stakeholder committee members is the single-lane roundabout at the intersection of SR 160 and Long Lake Road.

The key benefits of the recommended alternative are it improves and promotes continuous traffic flow reducing conflicting movements reducing the potential for injury, bicycle and pedestrian intersection crossing crashes, and it accommodates all vehicles including trucks and buses. The single lane roundabout is a practical solution that achieves the highest potential to reduce serious injury crashes.

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## **RECOMMENDATION**

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WSDOT staff and local stakeholder members worked together through the study process of establishing the needs, analyzing the data to measure the benefits and impacts of the potential alternatives, and developed criteria to choose the best alternative for improving the intersection. The study results and the recommendation were communicated to the public through an open house. Community members overall were supportive of the recommendation.

### **What are the next steps?**

Additional work on the recommended alternative was completed. A refined cost estimate for a single lane roundabout at the intersection of SR 160 and Long Lake Road was \$1.5 to \$2 million dollars.

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## **NEXT STEPS**

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The next steps following the completed study is to present the information and the recommended alternative to the WSDOT I2 Safety Panel where it will compete on a statewide level for design and construction funding in accordance with WSDOT's priority programming approach.