Communicating Intersection Decisions

Scott Davis, HQ Transportation Operations Division

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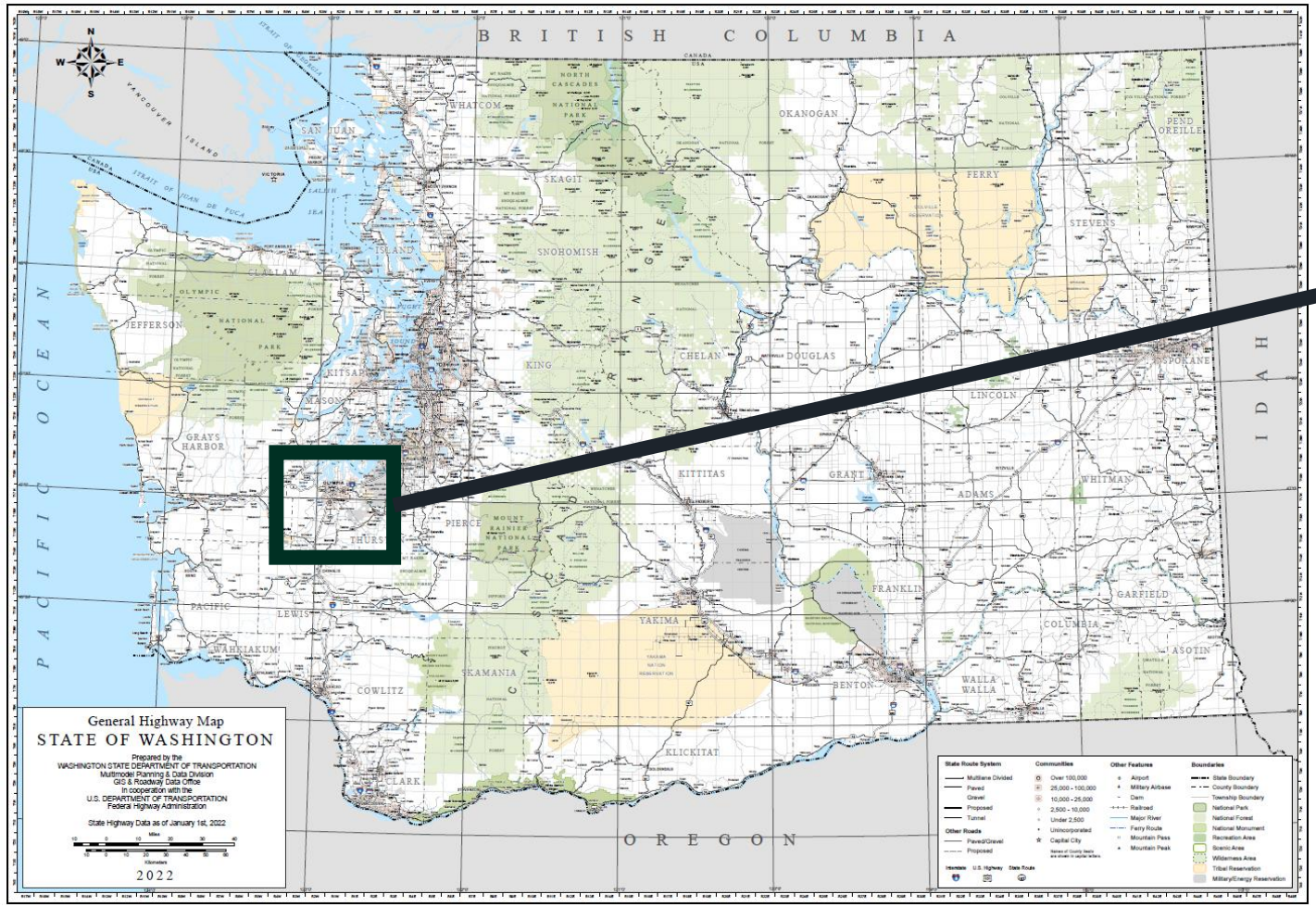
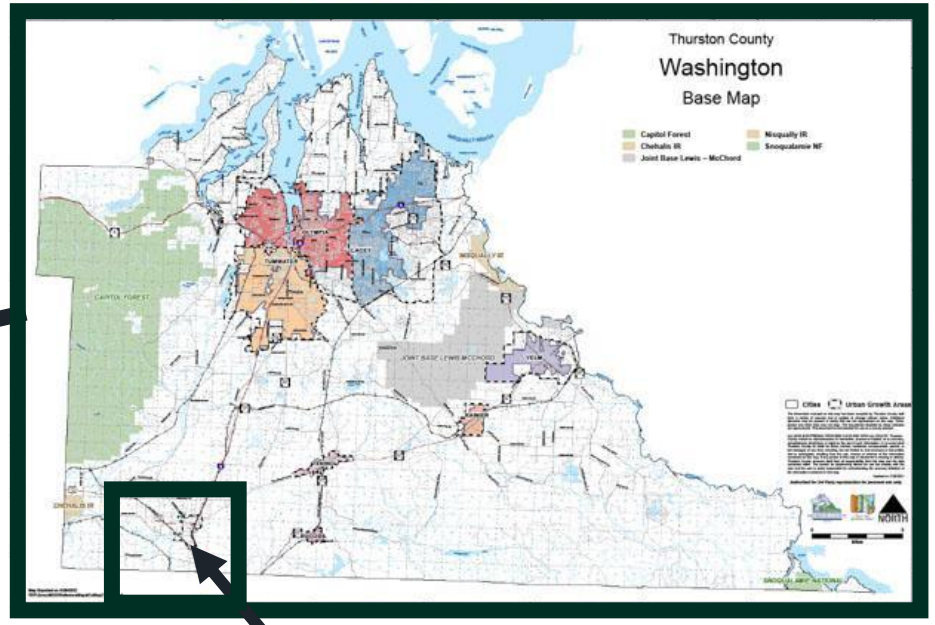
Locational Information





Grand Mound
Exit 88 on I-5

Location Information

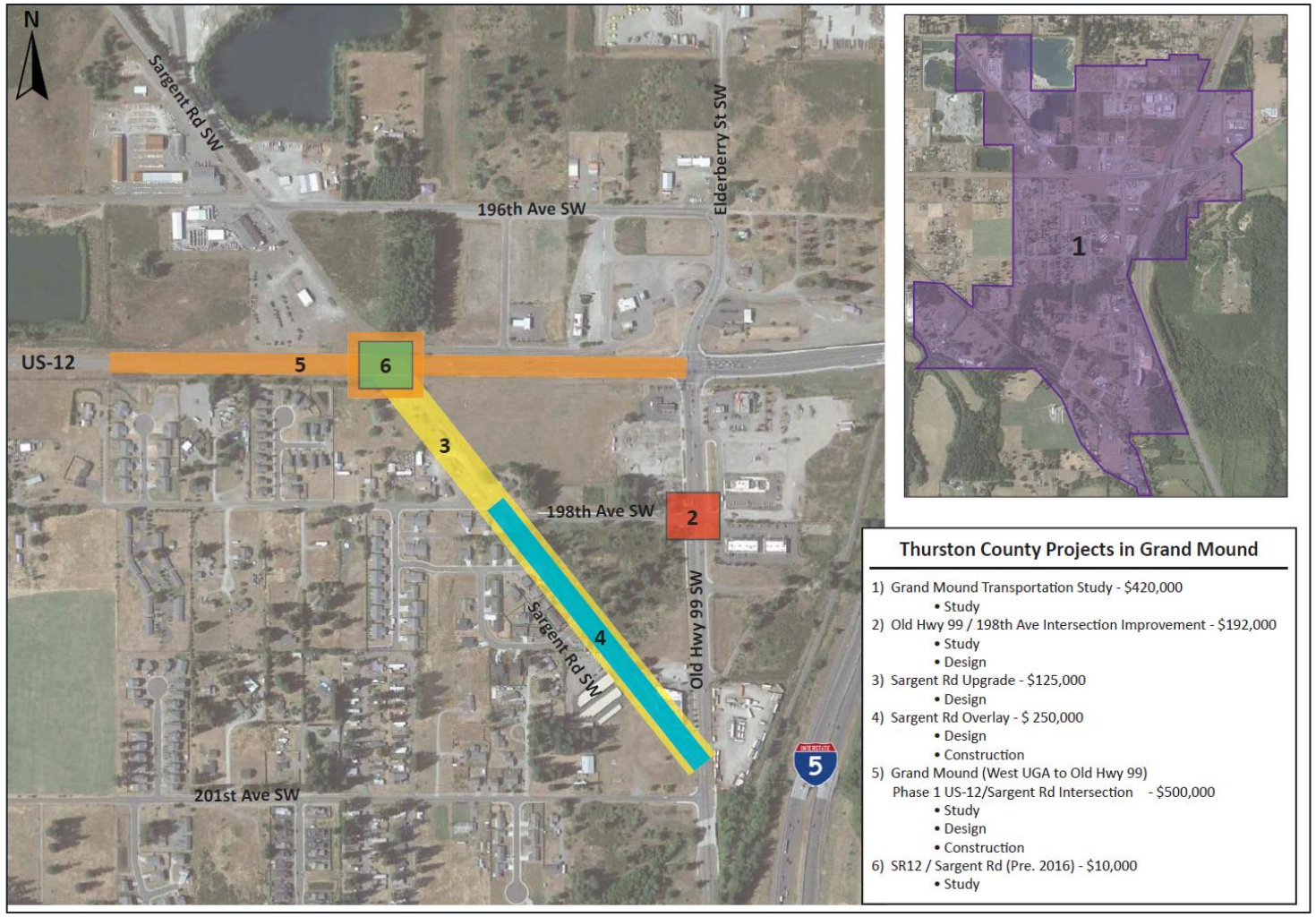
Population ~ 3,500

Count Road Traffic Volume ~ 17k

Freight ~ 8 million tons annually

5 lane arterial

Are we partners?

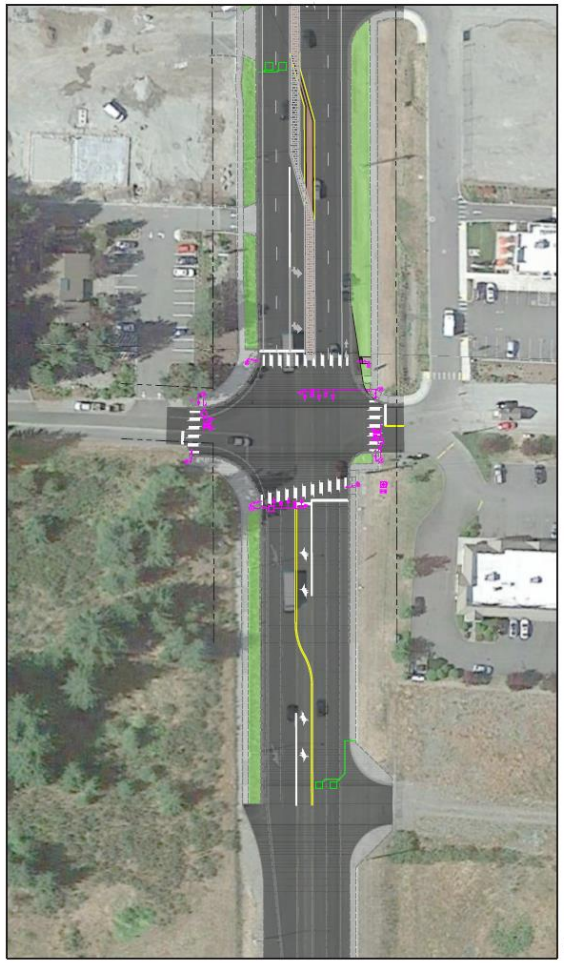


In the public sector, partnerships are typically financial in nature

Clear Alternative Drawings

ROUNDABOUT OVERVIEW

SIGNAL OVERVIEW



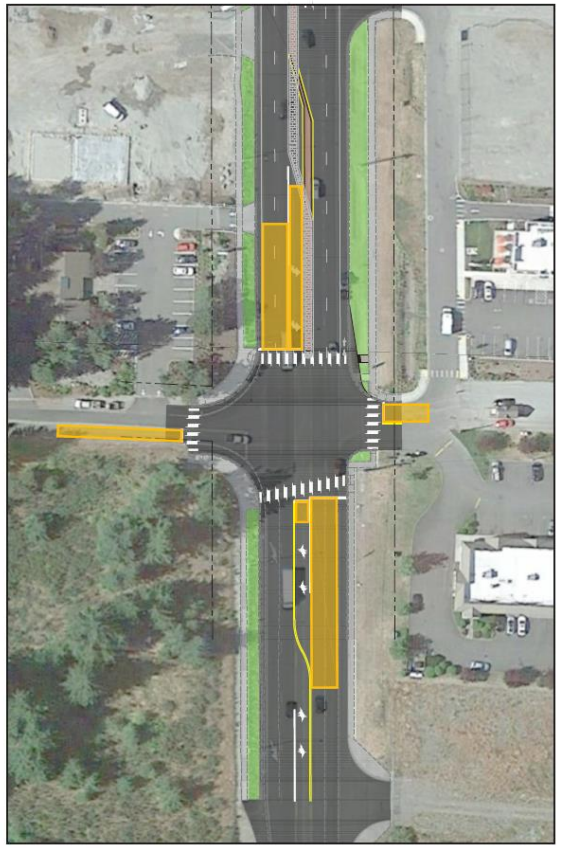
Drawings should be readily understood without explanation

Consider more cartoonish graphics vs. engineering drawings

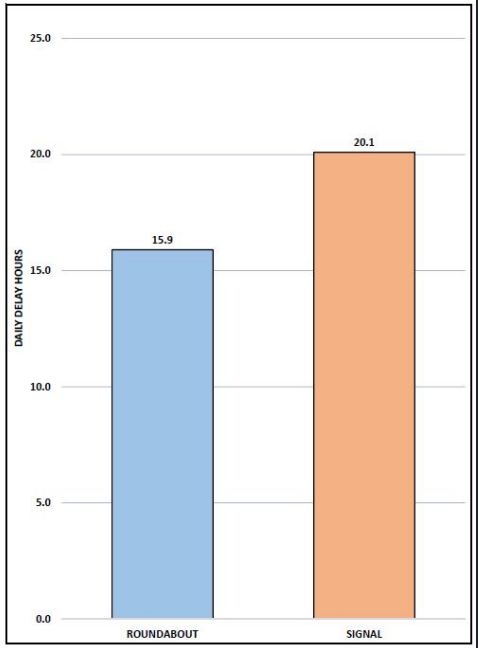
Reporting Results - Operations

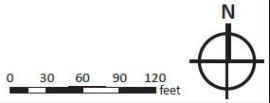
ROUNDABOUT QUEUE LENGTHS

SIGNAL QUEUE LENGTHS



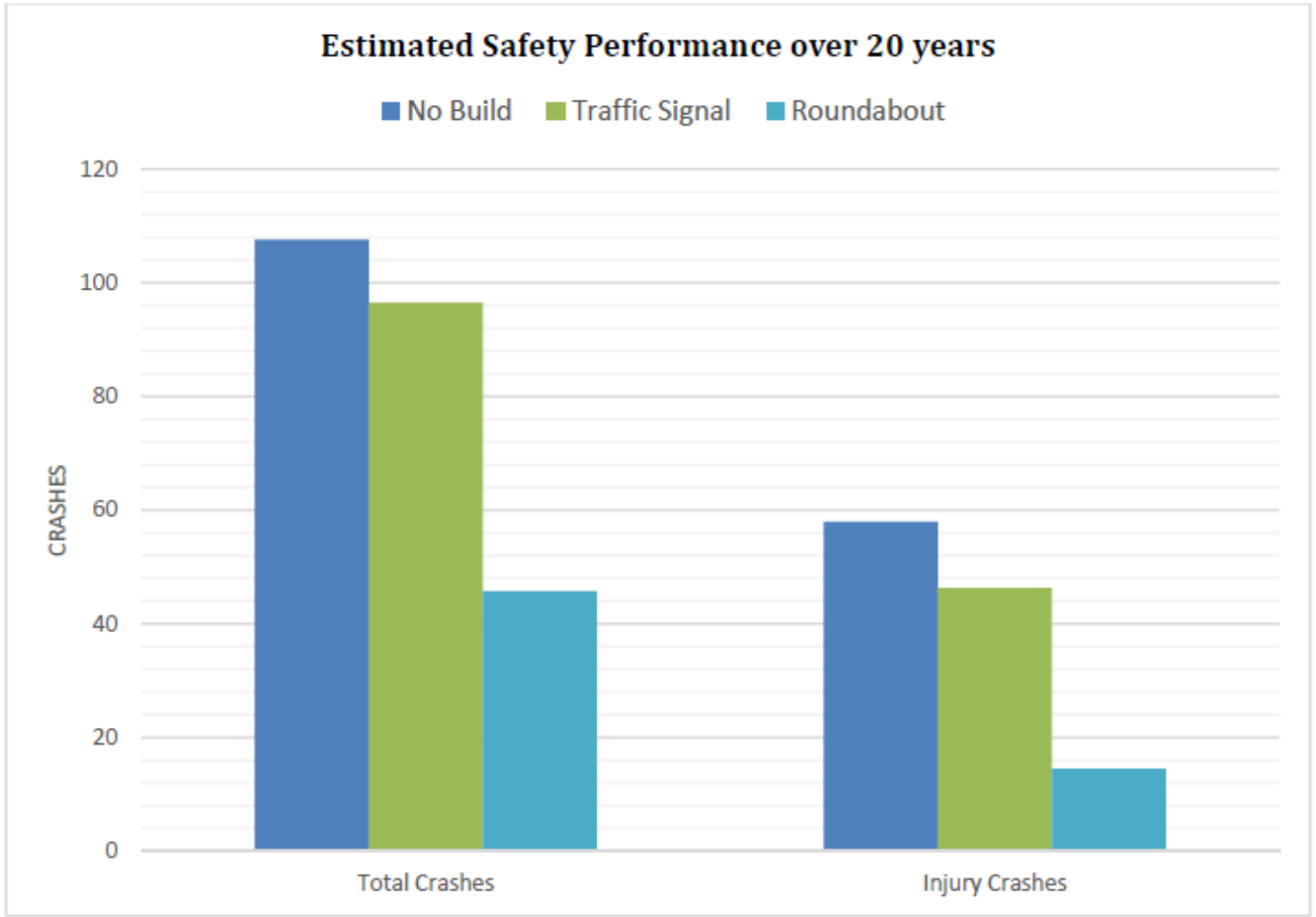
INTERSECTION DELAY





Consider Graphics & Round Numbers

Reporting Results - Safety

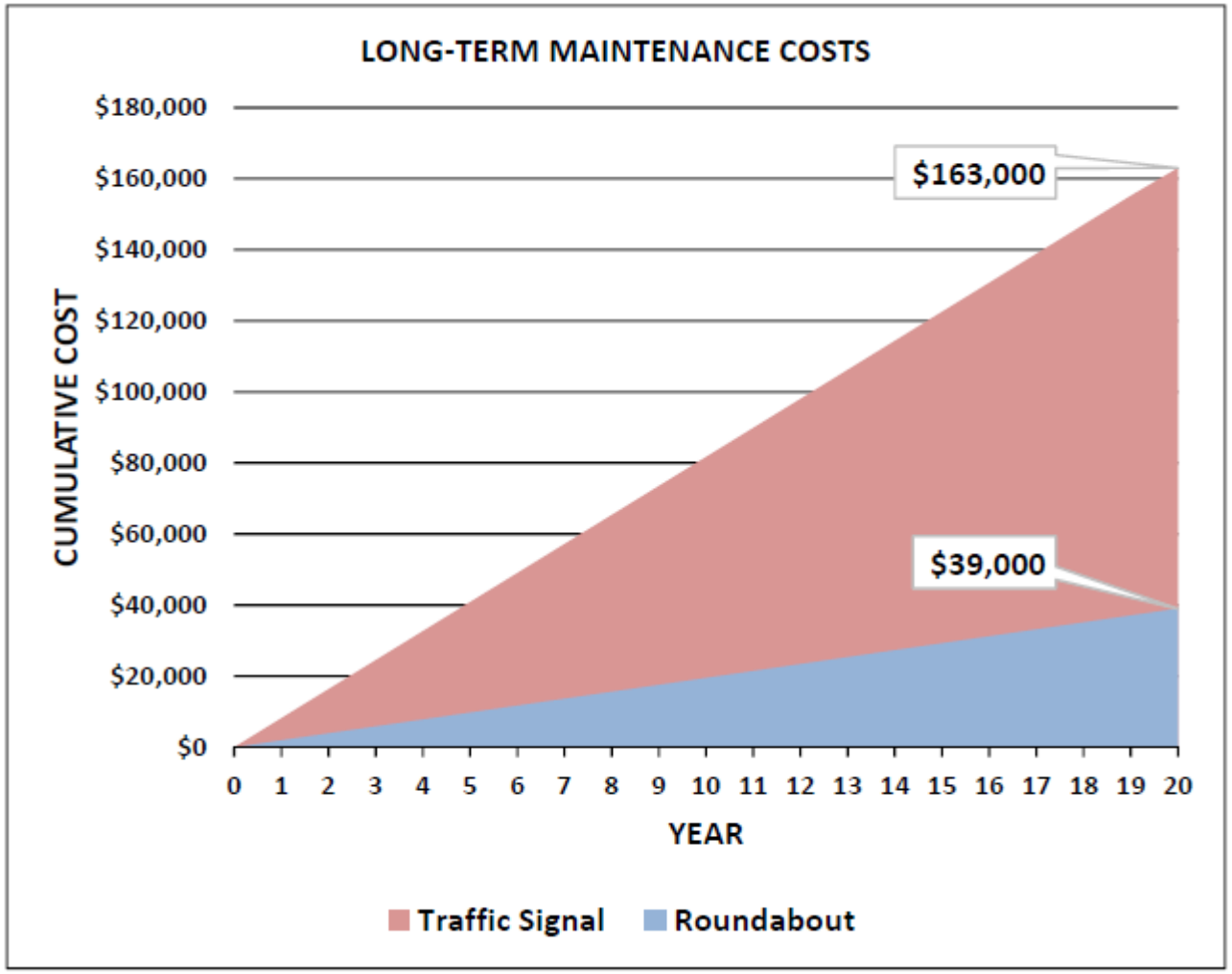


Many different ways to look at safety

Pick the one that best services the audience

HSM methods are not best served with non-technical folks

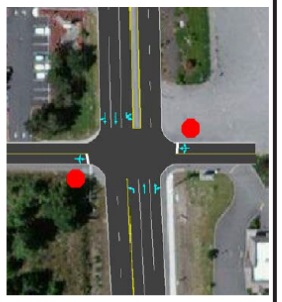
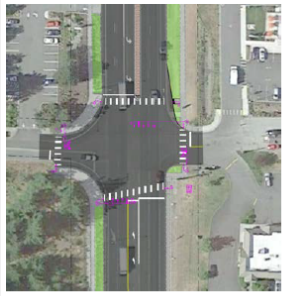
Reporting Results - Maintenance



Consider financial stewardship

Every decision impacts the future

Alternative Evaluation - Example

Performance Measures	Existing Control	Multi-lane RAB	Traffic Signal	Comments
Project Objective Statement: The 198th Avenue/Old Highway 99 intersection is an increasingly important access point for businesses in Grand Mound. Recently, median control on Old Hwy 99 between 198th Ave and Hwy 12 has improved safety and capacity on Old Hwy 99, but has put additional burden at 198th Ave. This project will address necessary improvements at 198th Ave/Old Hwy 99 to improve safety and circulation and accommodate existing and upcoming development traffic. The following criteria were established as key considerations in determining the best intersection control strategy to implement at 198th Avenue/Old Hwy 99:				Excellent Very good Good Fair Poor
Intersection Operation - 2018 PM Peak Hour Level of Service and vehicle delay at the intersection on an A to F scale; vehicle queuing	LOS F	LOS A	LOS B	2018 traffic volumes include Eagle 1 developments. Average delay is comparable between RAB and signal. Queues would be longer at a traffic signal than RAB.
Safety performance	Observed Existing Crash Problem			Roundabouts statistically experience significantly fewer injury crashes than traffic signals. Both build options would improve safety over current conditions.
Maintenance costs, considerations		Maintenance may be required on mountable curbs at the RAB.	Mechanical maintenance for life of signal and electricity usage	Power outages and crashes damaging signal hardware can be disruptive and expensive.
Planning-level construction costs		±$740,000	±$520,000	
Approximate construction schedule Can it be operational by the end of the year?		Requires modifications to the existing curbs	Built within the existing curb lines	It is not likely a roundabout could be operational by the end of 2017.
Functional Life Span How long will the intersection control strategy provide adequate capacity as traffic volumes increase in the area?	Fails Currently	Through 2040	Through 2040	2040 traffic volumes include the Sargent Road/SR 12 Roundabout being built which will shift some traffic away from this intersection.
Benefit to local network circulation Does this intersection control improve traffic flow and circulation for nearby intersections and roadways	Provides poor circulation for cross streets			Both improvement options improve cross street traffic flow. The RAB provides easier U-Turn movements and flexibility for access control on Old 99 and on 198th Avenue than a traffic signal.
Stakeholder input (to be obtained from May 17th meeting)				Stakeholders have indicated a strong desire for improvement to the intersection. Each improvement alternative was agreeable to the stakeholders in attendance.

Use more than operational and safety criteria

Consider not scoring or ranking alternatives

Washington State Department of Transportation

Questions

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