City of Sammamish
Issaquah-Fall City Road Improvements Project
Phase I Design: 242nd Avenue SE to Klahanie Drive SE

Evaluating the Design Options

The matrix below shows five potential roadway design options the City is considering and the factors it is using to evaluate the design options. Each box contains information on how the options perform.

PERFORMANCE KEY
- High
- Moderate
- Low

	Factors							
	Operations: Opening year	Operations: Future	Cost	Maintenance	Environment	Right-of-way (ROW) impacts	Safety	Aesthetics
Design Options								
Option 1 242nd: RAB Road A: 4-lane 247th: RAB Road B: 4-lane Klahanie: RAB	• All roundabouts operate at LOS A with shorter vehicle queuing	• All roundabouts operate at LOS B or better with shorter vehicle queuing	$14.9 M – $15.6 M	• Roundabout dependent on center island design	• 4-lane segment A & B provides least environmental impact	Area of Impact = 0.80 Acre	• Eliminates left turn conflicts at intersections • Elements two-way left turn lane • Roundabouts operate at lower speeds	• 3 roundabouts with center island • Reduced roadway width allows for additional landscaping • High potential for rain gardens/ low-impact development
Option 2 242nd: None Road A: 5-lane 247th: RAB Road B: 4-lane Klahanie: RAB	• All roundabouts operate at LOS A with shorter vehicle queuing	• All roundabouts operate at LOS B or better with shorter vehicle queuing	$16.7 M – $17.4 M	• Roundabout dependent on center island design	• 4-lane segment B provides low environmental impact	Area of Impact = 0.61 Acre	• Eliminates left turn conflicts at intersections • Roundabouts operate at lower speeds	• 2 roundabouts with center island • 5-lane segment may allow for intermittent planted median • Moderate potential for rain gardens/ low-impact development
Option 3 242nd: None Road A: 5-lane 247th: SIG Road B: 4-lane Klahanie: RAB	• Signal operates at LOS C or better • Roundabout operates at LOS A • Signal can have queues of 380 ft in PM peak hour • Roundabout has queues of up to 120 ft in PM peak hour	• Signal operates at LOS C • Roundabout operates at LOS B • Signal can have queues of 1,000 ft in PM peak hour • Roundabout has queues up to 360 ft in PM peak hour	$17.6 M – $18.3 M	• Roundabout dependent on center island treatment • Average annual maintenance and operations of traffic signal $5 K	• 4-lane segment B provides low environmental impact	Area of Impact = 0.49 Acre	• Signal at 247th Pl SE requires 5 lanes of width on the east approach for westbound left turn lane • Roundabout eliminates left turn conflicts at Klahanie intersection	• 1 roundabout with center island • 5-lane segment may allow for intermittent planted median • Moderate potential for rain gardens/LID
Option 4 242nd: None Road A: 5-lane 247th: RAB Road B: 5-lane Klahanie: SIG	• Signal operates at LOS D or better • Roundabout operates at LOS A • Signal can have queues ranging from 270 to 510 ft in PM peak hour • Roundabout has queues of up to 115 ft in PM peak hour	• Signal operates at LOS D or better • Roundabout operates at LOS B • Signal can have queues exceeding capacity in PM peak hour • Roundabout has queues up to 320 ft in PM peak hour	$17.9 M – $18.8 M	• Roundabout dependent on center island treatment • Average annual maintenance and operations of traffic signal $5 K	• 5-lane segments have greatest environmental impact	Area of Impact = 0.87 Acre	• Signal at Klahanie requires up to 4 lanes of width eastbound (6 lanes total on west approach)	• 1 roundabouts center island • 5-lane segment may allow for intermittent planted median • Low potential for rain gardens/LID
Option 5 242nd: None Road A: 5-lane 247th: SIG Road B: 5-lane Klahanie: SIG	• Signals operate at LOS D or better • Signals can have queues up to 510 ft in PM peak hour	• Signal operates at LOS D or better • Roundabout operates at LOS B • Signal can have queues exceeding capacity in PM peak hour • Roundabout has queues up to 320 ft in PM peak hour	$17.4 M – $18.3 M	• Average annual maintenance and operations of traffic signals $10 K	• 5-lane segments have greatest environmental impact	Area of Impact = 0.62 Acre	• Can accommodate left turns between intersections • Left turns between intersections could be restricted if collision patterns increase • U-turns at intersections require additional roadway widening	• 5-lane segment may allow for intermittent planted median • Low potential for rain gardens/LID

All designs shown are conceptual and preliminary for discussion purposes only

LOS = Level of Service

City of Sammamish

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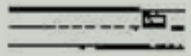
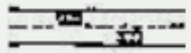
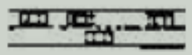
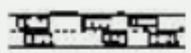
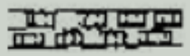
Level of Service (LOS)

Level of service (LOS) is a measurement of traffic flow at intersections used by transportation officials. It is measured on a scale of A to F, where free-flowing traffic is rated LOS A and congested conditions are rated LOS F. Factors taken into account when measuring LOS include, but are not limited to, speed, travel-time, density, maneuverability, and delays during peak travel times.

LEVEL-OF-SERVICE		CHARACTERISTIC TRAFFIC FLOW
A		Free flow, low volumes and no delays
B		Stable flow, speeds restricted by travel conditions, minor delays,
C		Stable flow, speeds and maneuverability closely controlled due to higher volumes.
D		Stable flow, speeds and maneuverability closely controlled due to higher volumes.
E		Unstable flow, low speeds, considerable delay, volume at or near capacity, freedom to maneuver is extremely difficult.
F		Forced flow, very low speeds, volumes exceed capacity, long delays with stop-and-go traffic.