

Balance is goal at 100th Ave. NE and Simonds Road

Alternative	Plan View	LOS	Pros	Cons
Alternative 3-1 Split Phase (Includes NB Shared Left-Thru Lane)		LOS AM – E LOS PM – D	<ul style="list-style-type: none"> Maintains two NB lanes through the intersection Allows for variable operation of NB shared left-thru lane similar to existing approach to NE 124th St 	<ul style="list-style-type: none"> Split phase condition degrades level of service Two SB lanes are required between 145th and Simonds Requires a shared thru-right on SB approach Dual right on east approach is required Significant storage length for NB left turn lanes is required
Alternative 3-2 Dual Protected Left for NB Approach		LOS AM – D LOS PM – D	<ul style="list-style-type: none"> Simplifies signal phasing Reducing to single NB lane allows for larger median and reduced PGIS area 	<ul style="list-style-type: none"> Reduces NB thru traffic to a single lane Two SB lanes are required between 145th and Simonds Requires a shared thru-right on SB approach Dual right on east approach is required
Alternative 3-3 Free Right from Simonds Rd to SB 100 th		LOS AM – D LOS PM – C	<ul style="list-style-type: none"> Produces the best LOS Minimizes project footprint on the SB side of 100th between 145th and Simonds Eliminates the need for a dual right condition on the east approach Minimizes storage length for NB left turn lanes Reducing to single NB lane allows for larger median and reduced PGIS area 	<ul style="list-style-type: none"> Reduces NB thru traffic to a single lane Free right condition may preclude a crossing on the south leg for non-motorized users Requires some widening on east approach which will reduce space for cabinets and above-ground utilities

Kirkland's 100th Avenue Northeast Corridor Improvements design team considered three options for the Simonds Road intersection. It opted for Alternative 3-2. Below, transportation engineers tested the intersection's design against turning radii. All vehicles are able to make the left-hand turn.

The primary goal of 100th Avenue Northeast's intersection with Simonds Road is balance: balancing the precious space between drivers coming from or going to Simonds Road, 100th Avenue Northeast, or Northeast 145th Street.

And in a broader sense, it is also attempting to balance the City's transportation goals and its environmental obligations.

Those environmental obligations are most specifically defined by a federal requirement to limit the space allotted to a ‘pollution-generating surface’ and to retain—as much as is practicable—the areas of a street that do not generate pollution.

The pollution-generating surface on 100th Avenue Northeast is every surface that vehicles touch and that convey the residue they leave behind—heavy metals from the exhaust, oil, gasoline, and, most lethally tire fragments.

Rain mixes with these pollutants and carries them into storm drains, which, drain into salmon-bearing streams before dumping into Lake Washington.

Researchers have long suspected a chemical in those tire fragments have been quietly killing Coho salmon in urban streams. And in 2020, University of Washington researchers identified that chemical.

The discovery highlighted the importance of ensuring that street improvements maximize as much as is practicable the amount of space that

does not generate pollution.

One good strategy to maximize ‘non-pollution generating space’ is to build an elevated median and plant pollutant-filtering trees in it.

However, if the analysis had determined the space now occupied by the median would be necessary for the intersection's ability to efficiently convey traffic through it, the project's design team would have instead used that space for vehicles and found other ways of reducing pollution-generating space.

Analysis showed, however, that an extra full lane there is just not necessary.

Here's why: The through-lane between the Simonds Road intersection and Northeast 145th Street would never have to accommodate more than one lane of traffic at a time.

That's because the traffic signal at Simonds Road—which the project upgraded and more efficiently coordinated with the traffic signal at Northeast 145th Street—will never allow both northbound lanes of traffic through the Simonds Road intersection at the same time.

As such, Kirkland's traffic engineers believe the line of automobiles queued at a red light at Northeast 145th Street would rarely, if ever, extend so far to the south that it would block automobiles from entering the right-turning lane onto Northeast 145th Street.

And just to be sure, they extended the right-turn-lane a few hundred feet to the south.

