

160th and Greenwood / Innis Arden Intersection Project Open House Summary



Meeting overview

The City of Shoreline and Shoreline Community College hosted a public open house on May 8, 2019, for the 160th and Greenwood / Innis Arden Intersection design project in support of Shoreline Community College's frontage improvements and on-campus residence hall project. The College did a traffic study as part of their project, which concluded that the City's delay standards are not being met at this intersection and will need to be improved to meet City traffic standards.

The information presented at the open house included:

- Explanation of the need to redesign the 160th and Greenwood / Innis Arden intersection
- How this project fits into the planned construction of Shoreline Community College's residence hall project
- Conceptual options and opportunities to provide feedback on community preferences
- Project timeline, next steps, and opportunities for future community involvement

Key audiences

- Shoreline residents nearby and adjacent to the 160th and Greenwood / Innis Arden intersection
- Travelers who use the intersection, including drivers, transit riders, cyclists, people with disabilities, and pedestrians
- Shoreline Community College faculty, staff, and students

Outreach opportunities

The in-person open house took place on Wednesday, May 8, 2019 from 6:00 to 8:00 p.m. The open house provided attendees with information and the opportunity to comment on the upcoming redesign of the N 160th Street, Greenwood Avenue N, and NW Innis Arden Way intersection. Attendees also had the opportunity to engage with both City and College staff, as well as members of the project team.

Prior to the in-person open house, City of Shoreline staff attended the Highland Terrace Neighborhood Association meeting to talk about the intersection project. At the open house, the City offered to attend any upcoming neighborhood association meetings as requested.

Open house attendees were encouraged to review project information and provide comments on conceptual options.

Key statistics from the in-person open house:

- **Number of attendees:** 24 community members (excluding event volunteers) signed in at the open house. An estimated 30 community members were in attendance.
- **Notification:** Most attendees heard about the open house through their neighborhood association (55%), followed by Shoreline Currents (41%), and a yard sign (32%).
- **Location:** Most attendees live in Highland Terrace (46%), Shorewood Hills (25%), and Innis Arden (17%).

Notification and engagement tools

A variety of notification and engagement tools were used to advertise the in-person open house and inform Shoreline residents about progress on the 160th and Greenwood/Innis Arden Intersection Project.

Notification tools included:

- Project webpage
- April 1, 2019 Shoreline *Currents* article
- Yard signs
- Shoreline *Alerts* email
- Social media
- Neighborhood alerts
- PTSA flyer

Question and answer session

Attendees asked the following questions during the in-person open house question and answer session (scanned question and answer cards attached):

- Once 2023 construction begins, will traffic control be similar to what's happening currently?
- When will computer traffic modeling be done and will info be shared to community?
- Could this be completed before agreed date?
- Is City or College considering ways to make intersection safer in the meantime?
- If enrollment at the college continues to drop, how will this affect funding of this project?
 - Will the City pick up the cost?
 - Will modifications need to be made?
 - Will the project get scrapped?
- Can we leverage Shoreline Place to help speed up the construction?
- Shoreline Place / Merlone Geier mentioned they are contributing to 160th St project. Are they contributing to sidewalk phase? Or this phase? Or both phases?
- Who pays for ongoing maintenance?
- What happens if it is not complete by 2025?
- Please explain how the new residence hall is affecting future traffic patterns – meaning, will there be many more students / staff driving to campus?
- Are all 3 options “cost effective”?
- Is slide show on Shoreline project site?
- Why wasn't the School District here? Will they be at future meetings?
- How many trees will be removed?
- The elevation from 160th to Dayton is challenging especially in morning and evening when sunrise and sunset occurs. What will the solution be? Impact to Dayton Avenue traffic?
- How many cars go thru this intersection 24/7 – how does this change during peak time and time of year?
- Has the new Shoreline Place and apartments on Denny site been figured into this?
- Will there be lighting by Metro Bus stop and north side by SCC?

Feedback summary by theme

The project team gathered feedback from attendees using display boards, comment cards, and participant questions and comments. The major themes that emerged from participant feedback include:

Traffic

- Commenters noted that the 160th and Greenwood / Innis Arden intersection experiences heavy traffic congestion throughout the day, particularly when students commute to and from the College
- Community members requested data on current traffic patterns and models predicting future traffic volumes and patterns for each option
- A few commenters suggested installing speed bumps, a five-way intersection, or combining a roundabout with a signalized intersection to slow down traffic
- A few commenters requested keeping the bus pull out to allow cars to pass
- Some community members were in favor of roundabouts, citing other countries where roundabouts were commonly used, whereas others questioned the efficacy of roundabouts

Safety and lighting

- Several commenters suggested installing more streetlights for pedestrian safety
- participants asked if there were any safety measures that could be implemented in the interim period before the project is completed
- A few community members voiced concern about distracted drivers, younger drivers speeding, and students who may be looking at their phones while walking instead of paying attention while crossing the intersection
- A few community members suggested extending the sidewalk from the College to the City ballfield for pedestrian safety
- One community member suggested installing flashing beacons for pedestrian crossings

Project time frame, funding, and completion

- During the Q&A period, several community members voiced concern about the project's timeline and how variation in funding availability might impact completion
- A couple community members asked who would ultimately be responsible for completing the project, particularly if the project is delayed or the College does not have adequate funding

Other stakeholder involvement

- During the Q&A period, a few community members inquired about other stakeholder involvement, specifically from the School District and local businesses in Shoreline Place and Merlone Geier Partners

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Appendix I: Display Boards

Project overview



The City of Shoreline and Shoreline Community College are working together to improve safety and mobility at the intersection of Greenwood Avenue N with N 160th Street and NW Innis Arden Way.

A total of three conceptual options are being considered: two options are roundabouts and one option is a signalized intersection.

At tonight's open house you can **learn more** about the conceptual options and **provide input** to help inform the alternatives.



Existing conditions at the intersection of Greenwood Avenue N with N 160th Street and NW Innis Arden Way. Source: Google Earth

Typical signalized intersections vs. typical roundabouts



Signalized intersection

Typical pros:

- Provide a familiar experience that drivers are comfortable with
- Provide orderly movement of traffic moving in different directions
- Provide clear guidance to people walking on when it is safe to cross

Typical cons:

- High maintenance costs
- Can fail during power outages
- Cause delay for people walking, biking, and driving during non-peak hours
- More conflict points and higher speeds compared to roundabouts resulting in poorer safety outcomes for people walking, biking, and driving



Roundabout

Typical pros:

- Improve safety for all users (90% reduction in fatalities¹, 76% reduction in injuries², and 35% reduction in all crashes²)
- Reduced delay for people walking, biking, and driving at peak hours and other times
- Reduced air and noise pollution and fuel use with fewer stops, hard accelerations, and idling
- Low maintenance cost (relative to signalized intersection control)

Typical cons:

- People walking can find it uncomfortable to cross without the familiarity of a signalized crossing
- Drivers may not be familiar with how to drive through a roundabout, which can cause confusion and discomfort
- Can require more space
- More complicated construction phasing

¹"Safety Effect of Roundabout Conversions in the United States: Empirical Bayes Observational Before-After Study." Transportation Research Record 1751, Transportation Research Board (TRB), National Academy of Sciences (NAS), Washington, D.C., 2001.

²NCHRP Report 572: Roundabouts in the United States. National Cooperative Highway Research Program, TRB, NAS, Washington, D.C., 2007.

Roundabouts and traffic signals in other cities



Example roundabouts in nearby cities.



Five Corners Roundabout in Edmonds looking northwest
Source: MyEdmondsNews



Five Corners Roundabout in Edmonds
Source: Google Earth



Ash Way Roundabout in Lynnwood looking north
Source: Google Earth



Ash Way Roundabout in Lynnwood
Source: Google Earth

Example offset intersections in Seattle.



3rd Ave NE and NE Northgate Way looking east
Source: Google Maps



3rd Ave NE and NE Northgate Way
Source: Google Earth



NE 50th St at Latona Ave NE and Thackeray Pl NE looking east
Source: Google Maps



NE 50th St at Latona Ave NE and Thackeray Pl NE
Source: Google Earth

160TH AND GREENWOOD / INNIS ARDEN INTERSECTION PROJECT shorelinewa.gov/160Greenwood

Conceptual option — Large roundabout



- Provides operational efficiency and safety benefits
- Opportunity for public art or place-making in center island
- Accommodates buses and emergency vehicles
- Longer travel path compared to small roundabout and signal options
- Some property acquisition from Shoreline School District required
- Pedestrian-activated flashing beacons at crosswalks similar to photo shown below



Five Corners Roundabout in Edmonds



160TH AND GREENWOOD / INNIS ARDEN INTERSECTION PROJECT shorelinewa.gov/160Greenwood

Conceptual option — Small roundabout



- Provides operational efficiency and safety benefits
- Eliminates bus pull-off on Innis Arden Way, causing delay during loading/unloading
- Opportunity for public art or place-making in center island and area north of existing median
- Reduces travel path for left turns compared to large roundabout
- Accommodates buses and emergency vehicles
- Pedestrian-activated flashing beacons at crosswalks similar to photo shown on large roundabout display board
- Some property acquisition from Shoreline School District required



160TH AND GREENWOOD / INNIS ARDEN INTERSECTION PROJECT

shorelinewa.gov/160Greenwood

Conceptual option — Signalized intersection



- Operational benefits over existing stop signs
- Requires two signalized intersections, which would be coordinated to reduce congestion
- Maintains current configuration
- No property acquisition required
- Increased operations and maintenance cost
- Accommodates buses and emergency vehicles
- Pedestrian crossing signals



160TH AND GREENWOOD / INNIS ARDEN INTERSECTION PROJECT

shorelinewa.gov/160Greenwood

Criteria for evaluation



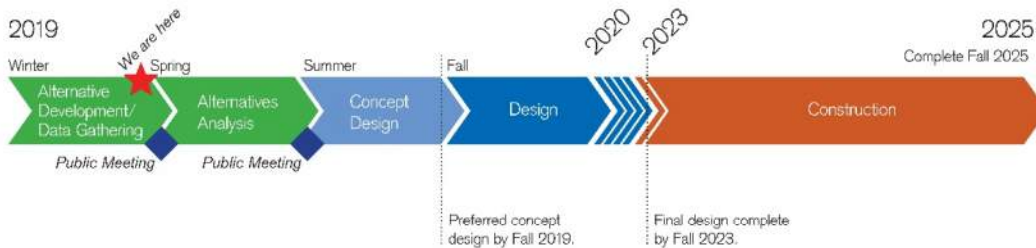
We will evaluate conceptual options and future alternatives using the following criteria:

- Traffic operations 
- Safety for people walking, biking, and driving (ADA inclusive) 
- Construction, operations, & maintenance costs 
- Right of way acquisition/impacts 
- Environmental impacts 
- Community feedback 
- Impacts to existing and newly constructed infrastructure 

We will come back to share the results of the evaluation this summer at a public meeting. Stay tuned for more information!

160TH AND GREENWOOD / INNIS ARDEN INTERSECTION PROJECT shorelinewa.gov/160Greenwood

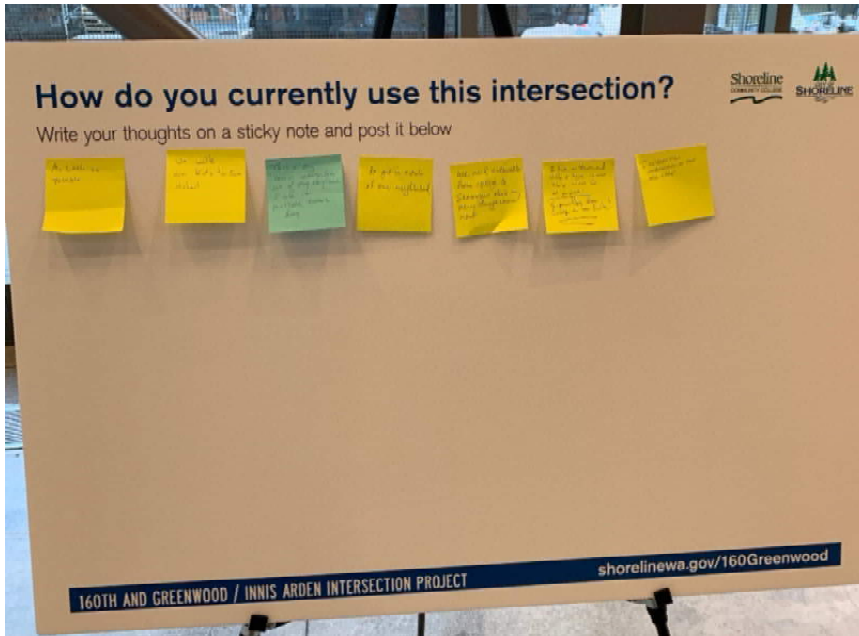
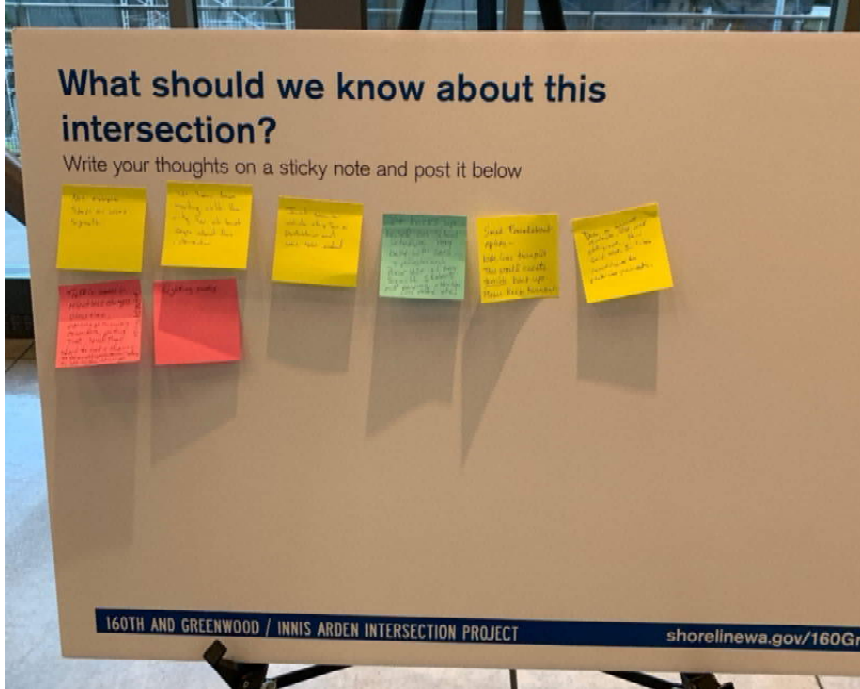
Project timeline

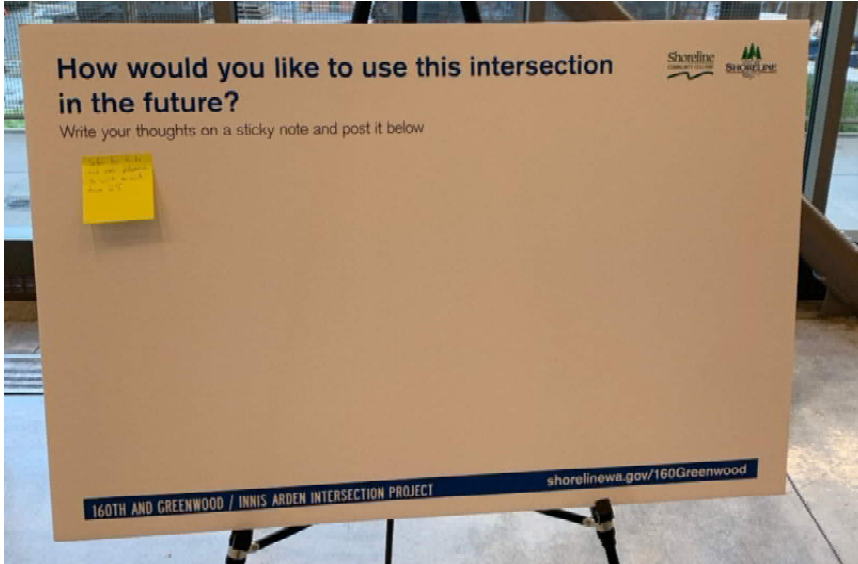


The College's Master Development Plan projects cause impacts to this intersection that must be mitigated to meet City codes. Intersection improvements must be completed within 6 years of the opening of the residence halls project.

The College will fund all or a large portion of the improvements that result from this alternatives analysis. Depending on the option selected, the City or College will construct the project by fall 2025.

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Shoreline Community College residence hall



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Appendix II: FAQ

160TH AND GREENWOOD / INNIS ARDEN INTERSECTION PROJECT

Spring 2019

Frequently Asked Questions

Why are you redesigning the intersection of Greenwood Avenue N with N 160th Street and NW Innis Arden Way?

The City of Shoreline and Shoreline Community College are working together on a conceptual design for the N 160th Street and Greenwood Avenue N / NW Innis Arden Way intersection. The College did a traffic study as part of their new on-campus residence hall project. The study shows that the intersection does not function well now and will continue to get worse as traffic increases. Without changes, the intersection will not meet the City's delay standards when the new housing opens. Intersection improvements must be completed within six years of the opening of the new on-campus residence halls.

There is already work happening near the intersection. What is it for?

In conjunction with the residence hall, the College is investing approximately \$2 million in street frontage improvements, including infrastructure upgrades, new sidewalks, and bike lanes. The College's contractor is finishing up construction on the new 68 unit on-campus residence halls. Work on utilities in the roadway is underway. You can expect to see new sidewalks and striping this summer/fall. For more information on these "Phase 1 Improvements" please contact the College's Director of Facilities (see contact below).

What options are you considering for redesigning the intersection?

Three conceptual options are being considered for this intersection:



Traffic signals provide a familiar experience with orderly movement for people driving but have higher maintenance costs and cause delays for people walking and driving when the roadway is not as busy. Roundabouts improve safety and reduce traffic delay, but can be unfamiliar for people driving and walking.



Why are you considering roundabouts?

Roundabouts are used across the country and internationally to move traffic through large and small intersections. Roundabouts are shown to improve safety for people walking, biking, driving, and taking transit and improve the flow of traffic when installed in appropriate locations. The benefits of standard roundabouts include:

- 90% reduction in fatalities¹, 76% reduction in injuries², and 35% reduction in all crashes²
- Reduced delay for people walking, biking, and driving
- Reduced pollution and fuel use
- Reduced maintenance costs

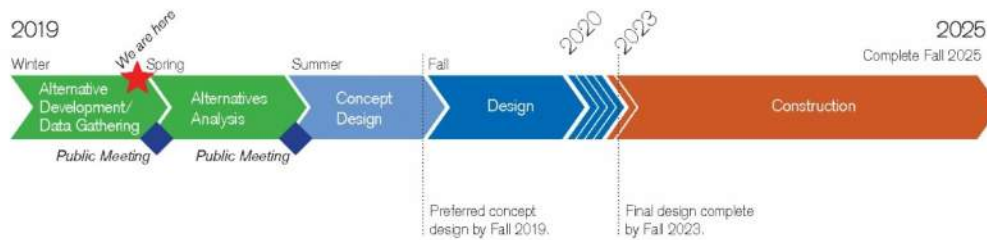
How will you select a final concept?

The City's team will analyze the options based on:

- Traffic operations (meeting the City's delay standards)
- Safety for people walking, biking, and driving (ADA inclusive)
- Construction, operations, and maintenance costs
- Right of way acquisition/impacts
- Environmental impacts
- Community feedback
- Impacts to existing and newly constructed infrastructure (including impacts to bus stops and new sidewalks installed with the College's Phase 1 improvements)

What is the project timeline?

We are currently developing alternatives and gathering data. The College will fund all or a large portion of the improvements that result from this alternatives analysis. Depending on the option selected, the City or College will construct the project by fall 2025.



How will residential properties be impacted?

To accommodate the new design, the City may have to acquire some property from the Shoreline School District. Based on current options, we do not anticipate needing to acquire property from residential properties. Construction impacts will be identified as construction gets closer.

How do I stay involved?

We know this is an important intersection for the neighborhood and want your input. The City will be holding a public meeting this summer to share the results of the analysis and get more feedback before selecting a final concept.

Contact us

For additional project information, visit shorelinewa.gov/160Greenwood

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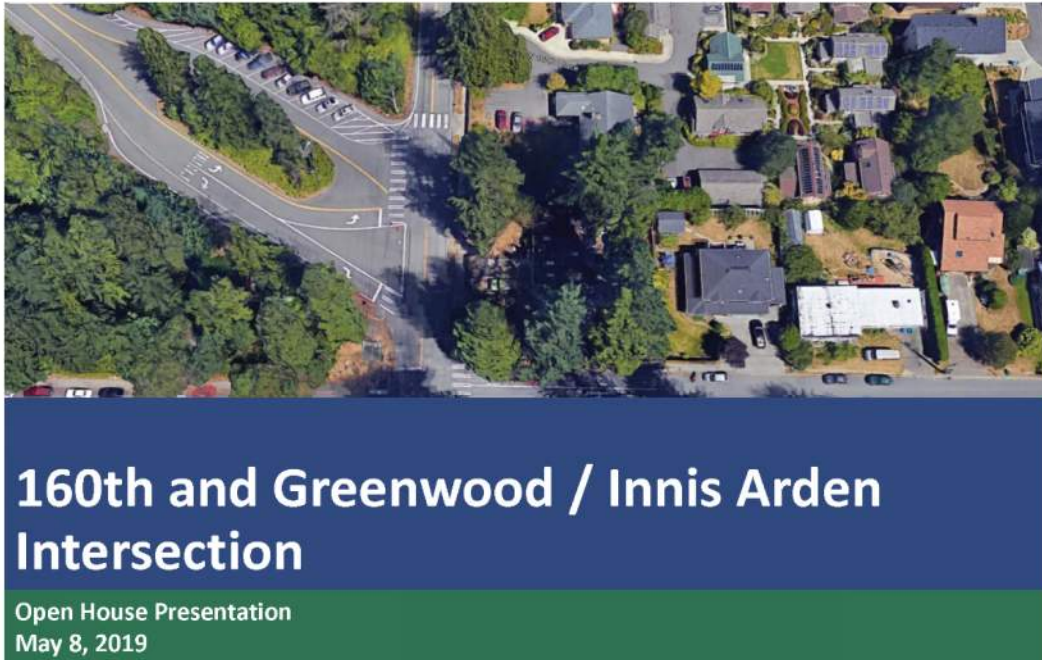
Jason Francois
Shoreline Community College, Director of Facilities
jfrancois@shoreline.edu | (206) 546-4514

¹ "Safety Effect of Roundabout Conversions in the United States: Empirical Bayes Observational Before-After Study," Transportation Research Record 1751, Transportation Research Board (TRB), National Academy of Sciences (NAS), Washington, D.C., 2001.

² NCHRP Report 572: Roundabouts in the United States. National Cooperative Highway Research Program, TRB, NAS, Washington, D.C., 2007.



Appendix III: Presentation



MEETING AGENDA

6:00 PM – Welcome & sign in

6:30 PM – Presentation and Q&A

7:00 PM – Open house

- View conceptual options
- Talk with staff who can answer questions
- Share your feedback on the conceptual options and your experience at this intersection

8:00 PM – Adjourn

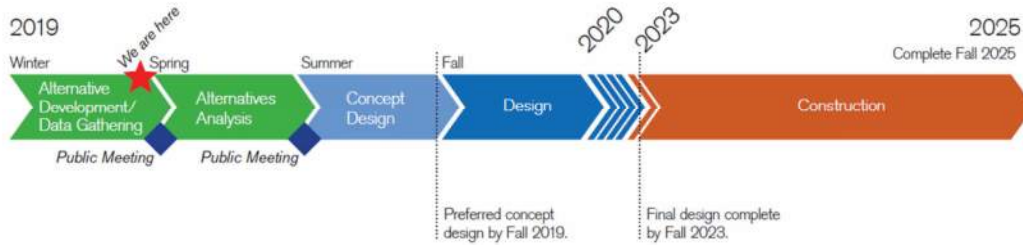


SHORELINE COMMUNITY COLLEGE MASTER DEVELOPMENT PLAN

- Master Development Plan to support growing College
- Sidewalk improvements coming soon; concurrent with the residence hall project
- Improvements to 160th and Greenwood / Innis Arden intersection required within 6 years of residence hall project
- City and College developing intersection concepts and want your feedback



PROJECT TIMELINE



WHAT ARE THE CURRENT CHALLENGES AT THIS INTERSECTION?

- Unusual alignment leads to confusion / poor operation
- Existing traffic delays, which are becoming longer with increased traffic
- Poor access for people walking and biking
- Metro buses, school buses, and other heavy vehicles are regular users
- Serves elementary school and College campus



Source: Google Earth



CONCEPTUAL OPTIONS



Three improvement options are being considered: two options are roundabouts and one option is a signalized intersection



ROUNDBABOUT PEDESTRIAN FEATURES

Pedestrian-activated flashing beacons at crosswalks



CRITERIA FOR EVALUATION

- Safety and ease of use for people walking, biking, and driving (ADA inclusive) 
- Traffic operations 
- Construction, operational & maintenance costs 
- Right of way acquisition/impacts 
- Environmental impacts 
- Community feedback 
- Impacts to existing and newly constructed infrastructure 



SIGNALIZED INTERSECTIONS

Typical pros:

- Provide familiar experience that drivers are comfortable with
- Provide orderly movement of traffic moving in different directions

Note: Complex or offset intersections require coordination and present operational challenges

- Provide clear guidance to people walking on when it is safe to cross

Typical cons:

- High maintenance costs
- Can fail during power outages
- Cause delay for people walking, biking, and driving during non-peak hours
- More conflict points and higher speeds compared to roundabouts resulting in poorer safety outcomes for people walking, biking, and driving



◆ ROUNDABOUTS

Typical pros:

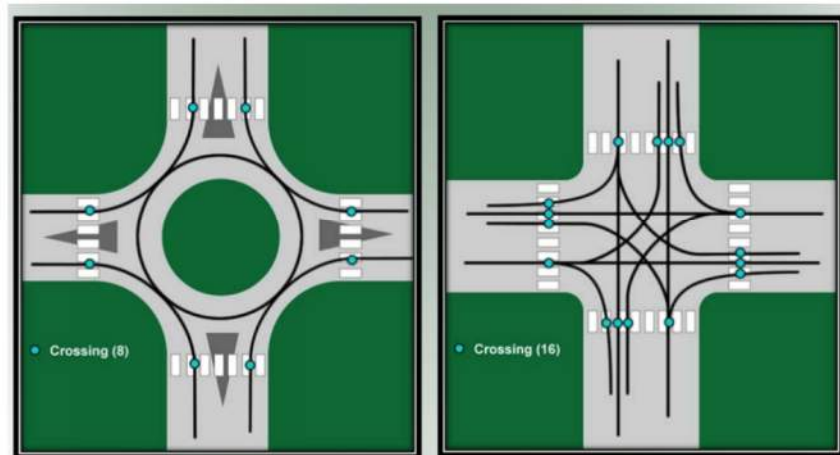
- Reduced delay for people walking, biking, and driving at peak hours and other times
- Reduced air and noise pollution and fuel use with fewer stops, hard accelerations, and idling
- Low maintenance cost (relative to signalized intersection control)
- Improve safety for all users (90% reduction in fatalities, 76% reduction in injuries, and 35% reduction in all crashes)

Typical cons:

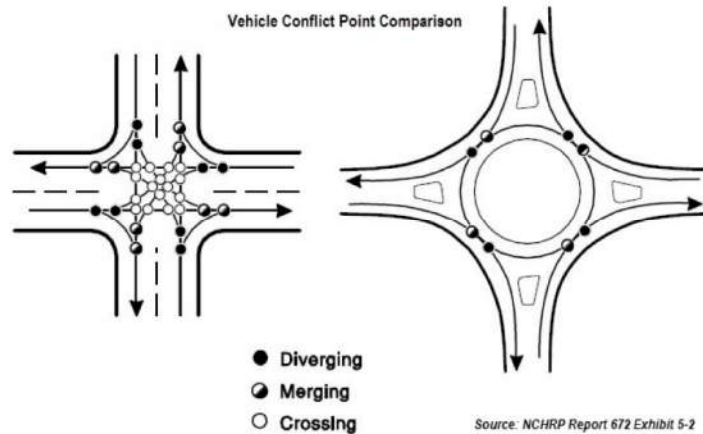
- People walking can find it uncomfortable to cross without the familiarity of a signalized crossing
- Drivers may not be familiar with how to drive through a roundabout, which can cause confusion and discomfort
- Can require more space
- More complicated construction phasing



VEHICLE-PEDESTRIAN CONFLICT POINTS

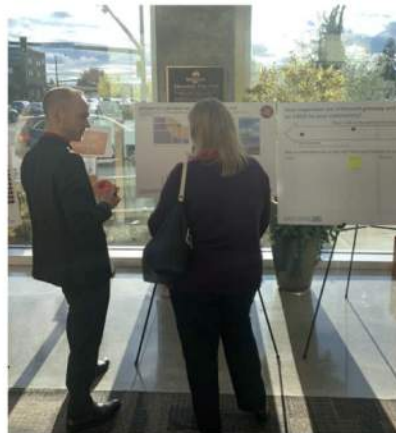


VEHICLE-VEHICLE CONFLICT POINTS



NEXT STEPS

- Listen to feedback and input from community
- Evaluate options based on criteria and feedback
- Refine concepts:
 - One roundabout, one signal
- Next public meeting in summer 2019



YOUR FEEDBACK

How do you **currently**
use this intersection?

How would you like to
use this intersection in the **future**?

What **should we know**
about this intersection?



QUESTIONS?



THANK YOU FOR ATTENDING!

For questions or comments, contact:

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City of Shoreline Engineering Project Manager

zevans@shorelinewa.gov

(206) 801-2428

