



CITY OF KIRKLAND
Department of Public Works
123 Fifth Avenue, Kirkland, WA 98033 425.587.3800
www.kirklandwa.gov

MEMORANDUM

To: Kurt Triplett, City Manager

From: Julie Underwood, Director of Public Works
Rod Steitzer, P.E., Capital Projects Manager
George Minassian, P.E, Capital Projects Supervisor

Date: September 8, 2022

Subject: KIRKLAND AVENUE/LAKE STREET INTERSECTION IMPROVEMENTS—
CLOSURE OPTIONS UPDATE

RECOMMENDATION:

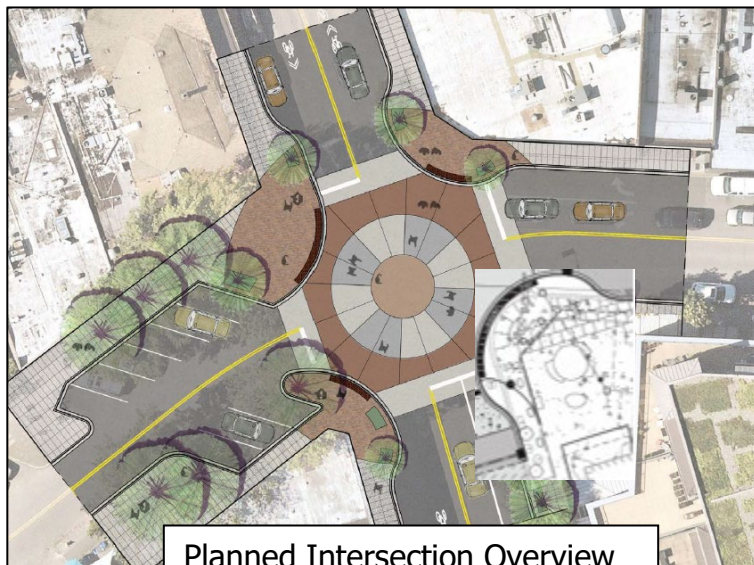
It is recommended that the City Council receive additional information about roadway closures for the Kirkland Avenue/Lake Street Intersection Improvements Project and provide direction to staff. Staff will provide an oral report and respond to questions at the meeting.

BACKGROUND DISCUSSION:

The Kirkland Avenue and Lake Street Intersection Improvements project will improve safety, reduce pedestrian crossing times, implement a "pedestrian scramble phase," improve sight distance for vehicles, and enhance surface water facilities. Specific work includes ADA ramps, curb bulbs, signal system improvements, new urban design surface features, and storm water system collection, flow volume, and treatment improvements (see Attachment A, Vicinity and Area Map). The improvements support the Council Goals of Balanced Transportation and Dependable Infrastructure.

Previous Project updates include:

- May 4, 2021, [staff presented the Council](#) with options about urban design features.
- May 18, 2021, [the Council authorized staff](#) to further develop urban design concepts and return with refined cost estimates.
- August 4, 2021 [the Council provided direction](#) to remove the northbound-to-eastbound turn lane.
- On October 5, 2021 staff presented the [urban design features](#) and cost estimates.



Construction Planning—Traffic Control

Since the work for the proposed improvements includes trenching for utilities, excavation for revised curb lines, installation of signal pole bases, and the placement of concrete, extensive traffic control measures are needed to ensure pedestrian and vehicle safety, handle traffic volumes effectively, and to accommodate business access. Staff worked with its consultants and determined that Project construction requires a full closure of the intersection for at least two weeks under any scenario.

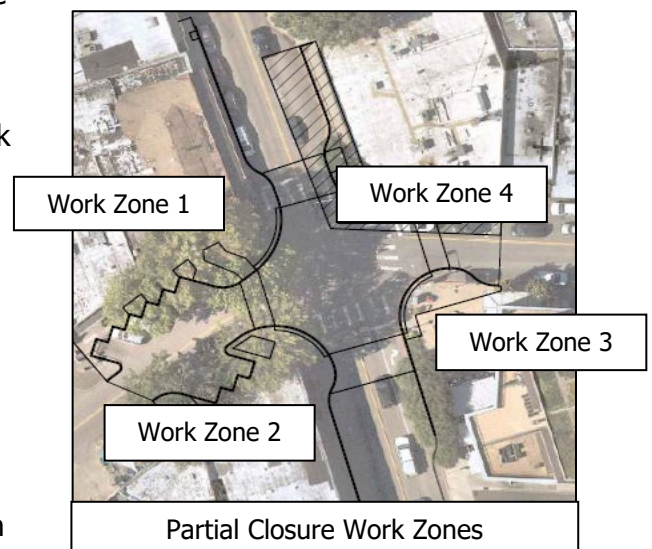
Because an intersection closure significantly impacts the downtown area, Staff worked with its consultants to determine which construction activities could be done using a partial intersection closure thereby providing options that each have differing potential impacts in the downtown area. The team developed three traffic control options to handle pedestrians and vehicles during construction of the project, shown in Table 1.

Each of the three options uses a combination of full closure and partial closures to complete the work. It is expected that 30 parking stalls, including short term (yellow curb) spaces, will be utilized during all closure options. The closure options account for 6 stalls to be utilized for u-turn movements for vehicles. The configurations are defined as follows.

- **Full Closure:** The intersection would be closed to vehicle traffic in all directions 24 hours per day. At all times, safe pedestrian access would be maintained. A detour plan for the full closure work zone is provided (see Attachment B, Proposed Detour Map).
- **Partial Closure:** The partial closure utilizes one north bound travel lane, and one west bound travel lane to move vehicles through the intersection 24 hours per day. Southbound and Eastbound vehicles would follow a detour route. This configuration allows construction work in one of the four defined work zones for a given period of time; no work would occur in the other three zones during that same period (see Partial Closure Work Zones Image on this page). The traffic configuration would be changed to allow work in the next work zone. Outside crew work hours, northbound and westbound travel lanes would be controlled by stop signs. At all times, safe pedestrian access would be maintained.

General Notes:

- No work during Noise Ordinance hours:
 - Between 8 p.m. & 7 a.m. on weekdays; and
 - Between 6 p.m. & 9 a.m. on Saturdays; and
 - All day Sunday.
- Access to all businesses will be maintained with exception of scheduled/planned short-term interruptions to restore finished surfaces such as concrete sidewalks.



Understanding the impacts of a partial closure is an important element of handling traffic volumes during construction. Three primary factors were considered when analyzing the impacts of the proposed partial closure:

- Flaggers would operate the Lake Street and Kirkland Avenue intersection during hours of construction; flaggers would be able to clear large queues and move emergency vehicles through the intersection as needed. However, during non-work hours, stop signs likely will increase the time for vehicles to move through the intersection and increase overall delay.
- There is a high-volume, mid-block pedestrian crossing on Lake Street at Park Lane just north of the Lake Street and Kirkland Avenue intersection. The volumes are difficult to predict and model, but mid-block pedestrian crossings likely will cause additional stops and add delay to motorists.
- The high volume of vehicles at the Lake Street and Central Way intersection could cause backups for vehicles on Lake Street from Central Way through the Lake Street and Kirkland Avenue intersection.

Using the closure configurations along with the anticipated construction schedule of work, the team has developed three traffic control options that could be implemented during construction, which is projected to take about 4 months (15 weeks) to 5 months (20 weeks), excluding interruptions caused by weather, material delays, labor shortages, etc. Table 1 below summarizes the time impacts for each option.

- **Option 1 Full Closure/Quickest Completion:** This option reduces the total length of time to construct the project. Although this option requires approximately two months of closure, this option reflects the shortest time needed to complete the overall project. Because this option has the shortest time, the project would require less time for labor and resources to manage the project, traffic control, and stage materials and equipment. For these reasons, this would also be the least expensive option.
- **Option 2 Minimize Full Closure/Extended Partial Closure:** This option limits the time that the intersection/roadway experiences full closure, but results in the longest overall time to construct the project. Because this option requires the longest time to construct the project, this option would be the most expensive option to implement.
- **Option 3 Optimized Combination of Full and Partial Closures:** This option utilizes a combination of partial and full closures to complete construction. A factor to consider with this option is needing to be nimble, and therefore, less predictable with closures.

Table 1: Time-Based Traffic Control Options

Option	Description	Partial Closure	Full Closure	Subtotal*
1	Full Closure	0 weeks	8 weeks	8 weeks
2	Minimize Full Closure/Extended partial closure	11 weeks	2 weeks	13 weeks
3	Combination of closures	7 weeks	4 weeks	11 weeks

* Each option requires an additional 7 weeks to complete construction activities behind the curbs, between the road and the buildings. Traffic control for this configuration allows vehicles to move through the intersection similarly to how traffic flows today. There would be temporary disruptions to vehicle traffic to allow construction crews and materials to work in the sidewalk

areas. Safe pedestrian access would be maintained with short term accommodations for placement of new sidewalks.

By comparison, Option 1 requires 5 weeks less than Option 2 to complete the work. This results in 5 weeks less public disruption, as well as less labor and resources to complete the Project. Depending on bid prices received, the anticipated 5-week difference could be as high as a \$200,000 difference.

Staff Recommendation

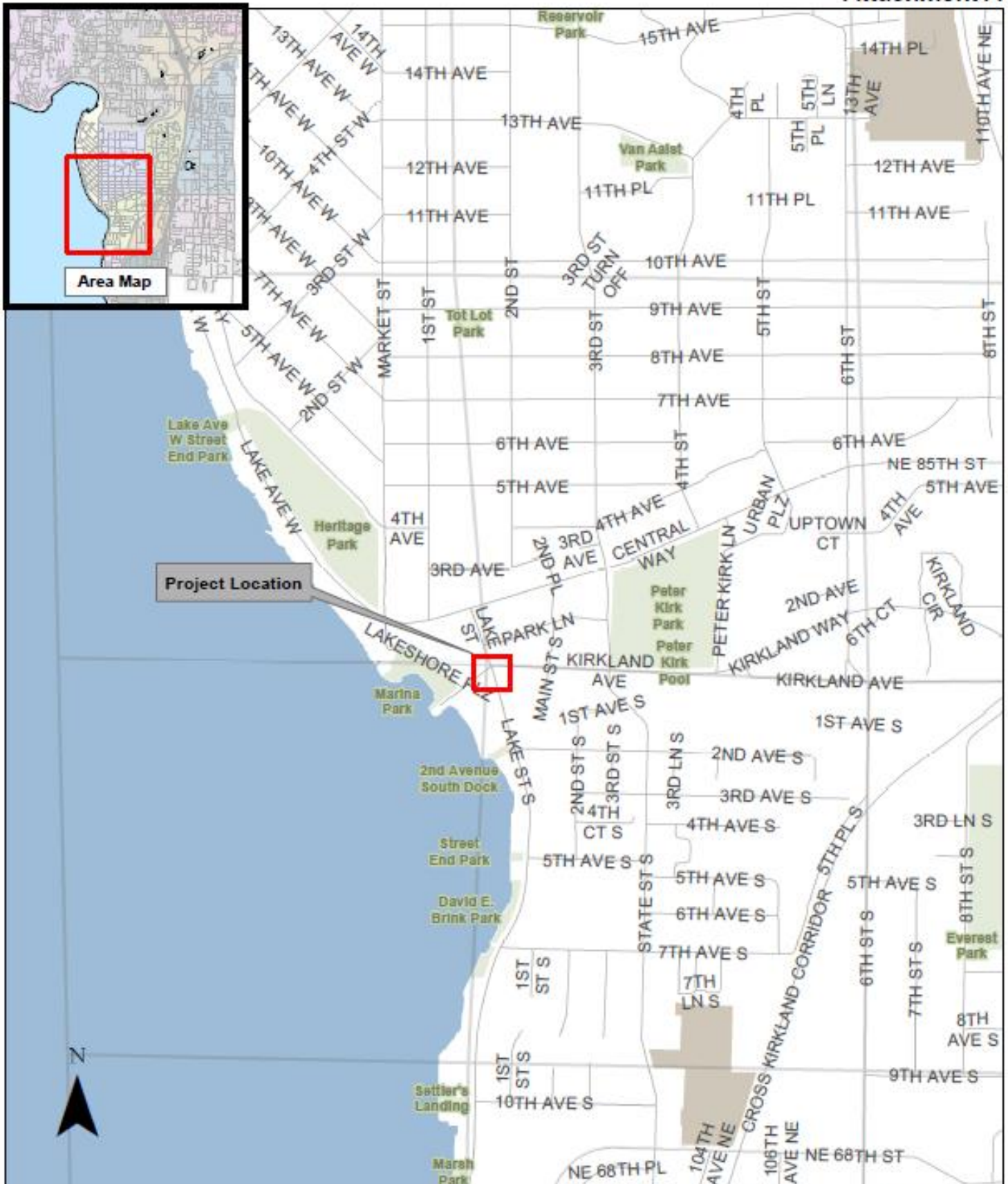
To shorten the overall length of construction and reduce construction costs, staff recommends Option 1. However, given the significance of the impact the project will have in Kirkland's downtown core, staff is seeking Council's feedback and direction. With direction, staff will work with the Washington State Department of Transportation (granting agency) for traffic control plan approval prior to advertising the Project. Because costs for complex and extensive traffic control measures can vary by bidder and with time of year, staff has also included contract provisions to receive value engineered traffic control proposals which allows traffic control flexibility compliant with competitive bidding processes.

Schedule

The project continues to be on schedule, with an anticipated construction start time late in the first quarter of 2023. Once the Council provides direction about the preferred construction traffic control option, staff will begin the public outreach process by notifying adjacent property owners with a direct mailing describing the upcoming work. Project information, including a regularly updated construction schedule, also will be posted on the City's Capital Improvement Project website and will be widely distributed through social media and the City's e-newsletter. To the greatest extent feasible, the proposed detour will be coordinated to avoid any special summer events.

Attachment A: Vicinity and Area Map

Attachment B: Proposed Detour Map



Vicinity and Area Map
Kirkland Avenue/Lake Street Intersection Improvements

