



**CITY OF KIRKLAND**  
**Department of Public Works**  
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## **MEMORANDUM**

**To:** Kurt Triplett, City Manager

**From:** Laura Drake, P.E, Senior Project Engineer  
Rod Steitzer, P.E., Capital Projects Manager  
Julie Underwood, Director of Public Works

**Date:** July 22, 2021

**Subject:** KIRKLAND AVENUE/LAKE STREET INTERSECTION IMPROVEMENTS—  
NORTHBOUND TO EASTBOUND TURN

### **RECOMMENDATION:**

It is recommended that the City Council provide direction about the potential repurposing of the northbound-to-eastbound right turn lane at the Kirkland Avenue/Lake Street intersection as part of the project scope.

### **BACKGROUND DISCUSSION:**

The intersection of Kirkland Avenue and Lake Street is at the heart of downtown (see Attachment A, Vicinity and Area Map) and has a high level of pedestrian activity. Presently, pedestrians experience long delays waiting to cross the intersection, and curb ramps are not ADA compliant. There is a history of pedestrian/vehicular collisions at this intersection attributable in part to permissive turning movements for vehicles that occur when pedestrians are crossing the street.

To improve safety, reduce crossing times, and increase sight distance, the current project scope is to build a raised intersection, replace the ADA ramps, add curb bulbs, and modify the signal system to implement a "pedestrian scramble phase," during which all vehicles will be stopped but pedestrians will be able to utilize any crosswalk in any direction. For the northbound traffic at the intersection, these changes will reduce vehicle peak-hour level of service from the 2019 level of "B" to the projected 2035 level of "E," but the project will improve pedestrian safety and accessibility. Additionally, the project will enhance the storm water system to accommodate the roadway improvements, handle surface water flow volumes, and treat surface water runoff.

On May 4, 2021, staff presented the Council with the two options. One was to amend the project scope to address a series of traffic signal and surface water infrastructure issues that could be addressed most efficiently at the time the intersection was being reconstructed. The second option was to explore possible enhancements to the project by including an array of urban design features. On May 18, 2021, the Council authorized staff to amend the scope to address the signal and surface water issues, and also authorized staff to develop urban design concepts further for future Council review and discussion. The Council amended the project's budget on May 18 to fund those scope amendments.

### Northbound Right Turn Lane

At the May 4, 2021 meeting, as part of its deliberations, the Council also requested staff to investigate the feasibility of repurposing the existing northbound-to-eastbound right turn lane at the intersection. Utilizing that turn pocket would allow for some additional pedestrian space to be created on the southeast corner and reduce crossing distances incrementally. A traffic analysis has determined that during most times of the day the impacts to vehicles would be minimal. However, there would be a greater impact for northbound drivers travelling during the afternoon peak/commute period than if the right turn were not removed. Northbound p.m. peak drivers would experience increased delays and queuing, as shown in Table 1, below.

**Table 1: Impacts to Northbound Vehicles During PM Peak**

	Level of Service	Queue Length (ft)
2019 (Existing)	B (19 seconds)	1,050
2035 (No Project)	C (21 seconds)	1,480
2035 With Scramble	E (55 seconds)	2,550
2035 With Scramble and Removal of NB RT Lane	E (63 seconds)	2,960

There are marginal benefits and impacts on either side of this question.

With regard to safety, the greatest benefit to pedestrians is whether the scramble is installed at all. When the signals turn red for the scramble, there are to be no vehicles in the intersection and pedestrians can make their crossings safely. The potential safety benefits of repurposing the northbound-to-eastbound turn lane may be for those cases when pedestrians attempt to cross when vehicular movements are permitted. Further, with the redevelopment of the southeast corner of the intersection several years ago, there is now additional plaza space (albeit largely privately-owned rather than public right-of-way) for pedestrians to stand and wait for a safe crossing; the bulb would add even more space and an incremental increase in safety. This contrasts with the northwest corner, where currently there is very little sidewalk space for pedestrians to stand and wait and where today a free right from southbound-to-westbound is allowed. Adding a bulb to the northwest corner, which is included in the design that is being engineered now, should improve pedestrian safety.

Repurposing the turn lane and adding a bulb on the southeast corner may reduce east/west crossing time by several seconds, but for an all-way scramble intersection the technical measurement is the longest crossing, which would be the diagonals. The geometry of the proposed bulb on the southeast corner would not reduce the distance between southeast-to-northwest materially and would have no impact on southwest-to-northeast crossings.

That being said, Kirkland has a long history of implementing policies and making capital improvements that enhance the walkability and pedestrian appeal of its downtown, so the proposed removal of the right turn lane would further support those policies and previous actions. The *Intelligent Transportation System Plan*, for instance, calls for increased benefits to pedestrian accessibility over vehicular throughput.

For drivers, as shown in Table 1, above, the elimination of the turn lane would add an estimated 8 seconds of delay by the year 2035 and would increase the projected queue by an estimated 400 feet. There are several other factors that contribute to vehicle stops and queues in this segment of Lake Street (e.g., several non-signalized pedestrian crossings), but the

removal of the turn lane and the addition of the bulb would add roughly 15% of delay and queuing for northbound drivers in the p.m. peak.

Ultimately, this policy choice may come down to a matter of perspective: the potential incremental benefit to pedestrians versus the projected impact to traffic.

### **Advancement of Engineering**

The option of adding urban design features to the intersection is a decision that can be made in the coming weeks without impacting the project's schedule, and staff anticipates returning to the Council in September to resume that discussion.

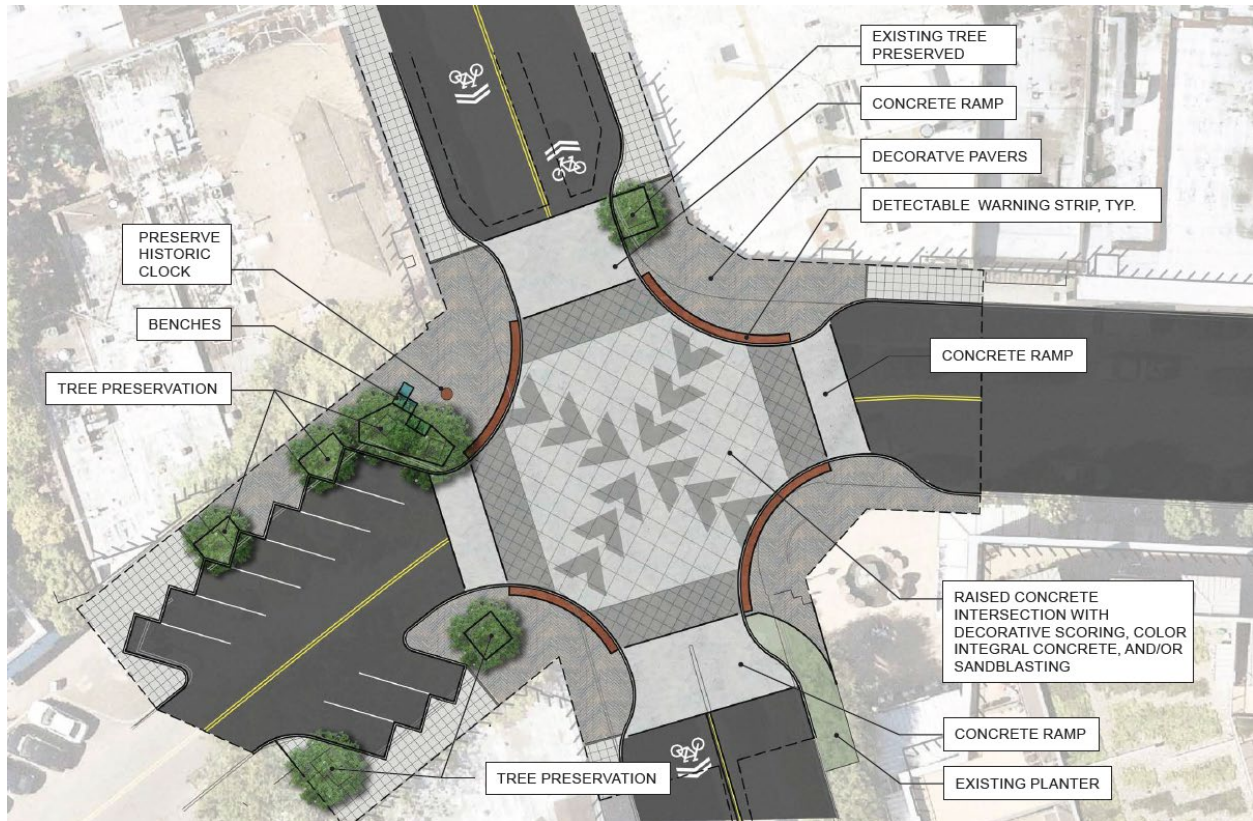
However, staff needs a decision at this time regarding the right-turn question not only to keep the project on schedule but also to confirm important engineering design decisions. For two examples, whether or not to include the bulb on the southeast corner influences the curb line, which in turn impacts the design of the stormwater system; and whether or not to include the bulb influences the location of signal poles and related design decisions.

The Council does have the option of choosing to keep the turn lane, evaluate the performance of the intersection over the coming years, then choosing to add the bulb in the future. The possibility here is to design the project with the anticipation the bulb may be added in the future; at this time there do not appear to be complicating utility or vault location issues associated with that option. However, this would not be the most cost-effective choice. While staff is knowledgeable about this project as it stands today, staff cannot identify at this time how much re-work would need to be undertaken. A better answer to that question could be derived once 60% design is achieved. The rework also would cause another cycle of disruption to the public while the intersection is modified.

### **Urban Design Concepts—Future Discussion**

While this agenda item is primarily to seek direction about the turn lane, staff also notes for the Council that the turn lane decision is an element of potential urban design enhancements that the Council will be asked to consider at a subsequent meeting.

The urban design recommendation from the project team is to create a design that is both aesthetically pleasing and also encourages pedestrians to use the "cross all ways" feature of the pedestrian scramble—when all cars stop and pedestrians are able to cross the intersection in any direction, including diagonally. Since the raising of the intersection already in the project's scope, decorative scoring, color and/or sandblasting could be added. The project intends to preserve the historic clock currently on the northwest corner of the intersection, and the project team is making every effort to preserve existing trees, especially the large trees on the west leg of the intersection. Additionally, decorative pavers can be added to the four intersection corners, with interest to select pavers that require minimal maintenance. These kinds of features are illustrated in Figure 1, below.



*Figure 1: Conceptual Aerial View of Kirkland Avenue and Lake Street with Decorative Features*

In addition to those larger features, smaller urban design features could be added to create a vibrant and inviting environment for businesses and the community. Bicycle racks and benches provide facilities for nonmotorized users, encouraging people to bike to the area and enjoy the outdoor space. The trash and recycling receptacles at the intersection currently must be relocated to the optimal location at the intersection. Staff recommend replacing both receptacles rather than relocating the existing receptacles to ensure the reliability of these facilities while reducing potential constructability issues. The current scope will replace the existing traffic signal cabinet, which today features a decorative wrap. Staff recommends wrapping the new traffic signal cabinet similarly so that the community may continue to enjoy this decorative feature. Vehicular bollards can function as both safety features and to prevent errant vehicles from

entering pedestrian space; and could provide another aesthetic feature, such as decorative bell-shaped bollards.

Landscaping provides the public with cleaner air and creates a vibrant urban feature that changes throughout the year. Staff recommends preserving as many existing trees as possible. However, any trees that are in poor condition or would not survive construction would be replaced (where possible). Additionally, the existing large flowerpots, currently sponsored by the Kirkland Downtown Association, will be preserved. Planter railings may be added along the existing planter strip on Lake Street, helping to reduce damage to the plants by creating a safe barrier between the pedestrian space and the landscaped area while adding another decorative feature to the intersection. Hanging flowerpots and/or decorative banners could be added to the new signal poles at the intersection.

Additional features that could celebrate downtown's unique identity include a public art feature and downtown identity signage. Finally, art inlayed in the sidewalks also could provide wayfinding, such as the examples shown in Figure 2, above.



Figure 2: Examples of Art and Wayfinding Sidewalk Inlay

Staff is aware that installing such improvements is only part of the equation. On-going maintenance costs and durability are another, and staff is identifying those and will present estimates when it returns with a discussion about the urban design options.

### **Urban Design Features—Initial Estimates of Cost**

Because costs and budget implications are important to discussions about capital improvements, below in Table 2 are preliminary estimates of individual urban design elements. These estimates cannot be relied upon at this point because work is still being done to refine the design options. Staff is providing these estimates to indicate a sense of scale, which could facilitate the Council's discussion on August 4 but may also be helpful data to have in mind when the Council has its more detailed discussion about the urban design options in the near future.

**Table 2: Cost Estimates for Urban Design Features**

Item	Total
Decorative Intersection Treatments	\$ 60,000
Planter Railing	\$ 78,750
Bell Bollards	\$ 24,000
Block Bench	\$ 15,000
Standard Bench	\$ 8,100
Bicycle Rack	\$ 6,000
Waste Receptacle	\$ 12,750
Recycling Receptacle	\$ 12,750
Utility Cabinet Box Wrap	\$ 24,000
Decorative Pavement Inlays	\$ 22,550
Planter Pots	\$ 2,700
Banner or Flower Basket Arms	\$ 3,000
<b><i>Core Urban Design Subtotal</i></b>	<b><i>\$ 269,550</i></b>
Additional Decorative Add-Ins	
Public Art Piece	\$ 66,000
Downtown Identity Signage	\$ 33,000
<b>Total</b>	<b>\$ 368,550</b>

### **Schedule**

Project design efforts began in March 2021 with survey and data gathering. Design will continue until late Autumn 2021. Were the contract to be advertised at the end of 2021, the selected contractor would begin long-lead procurement in early 2022. Construction is planned to span Spring and Summer 2022. If environmental permits are obtained successfully in a timely manner, permitting will be in place by the end of 2021. However, if NEPA approval becomes complicated because of NMFS review processes, staff will return to the Council with an updated schedule and recommended next steps.

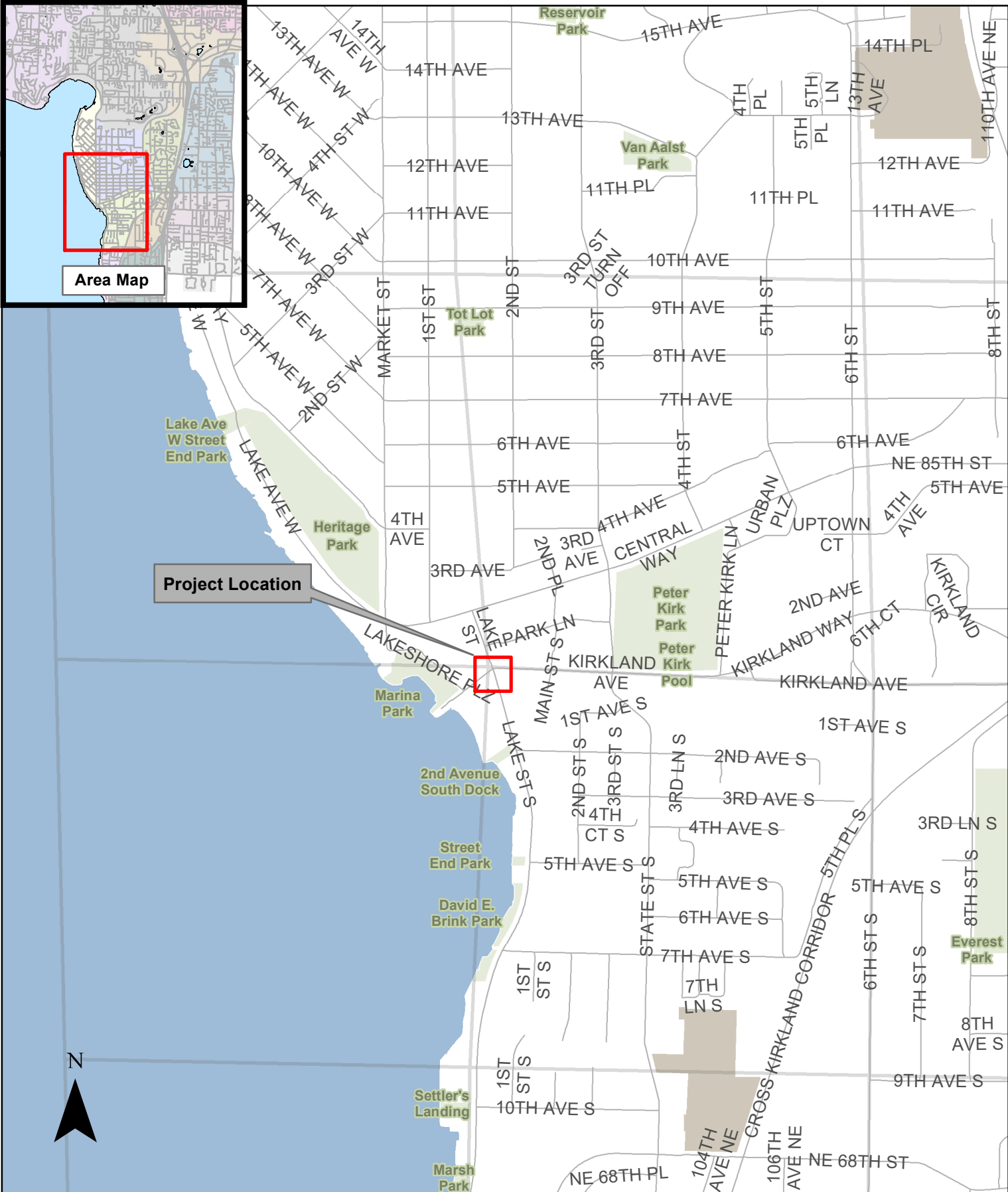
### **NEXT STEPS:**

Staff seeks the Council's direction at this time whether:

- To retain the northbound-to-eastbound turn lane at the intersection of Lake Street and Kirkland Avenue;
- To repurpose the right-turn lane and install a bulb on this corner when the scramble is first constructed; or
- To retain the right-turn lane for now with the further direction to staff and the consulting team that the City may choose to repurpose the right-turn lane in the future.

Staff also anticipates returning to the Council in the near future regarding urban design options for this project.





**Vicinity and Area Map**  
Kirkland Avenue/Lake Street Intersection Improvements