CITY OF KIRKLAND

TRANSIT IMPLEMENTATION PLAN

MARCH 2019

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CITY OF KIRKLAND

TRANSIT IMPLEMENTATION PLAN

CONTENTS


BUS BAY
1
KIRKLAND AVE
METRO
236 Woodinville/ Totem Lake
248 Avondale/ Redmond
RIDER ALERT
255 TOTEM LAKE
TO TERMINAL
1169
CROSSWALK WARNING DEVICE
CAUTION

INTRODUCTION

PLAN PURPOSE

Today, Kirkland's over 83,000 residents are served by several transit routes connecting the city to various Eastside destinations, as well as in Seattle and southwest Snohomish County. Kirkland is also a growing employment center that attracts transit trips from around the region.

In response to increased growth, the City of Kirkland developed the Kirkland Transit Implementation Plan (KTIP) to improve transit service within the City. In 2015, the City worked closely with stakeholders and the community to develop the Transportation Master Plan (TMP), which helped to prioritize transportation projects through 2035.

The TMP establishes several goals relevant to transit, which include:

- **Goal T-0 Safety**: By 2035 eliminate all transportation related fatal and serious injury crashes in Kirkland.
- **Goal T-3 Public Transportation**: Support and promote a transit system that is recognized as a high value option for many trips.
- **Goal T-5 Link to Land Use**: Create a transportation system that supports Kirkland's land use plan.
- **Goal T-6 Be Sustainable**: As the transportation system is planned, designed, built, maintained and operated, provide mobility for all using reasonably assured revenue sources while minimizing environmental impacts.
- **Goal T-7 Be an Active Partner**: Coordinate with a broad range of groups; public and private to help meet Kirkland's transportation goals.

The KTIP builds upon the goals of the Transportation Master Plan and serves as a tool to help get Kirkland residents where they want to go in the safest and most efficient way.

PLANNING PROCESS

This Plan is the result of a year-long process that involved local stakeholders, transit agencies, community members, and comprehensive technical analyses to understand the current state of fixed-route transit service and plan for the future. A Technical Advisory Committee comprised of King County Metro, Sound Transit, and Washington State Department of Transportation (WSDOT) was convened to identify the best strategies to enhance transit connections, while the Kirkland Transportation Commission provided guidance throughout the plan development process.

COMMUNITY OUTREACH

The KTIP was informed by two phases of community outreach. For the first phase, feedback was collected at an in-person Open House in November 2017 and through an online survey that was available for resident participation in December 2017 and January 2018. After these comments were collected, the input was used to guide transit improvement priorities in Kirkland and to identify specific projects which enhance transit service throughout the City. For the second phase, the City hosted an Online Open House for community members to learn more about potential transit projects and provide feedback on the proposals. These efforts are described in greater detail in the upcoming sections.


6TH STREET
STOP
FOR ME
IT'S
THE
LAW
ROAD
WORK
AHEAD
Snorkel


235
Bivue TC/Kingsgte
Kirkland
249
Overlake/S Bellev
255
Brickyar/Seattle
Kirkland
74450
206-553-3000
www.kingcounty.gov/metro
King County
METRO
255
6998
IT STARTS
YES
Seattle Children's

EXISTING AND FUTURE CONDITIONS

EXISTING TRANSIT LANDSCAPE

Existing Services

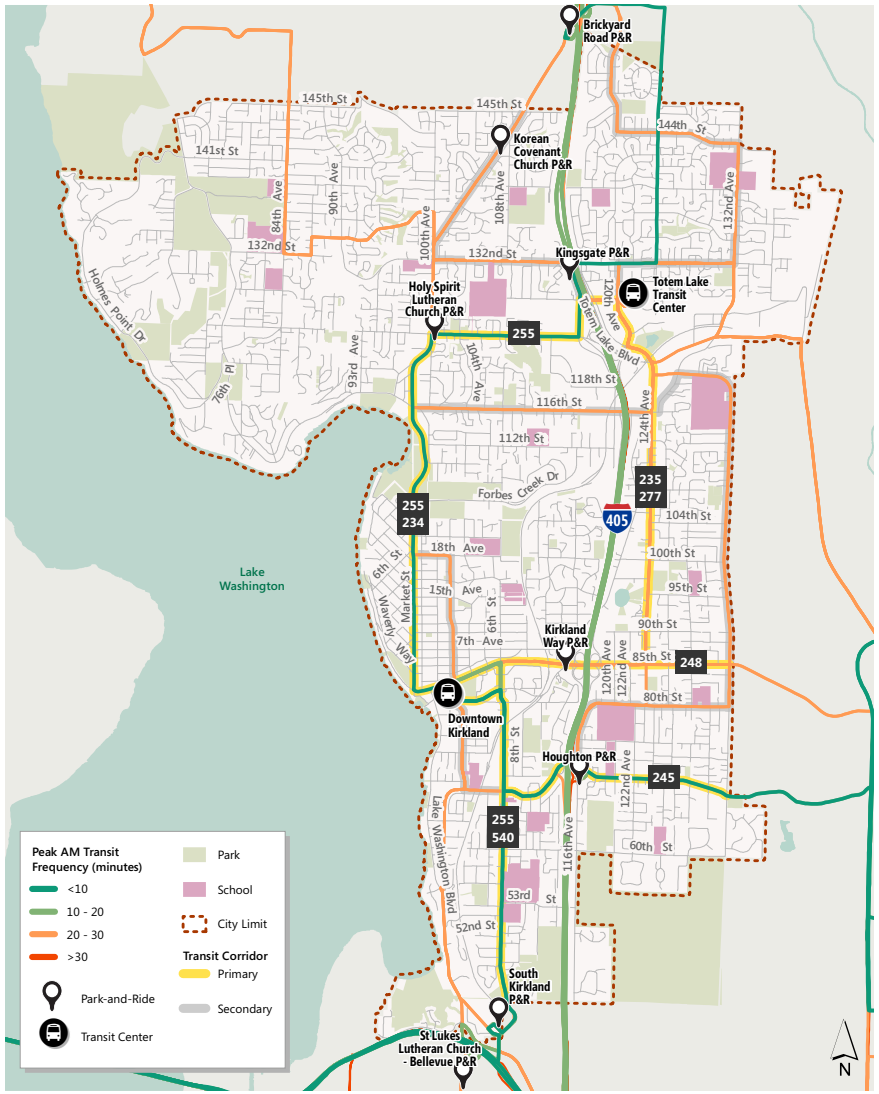
Kirkland currently has fourteen bus routes that pass through its boundaries: two frequent lines, with buses arriving every 15 minutes or less during peak periods (the 245 and 255); four express lines, with limited stops (the 252, 257, 277, and 540); and eight local lines. There are three hubs for transit in City limits – the Downtown Kirkland Transit Center, the Totem Lake Transit Center, and the South Kirkland Park and Ride. Additionally, there are five other Park and Ride lots in Kirkland, including Houghton, Kirkland Way, Kingsgate, Holy Spirit Lutheran Church, and Korean Covenant Church. These are shown in **Figure 1**.

The Transportation Master Plan identified priority transit areas along primary and secondary corridors, shown in yellow and grey respectively in **Figure 1**. The corridors represent key transit functions with existing or planned frequent service. However, much of the City is still without frequent service, and some areas, such as the northwestern part of the City along Juanita Drive, have no transit service.[1]

Approximately 8,000 people board a bus in Kirkland each day, with some routes carrying a majority of the total ridership. Route 255, which operates between Kirkland and Downtown Seattle has the highest ridership among all Kirkland routes with approximately 3,300 people boarding each day. In general, ridership has increased since 2013, with citywide daily boardings up over 100 percent, as shown in **Table 1**.

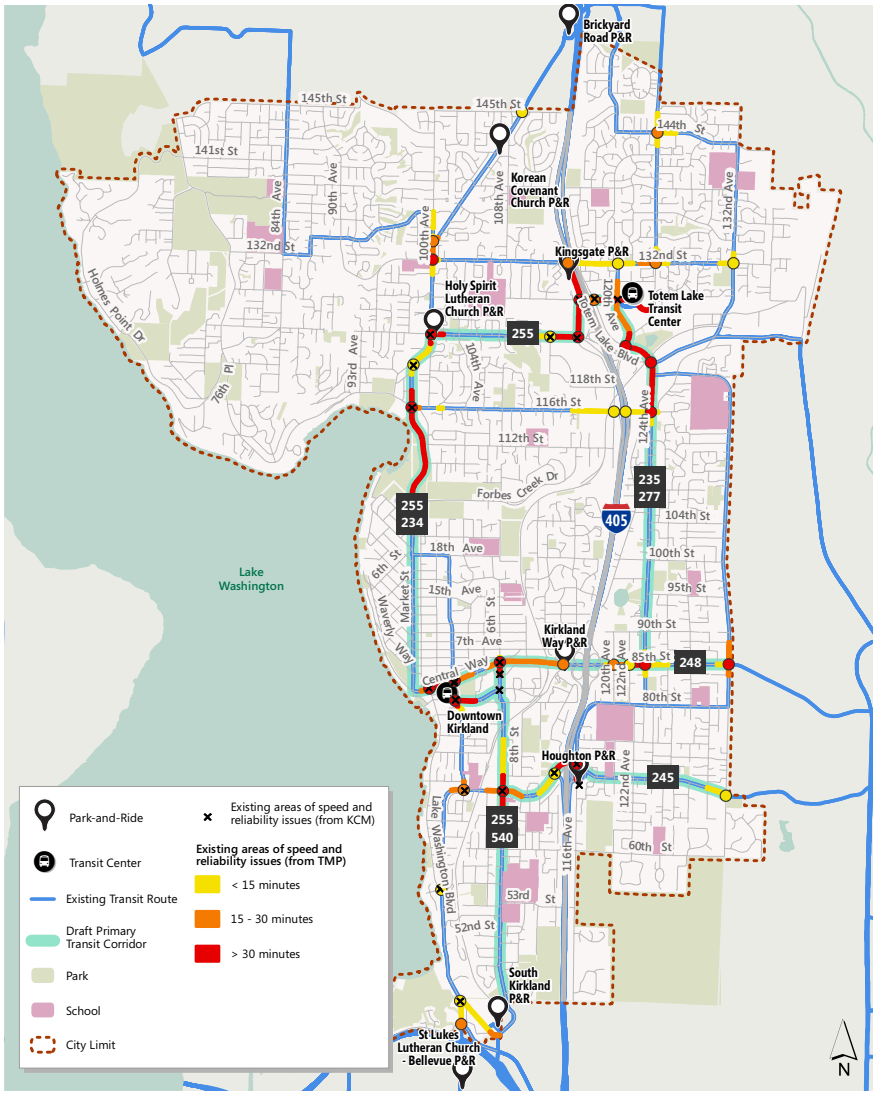
1. The City of Kirkland is working with King County Metro through their "Community Connections" program in order to identify the appropriate alternative solution.

Figure 1: Existing Transit Network in Kirkland



Source: Fehr & Peers, 2018

Figure 2: Existing Transit Speed and Reliability in Kirkland



Source: Fehr & Peers, 2018

Service Performance

The Kirkland Transportation Master Plan and recent King County Metro studies provided the location and type of speed & reliability issues typically experienced by transit. Several locations throughout the city experience significant transit delay and reliability issues. **Figure 2** highlights these areas, which include:

- Kingsgate Park & Ride
- Totem Lake area along NE 128th Street and 124th Avenue NE
- Market Street/98th Avenue NE south and north of Forbes Creek Drive
- Downtown Kirkland and the Kirkland Transit Center
- Houghton Park & Ride
- 6th Street S/108th Avenue NE
- NE 85th Street at 124th Avenue NE and 132nd Avenue NE
- 100th Avenue NE at NE 132nd Street and NE 124th Street

Many of the significant delays are associated with turning movements at major intersections within Kirkland. Several corridors also experience significant delay, such as 98th Avenue NE south of NE 116th Street and 124th Avenue NE north of NE 116th Street.

PLANNING CONTEXT

Travel Demand

In order to best serve transit users in the City of Kirkland in the future, it is essential to understand the full landscape of how travel demand is anticipated to change. A driving factor will be changes to land use. Because transit, more than any other mode, is dependent on land use for success, Kirkland's land use choices will have an important influence on where and how transit service is deployed. Kirkland's Comprehensive Plan sets a goal of promoting a compact, efficient, and sustainable land use pattern in Kirkland that:

- Supports a multimodal transportation system that efficiently moves people and goods;
- Minimizes energy use, greenhouse gas emissions, and service costs;
- Conserves land, water, and natural resources; and
- Provides sufficient land area and development intensity to accommodate Kirkland's share of the regionally adopted population and employment targets.

The majority of Kirkland's growth will be concentrated in the Totem Lake Urban Center, which will have significant concentrations of employment and housing, as well as high-capacity transit service and a wide range of land uses. Downtown Kirkland will experience moderate commercial and residential growth, serving as a hub for transit. Several other mixed use centers around the City will experience growth, including Juanita Village, the South Kirkland Park & Ride, and other mixed use centers shown in **Figure 5**.

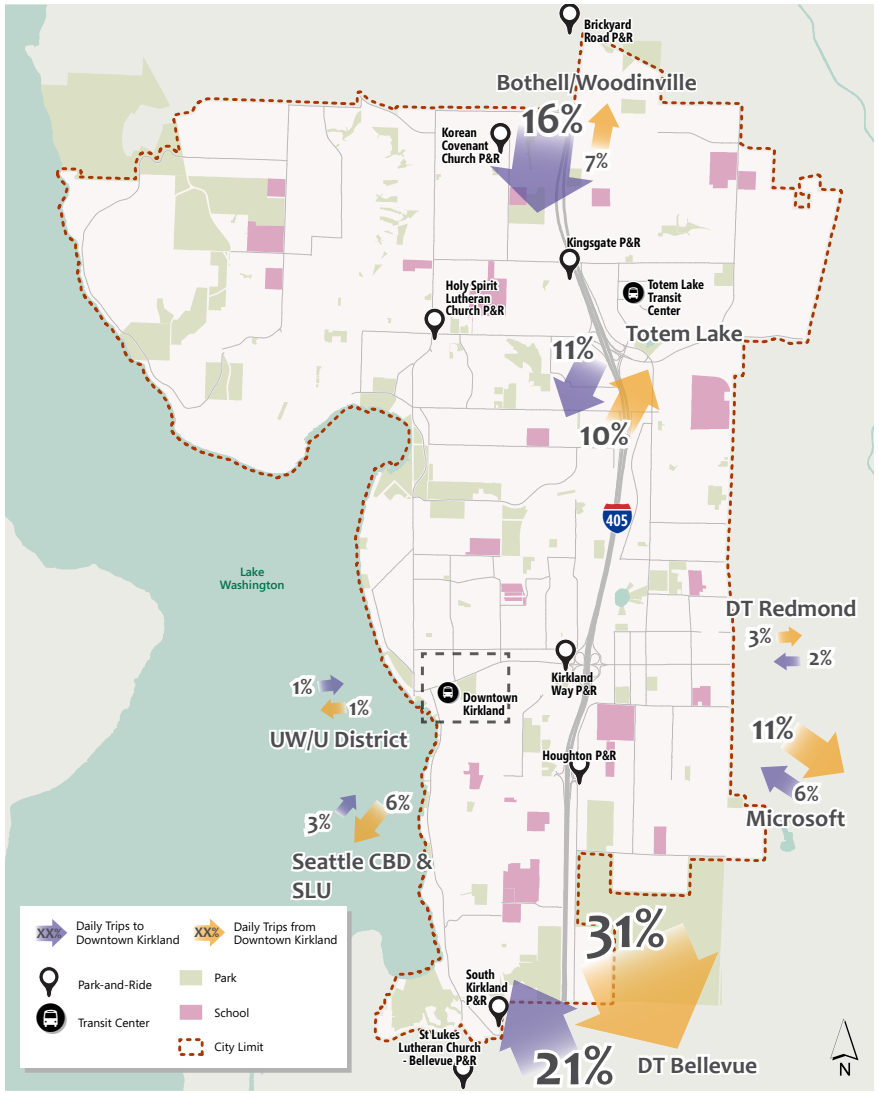
To understand future transportation conditions, the PSRC Travel Demand Model[2] provided forecasted travel demand from Downtown Kirkland and the Totem Lake Regional Growth Center for a 2025 horizon year.

Table 1: Change in Transit Ridership by Route

Rte	Service Type	2013 Daily Boardings	2017 Daily Boardings	Δ Daily Boardings
234	Frequent	320	660	340
235	Frequent	300	660	360
236	Local	150	350	200
238	Local	305	490	185
243	Local	0	3	3
244	Local	75	90	15
245	Frequent	250	660	410
248	Local	120	340	220
249	Local	80	135	55
252	Express	265	365	100
255	Frequent	1,365	3,320	1,955
257	Express	230	300	70
277	Express	140	135	-5
540	Express	220	280	60

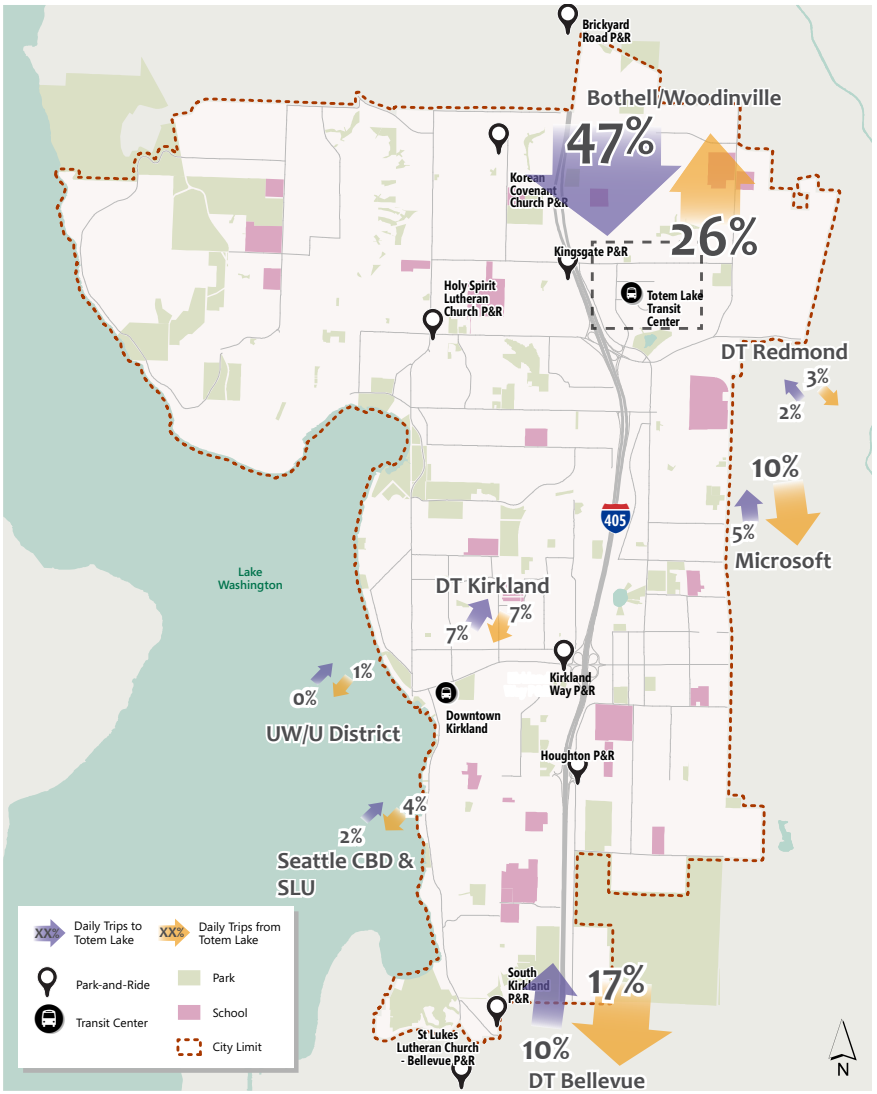
2. The PSRC travel demand model version used for the development of METRO CONNECTS

Figure 3: Daily Travel Demand from Downtown Kirkland in 2025



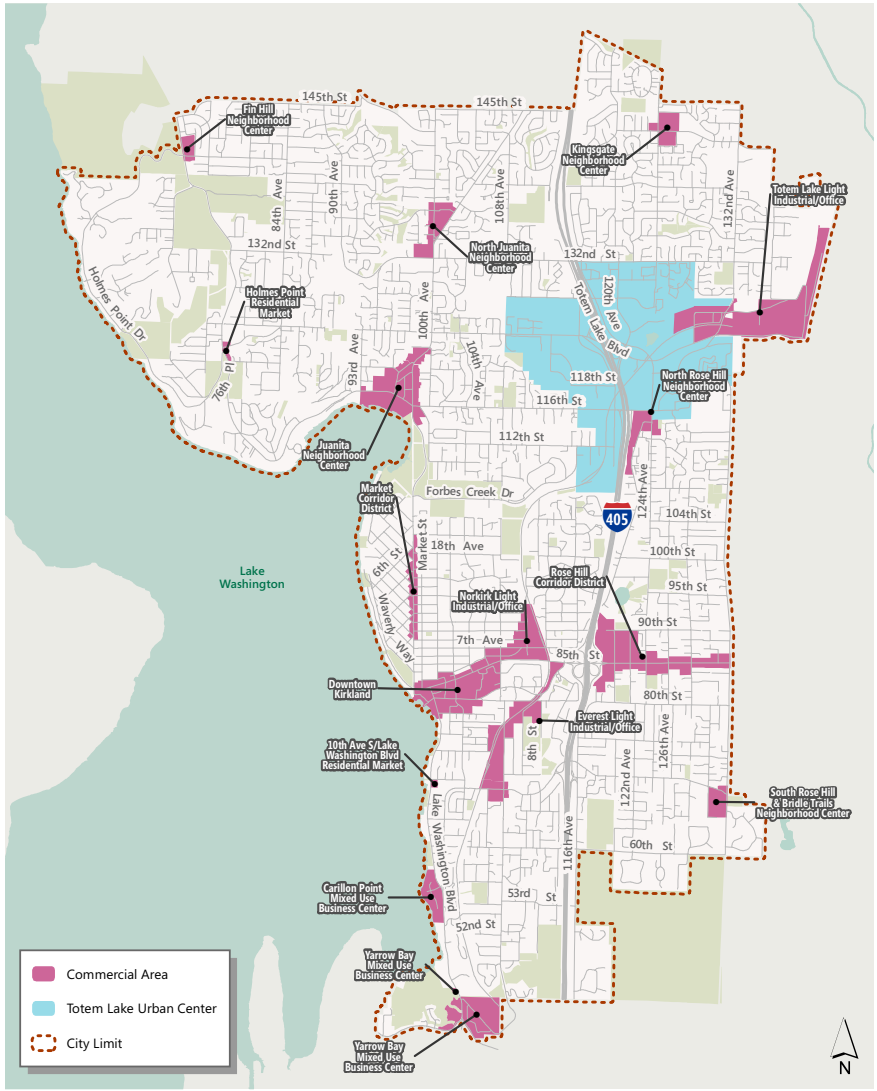
Source: Fehr & Peers, 2018. Data Source: PSRC Travel Demand Model, 2025

Figure 4: Daily Travel Demand from Totem Lake in 2025



Source: Fehr & Peers, 2018. Data Source: PSRC Travel Demand Model, 2025

Figure 5: Commercial and Mixed Use Areas in Kirkland



Source: Fehr & Peers, 2018

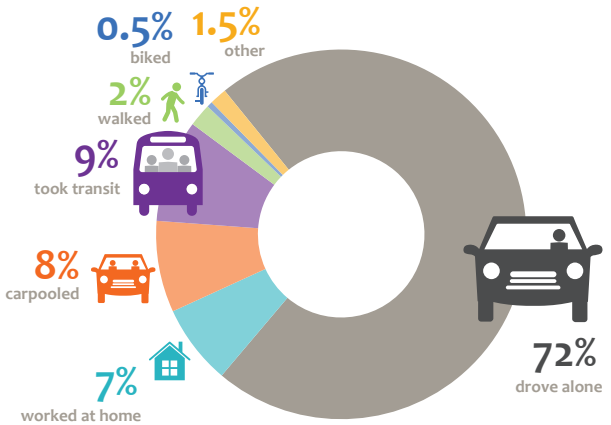
Figures 3 and 4 demonstrate where people will travel to in the region in 2025 when starting their trip in Downtown Kirkland and Totem Lake, respectively. From Downtown Kirkland, heavy demand is anticipated to and from Downtown Bellevue, Totem Lake, Bothell, and Woodinville. From Totem Lake, the demand for traveling to Bothell and Woodinville is much greater than it will be from Downtown Kirkland, and demand to Downtown Bellevue is also strong.

Transit Travel Demand

Given the longer distances of Kirkland residents' journeys to work, most residents either drive or take transit to work. Results from the American Community Survey (ACS) show that while most Kirkland residents drive alone to work (72%), transit is the second most common commute mode (9%), followed by carpooling (8%) and telecommuting (7%), as shown in **Figure 6**.

The Sound Transit Ridership Model provided forecasts of future transit demand along key corridors within the City. Current ridership from 2017 is based on average daily departing number of riders on the bus in both directions. The 2025 and 2040 models assume Bus Rapid Transit (BRT) service on I-405 and frequent transit service along NE 85th Street will be in place.

Figure 6: Kirkland Residents' Modeshare



Source: Fehr & Peers, 2018. Data Source: 2015 American Community Survey 5-year estimate

The corridor that will experience the greatest **percent increase** in daily ridership by 2025 is NE 85th Street, with up to 440 new riders (over a 100 percent increase from 2017), primarily due to connections to the I-405 BRT system. NE 85th Street will continue to see significant increases in ridership by 2040, with up to 610 new riders from 2017 (150 percent increase). By 2040, NE 124th Street will experience the biggest percent change in ridership, with up to 1,230 new riders (190 percent increase from 2017).

In terms of **net change**, the Kirkland Transit Center will see steady growth in ridership, with up to 730 new riders expected by 2025 (25 percent increase) and 1,230 new riders by 2040 (40 percent increase), as shown in **Figure 7**. Market Street at Forbes Creek and NE 124th Street at 116th Avenue NE will also experience steady growth – 1,400 new riders are expected on Market Street at Forbes Creek by 2040 (70 percent increase), and 1,230 riders are expected at NE 124th Street and 116th Avenue NE by 2040 (190 percent increase).

Future Transportation in Kirkland

The Sound Transit 3 (ST3) System Plan will build rail and bus projects throughout the region over the next 25 years. Of the many projects in the ST3 System Plan, a few are of particular interest to Kirkland, including:

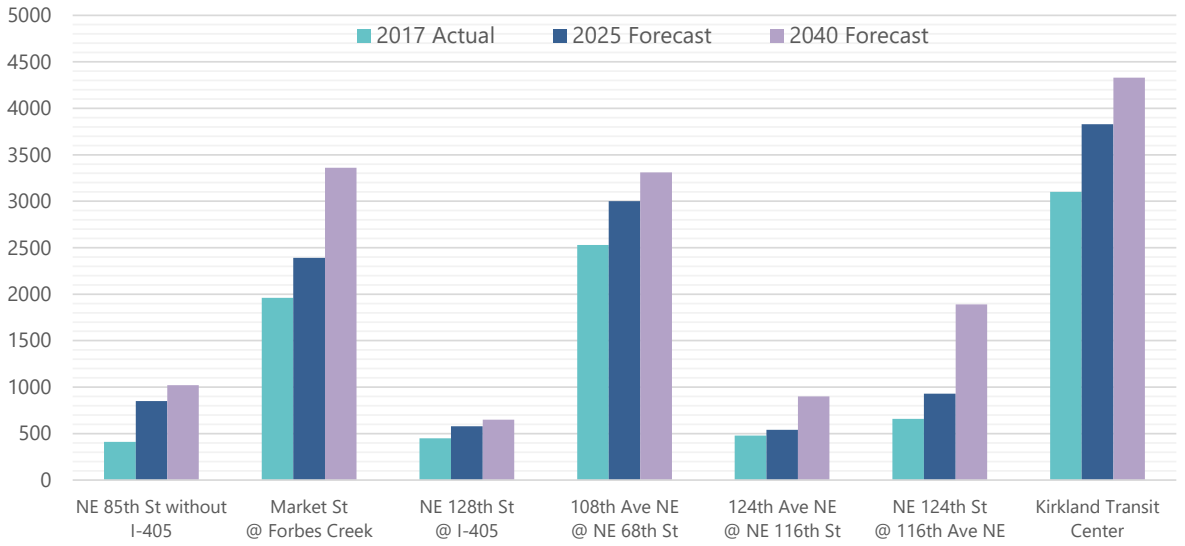
- **I-405 Bus Rapid Transit:** This project establishes a Bus Rapid Transit (BRT) corridor along I-405 connecting Lynnwood and Burien. This project will utilize the I-405 Express Toll Lanes to improve travel times and increase service reliability. The project will also construct a new station at the NE 85th Street interchange, including a transit connection to downtown Kirkland. (Project completion: 2024)

- **East Link Light Rail:** This project builds light rail from Seattle's International District across I-90 to Mercer Island and South Bellevue, and through downtown Bellevue to Redmond Technology Station. As a second phase, the line will be extended to downtown Redmond. (Project completion: 2023 for Phase 1 and 2024 for Phase 2)

- **South Kirkland to Issaquah Light Rail:** This project builds light rail between South Kirkland and Issaquah, including new stations at the South Kirkland Park and Ride, the Richards Road area, near Bellevue College in Eastgate, and central Issaquah. (Project completion: 2041)

Additionally, King County Metro is expanding its RapidRide service throughout the region, including service to Kirkland. By 2040, Kirkland will be served by three RapidRide lines (Routes 1025, 1026, and 1027). RapidRide will provide riders better connections, buses that come more often, and faster service that is more reliable and comfortable. Planning of Route 1027 between Kirkland, Bellevue, and Eastgate will begin in 2019.

Figure 7: Forecasted Change in Daily Ridership



Source: Fehr & Peers, 2018


SPEED
LIMIT
35


6999
YOUR SUNCADIA ADVENTURE AWAITS
YIELD
for Buses
New River View Homesites
255
A Quick 80 Miles from Seattle
WARNING
RIGHT TURN HAZARD
RIVERRIDGELIFE.COM
SUNCADIA
WASHINGTON
A1103C

PROJECT DEVELOPMENT

As the City of Kirkland plans for future transit, it is important to recognize opportunities and challenges for the City's and region's transportation system. Sound Transit and King County Metro are heavily investing in the region's transit infrastructure. Additional RapidRide routes, light rail expansion, and revisions to I-405 in the upcoming years will make it easier to take transit to and from Kirkland. Despite these revisions, growing traffic congestion is a regional reality, limited right-of-way influences what improvements are feasible on our roadways, and limited funding is an ongoing challenge. Further, the City of Kirkland must balance how much to invest in maintaining existing operations versus new capital expenses.

This chapter details a long list of potential projects to address existing or anticipated transit challenges. These projects stem from public input, discussions with City staff and the Technical Advisory Committee, field visits, Kirkland's Transportation Master Plan (TMP), and recent King County Metro studies. Projects fall into one of three overall categories:

- Speed and reliability
- Non-motorized access to transit
- Flexible transit service

COMMUNITY OUTREACH FEEDBACK

On November 14, 2017, the City held an Open House at Heritage Hall with almost 20 people in attendance. Community members identified additional speed & reliability issues, which include:

- Delays entering/exiting the South Kirkland Park & Ride
- Delays near Northwest University
- Access within the neighborhood of Juanita
- Reliability of Route 540
- Queuing northbound on Market Street
- NE 132nd Street congestion (eastbound in the AM, westbound in the PM)
- 124th Avenue NE congestion between NE 85th and 104th Streets in the AM
- NE 85th Street congestion (eastbound in the AM, westbound in the PM)

Attendees were asked to rank six potential transit improvement types using dots at the meeting on a scale of one to six, one being the highest priority and six being the lowest. Attendee rankings of these potential improvements were averaged and

are shown in **Table 2**. The full ranking and additional details on the Open House can be found in **Appendix A**.

To supplement the in-person input, the City conducted an online survey which included an interactive web map on the project website from December 15, 2017 to January 15, 2018 to gauge how people experience using transit in Kirkland today and what their priorities are for future transit. Over 260 people responded to the survey and almost 100 comments were pinned on the web map. Route 255 was the most commented on route with 76 percent of respondents stating that they ride it at least once a week. Survey respondents had the same top three transit priorities as Open House participants:

1. Speed and reliability
2. Frequency
3. Accessibility

The majority of the web map comments identified speed and reliability issues on specific bus routes and along specific corridors. Others identified neighborhoods that need additional and/or improved bus service, such as Inglewood/Finn Hill, Highlands, Juanita, and new development areas in Kingsgate. Several comments identified locations that need bus shelters, crosswalks, bike parking, improved lighting, and other pedestrian and bicycle facilities. Participants had several requests for improved transit access at the Kingsgate, Houghton, and South Kirkland Park & Rides. Lastly, while outside of Kirkland, there were a few requests for improved reliability of Route 540 to Kirkland from the University of Washington. Detailed summaries by area are included in **Appendix A**.

Ultimately, this public input directly informed and served as the basis for the projects in this plan. The project team further refined the project details through field visits and observation.

Table 2: Community Ranking of Transit Improvement Types

Priorities	Open House Weighted Average	Survey Weighted Average
Speed and Reliability	1.9	1.8
Frequency	2.2	2.5
Accessibility	3.6	3.1
Safety	4.2	3.7
Information Technology	3.9	4.3
Comfort	5.3	4.7

Source: Fehr & Peers, 2018

SPEED AND RELIABILITY PROJECTS

Speed and Reliability was ranked the community's top priority for future transit improvements at the Open House and in the online survey, as shown in **Table 2**.

The Speed and Reliability project type seeks to address how fast and reliable bus service is throughout the city. The analysis addresses locations where buses consistently do not show up on time or get stuck in traffic.

Speed and Reliability investments provide a number of benefits, including faster and more reliable travel time for riders and reduced operating costs for the transit operators. The savings in operating costs can be reinvested to provide more frequent and reliable service. As an example, for every five minutes in travel time saved on Route 255, one less bus is required to provide the same frequency of service.

Methodology

The initial project list for speed and reliability improvements was developed based on a number of sources, including:

- King County Metro analysis – King County Metro recently analyzed a sample of bus routes in Kirkland and identified preliminary problem areas and potential solutions.
- Transportation Master Plan hotspot locations – The TMP identified certain intersections and roadway segments where transit historically experiences significant delay.

- Public feedback – The Open House and survey provided the opportunity for the public to identify areas where they typically experience poor reliability on transit.

- Field visits – The Consultant and City staff visited the most commonly cited locations mentioned above to verify speed and reliability issues.

Project Evaluation Criteria

City staff and the Transportation Commission worked jointly to develop ten evaluation criteria to assess each of the proposed solutions and develop initial project priorities. These include:

1. Ridership
2. Travel Time
3. Cost
4. General Purpose Traffic
5. Agency Plans
6. TMP
7. Feasibility/Complexity
8. Activity Density
9. Access to Regional Centers
10. Community Support

See **Appendix B** for more detail. They measure how effective each potential project would be in supporting effective transit service primarily along the priority and secondary transit corridors established in the TMP. There was a mix of quantitative and qualitative criteria, and criteria was weighted to place more emphasis on factors that aligned best with public input and overall project objectives.

Results

Each project received a total score summing the individual metric scores based on the weighting highlighted in Appendix B. The prioritization scores, in conjunction with public input and professional judgment, guided the development of a focused set of priority projects for inclusion in this plan. The Final Project List chapter describes these priority projects in detail.

The full list of speed and reliability improvements evaluated is outlined below, and speed and reliability projects included in the Final Project List are in bold.

1. **South Kirkland Park & Ride traffic signal**
2. **108th Avenue NE improvements**
3. **Market Street BAT lanes**
4. **Totem Lake Transit Center bus stop consolidation**
5. **Downtown Transit Center efficiency improvements**
6. **NE 124th Street & 100th Avenue NE improvements**
7. **NE 85th Street transit improvements**
8. **Houghton Park and Ride stop relocation**
9. **NE 124th St & 116th Ave NE improvements**

- Totem Lake Boulevard & NE 128th Street improvements for westbound buses
- NE 128th Street & 116th Avenue NE improvements for westbound buses
- NE 124th Street & 124th Avenue NE improvements and signal modifications
- NE 85th Street & 124th Avenue NE improvements for east/westbound buses
- New bus stop on 116th Avenue NE at the Kingsgate Park & Ride
- NE 85th Street & 132nd Avenue NE improvements for westbound buses
- Extend westbound right turn lane at NE 132nd Street & 100th Avenue NE
- Bus stop relocation on 100th Avenue NE near NE 137th Street

NON-MOTORIZED ACCESS PROJECTS

During the Open House and in the online survey, community members expressed a desire for projects that improve transit accessibility and safety.

Additionally, the Transportation Master Plan has a policy to integrate transit facilities with pedestrian and bicycle networks.[3] The Non-Motorized Access project type focuses on identifying Activity Centers[4] that would warrant investment to improve the pedestrian and bicycle connections to transit. Specific facilities could include upgraded sidewalks, signalized crosswalks, or bike facilities.

Non-motorized access projects improve the safety and connectivity to transit stops and increase the usefulness of transit. Shorter walk and bicycle distances and faster crossings of arterials enable potential riders to safely and more quickly get to and from their transit stop to reach their destination.

Methodology

This assessment specifically looked at locations near key transit centers, Park & Rides, and nodes of commercial activity. 26 locations in total were ultimately analyzed based on input from City staff. At each location, a 0.6 mile walkshed was

3. Policy T-3.3
4. Activity Centers are key trip hubs in the City, such as where people work, shop, catch the bus, or congregate within a neighborhood

Figure 8: Two Approaches for Estimating 0.6 Mile Walkshed from Downtown Kirkland

Source: Fehr & Peers, 2018.

generated from a central point (as shown as A in **Figure 8**), which was based on the existing "walk network" (i.e. streets and trails). In other words, how far can a person get if they walk 0.6 miles from the central point.[5] This was compared to the walkshed "as the crow flies" (as shown as B in **Figure 8**). In an area with a consistent north-south and east-west street network, the ratio between the two distances (A divided by B) would be approximately 70 percent. Once the ratios were determined for each location, the final Walkshed Index score was calculated. Sites ranking closest to 70 percent received a Walkshed Index of 100.

This assessment was meant to provide a high-level comparison between key transit activity centers to understand general locations that should be targeted for non-motorized investment. The evaluation did not incorporate other aspects including sidewalk quality, ADA facilities, or bicycle infrastructure. It also did not incorporate terrain into the walkshed distance. Understanding how terrain impacts the walkshed will be useful in the next phase of analysis to determine appropriate locations for non-motorized investments. For example, if terrain significantly restricts the walkshed from an activity center, an area closer than 0.6 miles around the activity center should be the focus of any proposed non-motorized projects. This ensures that the proposed project would benefit an area within the actual walkshed (once terrain is accounted for).

Project Evaluation Criteria and Results

The ten locations with the lowest Walkshed Index score were included in the Online Open House during June 2018 for feedback from the community. The Final Project List chapter incorporates the community feedback and ranking of the locations to outline the overall strategy for addressing non-motorized access to transit. Identifying specific projects will be addressed in the upcoming Active Transportation Plan update.

FLEXIBLE TRANSIT SERVICE PROJECTS

During the Open House and in the online survey, community members expressed a desire for projects that improve transit frequency and accessibility. **Table 2** shows how the 262 survey participants ranked what aspects of transit the City should prioritize, with 1 being the highest priority and 5 being the lowest priority.

The Flexible Transit Service project type seeks to provide a more cost-effective transit option at certain times of day when fixed-route transit service is not as efficient as alternative modes. As an example, during times when fixed-route transit service only carries a handful of riders, alternative mobility options such as an on-demand ride-hailing service (e.g. Uber and Lyft) could provide connections to high frequency transit or to a rider's final destination for a comparable price. This approach could help make it possible to maintain or improve convenient fixed-route transit service where it is the most efficient, providing the appropriate level of service in certain areas and times of the day.

5. 0.6 miles is roughly a 15-minute walkshed on level terrain

It is important to note that this evaluation process is intended to start the conversation around the general need for flexible transit service in terms of demand and locations, as opposed to specific routes that should be restructured. As a result, this will help inform City decisions on if this type of project makes sense and how many resources to devote to it.

Methodology

To identify the areas where flexible service may be appropriate, the project team used King County Metro data to calculate the operating cost per trip, cost per rider, and average customer trip length for a given route and time period. This data was then used to estimate the cost of using a ride-hailing service such as Uber or Lyft instead of fixed-route transit. While this analysis evaluated existing bus routes, potential areas outside of existing fixed-route service areas were considered for flexible transit.

King County Metro is currently evaluating bus routes in northeast King County through the North Eastside Mobility Project. That evaluation will complement the initial assessment conducted for the Kirkland Transit Implementation Plan.

Project Evaluation Criteria and Results

The estimated cost of a ride-hailing trip was compared to the operating cost per trip for existing transit routes. Routes were ranked as having a high, medium, or low opportunity for flexible transit based on the cost comparison between a ride-hailing service and fixed-route transit. The analysis was not meant to target specific routes, but was meant to provide a general understanding of how fixed-route transit service performs in Kirkland throughout the day and what opportunities may exist for flexible forms of transit.

A Flexible Transit Service program is described in the Final Project List chapter later in the plan.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7229
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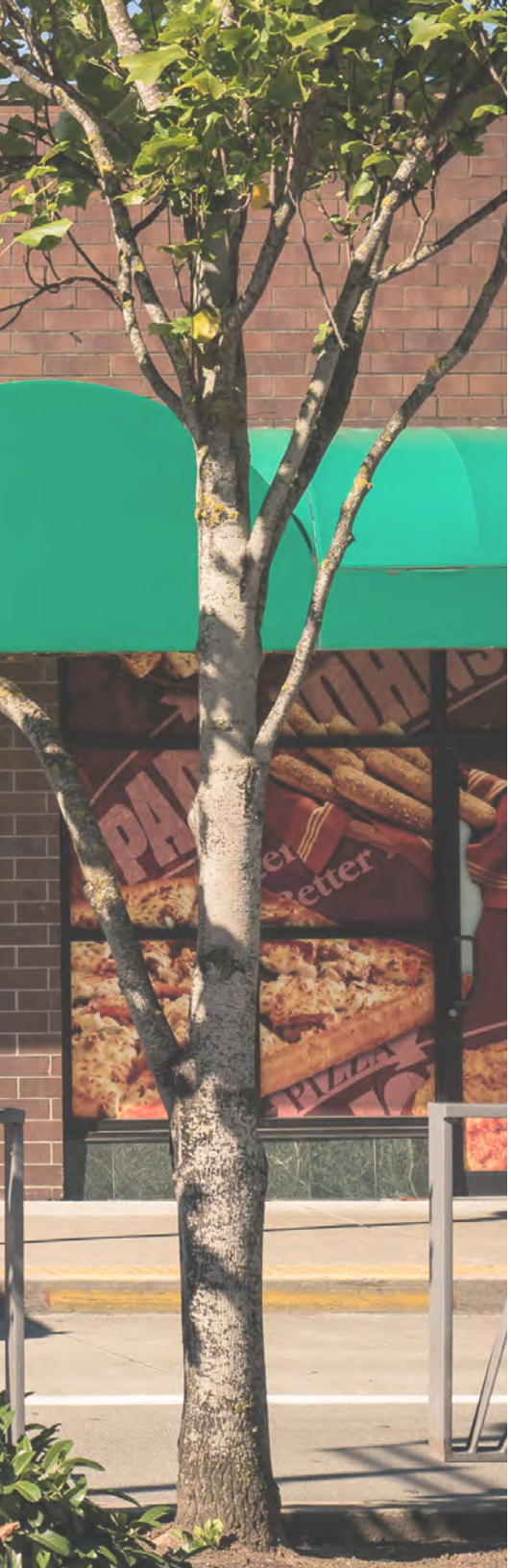
We Deliver



FINAL PROJECT LIST

The potential Speed & Reliability projects were prioritized based on the evaluation criteria, and the top nine projects were carried forward to the Final Project List. In addition, two programmatic projects focused on Non-Motorized Access and Flexible Transit are included in the Final Project List. The projects are not listed in priority order.

This section includes a description of each project, the benefits and challenges, and the estimated costs of the project. Additionally, a timeline of each project and coordination and funding considerations are included to establish the next steps for implementation of the Plan.

The benefits, cost estimates, and considerations are based on a mostly qualitative review of existing information and are provided as a means to compare separate projects. More detailed technical analysis would be required to more accurately estimate travel time benefits, design-based cost estimates, and other technical considerations for construction and feasibility.

All of these projects will require partnering with King County Metro and Sound Transit to ensure that the City's capital investments continue to align with the agencies' planned service improvements. Successful capital projects enable transit agencies to provide additional service as transit becomes faster and more reliable.

The following benefits are summarized for each project:

- Travel time saved per bus trip – The amount of travel time saved per trip is determined by standard estimates of travel time improvements based on project type
- Number of bus trips per peak hour – The number of trips operating per hour is based on schedule information for both current and planned service
- Number of riders benefited – The total number of riders on transit that would benefit from the project is based on current ridership and growth projections
- Total travel time saved per day – The combined person-hours savings is based on the total number of daily riders multiplied by the estimated travel time savings per trip

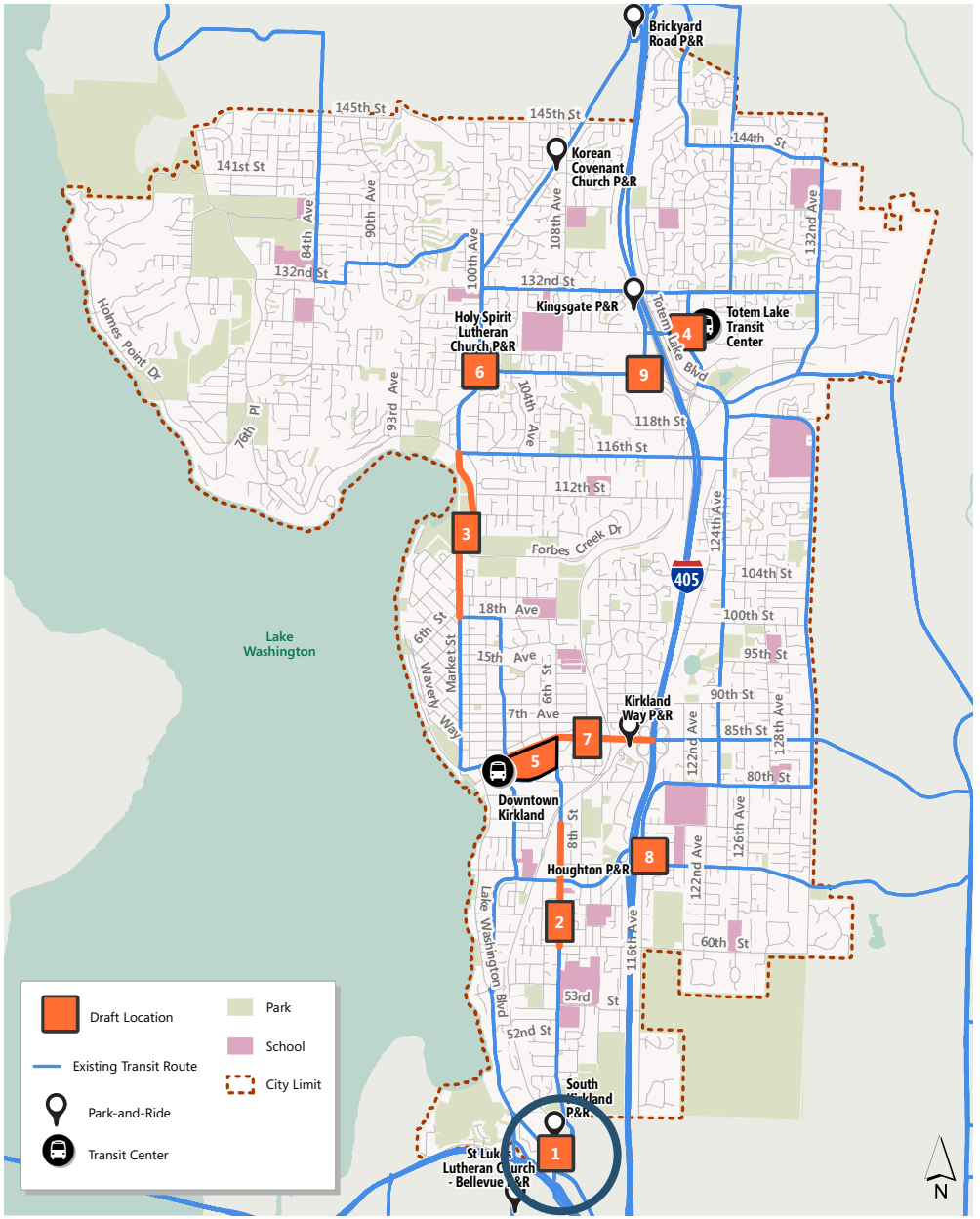
PROJECT 1: SOUTH KIRKLAND PARK & RIDE TRAFFIC SIGNAL

Project Description

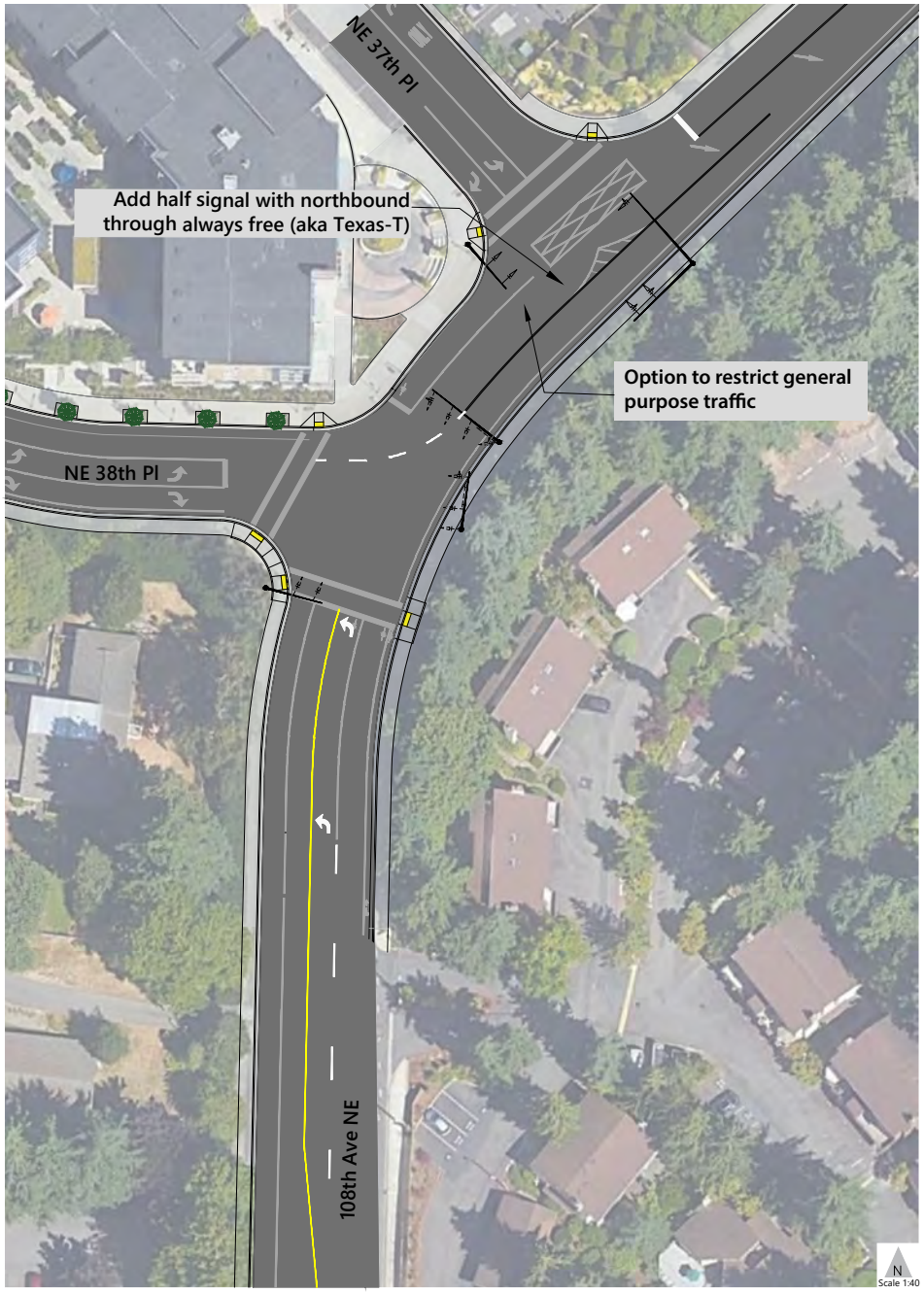
All buses accessing the South Kirkland Park & Ride must enter from 108th Avenue NE at NE 37th Place. There is no signal at this intersection and therefore, buses must wait for gaps in southbound traffic in order to make the left-turn into the Park & Ride. Therefore, this project would add a signal at the intersection of 108th Avenue NE and NE 37th Place that has transit service priority to provide a protected left-turn movement for buses. The left-turn could be restricted to buses only, or it could remain open to general purpose traffic. Alternately, the City could consider a "queue hold" signal priority at this intersection, which would add transit service priority to the existing signal at NE 38th Place instead of adding the new signal. While this project is located in the City of Bellevue, it impacts Kirkland transit service.

Project Benefits

- On average, 15-20 seconds saved per bus trip
- 15 to 20 bus trips per hour benefit from the project
- Project improves travel times for 5,000 to 6,000 riders per day
- Travel time savings of over 20 person-hours per day based on ridership and per trip savings
- Increased safety based on reducing potential conflicts with oncoming vehicles
- On future METRO CONNECTS Service Network map as RapidRide corridor



Source: Fehr & Peers, 2018



Source: Fehr & Peers, 2018
Conceptual - Not for construction. Detailed analysis and engineering required

Project Considerations and Potential Challenges

- Signal spacing constraints (current signal is at 38th Place)
- Southbound and northbound vehicle delays and queuing
- Potential for transit-only signal head for northbound left-turn
- Restricting the left-turn to buses only would require vehicles entering the Park & Ride to use NE 38th Place to access the parking lot from 107th Lane NE. Vehicles exiting the Park & Ride would still be able to use the NE 37th Place intersection.
- Additional analysis required to understand potential added delay for vehicles entering the Park & Ride from the south given the restriction in access from the south

Coordination Needs

- King County Metro
- Sound Transit
- Adjacent property owners
- WSDOT
- City of Bellevue

Potential Funding Mechanisms

- King County Metro RapidRide Program
- Transportation Improvement Board
- Local City funds

Cost Estimate

$1-2 million

Timeline for Implementation

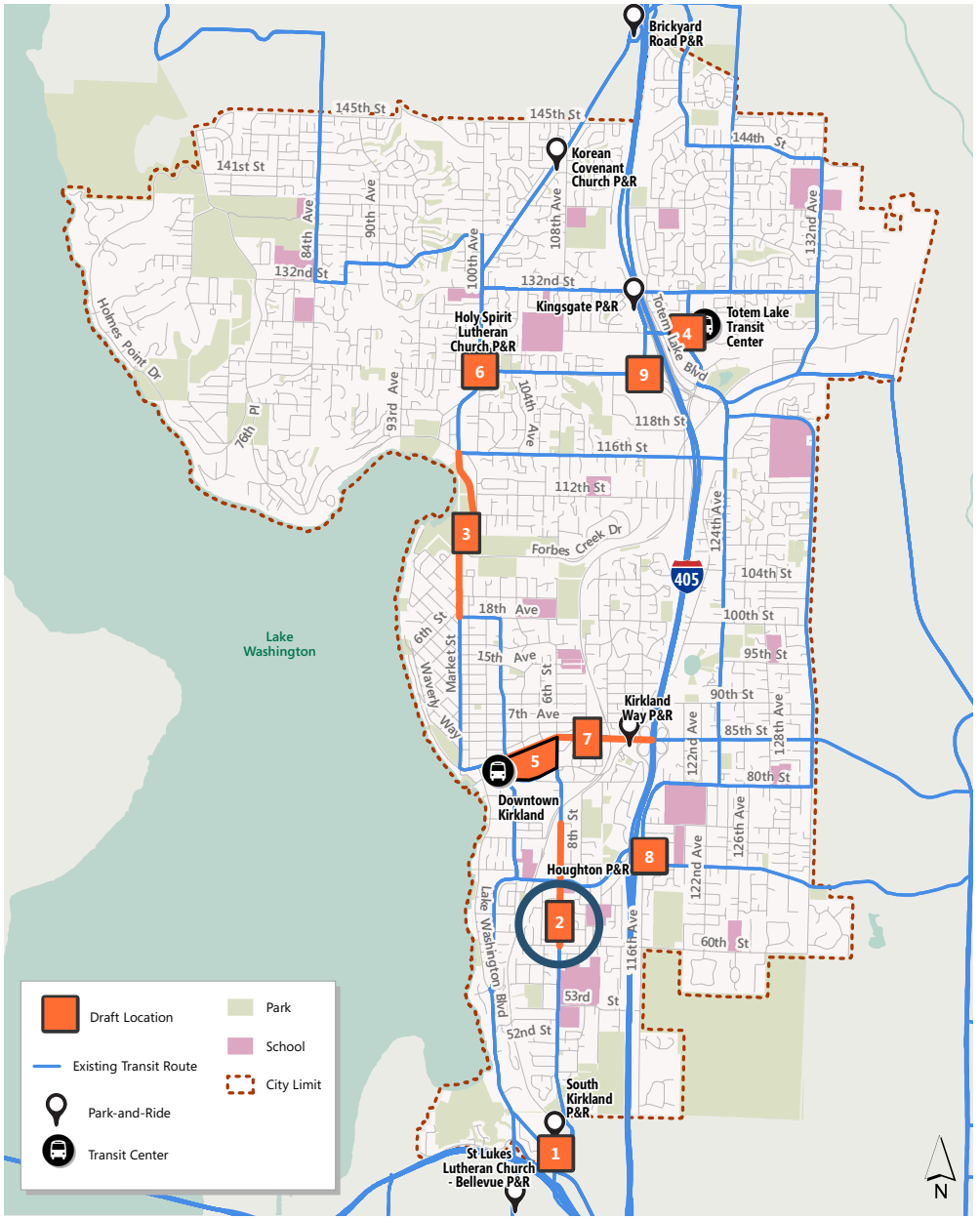
0-5 Years | **5-10 Years** | 10+ Years

PROJECT 2: 108TH AVENUE NE IMPROVEMENTS

Project Description

Buses routinely experience delay along the 108th Avenue NE corridor, particularly in the PM peak period. The recently completed Houghton Everest Neighborhood Center & 6th Street Corridor Study identified a number of solutions to address transit delay throughout the 108th Avenue/6th Street corridor. This project includes the following components:

- Add a northbound bus lane/queue jump and bus-only signal on 108th Avenue NE at NE 68th Street.
- Explore moving the southbound 245 bus stop north of the intersection (near-side stop).
- Widen 108th Avenue NE to provide a northbound queue jump and/or new signal at NE 60th Street.
- Coordinate the traffic signals along the corridor.
- Consolidate driveways around the businesses at NE 68th Street & 108th Avenue NE.
- Reduce business access on NE 68th Street & 108th Avenue NE to signalized intersections.



Source: Fehr & Peers, 2018

Project Benefits

- On average, over 80 seconds saved per bus trip for the portion of the corridor between NE 62nd Street and 9th Avenue S
- 8 to 12 bus trips per peak hour benefit from the project
- Project improves travel times for 1,500 to 1,800 riders per day
- Over 40 person-hours saved per day
- On future METRO CONNECTS Service Network map as RapidRide corridor

Coordination Needs

- King County Metro
- Sound Transit
- Adjacent property owners
- Fire Department

Potential Funding Mechanisms

- King County Metro RapidRide Program
- Transportation Improvement Board
- Local City funds

Cost Estimate

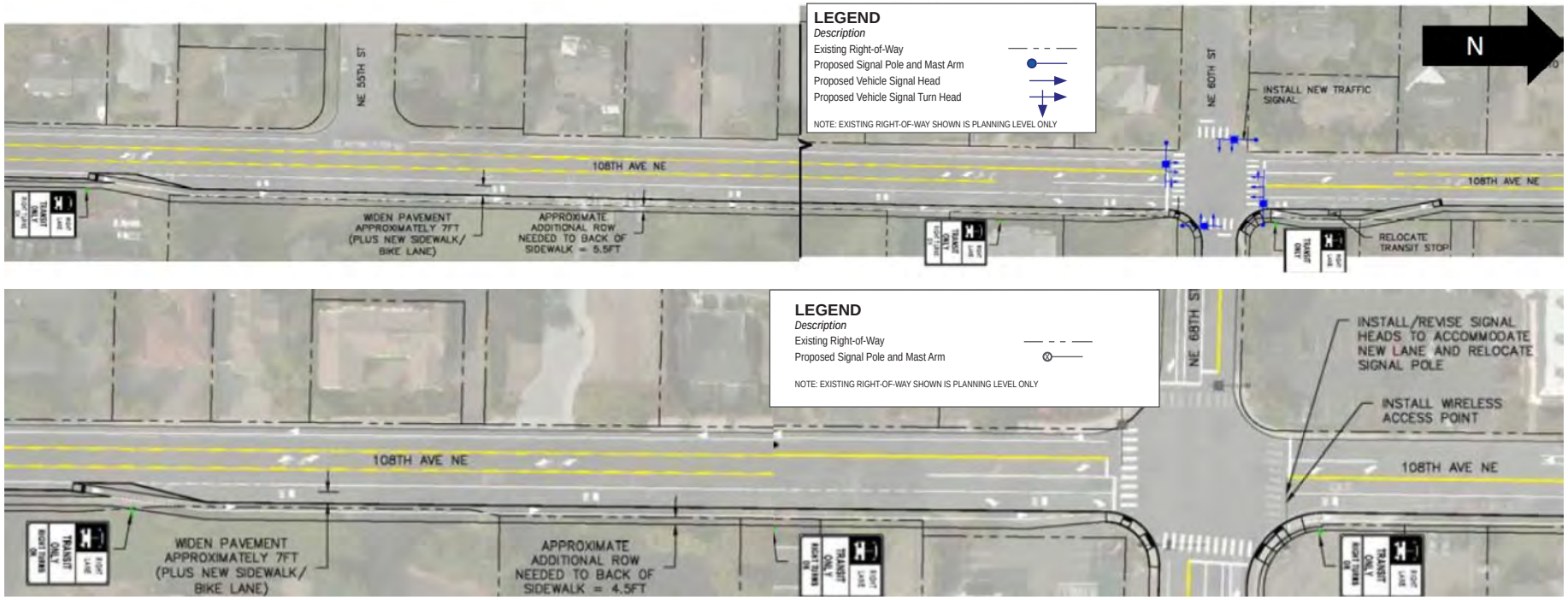
$10-12 million

Timeline for Implementation

0-5 Years | **5-10 Years** | 10+ Years

Project Considerations and Potential Challenges

- Right-of-way requirements
- Signal modifications



Source: Houghton Everest Neighborhood Center & 6th Street Corridor Study, 2018.
Conceptual - Not for construction. Detailed analysis and engineering required

PROJECT 3: MARKET STREET BAT LANES

Project Description

Transit experiences delays primarily in the northbound direction along Market Street/98th Avenue NE between 18th Avenue and NE 116th Street. Rolling queues develop along Market Street south of Forbes Creek Drive in the PM period and queues block both lanes along 98th Avenue NE at the NE 116th Street intersection.

This project would convert the existing parking and bicycle lanes in the northbound direction into a Business-and-Transit (BAT) Lane from NE 18th Street to NE 116th Street along Market Street/98th Avenue NE. The BAT lane would be in effect during peak travel periods, and during non-peak travel, parking would be allowed and bicycles would use the area marked with sharrows. Beyond the direct travel time improvements for riders on the bus, this project would improve on-time reliability for the substantial number of riders that board at stops further south along the route.

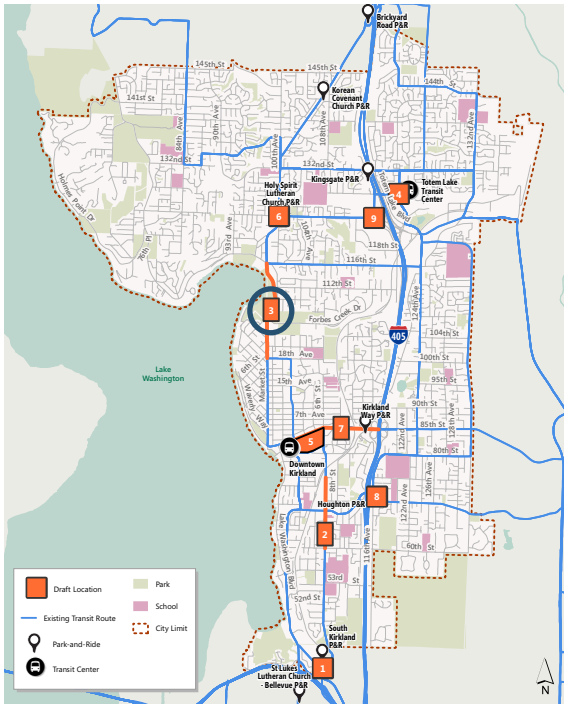
A southbound queue jump at Forbes Creek Drive and 98th Avenue NE is being implemented in 2019 to address current congestion in the southbound direction north of Forbes Creek Drive.

Project Benefits

- On average, over one minute saved per bus trip
- 10 to 12 bus trips per peak hour benefit from the project
- Project improves travel times for 2,000 to 2,500 riders per day
- Over 30 person-hours saved per day
- On future METRO CONNECTS Service Network map as RapidRide corridor

Project Considerations and Potential Challenges

- Parking removal for portion along Market Street north of NE 18th Street during peak hours (AM and PM)
- Right-of-way constraints with median and bike lanes
- City is currently planning a southbound queue jump lane at Forbes Creek intersection
- Potential options for shared bus/bike lane northbound



Source: Fehr & Peers, 2018

- Final options to address parking, bicycles, and transit priority to be determined through a detailed planning and design process
- Planning and design of the project will identify improvements that address safety and convenience of pedestrian crossings at transit stops
- Consider operational costs associated with enforcement, such as towing

Source: Fehr & Peers, 2018
Conceptual - Not for construction. Detailed analysis and engineering required

Coordination Needs

- King County Metro
- Adjacent property owners
- Fire Department
- Parks Department

Potential Funding Mechanisms

- King County Metro RapidRide Program
- Transportation Improvement Board
- Local City funds

Cost Estimate

$8-12 million

Timeline for Implementation

0-5 Years | **5-10 Years** | 10+ Years

PROJECT 4: TOTEM LAKE TRANSIT CENTER BUS STOP CONSOLIDATION

Project Description

The Totem Lake Transit Center's location is difficult to serve and duplicates the access provided by the stops near the Totem Lake Freeway Station and the Kingsgate Park & Ride. Buses stopping at the Transit Center must divert from a more direct alignment in order to serve the Transit Center loop. The Transit Center's value is primarily as a place to layover buses between their trips. This project would identify potential route restructures to consolidate the Totem Lake Transit Center stops to locate on-street or to use existing stops on NE 128th Street. The City of Kirkland is coordinating with King County Metro during the planning phase of the North Eastside Mobility Project. The restructures may be implemented by September 2019.

Project Benefits

- On average, almost two minutes saved per bus trip
- 17 to 20 bus trips per peak hour benefit from the project
- Project improves travel times for 500 to 600 riders per day
- Over 15 person-hours saved per day

Project Considerations and Potential Challenges

- Nearby medical facilities require stops within close walking distance
- Potential right-of-way limitations for new stop locations
- Options may include a new eastbound near-side stop on NE 128th Street at 120th Avenue NE or a southbound far-side stop.

Coordination Needs

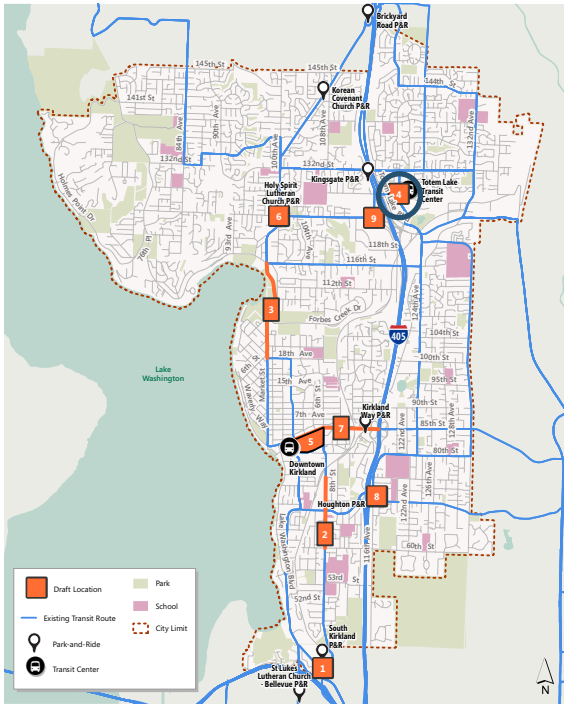
- King County Metro
- Sound Transit
- Adjacent property owners
- WSDOT

Potential Funding Mechanisms

- King County Metro

Cost Estimate

$700,000 – $900,000



Source: Fehr & Peers, 2018

Timeline for Implementation

Source: Fehr & Peers, 2018
Conceptual - Not for construction. Detailed analysis and engineering required

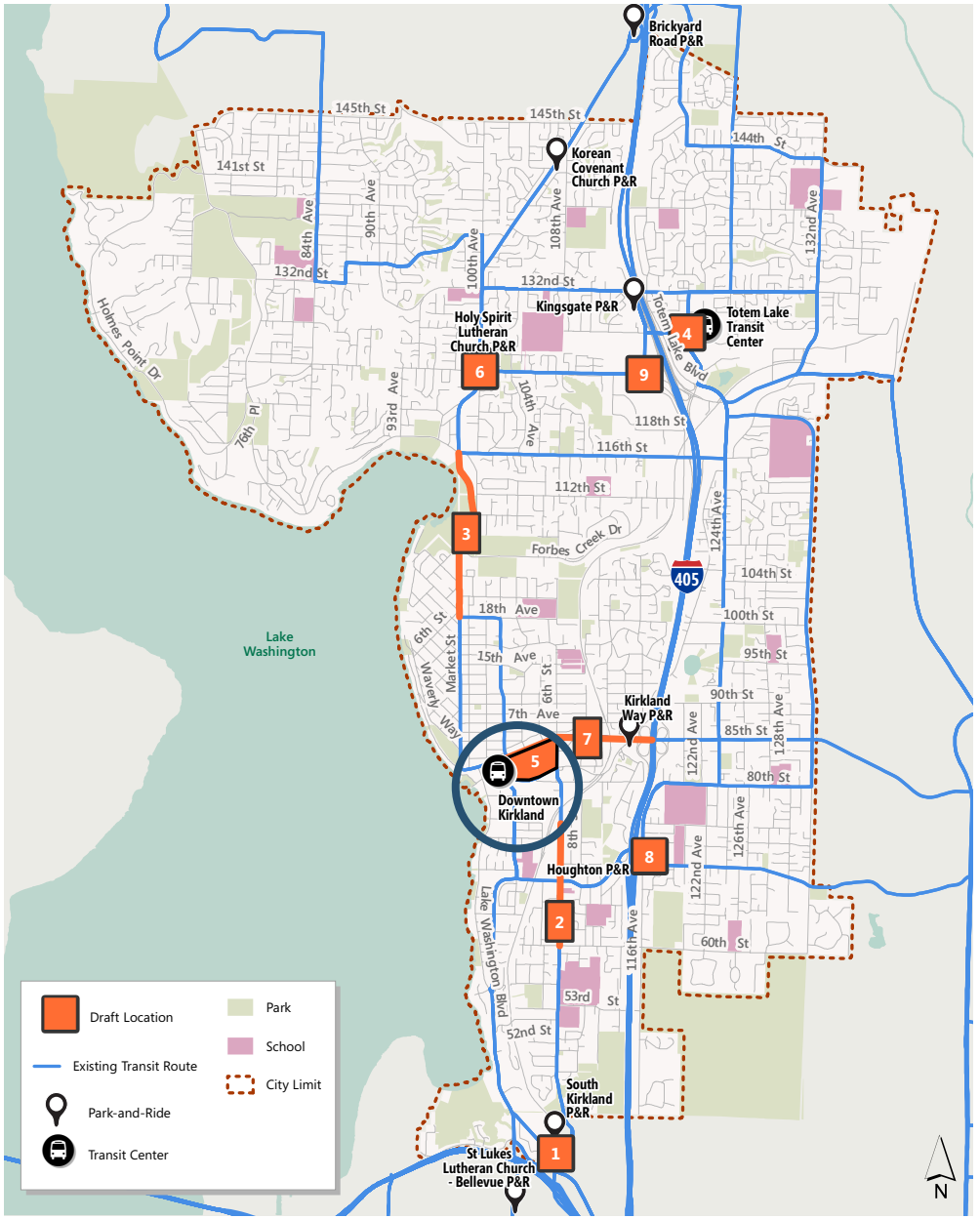
PROJECT 5: DOWNTOWN TRANSIT CENTER EFFICIENCY IMPROVEMENTS

Project Description

Transit is often delayed by general purpose traffic using 3rd Street through the Kirkland Transit Center. Delays occur when buses re-enter the travel lane and when buses wait in queues at the intersections with Kirkland Avenue and Central Way. This project would evaluate alternatives to optimize transit operations along 3rd Street between Central Way and Kirkland Avenue in order to speed up buses through the Transit Center and improve pedestrian safety and experience with lighting and platform investments, such as ORCA card vending machines.

Project Benefits

- On average, over 30 seconds saved per bus trip
- 36 to 40 bus trips per peak hour benefit from the project
- Project improves travel times for 3,000 to 4,000 riders per day
- Over 20 person-hours saved per day
- On future METRO CONNECTS Service Network map as RapidRide corridor



Source: Fehr & Peers, 2018

Existing Conditions on 3rd Street

Project Considerations and Potential Challenges

- Potential to extend curb to shorten crossing for pedestrians
- Potential for fully closing off vehicular access on 3rd Street
- Potential for partial closure of access for vehicles (only northern or southern half or only northbound or southbound)
- Diversion of traffic from 3rd Street to parallel streets with full or partial restricted access
- Potential for specific time-of-day restrictions

Coordination Needs

- King County Metro
- Sound Transit
- Adjacent property owners
- Kirkland Library
- Parks Department

Potential Funding Mechanisms

- King County Metro RapidRide Program
- Sound Transit System Access Fund Program
- Transportation Improvement Board
- Local City funds

Cost Estimate

$10-20 million

Timeline for Implementation

0-5 Years

5-10 Years

10+ Years

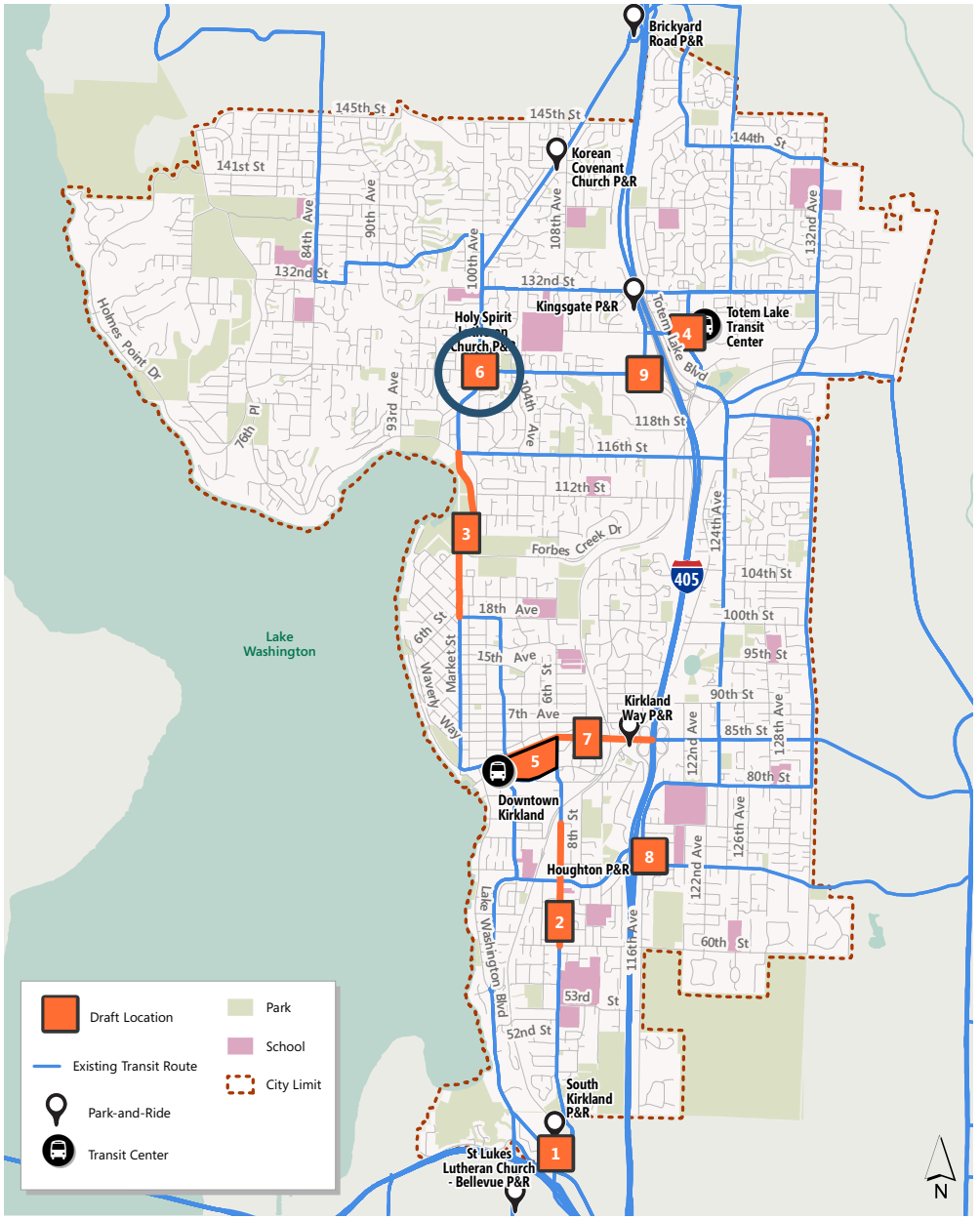
PROJECT 6: NE 124TH ST & 100TH AVE NE IMPROVEMENTS

Project Description

Transit currently experiences significant delay in the westbound direction attempting to make a left-turn from NE 124th Street to 100th Avenue NE. This project would re-stripe and modify the signal in order to allow for dual left-turns from the westbound approach. The intersection would require split phasing for the east and west approaches (only one approach proceeds during a signal phase) in order to allow the dual left-turns. Beyond the direct travel time improvements for riders on the bus, this project would improve on-time reliability for the substantial number of riders that board at stops further south along the route.

Project Benefits

- On average, over 30 seconds saved per bus trip
- 6 to 8 bus trips per peak hour benefit from the project
- Project improves travel times for 700 to 1,000 riders per day
- Almost 10 person-hours saved per day
- On future METRO CONNECTS Service Network map as RapidRide corridor



Source: Fehr & Peers, 2018

Source: Fehr & Peers, 2018
Conceptual - Not for construction. Detailed analysis and engineering required

Project Considerations and Potential Challenges

- Requires split phasing
- Signal head modifications required
- Potential minor increase in intersection delay due to split phasing
- Potential delay with vehicles using the new left-turn lane because buses stop immediately south of the intersection

Coordination Needs

- King County Metro

Potential Funding Mechanisms

- King County Metro RapidRide Program
- Transportation Improvement Board
- Local City funds

Cost Estimate

$100,000 – $300,000

Timeline for Implementation

0-5 Years | 5-10 Years | 10+ Years

PROJECT 7: NE 85TH STREET TRANSIT IMPROVEMENTS

Project Description

The planned I-405 Bus Rapid Transit project would construct a freeway station at NE 85th Street. This station would provide a key connection to Downtown Kirkland from the I-405 BRT system. Currently, the connection requires buses to travel in mixed traffic between Downtown Kirkland and I-405. The recently approved Sound Transit 3 (ST3) funding package plans for bus only lanes on NE 85th Street between I-405 and 6th Street to improve the connection between these two key transit hubs.

Project Benefits

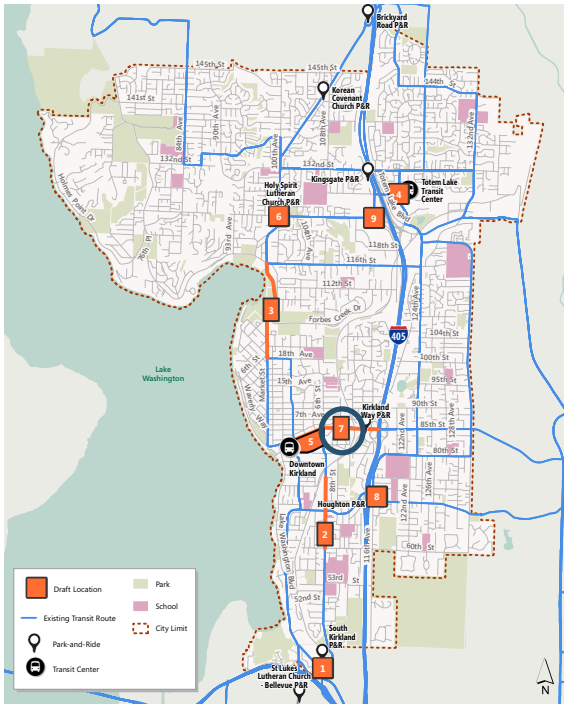
- On average, between 30 and 60 seconds saved per bus trip
- 8 to 12 bus trips per peak hour benefit from the project
- Project improves travel times for 800 to 1,000 riders per day
- Almost 20 person-hours saved per day

Project Considerations and Potential Challenges

- Potential to achieve similar travel time savings with targeted queue jump and signal priority investments at the following locations along NE 85th Street:
  - 3rd Street
  - 6th Street
  - 114th Avenue NE
- Significant constructibility issues due to topography constraints between 6th Street and 114th Avenue NE
- Limited delay exists for portions of the NE 85th Street corridor and the travel time savings for full BAT lanes may not be realized
- More detailed analysis is required to understand the specific benefits of targeted priority treatments and the ability of other strategies to achieve similar transit connectivity outcomes
- Coordination and design considerations required for potential shared-use path from Cross-Kirkland Corridor to I-405
- This project will widen the intersection and make pedestrian crossing times longer

Coordination Needs

- Sound Transit
- King County Metro
- WSDOT
- Adjacent property owners
- Department of Ecology



Source: Fehr & Peers, 2018

Potential Funding Mechanisms

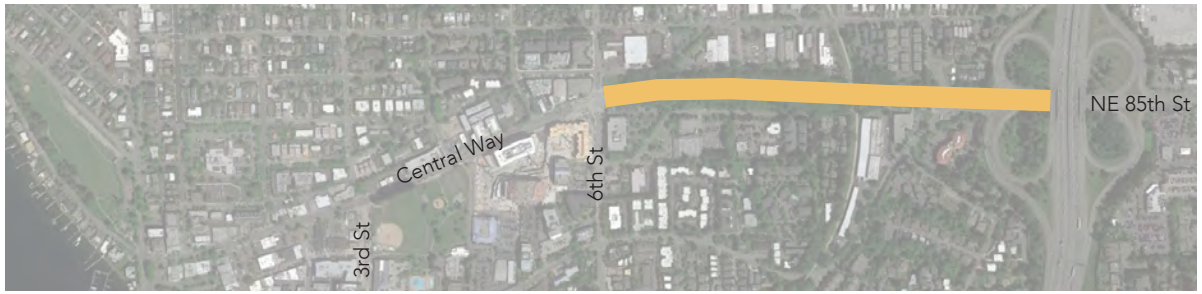
- Sound Transit 3 I-405 BRT Program

Cost Estimate

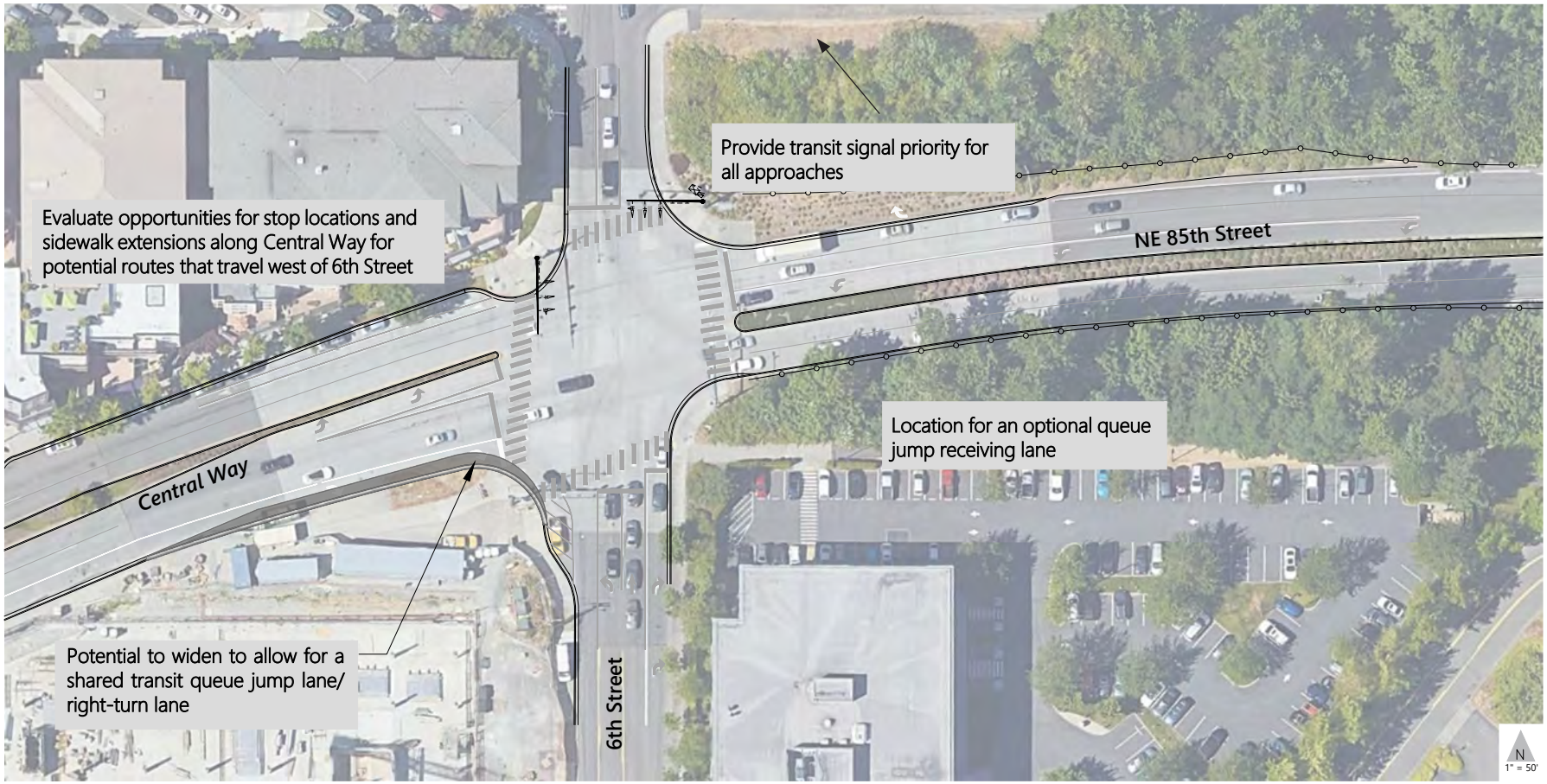
$40-50 million (Sound Transit funding)

Timeline for Implementation

Project Extent



The figure below identifies an opportunity to provide an eastbound queue jump along Central Way across 6th Street.



Source: Fehr & Peers, 2018
Conceptual - Not for construction. Detailed analysis and engineering required

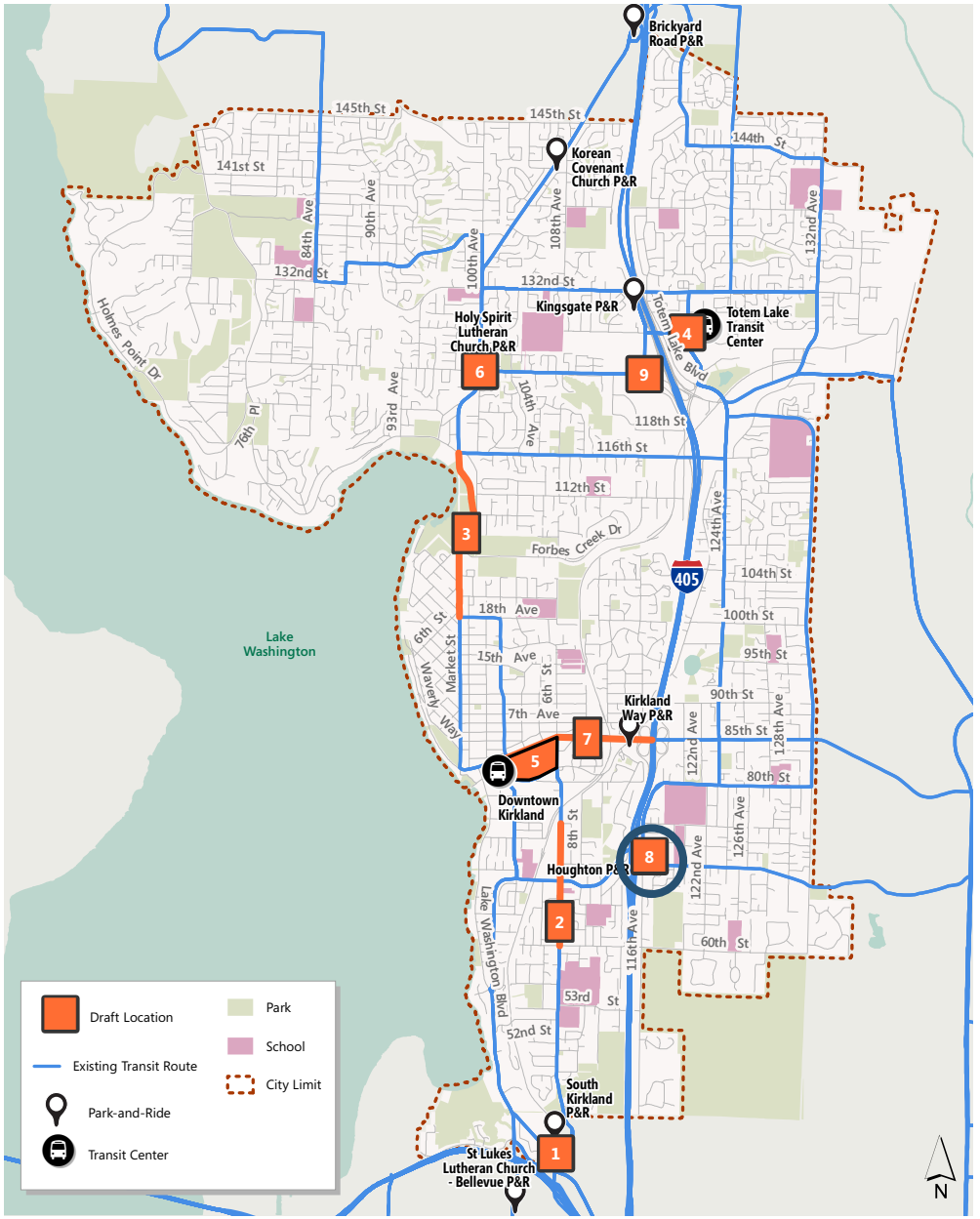
PROJECT 8: HOUGHTON PARK AND RIDE STOP RELOCATION

Project Description

Buses traveling westbound along NE 70th Place must divert into the Houghton Park & Ride in order to serve stop on the east side of 116th Avenue NE. The diversion adds approximately 60 seconds of delay because the bus must make two left-turns to access and exit the Park & Ride. Therefore, this project re-routes buses so they do not circulate through Houghton Park & Ride by adding an on-street bus stop on NE 70th Place at 116th Avenue NE for westbound buses. Riders would use the existing crosswalk across NE 70th Place to reach the Park & Ride.

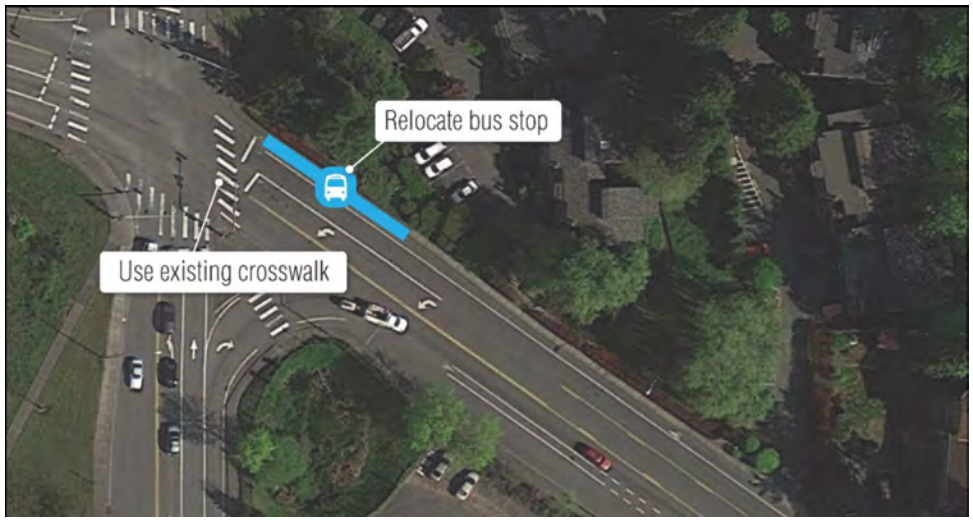
Project Benefits

- On average, over 90 seconds saved per bus trip
- 4 to 6 bus trips per peak hour benefit from the project
- Project improves travel times for 500 to 600 riders per day
- Almost 10 person-hours saved per day



Source: Fehr & Peers, 2018

New Bus Stop Location



Source: King County Metro Route 245 Speed and Reliability Improvements Report, 2016

Project Considerations and Potential Challenges

- Passengers using the stop may incur some additional delay due to crossing NE 70th Place to reach the Park & Ride

Coordination Needs

- WSDOT
- King County Metro
- Adjacent property owners

Potential Funding Mechanisms

- WSDOT
- King County Metro

Cost Estimate

$150,000 – $200,000

Timeline for Implementation

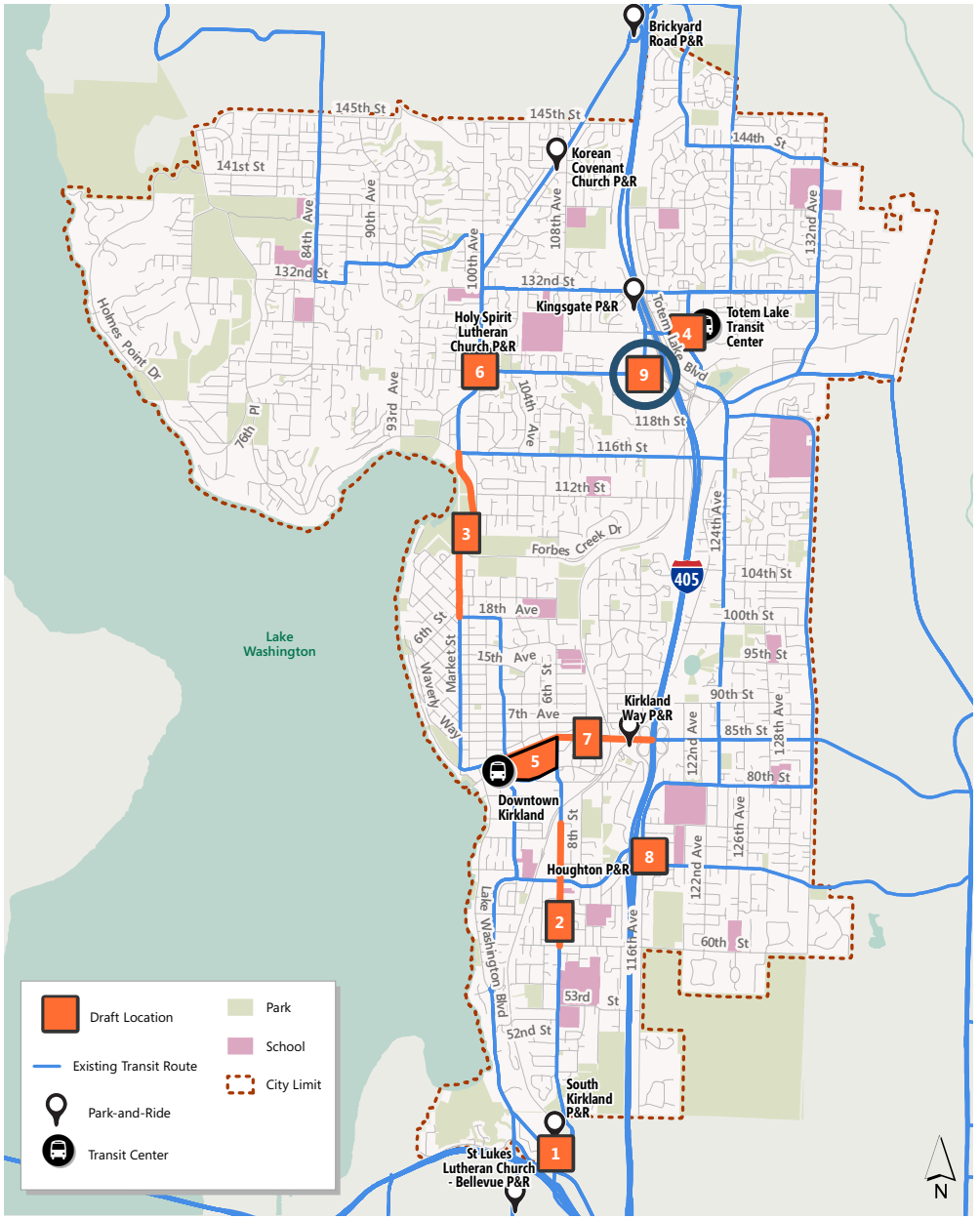
PROJECT 9: NE 124TH STREET & 116TH AVENUE NE IMPROVEMENTS

Project Description

Buses experience substantial delay in the southbound approach at NE 124th Street and 116th Avenue NE due to the high volume of traffic attempting to turn right from 116th Avenue NE. Queues at times can back up as far as NE 128th Street along 116th Avenue NE. Therefore, this project would construct a new southbound right-turn lane to provide additional storage space and to improve operations at the intersection. Beyond the direct travel time improvements for riders on the bus, this project would improve on-time reliability for the substantial number of riders that board at stops further south along the route.

Project Benefits

- On average, over 50 seconds saved per bus trip
- 6 to 8 bus trips per peak hour benefit from the project
- Project improves travel times for 300 to 400 riders per day
- Almost five person-hours saved per day
- On future METRO CONNECTS Service Network map as RapidRide corridor



Source: Fehr & Peers, 2018

Source: Fehr & Peers, 2018
Conceptual - Not for construction. Detailed analysis and engineering required

Project Considerations and Potential Challenges

- Construction challenges include:
  - Underground utility relocations
  - Pole relocations
  - Driveway reconstruction
- Right-of-way constraints

Coordination Needs

- King County Metro
- Sound Transit
- Adjacent property owners
- WSDOT

Potential Funding Mechanisms

- King County Metro RapidRide Program
- Transportation Improvement Board
- Local City funds
- Redevelopment

Cost Estimate

$1-2 million

Timeline for Implementation

0-5 Years | **5-10 Years** | 10+ Years

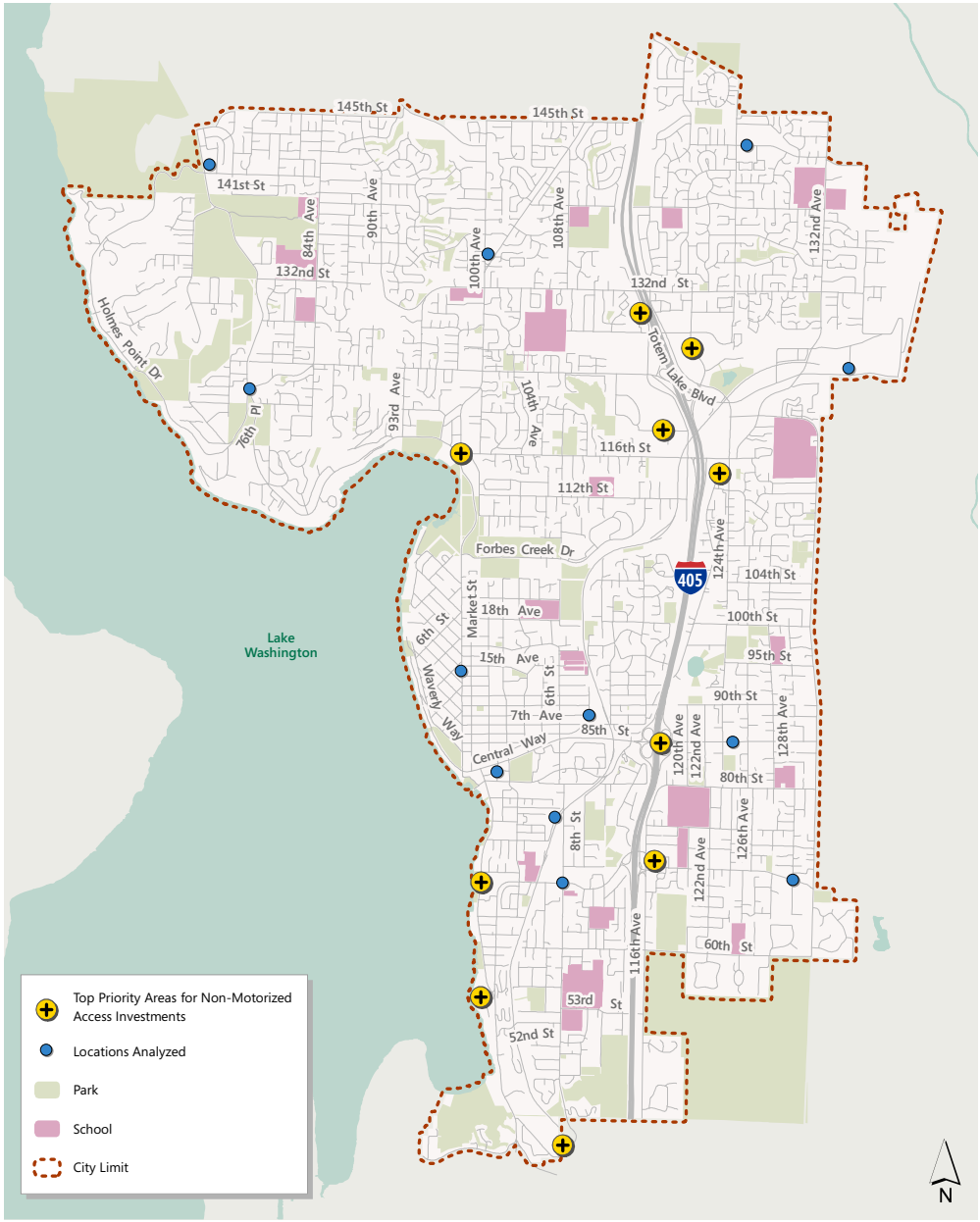
PROJECT 10: NON-MOTORIZED ACCESS TO TRANSIT PROGRAM

Project Description

Safe, comfortable, and easy connections to transit stops are a primary requirement to improve the usability of transit. Within the City of Kirkland, barriers exist that limit the accessibility of transit stops by pedestrians and bicyclists. The constraints include gaps in the street network, major facility barriers such as freeways, topography, lighting, and limited bicycle infrastructure. New amenities at bus stops, such as shelters, real-time bus arrival information systems, and improved lighting, would improve access to transit. Information provided in this plan can inform the update of Kirkland's Active Transportation Plan and help with prioritizing of previously identified non-motorized projects.

Project Benefits

- Potential ridership gains based on increasing the viable walkshed around transit stops
- Increased pedestrian and bicyclist safety
- Overall improvements to the citywide bicycling network



Source: Fehr & Peers, 2018

Top Priority Areas for Non-Motorized Access Investments

- South Kirkland Park & Ride
- Carillon Point Mixed Use Business Center
- 10th Avenue S / Lake Washington Boulevard Residential Market
- Totem Lake Urban Center
- Houghton Park & Ride
- Totem Lake Transit Center
- Kingsgate Park & Ride
- I-405 at NE 85th Street Bus Rapid Transit
- North Rose Hill Neighborhood Center
- Market Street / 98th Avenue NE

Project Considerations and Potential Challenges

- Limited right-of-way for safe bicycling infrastructure
- Limited data availability of other pedestrian access factors such as safety, lighting, and comfort
- Prioritization process to target non-motorized investments

Coordination Needs

- King County Metro
- Sound Transit
- Adjacent property owners
- WSDOT

Potential Funding Mechanisms

- King County Metro RapidRide Program
- Transportation Improvement Board
- Local City funds

Timeline for Implementation

0-5 Years | 5-10 Years | 10+ Years

Bus shelter

Real-time bus arrival information system and lighting

Bike racks

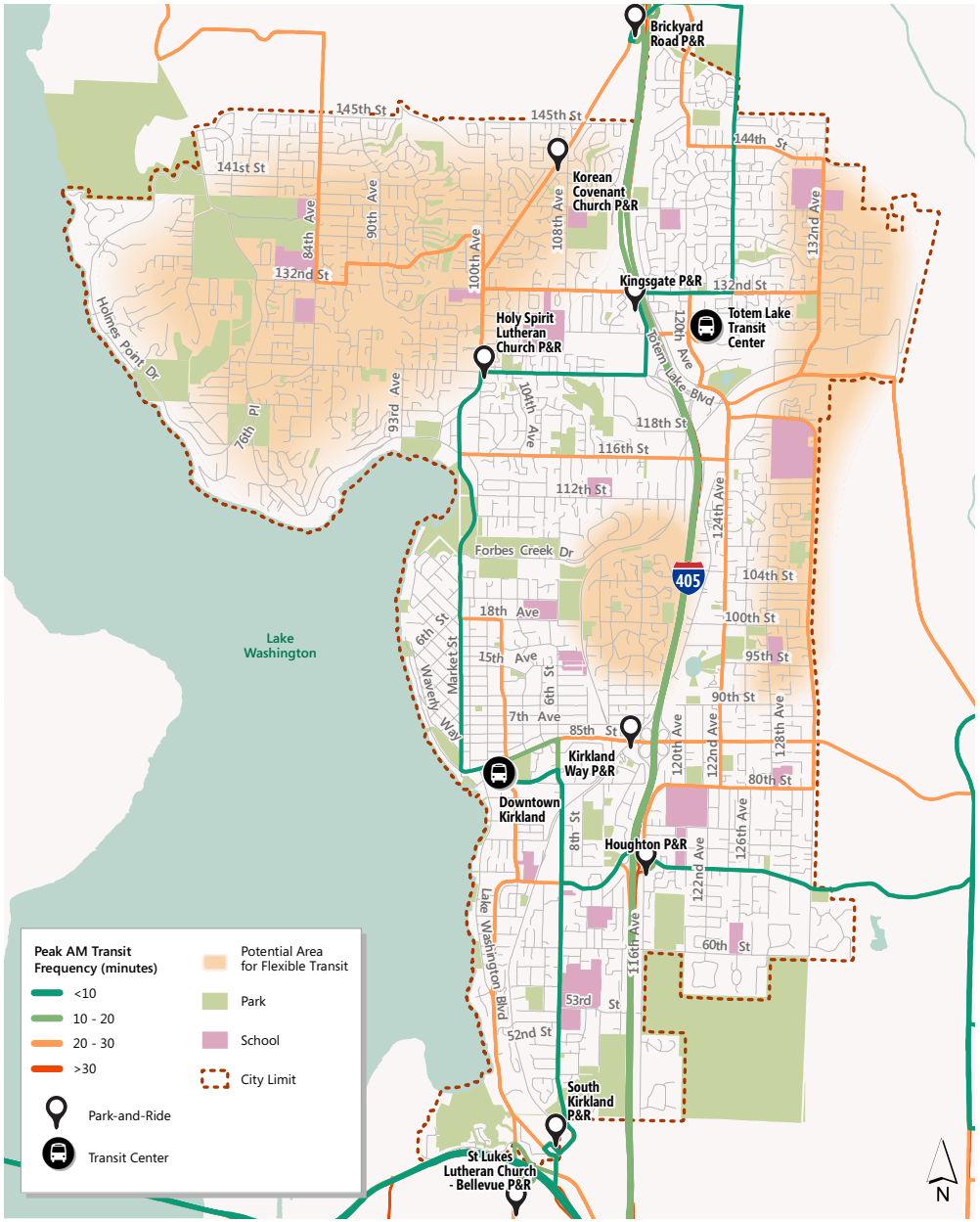
PROJECT 11: FLEXIBLE TRANSIT PROGRAM

Project Description

Ensuring appropriate coverage of the transit system throughout the City of Kirkland requires balancing the competing needs of different users. While providing a "bus on every street" would ensure maximum coverage to limit how far a rider must walk, it isn't the most efficient use of resources. On the opposite end of the spectrum, only providing transit through high-density corridors would prevent many residents from having the option to use transit. The Flexible Transit Program project establishes an evaluation mechanism and identifies areas of opportunity based on the current fixed-route transit network to partner with transit agencies and potentially private mobility providers to improve first-last mile connections to high frequency transit within the City. It seeks to identify areas that may not be able to support fixed-route transit and evaluates options to provide similar, or better levels of mobility.

Project Benefits

- Potential ridership gains based on improved travel times and reduced transit wait times
- Increased mobility and access to jobs, services, and opportunities
- More efficient use of transit resources
- Similar or better transit coverage throughout the City



Source: Fehr & Peers, 2018

Project Considerations and Potential Challenges

- Ensuring rider understanding of different mobility options
- Potential confusion of using a non-fixed route transit service
- Best practices in fare integration and payment technologies are still being established
- Potential inequities in how service is managed and deployed

Coordination Needs

- King County Metro
- Sound Transit
- Potential mobility provider partners

Potential Funding Mechanisms

- King County Metro Community Connections program
- Local City funds
- Private partnerships

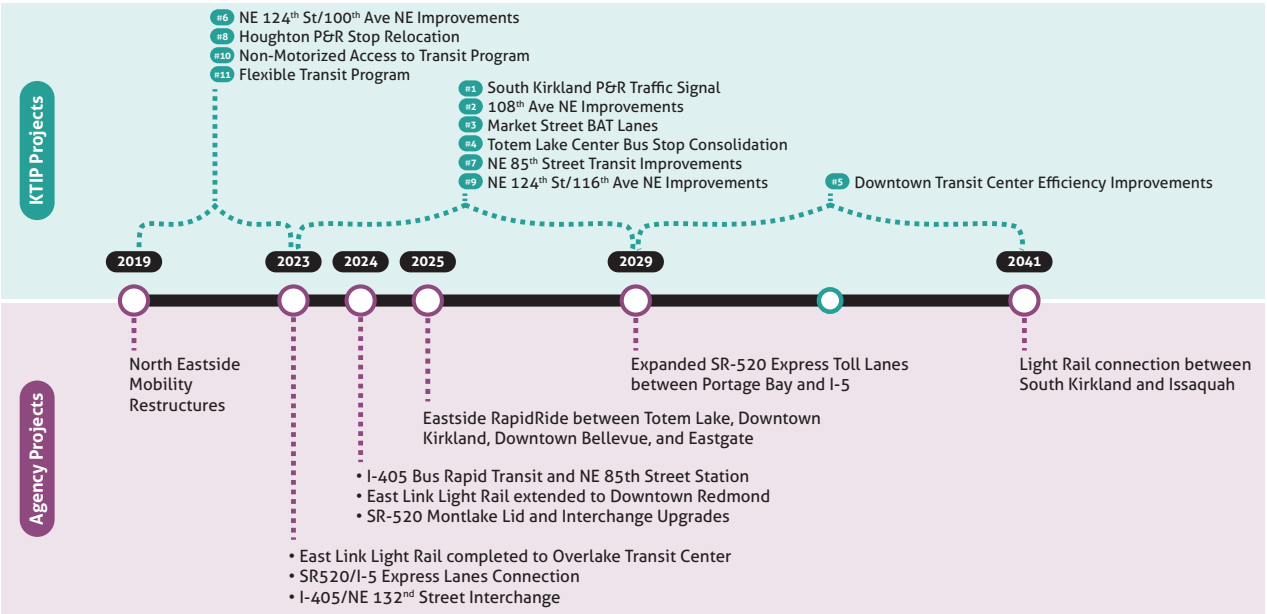
Timeline for Implementation


KIRKLAND TRANSIT CENTER
Bus Bays 1, 2
Kirkland Ave
Library
Bicycle Storage
Bus Bays 3, 4
Main St
Marina Park

IMPLEMENTATION AND NEXT STEPS

Establishing a prioritized list of transit investments is the first step in improving the transit experience for riders within the City of Kirkland. The areas of focus and potential strategies establish a framework to move forward to secure funding, leverage partner agencies, and begin the planning and design phases for implementation of the projects. Key actions are required in order to engage with upcoming planning processes and to ensure the phasing of the next steps aligns with other projects, both under city control and with other agencies.

The timeline below highlights the expected planning phases for the prioritized projects and ongoing planning efforts with other agencies. Expected years for completion are based on current schedules for projects managed by Washington State Department of Transportation, Sound Transit, and King County Metro.




Bus Bay 1
Kirkland Ave
Library
Bus Bay 3
Bicycle Storage
Main St
Marina Park

APPENDICES

A. PUBLIC OUTREACH SUMMARIES

B. SPEED & RELIABILITY PROJECT EVALUATION CRITERIA

C. SUMMARY OF TECHNICAL ANALYSIS

APPENDIX A: PUBLIC OUTREACH SUMMARIES

Open House #1 Summary

Tuesday, November 14, 2017, 5:30 – 7:30 PM
Heritage Hall, 203 Market St, Kirkland, WA 98033

Overview

The Kirkland Transit Implementation Plan project team held an open house on Tuesday, November 14, 2017 from 5:30 – 7:30 PM at Heritage Hall near Downtown Kirkland. The project team estimated that 20 members of the public attended the meeting, with 18 attendees having signed-in at the welcome station.

The purpose of the meeting was to share a general project overview and to gather feedback from the community on the existing and planned transit networks in the area. Community members also had the opportunity to provide their input on prioritizing potential transit investment opportunities, such as speed and reliability, frequency, accessibility, and more. Members from the project team were available to speak directly with the community to gather their feedback.

Participants were also asked to share their feedback regarding the open house and community outreach structure.

Staff

Staff from the City of Kirkland and the consultant team (EnviroIssues) attended the public meeting to facilitate the meeting, answer the community's questions, staff the open house stations and document attendee feedback.

Stephen Padua, City of Kirkland
Joel Pfundt, City of Kirkland
Aaron Gooze, Fehr & Peers
Don Samdahl, Fehr & Peers
Sophie Cottle, EnviroIssues
Betsy Kinsey, EnviroIssues
Dennis Sandstrom, EnviroIssues
Anne Broache, WSDOT
Diana Giraldo, WSDOT
Evelyn Pao, WSDOT

Notifications

Community nofications for the November 14 meeting included the following:

- Social media posts
    - Tweets sent on November 1, 7, and 14
    - Facebook posts on November 1, 7, and 14
- Posters displayed beginning on November 2 at:
    - Kirkland Library

    - Kirkland City Hall
    - Kirkland Performance Center
    - Peter Kirk Community Center
    - Kirkland Teen Union Building
    - Kirkland Bicycle
    - South Kirkland Park & Ride
- Flyers distributed to community centers beginning on November 2
    - Kirkland Library
    - Kirkland City Hall
    - Kirkland Performance Center
    - Peter Kirk Community Center
    - Kirkland Teen Union Building
    - Kirkland Bicycle
- Flyers were distributed to all City neighborhood associations
    - Central Houghton Neighborhood Association
    - Everest Neighborhood Association
    - Evergreen Hill Neighborhood Association
    - Finn Hill Neighborhood Alliance
    - Highlands Neighborhood Association
    - Juanita Neighborhoods Association
    - Lakeview Neighborhood Association
    - Market Neighborhood Association
    - Moss Bay Neighborhood Association
    - Norkirk Neighborhood Association
    - North Rose Hill Neighborhood Association
    - South Rose Hill/Bridle Trails Neighborhood Association
    - Totem Lake Neighborhood Association
- City email newsletters
- City project website

Meeting format

The meeting was an open house, with several information and feedback stations. Attendees visited stations to learn more about the project history, the project timeline, potential improvements under consideration, provide feedback on potential improvements, and leave comments on maps of existing and future transit networks in the area. Meeting attendees prioritized transit improvements from a list of six potential options. Attendees also had the opportunity to provide written comments regarding the KTIP and the open house structure.

Attendee feedback

Attendees were asked to provide feedback on the existing transit network and the future transit network maps, as well as on potential improvement priorities. People left notes on the maps and display boards, and comment cards as well as sharing their feedback with project staff.

Much of the feedback from the community was regarding Metro Route 255, future network integration with the future BRT, and increasing reliability and service with the existing network. Attendee feedback is summarized below. Verbatim feedback can be found in the Appendix.

Existing Network

- There are several areas surrounding Kirkland that suffer from traffic and pedestrian congestion
    - South Kirkland Park & Ride
    - Northwest University
    - Neighborhood of Juanita
- Metro Route 255 is an existing asset to the community
- There are concerns with existing service and reliability
    - Sound Transit Route 540 is unreliable
    - Increase frequency of existing routes

Future Network

- Metro Route 255
    - Extend service into the weekend and weeknights
    - Limit the number of stops on the existing route
    - Improvements should focus in relieving delays due to traffic
- Integrate and expand existing network with the future BRT
    - Connect park and rides to BRT
    - Ensure safe pedestrian access
    - Improve east-west connections to BRT
- Use the rail corridor for transit
- Promote transit-oriented development with the BRT
    - Up-zone areas
    - Create safer pedestrian/bicycle access to stations
- Reliability
    - Increase signal priority for transit
    - Promote reliable transfers and connections with other transit modes
    - Increase reliability and predictability with mobile apps

Prioritizing Potential Improvements

Attendees were asked to rank six potential transit improvements using dots at the meeting on a scale of one to six, one being the highest priority and six being the lowest. Attendee rankings of these potential improvements are averaged below. The full ranking can be found in the appendix.

	Speed and Reliability	Safety	Frequency	Accessibility	Comfort	Information Technology
Average rating	**1.9**	**4.2**	**2.2**	**3.6**	**5.3**	**3.9**

Observations and recommendations

- Some attendees were expecting a presentation and arrived promptly at the beginning of the open house in order to ensure they didn't miss it. Recommend publicizing the event with language that indicates participants can stop by any time or that there is a presentation at a specifc time.
- Most attendees stayed at the open house for around an hour and took time to have conversations with staff and provide thoughtful feedback. Attendees seemed familiar with this type of meeting and many had attended transit open houses with other agencies. Recommend using roll plots again in the future, as much discussion and feedback was gathered around the roll plots in the center of the room.
- Contacting the neighborhood associations helped attendance. Recommend to continue outreach with the neighborhood associations.
- Recommend having fewer staff at future events if attendance level is expected to be roughly the same.
- The size of the space and information provided felt appropriate for the number of attendees and purpose of the event.

Photos


NOT AN EXIT
Existing Transit Network


Planned Metro Connects 2025 Service Network
Evaluating potential

Appendix: Feedback

Evaluating Potential Improvements

Speed and Reliability	Safety	Frequency	Accessibility	Comfort	Information Technology
1	3	3	4	6	3
1	5	2	3	6	6
3	4	1	4	6	6
2	2	4	2	5	5
1	6	1	4	6	5
2	5	2	3	6	5
1	3	1	4	5	4
1	5	4	3	5	2
1	6	4	1	6	2
3	5	2	3	4	6
5	3	2	3	5	6
1	5	1	6	6	4
1	3	1	3	6	4
2	4	2	4	2	4
1	5	2	3	6	4
3	6	2	6	5	1
3	1	4	4	5	2
		1	5	5	2
		2			
		3			
Average	**1.9**	**4.2**	**2.2**	**3.6**	**5.3**	**3.9**

Existing Transit Network

Category	Comment	Location	Route (If Applicable)
Other	Use Washington DC zone model	General	
Cost	Lakeview area feels they are repeated and overcharged for these services; consider partnering with Eastside for flat rate even within Kirkland	Lakeview/Kirkland	
Service Improvements	Queue jumps from [South Kirkland] Park and Ride to 520	Park and Ride	
Safety	Reduce crossing need	Watershed Park	
General	Heavy student volume	Northwest University	
Service	Move [bus] stop	108th Ave NE & NE 53rd St	
General	Look at right-of-way and sidewalk space	Watershed Park	
Safety	Future signal	Lake Washington Blvd Ne & NE 52nd St	
Service	The 255 is great! The 540 is unreliable - always late!	General	255, 540
Service	I ride the 255 most often, at non-commute times. I love having a route along 108th. Wish the Bellevue route still ran there.	General	255
Park and Rides, Service	How can we better use the NE 70th Park and Ride, especially in conjunction with the I-405 BRT?	NE 70th Park and Ride	
Traffic	Really bad backups in the morning	132nd St & 108th Ave	
Safety	Using transit in this business area is hard. Pedestrian access to bus stops is bad.	Juanita Woodinville Way NE & 100th Ave NE	
Service, cost	Peak-only rates are useless to me. So are routes with more than 15 min frequency	General	

Future Transit Network

Category	Comment	Location	Route (If Applicable)
Service	You asked us about lighting and safety, but NOT where we want the buses to go! How many Kirklanders want to go to Seattle versus Bellevue?	General	
Service	CRITICAL to have a fast, efficient transfer from east/west buses on 520 to UW light rail	UW Light Rail	Light rail
Reliability	More reliable data feed for One Bus Away etc., especially for 255 and bus tunnel	General	255
Service	Eliminate 50% of stops on route 255	General	255
	I really want more 255 weekend and week night hours, especially after downtown events	General	255
Reliability	A more reliable method of tracking bus via phone would help greatly	General	
Service	Would like convenient tie-in from South Kirkland to 85th when/if 85th will be the main tie to I-405	General	
Service	How do we connect NE 85th St BRT to downtown/jobs/housing/festivals in a meaningful way? If making that investment, how do we upzone to take advantage?	General	BRT
Parking	Covered bike parking, well signed, and obvious for bike share and owned bike parking	General	
	Prioritize safe walking access to future NE 85th St BRT station on both sides of 405.		BRT
Reliability	Priority for transit signal priority	General	
Routes	For the love of god, USE THE RAIL CORRIDOR FOR TRANSIT (please, thanks)	Rail corridor	
Other	What about a ferry?	Lake Washington	

Accessibility	Split city into regions. Make sure each region can access all others safely by walking (sidewalks), and biking (protected bike routes), and buses. Also, each region should be able to access all transit hubs via the same methods.	General	
Reliability	Yes to bus only lanes	General	
Routes	Current routing makes sense for now, but alternative routing is more feasible for a RapidRide model serving Finn Hill	Finn Hill	
Service	We need an east/west [connection] from 100th Ave to Redmond/Willows via NE 124th St	Redmond	
Park and Ride	Relocate Totem Lake Transit Center to west of 120th Ave NE to function more like Bellevue Transit Center	Totem Lake TC	
Service, Reliability	Queue jumps on 108th ASAP. TSP integrated with Metro.	108th Ave NE	
Service	Bus improvements to get people to use the bus + off the overcrowded roads between Juanita and 520	Juanita	
Service	255 bus route between Juanita and South Kirkland Park and Ride on the bus takes usually 45 mins+; this is due to roads being at WAY over capacity	Juanita	255
General	Manage park and ride transit access	General	
Service	Improve east-west transit to connect to I405 transit service and future BRT	General	BRT
Park and Ride	Congestion; park and rides; they're full	General [note was left between Brickyard Road P&R and the Korean Covenant Church P&R]	
General	Keep conversation about corridor alive! 405 misses most people	I-405	
General	Prioritize RR; much more valuable than 85th St	Rail corridor	

Metro Connects 2025

Category	Comment	Location
Service	Could you do a loop shuttle within the central core of Kirkland?	Downtown Kirkland

Kirkland Transit Implementation Plan
February 2018

Summary of Public Comments Received on Web Map

December 15, 2017 to January 15, 2018

Below are captions and summaries from web map comments provided by the public during a one month online survey period. They are organized by area, route, and/or topic type.

UW to Kirkland

- Eastbound 540 from UW is unreliable, and the 255 isn't an adequate alternative
    - Eastbound 540 reliability at UW is basically unusable. 25+ minute headways + delays through UW campus make timing the transfer from Link too hard. I've given up on 540 Eastbound, and just take 255 now
    - 540 to Kirkland is always late and only comes every 35+ minutes in the afternoon. Redmond has lots of buses going to East, but 255 is usually full when you try catching it on 520.

Inglewood/Finn Hill

- There is great need for added and/or improved service in this neighborhood. Comments included:
    - There are no bus stops in the Holmes Point Drive neighborhood, and that's the only reason I haven't used public transit more. That and park & rides filling up fast!
    - There are not easy ways to get down Juanita Drive to Juanita Beach to catch the bus to downtown Kirkland and then on to Seattle. And, there simply is not bus frequency on Finn Hill on 84th.
    - There is no bus service to this area
    - Need more bus stops/routes

Juanita

- Use Juanita Drive as a transit corridor providing better connectivity to Juanita Beach Park
- Two people brought up challenging transfers in Juanita
    - 326-255 transfer time
    - Making space for a small off-street transfer station so that cross-line transfers can wait here so people don't miss the transfer

Downtown Kirkland

- 245, 255, and 540 are often bogged down by traffic waiting for the Kirkland Way & 6th Street steep 4 way stop. Would this be a good place for a roundabout?
- Keep Route 255 going DIRECTLY to Seattle
- It's slow to get from Kirkland TC to Bellevue TC. Need something direct and fast.

Transit Delay/Reliability Issues

- NE 68th St & 108th Ave NE
    - Transfers should be better coordinated here, particularly during off-peak hours. Also, covered bike parking would be fantastic here. Perhaps in one of the grocery store parking lots?
    - Transit priority on 108th (especially around 68th St) would be greatly appreciated. The bus often gets stuck in traffic here.
    - This intersection frequently creates backups northbound into Kirkland. The timing of the light doesn't seem right or something.
- NE 124th Street (Route 244/255 - unclear which)
    - Bus gets stuck behind 405 onramp backup (pinned at 111th Lane NE)
    - Slow downs (pinned on NE 124th Street at I-405)
- NE 132nd Street east of I-405 (Route 236/244 - unclear which)
    - Reliability issues (bus runs WAY too early or late). (pin marked on NE 132nd Street at 127th Drive NE)
    - Eastbound there are two needlessly close bus stops here; one would suffice and speed things up.
- State Street S (between 3rd Avenue and 7th Avenue)
    - Perhaps convert the parking lane to a bus only lane?
    - Convert parking to dedicated bus lanes. The current bus delays caused by rush-hour traffic make the routes unusable
    - I stopped waiting for 235/236 northbound busses here in the evening. They are so backed up in traffic that I'd often wait more than 30 minutes for a bus that is supposed to come every 30 minutes.
    - Traffic often backed up and lengthy wait times while on bus
- Route 236
    - Left turn takes a very long time at the southbound freeway on/off ramps on Juanita Woodinville Way NE
    - Transfer 236 to 255 to Juanita (pin marked on NE 132nd Street at 120th Avenue NE)
- Route 238
    - Bus gets backed up on 132nd Avenue NE north of NE 85th Street
- Route 244
    - Is really bad on NE 124th Street just east of 134th Court NE
    - Stuck in traffic from NE 124th Street & 134th Courte NE all the way through Willows Road and back
    - Gets stuck in traffic on 132nd Ave NE (pinned between NE 124th Street and NE 126th Place)
- NE 85th Street (Route 248)
    - Eastbound, often congestion by the 132nd Avenue NE and 140th Avenue NE lights
    - NE 85th Street often congested by the 405 interchange (pinned at I-405)
- Route 255 – 3 people raised delays near Market St & Forbes Creek Drive
    - Explore options to improve intersection flow here such as a roundabout to reduce congestion for morning and evening commutes

    - In the mornings there's a lot of congestion along this stretch of 98th, around 8a. I catch the 255.
    - 255 Northbound often come in batches of 3-4 or even 5 buses at the same time in the afternoon - resulting in massive delays for southbound buses to get into Seattle. Many times I've waited 45 min.
    - 255 to Seattle on Market Street (pinned at 8th Avenue) is almost always late and the One Bus Away app does not accurately track the buses.
- 108th Avenue NE
    - Gets very congested during rush hour.
    - Stop spacing along 108th Ave is too close in many instances. The 255 makes many stops, greatly slowing the time through this corridor compared to the 540.
    - The 255 is often slowed by other traffic on 108th Ave. Also, road design encourages cars to bypass buses at stops, pushing the bus farther back in line at stoplights, etc. Can I really edit this?
    - Backups
    - 108th Ave is very backed up during rush hour
    - There are too many bus stops along this corridor to the South Kirkland Park & Ride. The buses have to stop too frequently and that contributes to the traffic & transit problems.
    -
- Route 257 – large backups on NE 132nd Street
    - Juanita High AM traffic causes backups all the way to 132nd/100th Ave intersection - makes bus very late to Kingsgate P&R
    - Large arrival window (early or late) for an infrequent bus (pinned on 119th Ave NE & NE 148th St)
- Route 342
    - Bus doesn't run according to schedule. Is often 10 minutes early in the morning and leaves without waiting. It's the last bus to Bellevue in the morning and missing it causes me to be late. (pinned on I-405 south of NE 68th Street)

Pedestrian accommodation

- Bus shelters needed:
    - Juanita Woodinville Way at NE 137th Place
    - Juanita Woodinville Way at the bus stop SW of NE 143rd Place
    - 124th Avenue NE & NE 137th Place
    - 132nd Street at 127th Drive NE
    - 132nd Street at 124th Avenue NE
    - EB stop on NE 70th Place just west of 132nd Avenue NE. All the shelters are WB.
    - Route 255 needs better bus stop on 6th Street S just north of 5th Avenue S. It needs a bus shelter.
    - Need covered bench on 108th Avenue NE just north of NE 55th Lane. This serves both the 255 and 540.
- Crosswalk needed:
    - 100th Avenue NE at NE 135th Place

    - NE 70th Place & 130th Avenue NE. The crosswalk is only on one side of the intersection, so not helpful for people using EB stop.
    - Install a crosswalk across 6th Street to the 255/540/245 bus stop outside of Google.
    - Improve pedestrian crossing on Market Street at 4th Avenue. Crossing Market Street at night to access the SB 255 bus can be difficult/scary.
    - In Downtown Kirkland, consider making Lake Street & Kirkland Avenue a scramble / all way walk since many pedestrians need to walk diagonally (and waiting for both lights takes several minutes today).
- Bike parking (a few other comments embedded in other sections)
    - Add bike rack to the bus stops along 6th Street S. That way we can ride to the bus stop without having to worry about taking our bikes into Seattle. (Pinned on 6th Street at 9th Avenue S.)
    - More bike parking along 108th. There is no bike parking between KTC and SKPR. That can be a long way out of the way from the closest stop to one's home, and the buses on 108th are very useful.
- Other facilities:
    - Bus stop at 80th & 130th is awful. No sidewalk, stand in the ditch.
    - Need light at the bus stop on NE 68th Street at 112th Avenue NE – bus stop is very dark and the bus often misses us.
    - In Downtown Kirkland, the pedestrian wait times at Lake Street & Kirkland Avenue are much too long and inspire jaywalking.
    - In Downtown Kirkland, during peak hours, walk signs at Kirkland & State should show green without requiring a beg button press. There is high foot traffic here and pedestrians often miss the beg button by a few seconds.
    - At Downtown Kirkland TC, live displays showing wait times until next bus on each route would be useful (just as they have at Bellevue TC)
    - Need bench at the bus stop on 108th Avenue NE outside Seventh Day Adventist. This is a heavily used stop. Also, transfer stops are kind of far from each other.
    - Bikes need help crossing 108th Avenue NE at NE 60th Street. The flashing lights are hard to use on a bike in both directions, but harder WB.

Kingsgate P&R

- More bike parking at Kingsgate P&R please
- Insufficient parking. Additional sots could easily be added by restriping.

Houghton P&R

- Houghton delay ag
- This lot is almost always empty. Wish there were more buses to Seattle from this lot.
- All the left turns to serve the P&R really slow down the bus and not that many people use it. Let's keep the bus on 70th and make the street crossings safe and comfortable.

South Kirkland P&R

- Route 234 to Bellevue doesn't run enough times in the morning

- Buses are slowed needlessly with a huge loop through South Kirkland P&R. A better design would put the stops on the East and West side of 108th Ave directly, skipping the loop altogether.
- Can we avoid the loop and straighten the routes?
- All the circling through the transit center. And the circuitousness of the 234/235 routes around here. (pinned near I-405 on-ramps)

New Service Needed

- New development area (northeast of NE 124th Street & 132nd Avenue NE) has no public transportation to a main hub
- Highlands has nothing accessible. A stop nearby, at least on CKC or freeway, would help the last mile problem. (Pinned at NE 104th Street & 116th Ave NE)

KIRKLAND
Transit Implementation Plan

Kirkland Transit Implementation Plan Online Open House Summary

Draft 8/9/18

May 7 to June 18, 2018

KTIP.participate.online

Overview

The Kirkland Transit Implementation Plan project team held an online open house from May 7 to June 18, 2018.

The purpose of the online open house was to share a general project overview, and to gather feedback from the community on projects types and specific projects under consideration. Community members had the opportunity to provide their input using an interactive map as well as a survey.

The online open house was viewed over 300 times by over 250 unique users. Of these viewers, 89 provided their comments using the survey or map feature.

Notifications

Community nofications for the November 14 meeting included the following:

- Social media posts
    - Tweet on May 18
    - Facebook post on May 20
- Flyers distributed at transit centers on June 15 and 18
    - Kirkland Transit Center
    - Totem Lake Transit Center
- City email newsletters
- City project website

See Appendix A for examples of the notifications used.

Participant feedback

Participants were asked to provide feedback on the types of projects being considered, as well as specific project options.

Participant map and survey feedback is summarized below. Verbatim feedback can be found in the Appendix B.

- Interest in direct connections to downtown Seattle with fewer transfers required
- Some opposition to increasing transit routes and transit centers in Kirkland
- Desire for improved sidewalk connections and improved bike facilities throughout the city
- Concern that projects would remove travel lanes for vehicles resulting in increased traffic delays throughout the city

Survey question #1: How do you rank the three strategies the City of Kirkland is considering (1 being most important, 3 being least important)?

Results:

Item	Overall rank	Score*
Speed and reliability investments	1	102
Non-motorized access	2	88
Flexible transit options	3	69

Survey questions #2: Of all the projects under consideration, rank your top 3 preferred projects.

Results:

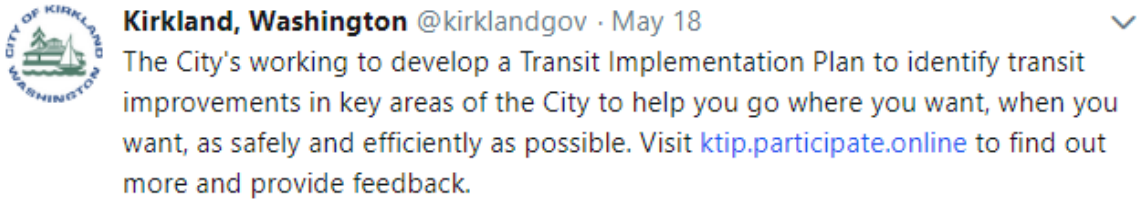
Item	Overall rank	Score*
I-405 at NE 85th St Bus Rapid Transit	1	28
108th Ave NE/6th St, including 108th & 68th, 108th & 70th St	2	22
Totem Lake Urban Center	3	17
South Kirkland P&R	4	16
Totem Lake Transit Center	5	13
Houghton P&R	6	12
Market Street and 98th Avenue NE	7	8
Houghton Park & Ride	8	8
NE 124th St/116th Ave NE	9	7
Connection to route 234	10	6
Totem Lake Transit Center	11	6
Connection to route 238	12	4
South Kirkland Park & Ride	13	4
NE 85th St from I-405 to the Kirkland Transit Center	14	4
Downtown Kirkland bus bays	15	4
NE 124th St/100th Ave NE	16	4
Kingsgate Park & Ride	17	3
North Rose hill	18	2
Downtown Kirkland bus bays/ 6th & Central Way	19	2
Totem Lake Blvd & NE 128th St	20	2
10th Ave S/Lake Washington Blvd Residential Market	21	1
Kingsgate P&R/116th Ave NE	22	1
NE 85th St/124th Ave NE	23	1
NE 132nd St/100th Ave NE	24	1
Yarrow Bay Mixed Use Business Center	25	1
Carillon Point Mixed Use Business Center	26	1

*The score is a weighted calculation based on the total responses for each option.

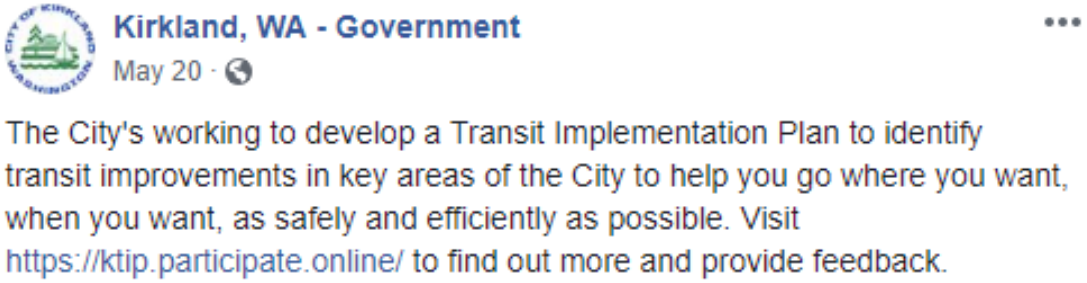
Appendix A: Notifications

Flyer distributed at transit centers

May 18 Twitter post



May 20 Facebook post



Appendix B: Verbatim comments

Map comments

Map comments can be viewed online at: https://enviroissues.mysocialpinpoint.com/kirkland-transit-implementation-plan#/

Survey comments

- The most important issue to me right now is smooth and safe connections from the Kirkland Transit Center to downtown Seattle. I am retired and use my senior Orca card to regularly attend cultural activities in Seattle. I am worried that a mandatory transfer at the UW will be cumbersome and potentially dangerous, both from a traffic & weather standpoint and people who may be encountered on the street when transferring. I'd like more information about how that transfer will occur and when.
- On 132nd Ave. NE, there is one bus (238) that goes to the Kingsgate P&R, but it stops running too early in the evening. If I work late, the bus runs late from caught in traffic, or I want to do an activity after work, I can get back to the Kingsgate P&R, but can't get home (which is off 132nd Ave. NE) from there without hiring an Uber. I would like this bus to run into the night, so I can count of being able to take it home. Since it does not work this way now, I avoid trips into the city, including accepting a job there. This is not always feasible.
- Stop making it difficult for cars!!! Parents with children in sports, activities, appointments...mass transit is NOT the answer when you've got 5 places to be in the space of an hour...with kids in tow. Stop messing around with the damn busses. The transit centers bring addicts and crime to Kirkland. Let us stay a family-oriented neighborhood. If you want to live in a big city, live in Seattle.
- Don't let 255 bus be terminated at Montlake Hub - allow it to go into Seattle and terminate at Westlake
- Finish the sidewalk projects now! Many of the other transit projects will take years to finish--don't wait until they are done to figure out the pedestrian connections. A person should be able to walk all the way along Kirkland Ave (not Kirkland Way) from its starting point at Kirkland Way up to the pedestrian Overpass over 405 to 116th Ave NE on the South side of the street! (not crossing Kirkland Ave from the south side to the north side multiple times.) There must be an easement for this along the properties that border this street. This is one of the safest (most direct) ways for pedestrians to get from the east side of Kirkland to the west side of Kirkland because it is so dangerous to walk up Central/85th. Kirkland Way is not very direct and doesn't have complete sidewalks either so Kirkland Ave should get sidewalks first. Pedestrian safety means limiting the amount of street crossings. People pushing a stroller or using a wheelchair do better on sidewalks so make them a priority especially on routes also useful to commuters. 68th is too far out of the way to be a viable alternative to the overpass pedestrian bridge and it has some major safety problems trying to cross the 405 on-ramp on the extra-long crosswalk. People think a flashing yellow arrow means 'hurry up and go', not 'slow to look for a pedestrian'.

Better walking routes from the Costco/Rose Hill area to Houghton Park and Ride would be a good idea especially if the Park and Ride becomes a better place to catch the bus from some neighborhoods than trying to get to Kirkland Transit Center first. Sidewalks on 116th Ave NE should have been put in ages ago considering a major high school in the area. It would be great to have a pedestrian path that continues along 118th Ave NE and along the Lee Johnson Property. Eventually this could be incorporated into the 85th Rapid bus stop design. That way people could walk to the 85th stop from neighborhoods in the south and east as well as the Houghton Park and Ride. You could also add a walking path down 116th Ave NE on the southwest side of the freeway so people in the Highlands neighborhood, Cross Kirkland Corridor trail and 100 Street bridge could access the 85th transit stop. There will be more and more housing going in and people need to be able to walk all over Kirkland. You really need to focus on a variety of pedestrian connections that go over the freeway or along the freeway in order to allow safe walking routes with sidewalks or pedestrian-only walkways. I think you should use a magic computer simulation to remove everything including roads from a map of Kirkland and only show actual sidewalk. This will give you a realistic view of how pedestrian will be able to get around Kirkland without a car. You will be better able to see the gaps like the ones that exist on the south side of Kirkland Ave and make a plan to fill in those gaps. I like the idea of flexible transit but it doesn't help me very much because I only have a dumb phone. The people in the neighborhoods that need transit the most during the day are people that don't drive perhaps seniors and the disabled who need to get to the doctor or social activities. It is very depressing for people to get stuck at home all the time. I don't want priority always given to the masses of people that are forced to commute to jobs in another city. The other population that is grossly underserved is people under 16. There should be more buses that are added near schools for children to get to and from school into the neighborhood. There is no reason that the Lake Washington High School should have so many cars in it. Except maybe it is due to the fact that not enough buses actually go to the neighborhoods as well as the fact that there aren't adequate walking routes. Maybe you should do another magic simulation and pretend you are a teenager at the Lake Washington High School and want to get home after school in the Highlands neighborhood or go to Everest Field for a softball game, or Juanita high for a swim meet, or Costco for a hotdog, or a visit to NW Asthma and Allergy in Redmond to get your shot before they close, or North Kirkland Community Center for a dance class or the Finn Hill neighborhood for a babysitting job. That could be your new transportation simulation game. You are a 15 year old girl without a driver's license and have a parent that works in Everett and you need to get from place to place after school and you have the challenge of figuring out what is the quickest and safest and cheapest way to do at 3 pm. And maybe even throw in a raining dark day in the middle of winter. Our young people are the future and they need to get into the habit of walking and taking public transportation everywhere if you expect them to do it as an adult. Transportation planners need to think like someone who doesn't have a car, or a smart phone, or a credit card. Let the game begin!

- Revisit the connection of light rail through kirkland so we are tied in with the test of the region. Why is tiny kirkland the only one that needs it's separate solution while it's residents are still paying the taxes for ST

- I am very concerned about the noise, traffic, crime, loss of property value and in genera - l quality of life for Highlands residents. I think transportation centers such as the in-line station for 85th and 6th will be the end of our quaint and quiet neighborhoods near 85th,. I see concrete jungles built on 85th to accomodate BRT as a lack of foresight - the area is too small to take on construction to build transit related facilities & which will discourage visitors coming by car not rapid bus, not to mention dramatically change our very connected little community by 405. I feel fear for what is coming. I did not buy my house here in the Highlands 5 years ago because i wanted to live in the city. I do not comute but if I was I see Totem Lake being the place to build bus stations etc. Lower income people live in that area and north. Working people will also find it helpful to have convenient access to transit whether they are with Evergreen Hospital or other medical establishments. We're talking a few more minutes on 405 to get to Totem Lake where there is room and a natural addition to the commercial and housing market expanding there. Please consider the noise and the amount oof people loitering around our area, garbage, crime, and frankly fear of personal safety all come to mind. 85th is already home to a sad rough looking group of people who have prevented me going into Walgreens or Safwway in the evening on more than one occasion. Look at the parking lot next to Walgreens. People huddlle against the building - sitting o the sidewalk. A nearby cluster of trees seems to have become a place where people congregate. Garbage has become a common sight - disgusting. No matter how hard Walgreens tries to clean up. Nothing good is going on there at night, especially. I see 85tb expansion as more of the same. Im not alone in considering a move. High property taxes license tab fees and all we'll get out will be problems and unhappy residents. The commuters who live here will quickly find out that getting around 85th during construction is a only the beginning of another planning mistake on Kirklands part. People walk ru and push strollers on the KC. They better enjoy now. What a shame that we fell for the CKC. Who wants to enjoy a noisy walk next to a rapid bus? I wont stay here for that. I hope Im misinformed on the plans.. . Yes we need to find ways to reduce our traffic problems re-route traffic going to be a blight on the route to downtown Kirkland and discourage visitors. BRT sounds like a nightmare. More noise, traffic congestion to an area already congested by people who live here and drive cars, and wont be using transit. We already have crime - car prowls have increased and will continue to increase as transportation centers are built & it becomes easy to break into a home or car and jump right on thr bus. and produce noise already existing from freeway. Totem Lake makes moee sense all the way around.
- Connecting residents along Juanita Drive to a flexible transit option. The closest useable bus stop is a 25-minute walk. That means it's easier just to hop into my car to get somewhere on the Eastside instead of using buses or carpool.
- Remove the for-profit tolling on I-405 and give those lanes back to the taxpayers who paid for them. How about that? How about literally ANYTHING that doesn't involve forcing people out of their cars or making auto travel more difficult? How about a single idea that doesn't sound like it came from someone who puts social engineering ahead of personal mobility?
- A dedicated right turn lane (westbound) at 116th and 124th. It is always backed up
- As the project team considers options to improve non-motorized access, the project team must also consider how to make these non-motorized access option safe for pedestrians and cyclists.

Motorist are often inconsiderate, distracted and reckless. The City of Kirkland and Kirkland PD should consider launching a campaign to enforce the distracted driver law i.e. people on cell phones. Create awareness (i.e. think the mailers that were sent out for the water report) letting people know that they can expect to be pulled over and ticketed if found utilizing a cell phone while operating a motor vehicle. Perhaps if there were consequences, people would stop engaging in this dangerous behaviors. Thank you for your consideration.

- Safety should be the number one priority. The only way to make the streets of Kirkland safe is to decrease traffic speeds and enforce traffic laws. The contempt for those laws, demonstrated by the majority of automobile operators, is absolutely disgusting!
- There needs to be express bus service up/down I405 from Bothell all the way to Renton... Why is there no SINGLE bus to take a person from Totem Lake to Factoria?? Connections in downtown Bellevue are not time sensitive.
- Some of the speed and reliability improvements don't as obviously to me accrue value to transit, and instead seem to help cars instead. For example, when a project says "add a turn lane." Ultimately, I aggressively support taking away parking lanes and general lanes for transit lanes.
- #255 bus service needs to be a direct route downtown. We should not have to transfer to light rail in u district to access downtown.
- Keep motorized vehicles off the Kirkland Corridor permanently and add more tree cover to the trail.
- I would really like to see a frequent shuttle service between the Houghton Park and Ride and the South Kirkland Park and Ride. That would make use of the parking space at Houghton and relieve the lack of parking at South Kirkland.
- We need planned and developed bike routes. Market street to the CKC is really missing; the main route is on 7th ave, but we're competing with lots of traffic and it's just not safe. We need bike lanes on 7th ave!
- Generally we need more bike lanes. It would be great to have connected bike lanes and paths across kirkland, linking neighborhoods to the CKC. Right now there is no safe path from Market, Juanita etc. to the CKC.
- The city should have dedicated bike lanes on all major streets or alternative bike paths. The CKC is great north and south, but more safe ways to get to it from east and west of it. From Market/ EOM it's 7th Avenue, which sucks for bikes.
- I think the online open house greatly restricts the conversation on projects and how they fit with other plans and their connection with regional projects such as ST3. Given the limited number of likes and dislikes (the most i remember seeing is 8 on any project), i think the overall survey process is of very limited value.
- I want a contiguous sidewalk on the south side of Kirkland Ave from the intersection of Kirkland Way and Kirkland Ave to the freeway pedestrian overpass. This is long over due. Pedestrians should not have to cross back and forth while traveling up Kirkland Avenue. With the increased Development in Kirkland more cars will be taking Kirkland Way to get it and out of Kirkland. I want a Sound Transit bus going from Redmond Transit Center along 85th (with a few stops) to Kirkland Transit Center and then along 108th Ave (with a few stops) traveling to South Kirkland

Park and Ride and finishing at the University light rail station every 30 minutes from 6 am until 8 pm every day of the week. This will take some of the burden off the problem of overcrowding on the 255 line and South Kirkland Park and Ride lot.

- Rather than just "bike lanes," consider whatever kind of bike access improvement best meets the needs. Often bike lanes are not the most effective facility to improve access, and greenways or cycle tracks (a.k.a. separated bike paths) are more accessible to a broader range of people. Improved signal actuation or bike-specific signals might be helpful. Bike storage facilities can also be important, as are places to dry wet clothes. Likewise, alternatives to sidewalks might also be appropriate, such as asphalt paths, mid-block cut-thru paths, or even just programs to cut-back vegetation on existing sidewalks. For transit reliability improvements, also consider transit queue jumps. I've long thought using the parking lane on State St south of the transit center as a transit-only lane during peak hours would vastly improve transit service (in terms of transit service speed as well as providing more effective service in the same number of service hours), and could maybe justify re-routing bus service from 108th to State St to take advantage of such an improvement.

APPENDIX B: SPEED & RELIABILITY PROJECT EVALUATION CRITERIA

Evaluation Criteria	Score	Weight	Weighting Rationale
Ridership: Average daily number of riders	0 = Bottom third in terms of number of riders affected 1 = Middle third in terms of number of riders affected 2 = Top third in terms of number of riders affected	3	More moderate factor (overlaps with Travel Time, so weighting is 3 instead of 4)
Travel Time: Person-hour savings estimate (daily)	0 = Bottom third in terms of person-hours saved 1 = Middle third in terms of person-hours saved 2 = Top third in terms of person-hours saved	4	Major factor from outreach and overall project objective
Cost: High-level cost comparison	0 = Bottom third in terms of cost estimates 1 = Middle third in terms of cost estimates 2 = Top third in terms of cost estimates	2	Moderate factor to be considered
General Purpose Traffic: Potential to have neutral or positive impact on auto travel time	0 = Increases general purpose congestion or delay 1 = Possible increase in general purpose congestion or delay 2 = No increase or improves general purpose congestion or delay	2	Moderate factor to consider general purpose traffic
Agency Plans: On future RapidRide corridor (2025 or 2040)	0 = Not on future RapidRide corridor 1 = Only on 2040 RapidRide corridor 2 = On 2025 RapidRide corridor	3	More moderate factor to align with RapidRide planning and future funding/partnership opportunities
TMP: Consistent with the TMP	0 = Other transit service 1 = On a Secondary Transit Corridor 2 = On a Primary Transit Corridor	2	Moderate factor to ensure projects along priority corridors are prioritized
Feasibility/Complexity: Feasible and achievable	0 = May take more than 7 years to implement, or the City is not in control 1 = May require some coordination, could take 3-7 years to implement 2 = Under City control, can be done quickly (within next 1-3 years)	2	Moderate factor to consider overall project complexity (without negating complex projects entirely)
Activity Density: Serves area with current and expected high population/ employment activity	0 = Low (single family housing or other low density commercial) 1 = Medium 2 = High (similar scale to Downtown Kirkland)	1	Minor factor given broad definition of density and location of project versus population served
Access to Regional Centers: Improves a connection to/from a regional center or transit node	0 = Doesn't improve connections to/from a Regional Center or transit node 1 = Improves connection to the region, but is not in a Regional Center 2 = In Regional Center (i.e. Totem Lake)	1	Minor factor to provide contextual ranking to connecting in Regional Growth Centers
Community Support: Level of support for the project via online survey prioritization	0 = Bottom third of priority project ranking 1 = Middle third of priority project ranking 2 = Top third of priority project ranking	3	More moderate factor rather than major factor to provide community input while recognizing survey was not a full sample of the population

Source: Fehr & Peers, 2018.

APPENDIX C: SUMMARY OF TECHNICAL ANALYSIS

FEHR PEERS

MEMORANDUM

Date: August 20, 2018

To: Stephen Padua, City of Kirkland

From: Sarah Saviskas and Aaron Gooze, Fehr & Peers

Subject: Summary of Task 3 Technical Analysis

SE17-0552

This memorandum provides a summary of the technical analysis completed for development of the Kirkland Transit Implementation Plan. The memorandum documents existing and future transit demand, transit operation choke points and areas with speed and reliability issues, solutions and priorities identified through this process, and evaluation results. Elements from the technical analysis will be incorporated into the Draft Kirkland Transit Implementation Plan.

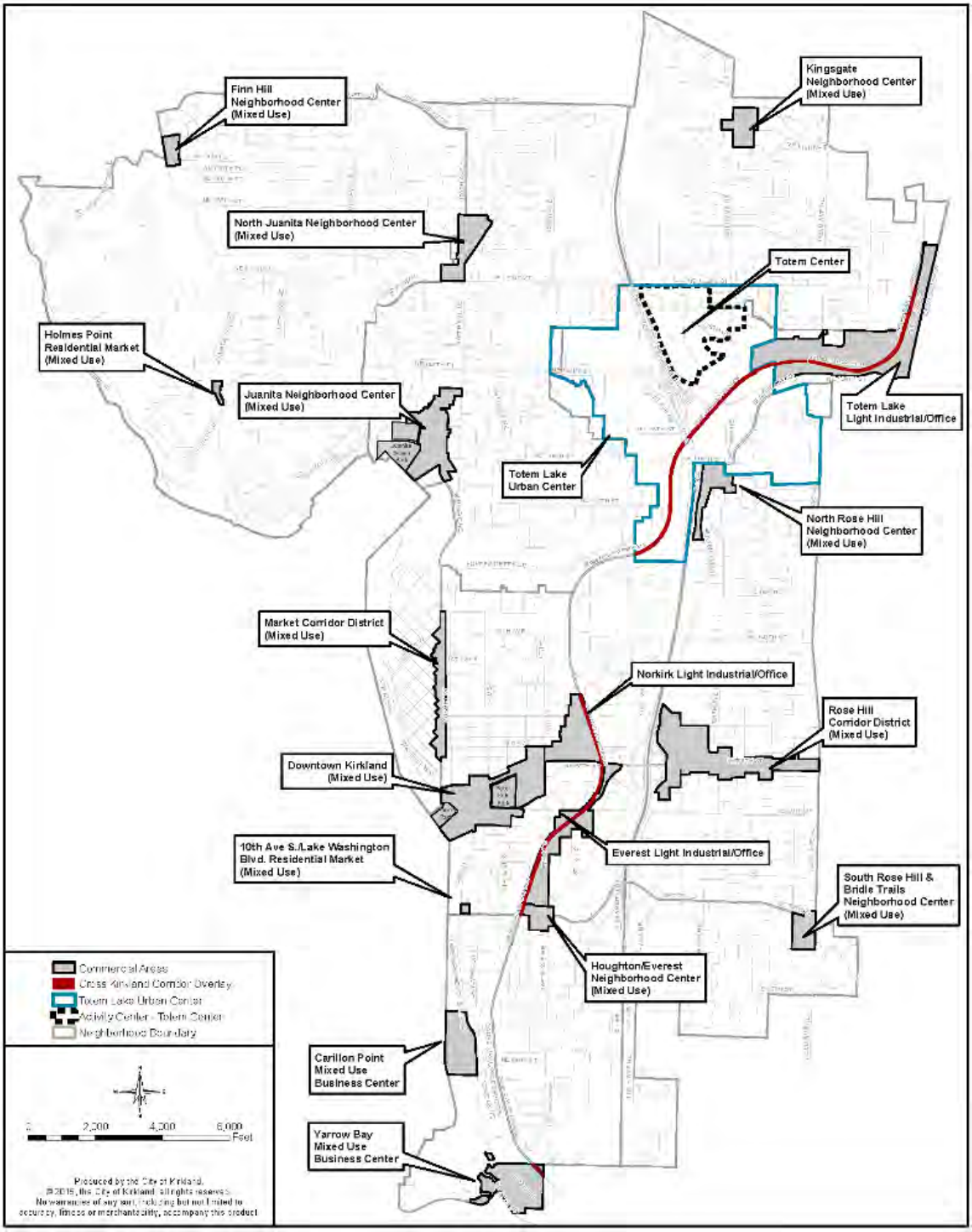
TRAVEL DEMAND ANALYSIS

In order to best serve transit users in the City of Kirkland into the future, it is essential to understand the full landscape of how travel demand is anticipated to change. A driving factor will be changes to land use. Because transit, more than any other mode, is dependent on land use for success, Kirkland's land use choices will have an important influence on where and how transit service is deployed. Kirkland's Comprehensive Plan sets a goal of promoting a compact, efficient, and sustainable land use pattern in Kirkland that:

- Supports a multimodal transportation system that efficiently moves people and goods;
- Minimizes energy use, greenhouse gas emissions, and service costs;
- Conserves land, water, and natural resources; and
- Provides sufficient land area and development intensity to accommodate Kirkland's share of the regionally adopted population and employment targets.

The majority of Kirkland's growth will be concentrated in the Totem Lake Urban Center, which will have significant concentrations of employment and housing, as well as high-capacity transit service and a wide range of land uses. Downtown Kirkland will experience moderate commercial and residential growth, serving as a hub for transit. Several other mixed use centers around the City will experience growth, including Juanita Village, the South Kirkland Park & Ride, and other mixed use centers shown in **Figure 1**.

Figure 1: Commercial and Mixed Use Areas in Kirkland. Source: Kirkland 2035 Comprehensive Plan



Fehr & Peers used the PSRC Travel Demand Model[1] to identify the change in overall travel demand from key activity centers in Kirkland for the 2025 horizon year. Specifically, we assessed daily travel demand from Downtown Kirkland and the Totem Lake Regional Growth Center.

Figures 2 and 3 demonstrate where people will travel to in the region in 2025 when starting their trip in Downtown Kirkland and Totem Lake, respectively. From Downtown Kirkland, heavy demand is anticipated to and from Downtown Bellevue, Totem Lake, Bothell, and Woodinville. From Totem Lake, the demand for traveling to Bothell and Woodinville is much greater than it will be from Downtown Kirkland, and demand to Downtown Bellevue is also strong.

Source: PSRC 4k Travel Demand Model, 2025

Figure 2: Daily Travel Demand from Downtown Kirkland in 2025

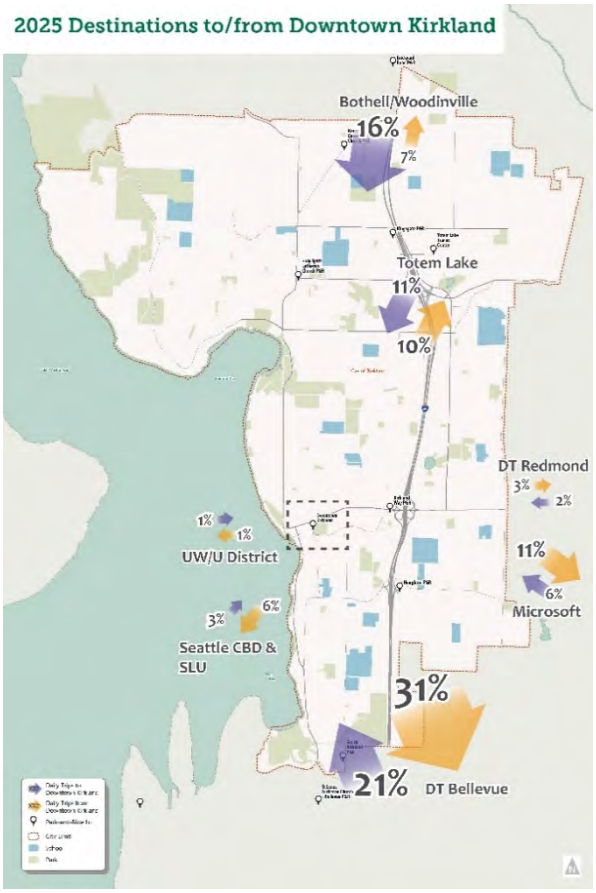
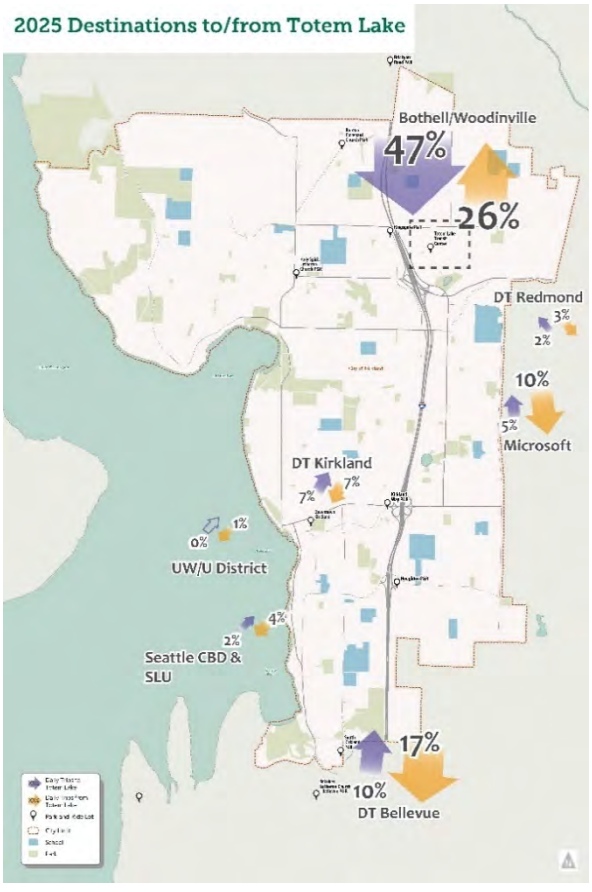


Figure 3: Daily Travel Demand from Totem Lake in 2025



[1] The PSRC travel demand model version used for the development of METRO CONNECTS

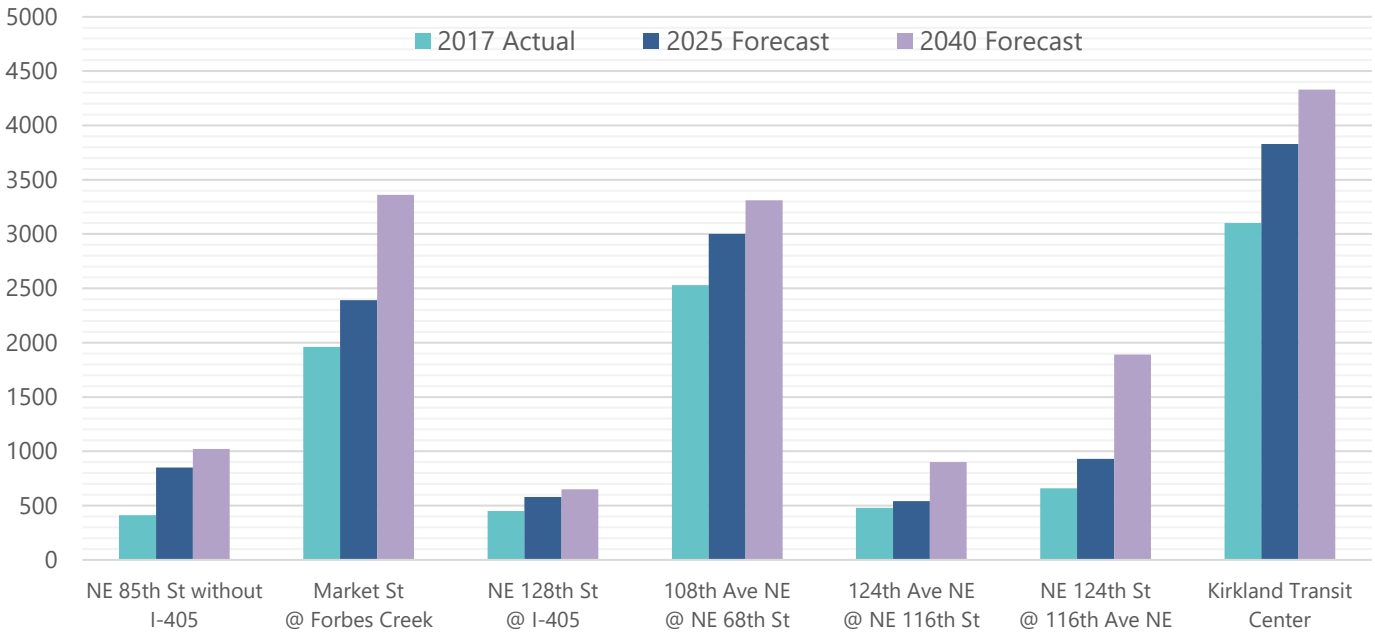
TRANSIT TRAVEL DEMAND

Fehr & Peers also used the Sound Transit Travel Demand Model to discern transit ridership forecasts along key corridors in Kirkland. 2017 ridership is based on average daily departing number of riders on the bus in both directions. The 2025 and 2040 models assume Bus Rapid Transit (BRT) service on I-405 and frequent transit service along NE 85th Street will be in place.

The corridor that will experience the greatest percent increase in daily ridership by 2025 is NE 85th Street, which will experience a 107 percent increase from 2017, primary due to connections to the I-405 BRT system. By 2040, NE 124th Street will experience the biggest percent change in ridership, increasing by 186 percent. NE 85th Street will continue to see significant increases in ridership by 2040, up 149 percent from 2017.

In terms of net change, the Kirkland Transit Center will see steady growth in ridership, with up to 730 new riders expected by 2025 and 1,230 new riders by 2040, as shown in **Figure 4**. Market Street at Forbes Creek and NE 124th Street at 116th Avenue NE will also experience steady growth – 1,400 new riders are expected on Market Street at Forbes Creek by 2040, and 1,230 riders are expected at NE 124th Street and 116th Avenue NE by 2040.

Figure 4: Forecasted Change in Daily Ridership.



Source: Fehr & Peers, 2018

PROJECT DEVELOPMENT

A long list of potential projects to address existing or anticipated transit challenges emerged from the Open House in November 2017, online community survey that was live in December 2017, discussions with City staff and the Technical Advisory Committee, and field visits, as well as previous analysis of existing speed and reliability issues outlined in the Kirkland Transportation Master Plan (TMP) and recent King County Metro studies. Projects fell into one of three overall categories – speed and reliability, non-motorized access to transit, and flexible transit service.

SPEED AND RELIABILITY

Speed and Reliability was ranked the community's top priority for future transit improvements at the Open House and in the online survey completed in December 2017, as shown in **Table 1**. This table reflects the 262 survey responses on what aspects of transit the City should prioritize, with 1 being the highest priority and 5 being the lowest priority.

Table 1: Survey Results on Community Priorities

Priorities	Weighted Average
Speed and Reliability	1.8
Frequency	2.5
Accessibility	3.1
Safety	3.7
Information Technology	4.3
Comfort	4.7

Source: Fehr & Peers, 2018

The Speed and Reliability project type seeks to address how fast and reliable bus service is throughout the city. The analysis addresses locations where buses consistently do not show up on time or get stuck in traffic.

Methodology

The initial project list for speed and reliability improvements was developed based on a number of sources, including:

- King County Metro analysis – King County Metro recently analyzed a sample of bus routes in Kirkland and identified preliminary problem areas and potential solutions.

- Transportation Master Plan hotspot locations – The TMP identified certain intersections and roadway segments where transit historically experiences significant delay.
- Public feedback – The Open House and survey provided the opportunity for the public to identify additional areas where they typically experience poor reliability on transit.
- Field visits – Fehr & Peers and City staff visited the most commonly cited locations mentioned above to verify speed and reliability issues.

Project Evaluation Criteria

Fehr & Peers worked with City staff and the Transportation Commission to develop ten evaluation criteria (shown in **Table 2**) to assess each of the proposed solutions and develop initial project priorities. They measure how effective each potential project would be in achieving the City's transit planning goals while remaining consistent with the TMP. There was a mix of quantitative and qualitative criteria, and criteria was weighted to place more emphasis on factors that aligned best with public input and overall project objectives.

Table 2: Project Evaluation Criteria

Evaluation Criteria	Score	Weight	Weighting Rationale
Ridership: Average daily number of riders	0 = Bottom third in terms of number of riders affected 1 = Middle third in terms of number of riders affected 2 = Top third in terms of number of riders affected	3	More moderate factor (overlaps with Travel Time, so weighting is 3 instead of 4)
Travel Time: Person-hour savings estimate (daily)	0 = Bottom third in terms of person-hours saved 1 = Middle third in terms of person-hours saved 2 = Top third in terms of person-hours saved	4	Major factor from outreach and overall project objective
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Activity Density: Serves area with current and expected high population/ employment activity	0 = Low (single family housing or other low density commercial) 1 = Medium 2 = High (similar scale to Downtown Kirkland)	1	Minor factor given broad definition of density and location of project versus population served
Access to Regional Centers: Improves a connection to/from a regional center or transit node	0 = Doesn't improve connections to/from a Regional Center or transit node 1 = Improves connection to the region, but is not in a Regional Center 2 = In Regional Center (i.e. Totem Lake)	1	Minor factor to provide contextual ranking to connecting in Regional Growth Centers
Community Support: Level of support for the project via online survey prioritization	0 = Bottom third of priority project ranking 1 = Middle third of priority project ranking 2 = Top third of priority project ranking	3	More moderate factor rather than major factor to provide community input while recognizing survey was not a full sample of the population

Source: Fehr & Peers, 2018

Results

Each project received a total score summing the individual metric scores based on the weighting highlighted in the previous table. The total scores for each project are shown in **Table 3**. The prioritization scores in conjunction with public input and professional judgement will guide the development of a focused set of priority projects for inclusion in the final Kirkland Transit Implementation Plan.

Table 3: Project Evaluation Criteria

	Location	Studied Solution	Total Score
1.	South Kirkland P&R	Add a signal on 108th Ave NE at NE 37th St and/or NE 38th Pl to improve access/egress to South Kirkland P&R. Potentially add on-street bus stops at 108th Ave NE.	40
2.	108th Ave NE/6th St, including 108th & 68th, 108th & 70th St	This project has several components: ▪Add a northbound bus lane/queue jump and signal on 108th Avenue NE at NE 68th Street. Explore moving the southbound 245 bus stop north of the intersection (near-side stop). ▪Widen 108th Avenue NE to provide a queue jump and/or new signal at NE 60th Street. ▪Coordinate the traffic signals along the corridor ▪Install "don't block the box" pavement markings at Fire Station on 108th Ave ▪Consolidate driveways around 68th St & 108th Ave businesses ▪Reduce business access on 68th & 108th to signalized intersections ▪Install new signal at 106th Ave, though this may increase neighborhood cut-through	39
3.	Market Street and 98th Avenue NE	This project has several components: ▪ Add a northbound peak only BAT lane (business access and transit only) north of 18th Avenue on Market Street and remove parking along this stretch. ▪ Continue the northbound BAT lane north past Forbes Creek Drive all the way to where the left turn pocket starts at NE 116th Street. ▪ Implement time-of-day parking restrictions on Market Street ▪ Potentially add a southbound BAT lane from the start of the bridge to Forbes Creek Drive	39
4.	Totem Lake Transit Center	At the Totem Lake Transit Center, consolidate bus stops and consider using it only for layover and charging. Potential shuttles between this location and consolidated stop at 128th & I-405.	37
5.	Downtown Kirkland bus bays	At the Downtown Kirkland bus bays, adjust which buses stop at which bays to look for efficiencies. For example, identify options to combine routes with similar destinations, such as Routes 255 and 540.	36

	Location	Studied Solution	Total Score
6.	NE 124th St/100th Ave NE	Adjust signal timing (add split phasing to allow for dual lefts) and convert the middle lane to a shared through/left turn lane to increase westbound capacity.	35
7.	NE 85th St from I-405 to the Kirkland Transit Center	Add BAT lanes (business access and transit only) on 85th Street between I-405 and the Kirkland Transit Center.	35
8.	Downtown Kirkland bus bays/ 6th & Central Way	Fully restrict access on 3rd Street between Central Way and Kirkland Ave, except for transit access. Bus stops could be along the curb which might involve extending the street curb.	34
9.	Houghton P&R	Reroute buses so they do not circulate through Houghton Park & Ride, and add a westbound on-street bus stop on NE 70th Street.	32
10.	NE 124th St/116th Ave NE	Add a southbound right turn lane on 116th Avenue NE at NE 124th Street.	32
11.	Totem Lake Blvd & NE 128th St	Provide a westbound queue jump for buses at Totem Lake Boulevard & NE 128th Street, as well as a full bus only zone over I-405.	31
12.	NE 128th St/116th Ave NE	Add a queue jump signal for buses heading westbound from the right lane.	29
13.	NE 124th St/124th Ave NE	The 124th Avenue Corridor Study will evaluate transit movement options and potential signal improvements at this location.	25
14.	NE 85th St/124th Ave NE	Add a westbound queue jump for buses in the existing right turn lane, and add an eastbound queue jump for buses between the left turn lane and through lane.	21
15.	Kingsgate P&R/116th Ave NE	Add a new northbound bus stop for Route 255 along 116th Avenue NE just south of the current crosswalk. This would eliminate the need for buses to queue along 116th Ave and circulate through the Park & Ride. (Very few people are actually boarding/alighting at the Kingsgate stops, and this would also shorten the transfer distance for those coming from Totem Lake freeway station.)	20
16.	NE 85th St/132nd Ave NE	Add a westbound queue jump for buses in the existing right turn lane.	18
17.	NE 132nd St/100th Ave NE	Extend the westbound right turn lane at NE 132nd Street & 100th Avenue NE.	14
18.	Juanita Woodinville Way/100th Avenue NE	Relocate the bus stop near NE 137th Street along 100th Ave NE.	10

Source: Fehr & Peers, 2018

NON-MOTORIZED ACCESS

During the Open House and in the online survey, community members expressed a desire for projects that improve transit accessibility and safety. **Table 4** shows how the 262 survey participants ranked what aspects of transit the City should prioritize, with 1 being the highest priority and 5 being the lowest priority.

Table 4: Survey Results on Community Priorities

Priorities	Weighted Average
Speed and Reliability	1.8
Frequency	2.5
Accessibility	3.1
Safety	3.7
Information Technology	4.3
Comfort	4.7

Source: Fehr & Peers, 2018

Additionally, the Transportation Master Plan has a policy to integrate transit facilities with pedestrian and bicycle networks[2]. The Non-Motorized Access project type focuses on identifying Activity Centers[3] that would warrant investment to improve the pedestrian and bicycle connections to transit. Specific facilities could include upgraded sidewalks, signalized crosswalks, or bike lanes.

Methodology

This assessment specifically looked at locations near key transit centers, Park & Rides, and nodes of commercial activity. 26 locations in total were ultimately analyzed based on input from City staff. At each location, a 0.6 mile walkshed was generated from a central point (as shown as A in **Figure 5**), which was based on the existing "walk network" (i.e. streets and trails). In other words, how far can a person get if they walk 0.6 miles from the central point[4]. This was compared to the walkshed "as the crow flies" (as shown as B in **Figure 5**). In an area with a consistent north-south and east-west street network, the ratio between the two distances (A divided by B) would be approximately 68 percent. Once the ratios

Figure 5: Two Approaches for Estimating 0.6 Mile Walkshed from Downtown Kirkland

[2] Policy T-3.3
[3] Activity Centers are key trip hubs in the City, such as where people work, shop, catch the bus, or congregate within a neighborhood.
[4] 0.6 miles is roughly a 15 minute walkshed on level terrain

were determined for each location, the final Walkshed Index score was calculated. Sites ranking closest to 68 percent received a Walkshed Index of 100.

This assessment was meant to provide a high-level comparison between key transit activity centers to understand general locations that should be targeted for non-motorized investment. The evaluation did not incorporate other aspects including sidewalk quality, ADA facilities, or bicycle infrastructure.[5] It also did not incorporate terrain into the walkshed distance. Understanding how terrain impacts the walkshed will be useful in the next phase of analysis to determine appropriate locations for non-motorized investments. For example, if terrain significantly restricts the walkshed from an activity center, an area closer than 0.6 miles around the activity center should be the focus of any proposed non-motorized projects. This ensures that the proposed project would benefit an area within the actual walkshed (once terrain is accounted for).

Project Evaluation Criteria and Results

The ten locations with the lowest Walkshed Index score were included in the Online Open House during June 2018 for prioritization by the community. The Kirkland Transit Implementation Plan will incorporate the community feedback and the ranking of the locations to outline the overall strategy for addressing non-motorized access to transit. Identifying specific projects will be addressed in the upcoming Active Transportation Plan update. The final Walkshed Index scores are shown in **Table 5**.

[5] More detailed evaluation of these specific elements will be incorporated into a future Active Transportation Plan.

Table 5: Non-Motorized Access Locations Analyzed and Walkshed Index Scores

Location	Walkshed Index
Houghton/Everest Neighborhood Center	100
South Rose Hill & Bridle Trails Neighborhood Center	100
Rose Hill Corridor District	95
Kirkland Transit Center	90
Finn Hill Neighborhood Center	90
Juanita Neighborhood Center	90
Market Corridor District	90
Holmes Point Residential Market	85
Kingsgate Neighborhood Center	85
Downtown Kirkland	85
Norkirk Light Industrial/Office	85
108th-6th St	80
North Juanita Neighborhood Center	80
Everest Light Industrial/Office	80
Market-98th	75
Totem Lake Industrial Market	75
North Rose Hill Neighborhood Center	**70**
Yarrow Bay Mixed Use Business Center	**70**
I-405 at NE 85th St Bus Rapid Transit	**65**
Kingsgate Park & Ride	**65**
Totem Lake Transit Center	**60**
Houghton Park & Ride	**60**
Totem Lake Urban Center	**60**
10th Ave S/Lake Washington Blvd Residential Market	**55**
Carillon Point Mixed Use Business Center	**45**
S Kirkland Park & Ride	**40**

Source: Fehr & Peers, 2018

FLEXIBLE TRANSIT SERVICE

During the Open House and in the online survey, community members expressed a desire for projects that improve transit frequency and accessibility. **Table 6** shows how the 262 survey participants ranked what aspects of transit the City should prioritize, with 1 being the highest priority and 5 being the lowest priority.

Table 6: Survey Results on Community Priorities

Priorities	Weighted Average
Speed and Reliability	1.8
Frequency	2.5
Accessibility	3.1
Safety	3.7
Information Technology	4.3
Comfort	4.7

Source: Fehr & Peers, 2018

The Flexible Transit Service project type seeks to provide a more cost-effective transit option at certain times of day when fixed-route transit service is not as efficient as alternative modes. As an example, during times when fixed-route transit service only carries a handful of riders, alternative mobility options such as an on-demand ride-hailing service (e.g. Uber and Lyft) could provide connections to high frequency transit or to a rider's final destination for a comparable price. This approach could help make it possible to maintain or improve convenient fixed-route transit service where it is the most efficient, providing the appropriate level of service in certain areas and times of the day.

It is important to note that this evaluation process is intended to start the conversation around the general need for flexible transit service in terms of demand and locations, as opposed to specific routes that should be restructured. As a result, this will help inform City decisions on if this type of project makes sense and how many resources to devote to it. The Kirkland Transit Implementation plan will likely incorporate one project that outlines the overall strategy for addressing flexible transit service in partnership with providers such as King County Metro and ride-hailing services.

Methodology

To identify the routes and times of day where flexible service may be appropriate, Fehr & Peers used King County Metro data to calculate the operating cost per trip, cost per rider, and average customer trip length for a given route and time period. This data was then used to estimate the cost of using a ride-hailing service such as Uber or Lyft instead of fixed-route transit. This analysis only considered existing bus routes, not routes that are under consideration or areas where no service currently exists.

Project Evaluation Criteria and Results

The estimated cost of a ride-hailing trip was compared to the operating cost per trip for existing transit routes. Routes were ranked as having "high" opportunity if the ride-hailing cost per trip was more than $5

cheaper than the existing transit cost. Routes were ranked as having "medium" opportunity if the ride-hailing cost per trip was $1-$5 cheaper than the existing transit cost. Routes were ranked as having "low" opportunity if the ride-hailing cost per trip was less than $1 cheaper than the existing transit cost.

Evaluation results for flexible transit service are found in **Table 7**. These bus routes currently have 30-45-minute headways compared to an estimated 10-minute wait time that could be provided through an on-demand ride-hailing service. Flexible transit service has the potential to provide cost savings and improved customer service.

Table 7: Flexible Transit Service Evaluation Results

Route and Time Period*	Route Destinations	Ride-haling Opportunity
236 (Peak)	Between Woodinville, Totem Lake and south of DT Kirkland	High
236 (Off-Peak)	Between Woodinville, Totem Lake and south of DT Kirkland	High
248 (Night)	NE 85th St to/from Redmond	High
238 (Peak)	Between Woodinville, Totem Lake and south of DT Kirkland	Medium
235 (Night)	Between Totem Lake and Bellevue TC	Medium
238 (Off-Peak)	Between Woodinville, Totem Lake and south of DT Kirkland	Medium
234 (Night)	Between Juanita and Bellevue TC	Low
248 (Off-Peak)	NE 85th St to/from Redmond	Low

* Off-Peak: weekday midday and weekend off-peak (5AM-7PM) service. Night: service between 7PM-5AM every day of the week.
Source: Fehr & Peers, 2018

NEXT STEPS AND PLAN DEVELOPMENT

Fehr & Peers is working with City Staff to refine the prioritization of projects listed in this memo, develop a list of top projects and conceptual cost estimates, and identify potential funding opportunities. A draft Transit Implementation Plan will be produced in August 2018 in preparation for meeting with the Transportation Commission and City Council in September 2018 and beyond.

CITY OF KIRKLAND