

# Juanita Public Pathway FEASIBILITY STUDY

May 22, 2024

## City of Kirkland

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*Information contained in this document is for planning purposes and should not be used for final design of any project. All results, recommendations, concept drawings, cost opinions, and commentary contained herein are based on limited data and information and on existing conditions that are subject to change. Further analysis and engineering design are necessary prior to implementing any of the recommendations contained herein.*

*Opinions of probable cost were developed by identifying major pay items and establishing rough quantities to determine a rough order of magnitude cost. Additional pay items have been assigned approximate lump sum prices based on a percentage of the anticipated construction cost. Planning-level cost opinions include a 30% contingency to cover items that are undefined or are typically unknown early in the planning phase of a project. Unit costs are based on 2024 dollars and were assigned based on historical cost data from WSDOT. Cost opinions do not include easement and right-of-way acquisition; permitting, inspection, or construction management; engineering, surveying, geotechnical investigation, environmental documentation, special site remediation, escalation, or the cost for ongoing maintenance. A cost range has been assigned to certain general categories such as utility relocations; however, these costs can vary widely depending on the exact details and nature of the work. The overall cost opinions are intended to be general and used only for planning purposes. Toole Design Group, LLC makes no guarantees or warranties regarding the cost estimate herein. Construction costs will vary based on the ultimate project scope, actual site conditions and constraints, schedule, and economic conditions at the time of construction.*

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## Introduction

The Juanita Public Pathway is proposed as an off-street walking and biking path between the Brickyard Park and Ride (P&R) in Bothell and the Cross-Kirkland Corridor (CKC), as shown in Figure 1. The Juanita Public Pathway (JPP) was initially proposed by the Juanita Neighborhood Association (JNA) over 8 years ago. The JPP route is intended to connect transit, neighborhood parks, Helen Keller Elementary School, the CKC, and Juanita High School. The proposed JPP route is intended to provide an off-street trail experience, separated from vehicles and closer to natural surroundings along most segments.

The City of Kirkland contracted Toole Design in late 2023 to assist in determining the feasibility of this proposal.

### Study Purpose and Goals

The goal of this study is to assess the overall feasibility of the JNA's proposal and provide recommendations and next steps, within the context of the City's existing active transportation, neighborhood, and parks plans.

### Process and Document Organization

The project team's analysis and evaluation was conducted from the late fall of 2023 through spring of 2024. The study document has five sections:

1. Definitions and Design Guidance
2. Planning Context
3. Study Methodology
4. Evaluation Criteria
5. Existing Conditions Assessment
6. Evaluation and Recommendations

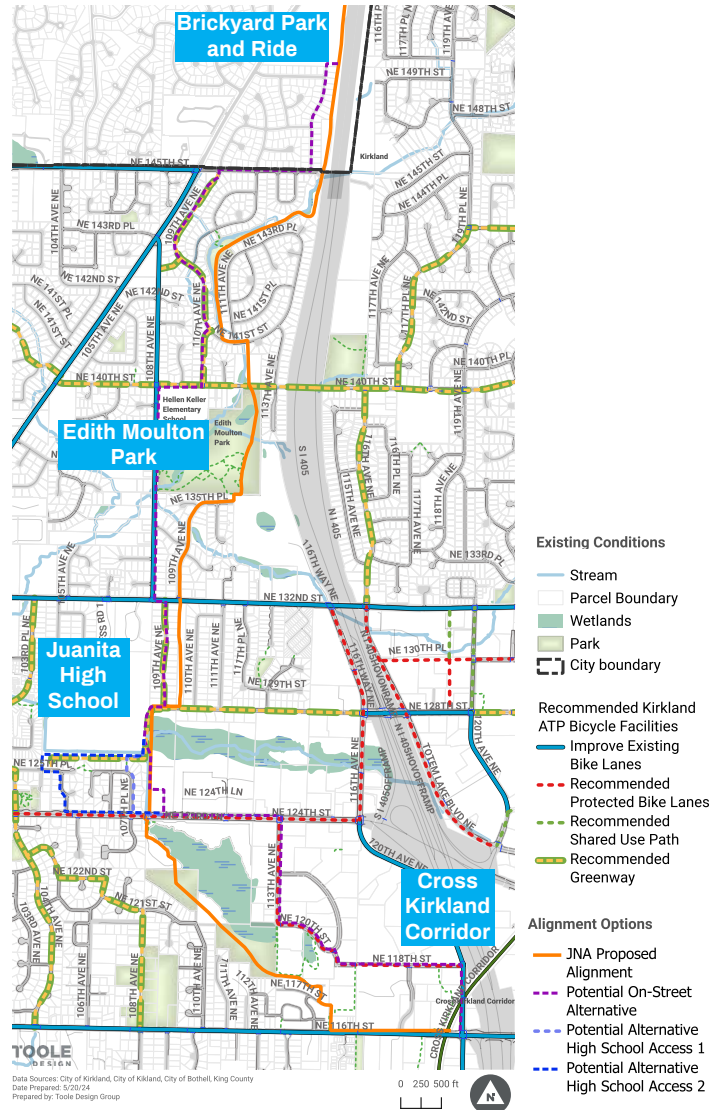


Figure 1. Study Area

## Definitions and Design Guidance

### Neighborhood Greenways

Neighborhood Greenways are a select network of low speed, low volume residential streets prioritized for walking and bicycling through the use of signage, pavement markings, and traffic calming and control measures. The purpose of a Neighborhood Greenway is to provide a route for people of all ages and abilities to feel safe walking and riding bicycles as a comfortable alternative to bike lanes on busy arterials. The JNA proposes the JPP as a more direct, connected route than the City's existing and proposed neighborhood greenway system.

### Shared-Use Paths and Trails

Shared-use paths, by definition (see text box), are separated from streets, and are considered the most comfortable facility for walking and biking. They are required to be accessible for people of all ages and abilities. Trails, as defined by Washington State Department of Transportation (WSDOT) and King County Parks, are often soft-surface, non-accessible routes, such as found within many parks and open spaces, and serve primarily as recreational facilities.

### Intended Use and Design Users

Because the JPP is intended to link key destinations by walking and bicycling, it should be usable by people of all ages and abilities. Thus, the JPP should be designed as a shared-use path. WSDOT's Design Manual indicates the cross-section of shared-use paths as 12 ft wide (10 ft minimum), with 2 ft shoulders on each side, for a total cross-section width of 16 ft (14 ft minimum) (see Figure 2). Other key design requirements are a "firm, stable, slip-resistant pavement" and running slopes of 5% or less.

### Other Design Parameters

Areas with erosion hazards, wetlands, streams, and associated buffers for these critical areas are highly regulated at the local, state, and federal levels and face stringent environmental documentation and permitting requirements. Impacts must be avoided, and where not possible, must be minimized or mitigated. Shared-use paths in such areas can be complicated and costly to implement.

## Planning Context

### Transportation

The city's existing active transportation network is made up of a combination of on- and off-street walking and biking facilities. The [Kirkland Active Transportation Plan \(ATP\) \(2022\)](#) proposes a network of connected facilities that are suitable for all ages and abilities, with an emphasis on low-stress facilities including protected bike lanes and Neighborhood Greenways (see Figures 3 and 4). Neighborhood Greenways are proposed in the Juanita and Totem Lake neighborhoods, including along NE 140th Street, 108th Ave NE, and NE 128th Street.

### WSDOT I-405 Express Toll Lanes and Sound Transit Brickyard STRIDE Station

As part of adding dual express toll lanes from NE 160th St to SR 527, this state funded project will add an in-line bus rapid transit (BRT) station on I-405 and construct a new pedestrian bridge across I-405 to access this station from the existing park and ride to the west and NE 155th St to the east. The project will also construct fish passage for Juanita Creek, noise walls, and local street improvements. Project is expected to be complete in 2028.

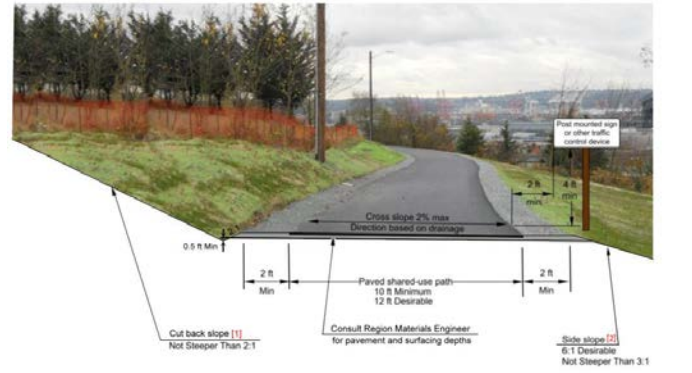


Figure 2. Cross-section for shared-use path, WSDOT Design Manual, Chapter 1515 Shared-Use Paths

### WSDOT Design Manual, Chapter 1515 Shared-Use Paths

**Shared-use paths are designed for both transportation and recreation purposes and are used by pedestrians, bicyclists, skaters, equestrians, and other users.** Some common locations for shared-use paths are along rivers, streams, ocean beachfronts, canals, utility rights of way, and abandoned railroad rights of way; within college campuses; and within and between parks as well as within existing roadway corridors. A common application is to use shared-use paths to close gaps in bicycle networks. There might also be situations where such facilities can be provided as part of planned developments. Where a shared-use path is designed to parallel a roadway, provide a separation between the path and the vehicular traveled way. Shared-use paths may have "trail" in their names, but they are not trails. **Trails are intended to provide and support recreational experience(s) and do not provide the necessary ADA accessible infrastructure.** Parts of trails might be accessible, but trails don't need to be accessible. Trails do not usually have a firm, stable, or slip resistant surfaces, nor do they usually have accessible cross slopes, or running slopes.

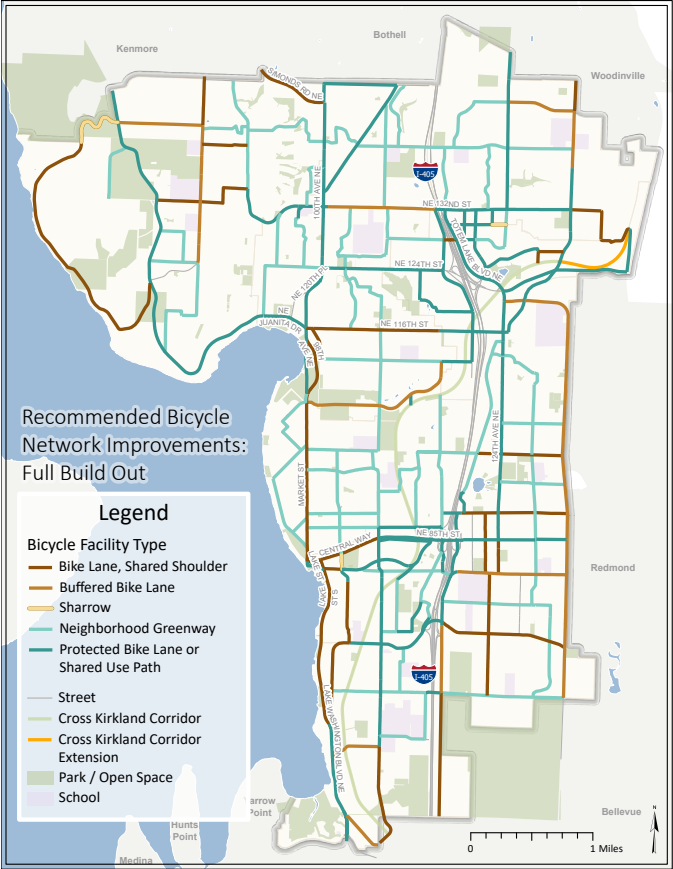


Figure 3. 2022 Kirkland ATP Recommended Bike Network

**Parks**

The Parks, Recreation and Open Space Plan (PROS Plan) (2022) is a strategic plan for managing and enhancing park and recreation services. It provides a vision for Kirkland’s park and recreation system and establishes a path forward for providing high quality, community-driven parks, trails, open spaces and recreational opportunities.

The [Edith Moulton Park Master Plan \(2015\)](#) proposes improvement through the park, including boardwalks and trails within wetland areas and stream buffers. The plan notes that these proposals could trigger permitting and mitigation requirements in the form of wetland and stream enhancement and restoration. The City has implemented several recommendations of this plan, including new artwork, restroom pavilion, bridges, boardwalks, and an off-leash dog area. However, the additional pathways and trails with boardwalks at the north end of the park and p-patch on the south end of the park identified in the master plan do not have funding or a timeline associated with completion.

**Neighborhood**

The Juanita Neighborhood Plan (2015) outlines a vision of a unique, diverse neighborhood with two thriving commercial centers. This document specifies policies around acquiring pedestrian access easements adjacent to Juanita Creek, restoring the natural drainage systems of Juanita Creek, and developing designated bicycle and pedestrian corridors. This document is presently being updated in coordination with the 2024 Comprehensive Plan update.

**City of Kirkland Active Transportation Plan**  
Prioritized Pedestrian Network - Final Score and Draft Projects

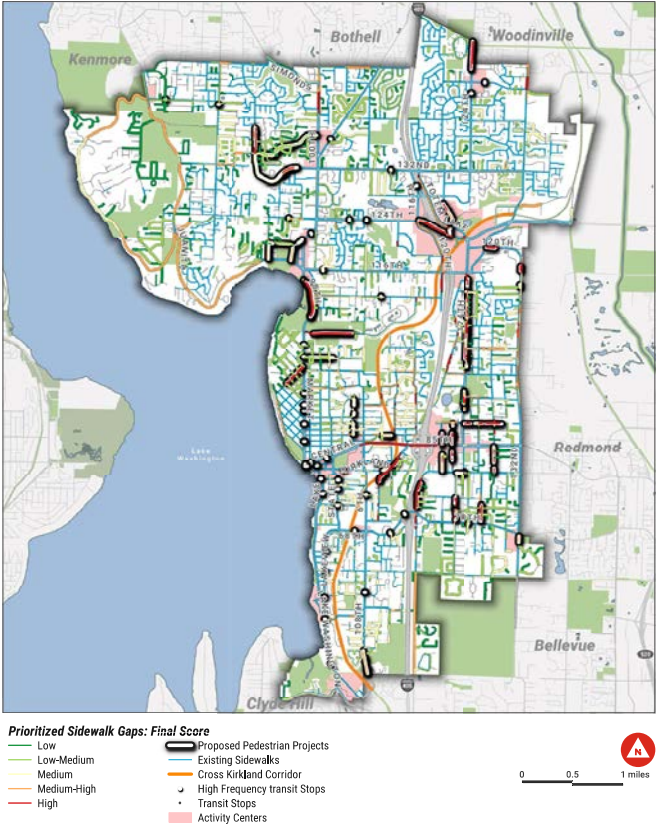


Figure 4. 2022 Kirkland ATP Recommended Pedestrian Network

Juanita Public Pathway Feasibility Study

## Study Methodology

### Planning Desktop Analysis

The project team conducted an initial desktop analysis of existing conditions. This included GIS analysis and mapping of existing and recommended active transportation facilities, including sidewalks, crosswalks, trails, bicycle facilities as well as existing right-of-way and parcel boundaries, wetlands, streams, parks, and schools.

### Walk shop

Together with City of Kirkland staff and representatives from the Juanita Neighborhood Association, the consultant project team held a walk shop to observe existing conditions and explore opportunities and constraints of possible pathway alignment options (see Figures 5 and 6). Participants included staff from Transportation, Parks Operations, Parks Planning & Development, Capital Projects, Long-Range Planning, and Storm & Surface Water Divisions (Public Works, Parks & Community Services, Planning & Building Departments) and representatives from the Juanita Neighborhood Association.

Here are takeaways the consultant team and City staff learned during the walk shop:

- Providing a safe connection from Juanita High School to NE 124th St is one of the JNA's highest priorities for this project.
- A pathway that passes through natural areas is an experience that is desired by the JNA
- There are multiple regulatory and construction challenges with possible alignments near branches of Juanita Creek and wetlands.
- Various segments of the JPP propose using existing informal paths or proposed routing through private property, and these present unique right of way acquisition or easement challenges.

### Existing Conditions Analysis, Opportunities, and Constraints

User experience, directness, and connectivity are important qualities for all walking and biking facilities. To provide a comprehensive assessment of the proposed JPP, the following key issues were assessed.

- **Segment Details:** What type of facilities are proposed?
- **Connectivity & Directness:** What destinations and on-street biking/walking facilities does the proposed alignment connect to?
- **Access Points & Crossings:** Where can the proposed alignment be accessed from the neighborhood? Where does the proposed alignment require street crossings and what are the crossings like for people walking and biking?



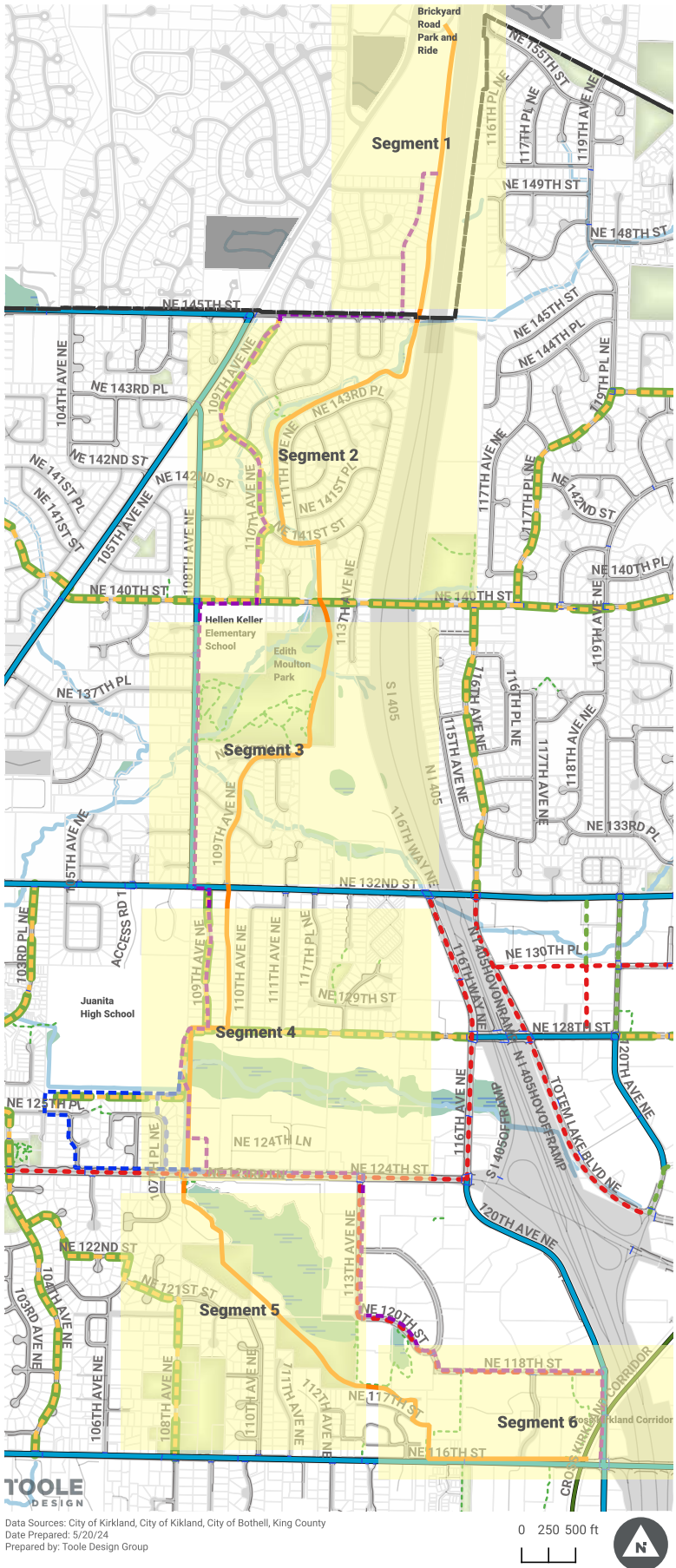
Figure 5. Route map provided by JNA at walk shop



Figure 6. City staff, project team, and community members discussing the JPP route at the start of the walk shop

- **Ownership/Acquisition Implications:** Where does the alignment segment use public property, and where would acquisition of private property be needed?
- **Critical Areas:** Would the alignment segment potentially impact wetlands, streams, buffers, steep slopes, erosion hazards, or other critical areas?
- **Potential Structures:** Would the alignment segment require bridges, retaining walls, or other structures?
- **User Experience:** What will the experience of using the path be for people? Would it feel comfortable for all users?

Evaluation criteria were developed based on these key issues and are described on following pages.



**Segment Breakdown**

Figure 7 shows an overview of the JNA proposed route. The proposed alignment was broken into six segments, as indicated on the map, from north to south, for ease of analysis.

- Segment 1. Brickyard Road Park and Ride to NE 145th Street
- Segment 2. NE 145th Street to Edith Moulton Park
- Segment 3. Edith Moulton Park to NE 132nd Street
- Segment 4. NE 132nd Street to Juanita High School and NE 124th Street
- Segment 5. NE 124th Street to Jasper’s Dog Park
- Segment 6. Jasper’s Dog Park to Cross Kirklund Corridor (NE 116th St).

**Existing Conditions**

- Stream
- Parcel Boundary
- Wetlands
- Park
- City boundary

**Recommended Kirklund ATP Bicycle Facilities**

- Improve Existing Bike Lanes
- - - Recommended Protected Bike Lanes
- - - Recommended Shared Use Path
- Recommended Greenway

**Alignment Options**

- JNA Proposed Alignment
- - - Potential On-Street Alternative
- - - Potential Alternative High School Access 1
- - - Potential Alternative High School Access 2

TOOLE DESIGN  
 Data Sources: City of Kirklund, City of Kirklund, City of Bothell, King County  
 Date Prepared: 5/20/24  
 Prepared by: Toole Design Group



Figure 7. Overview Map



## Segment Evaluation

### Evaluation Methodology and Criteria

The following criteria were developed to assess the feasibility of the alignments.

SCORING METRICS			
	LOW	MEDIUM	HIGH
<b>Connectivity &amp; Directness</b>			
Alignment is well-connected to the on-street biking and walking network. It should follow a direct route between destinations, with easy to follow routing and minimal out of direction travel.	No connections to any on-street biking/ walking facilities	Connects at least one on-street biking/ walking facility	Connects to multiple on-street biking/ walking facilities
<b>Access Points &amp; Crossings</b>			
Alignment is easily accessible to the neighborhood – access points are easy to find and use. Crossings of roadways should not pose barriers to movement, with traffic control and safety treatments for bicycles and pedestrians.	Major or multiple improvements to access points or crossings needed	Few improvements to access point or crossing needed	Easily accessible in current state, with safe roadway crossings
<b>Active Transportation Potential</b>			
Alignment is accessible and usable by all ages and abilities (AAA) , as indicated by: Slopes - does not require traversing steep slopes (grades of 5% for distances over 150 ft), so that it can provide an accessible path of travel. Surfacing - can be designed to accommodate all users (adequate width, firm, stable surfacing) Separation - from high volumes and speeds of motor vehicle traffic either through traffic calming interventions, physical separation, and/or enhanced crossing treatments.	Grades or other physical constraints limit use to pedestrians only for all or most of the alignment	Has some steep segment, stairs, or other constraints that would limit accessibility and use by wheeled users	Fully accessible and usable to both bicyclists and pedestrians
<b>Right-of-way</b>			
Alignment uses public right-of-way, and where not possible, should require minimal acquisition. Acquisition not only has cost implications but can also create challenges with public support.	Requires acquisition of entire parcels or multiple private parcels	May require an easements or partial acquisition of private parcels	No acquisition required
<b>Critical Areas</b>			
Alignment avoids impacts to wetlands, streams and buffers, as well as erosion hazards or other critical areas in order to avoid triggering the need for environmental documentation and permitting.	Significant impacts to critical areas or significant terrain challenges	Small impacts to critical areas or minimal steep slopes	No impacts to critical areas, no steep slopes
<b>Potential Structures or Bridges</b>			
Alignment minimizes the need for extensive or expensive structures such as bridges, retaining walls, stormwater detention, or drainage infrastructure.	Multiple or significant structures required	Minimal structures required	Requires few to no structures

<b>User Experience</b>			
<b>Physical Safety</b> Alignment provides a safe, intuitive, comfortable user experience as defined by separation from arterials/roadways with high volumes and speeds of motor vehicle traffic, arterial crossings with pedestrian/bicycle treatments	No separation from arterials, arterial crossings without appropriate traffic control treatments	Alignment provides separation along some parts of the segment, but not the entire length. Some crossings do not have appropriate traffic control treatments	Fully separated or buffered from arterials, all crossings have appropriate traffic control treatments
<b>Sense of Personal Security</b> Alignment provides a sense of personal security with physical and visual connections to the neighborhood	No visual or physical connection to neighborhood/ poor sight lines	Limited visual or physical connection to neighborhood	Ample visual and or physical connection to the neighborhood
<b>Access to Nature and Scenic Experience</b> Per JNA's interests, there is a preference for alignments that provide a scenic experience, with a trail that passes through parks/natural areas	Segment does not pass through parks/natural areas.	Limited parts of the segment pass through parks/natural areas	The majority of segment passes through parks/natural areas

**Evaluation**

Each segment is analyzed on the following pages, with an existing conditions assessment, a feasibility assessment, opinion of cost, and a recommendation.

**Cost Opinion Development**

Opinions of probable cost were developed using a planning-level cost calculator for shared-use paths. The overall costs are intended to be general and used only for planning purposes. The calculator provides a rough order of magnitude per mile cost and uses a set multiplier to account for various site conditions including rural/urban setting, terrain, proximity to critical areas, and potential funding source (local, state, or federal).

**Per mile costs include:**

- Materials costs for basic grading and trail surfacing
- Landscaping and basic amenities
- Drainage, erosion, and sediment control
- Signage, striping, and crosswalks
- Utility adjustments
- Design
- Construction
- 30% contingency to cover items that are typically unknown at this stage of planning

**Per mile costs do not include:**

- Easement and right-of-way acquisition
- Franchise utility relocation on real property
- Inspection, extensive surveying, grading, or geotechnical investigation
- Lighting/electricity
- Stormwater detention
- Escalation
- Ongoing maintenance

**Critical areas costs**

Multiple segments of the JPP are adjacent to Juanita Creek, its tributaries, or wetlands and steep slopes and will thus require environmental review, documentation, permitting, and mitigation as well as structures like boardwalks and bridges in those areas. An approximate lump sum price has been assigned to these items based on a percentage of the anticipated construction cost.

**Recommendations**

The ultimate question this study is seeking to answer is which segments are feasible as shared-use paths to provide neighborhood connectivity to/between identified destinations (based on high, medium, low feasibility scoring described above)?

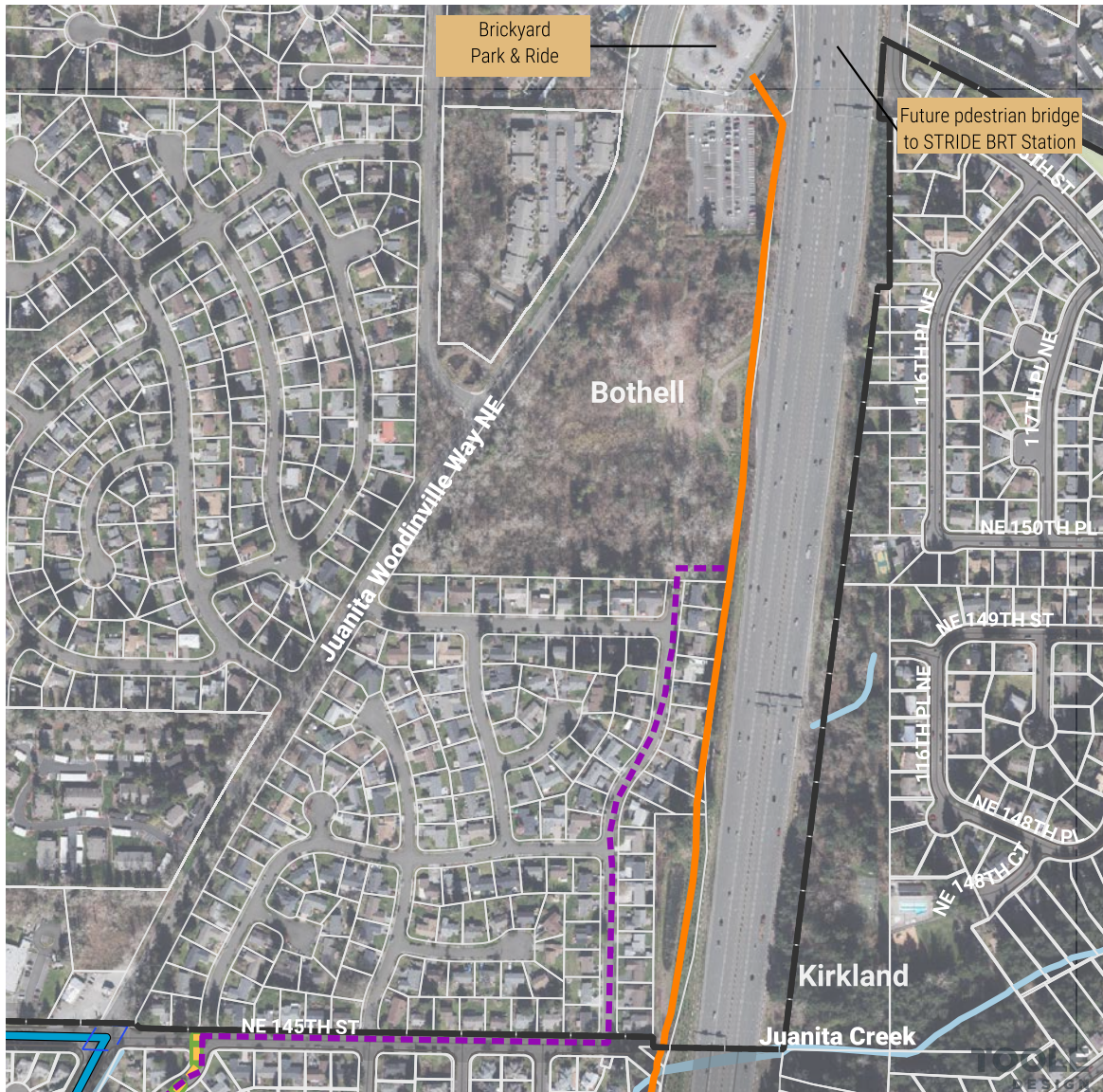
Recommendations are based on the following outcomes:

**Yes >** This segment appears to have high feasibility as a shared-use path, and could be recommended for inclusion in future neighborhood or active transportation plans. However, any yes recommendation would require additional analysis and engagement in order to forward to implementation.

**No >** This segment is not feasible as a shared-use path, with the following qualifications:

1. Segment has low feasibility as a shared-use path. Recommend use of alternative on-street route (ATP recommendations)
2. Segment is feasible as a pedestrian trail only (soft-surface)
3. Another option is proposed.

## Segment 1. Brickyard Road Park and Ride to NE 145th Street



Data Source: City of Kirkland and City of Bothell  
 Date Prepared: 5/20/24  
 Prepared by: Toole Design Group



### Existing Conditions

- - - Soft Surface Trail
- Sidewalk
- Crosswalk
- Stream
- Right-of-Way
- Parcel Boundary
- city

- Recommended Kirkland ATP Bicycle Facilities
- Improve Existing Bike Lanes
- - - Recommended Protected Bike Lanes
- Recommended Greenway

### Alignment Options

- JNA Proposed Alignment
- - - Potential On-Street Alternative

## Segment 1. Brickyard Road Park and Ride to NE 145th Street

### Overview and Summary

This segment is outside the Kirkland City limits. The County-owned parcel south of the Brickyard Park and Ride is undeveloped, except for the P&R parking lot, so it could potentially accommodate a path, if King County would allow it. I-405 sits on a high retaining wall that is physically and visually separate, but generates noise. It appears there is enough space for a path where homes back up to WSDOT right-of-way; however, the terrain is hilly, the path would need to be close to the tall retaining wall, and private property would need to be acquired. There would likely be concern from the neighbors about having a public path so close to backyards.

Given this is within the City of Bothell, there is no on-street alternative recommended here, but the parallel local road, 114th Ave NE, has sidewalks and has very low volume vehicle volumes that would be an appropriate low-stress route.

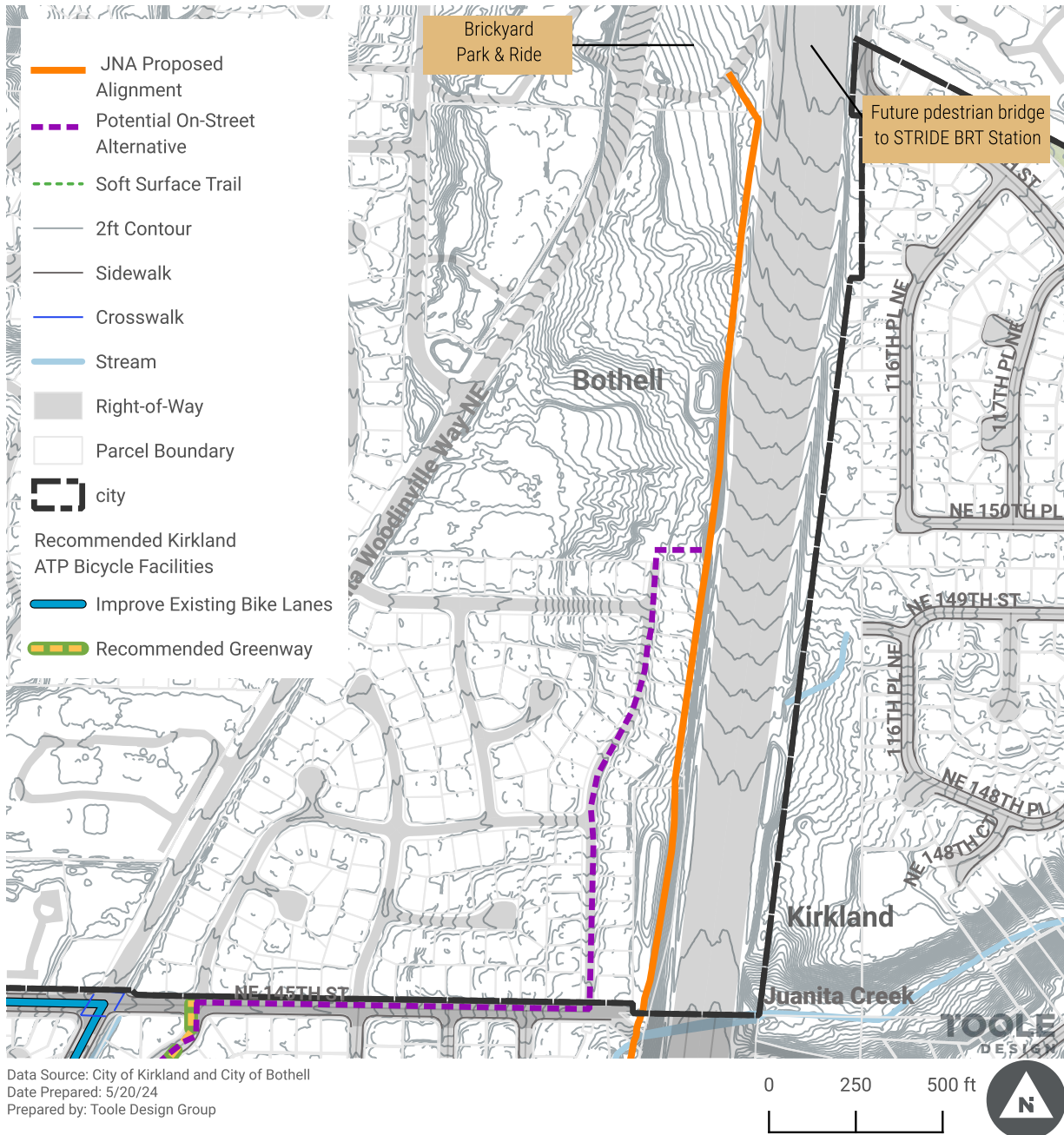


Looking north from NE 145th St to access road along WSDOT I-405 right-of-way from fence at end of NE 145th St



Looking north from NE 145th St to access road along WSDOT I-405 right-of-way toward detention pond

## Segment 1. Brickyard Road Park and Ride to NE 145th Street



### Planning Level Cost Opinion

ITEM	UNIT	\$/UNIT	TOTAL	NOTES
Shared-use path	0.6 miles	1,293,000	\$734,659	Likely to require stormwater detention, and ROW acquisitions (not incl.)
<b>TOTAL</b>			<b>\$735,000 to \$1 million</b>	

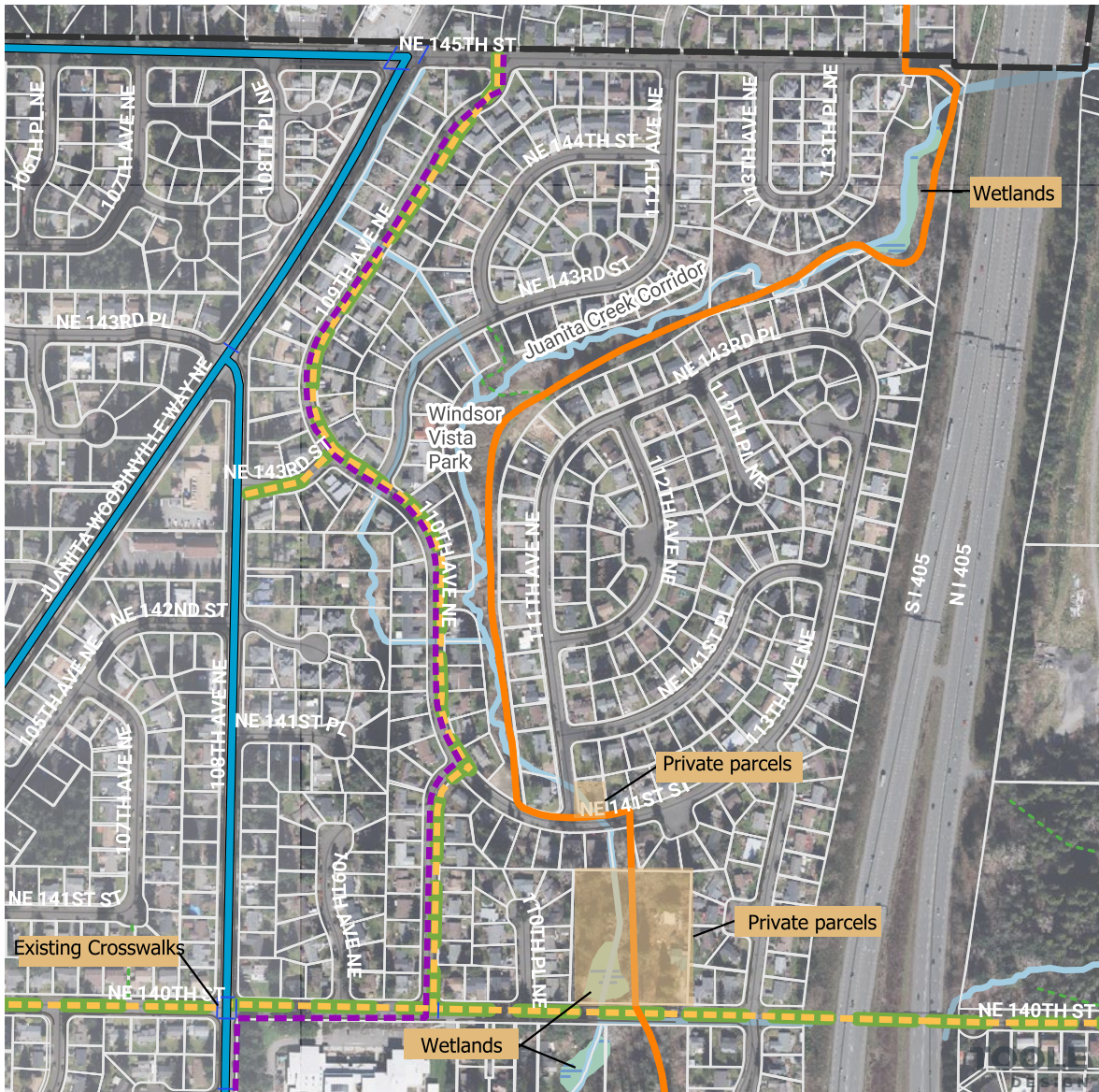
#### NOTES

Cost opinions are intended to be general and used only for planning purposes. Right of-way acquisition costs not included. Full design development is required to identify all costs and impacts and thus these cost opinions are likely low-end estimates. See Cost Opinion Development section on p. 7 for details about how cost opinions were developed.

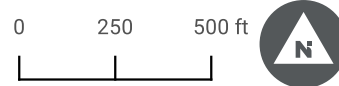
## Segment 1. Brickyard Road Park and Ride to NE 145th Street

FEASIBILITY EVALUATION CRITERIA	NOTES AND ANALYSIS	FEASIBILITY SCORE
<b>Connectivity &amp; Directness</b>	<ul style="list-style-type: none"> <li>Route is direct and connects to Park and Ride, but no other destinations or walking or walking facilities</li> </ul>	<b>LOW</b>
<b>Access Points and Crossings</b>	<ul style="list-style-type: none"> <li>Minimal access between entry points at north and south</li> <li>No major street crossings</li> </ul>	<b>LOW</b>
<b>Active Transportation Potential</b>	<ul style="list-style-type: none"> <li>There appears to be adequate right-of-way to create a shared-use path on the county-owned parcel</li> <li>Could accommodate all users (bicyclists and pedestrians)</li> <li>Terrain is mostly level</li> </ul>	<b>MEDIUM</b>
<b>Right-of-way</b>	<ul style="list-style-type: none"> <li>Using the P&amp;R and I-405 rights of way will require coordination with King County and WSDOT</li> <li>Alignment will also require acquisition or coordination with private property owners</li> </ul>	<b>LOW</b>
<b>Critical Areas</b>	<ul style="list-style-type: none"> <li>Possible impacts to stormwater facility in WSDOT right-of-way north of NE 145th St</li> </ul>	<b>MEDIUM</b>
<b>Potential Structures</b>	<ul style="list-style-type: none"> <li>None identified</li> </ul>	<b>HIGH</b>
<b>User Experience: Physical Safety and Sense of Personal Security</b>	<ul style="list-style-type: none"> <li>Entirely separate from roadway, however, with no internal access points, segment could feel isolated between high I-405 retaining walls and the backyards of private parcels</li> </ul>	<b>LOW</b>
<b>User Experience: Access to Nature and Scenic Quality</b>	<ul style="list-style-type: none"> <li>Path would provide an off-street experience, depending on distance from I-405, but highway noise could degrade the experience</li> </ul>	<b>LOW</b>
<b>RECOMMENDATION</b>	<b>No action - segment is beyond Kirkland City limits and thus beyond the City's purview. Continue to coordinate with City of Bothell as opportunities present.</b>	

## Segment 2. NE 145th Street to Edith Moulton Park



Data Source: City of Kirkland  
 Date Prepared: 4/30/24  
 Prepared by: Toole Design Group



### Existing Conditions

- - - Soft Surface Trail
- Sidewalk
- Crosswalk
- Stream
- Right-of-Way
- Parcel Boundary
- Wetlands
- city

- Recommended Kirkland ATP Bicycle Facilities
- Improve Existing Bike Lanes
- - - Recommended Greenway

### Alignment Options

- JNA Proposed Alignment
- - - Potential On-Street Alternative

## Segment 2. NE 145th Street to Edith Moulton Park

### Overview and Summary

This segment begins at the City limits at NE 145th St, where Juanita Creek emerges from a culvert under I-405. In the northern part of the segment, creating a trail would impact the stream and stream buffer. In addition, the stream channel has some steep banks and the right-of-way. The area around Windsor Vista Park has similar constraints, though the right-of-way is less constrained. Here the steep grades along the creek would make it extremely challenging to create an accessible trail with gentle grades. There are sidewalk gaps in this area, but the surrounding local streets ranked low for traffic stress in the ATP analysis. At the south end the path is proposed to follow the creek through private parcels. There are mapped wetlands in this area, along with steep grades.

There is a proposed greenway along 109th Ave NE, from NE 145th to NE 143rd Streets, connecting to Juanita Woodinville Way NE. The greenways could be extended down along 110th Ave NE to NE 140th St.



Looking south from NE 145th St at retaining wall supporting I-405, and culvert where Juanita Creek branch emerges



View of Juanita Creek south of Windsor Park; note steep eroding banks and restoration plantings to left



Footbridge over Juanita Creek through Windsor Vista Park



View of Juanita Creek through Windsor Vista Park, showing steep side slopes and vegetation restoration



## Segment 2. NE 145th Street to Edith Moulton Park



### Planning Level Cost Opinion

ITEM	UNIT	\$/UNIT	TOTAL	NOTES
Shared-use path	0.76 miles	1,550,000	\$1,174,242	Likely to require full acquisition of one parcel, partial acquisition of another, bank stabilization, retained slopes/walls, stormwater detention (not incl.)
Bridge and/or boardwalks	2 each	750,000	\$1,500,000	Prefab bridges, 12 ft wide
Critical areas documentation, permitting, mitigation	Lump Sum	1,500,000	\$1,500,000	Likely to require tree removals, mitigation, and monitoring
<b>TOTAL</b>			<b>\$4.2 to \$4.5 million</b>	

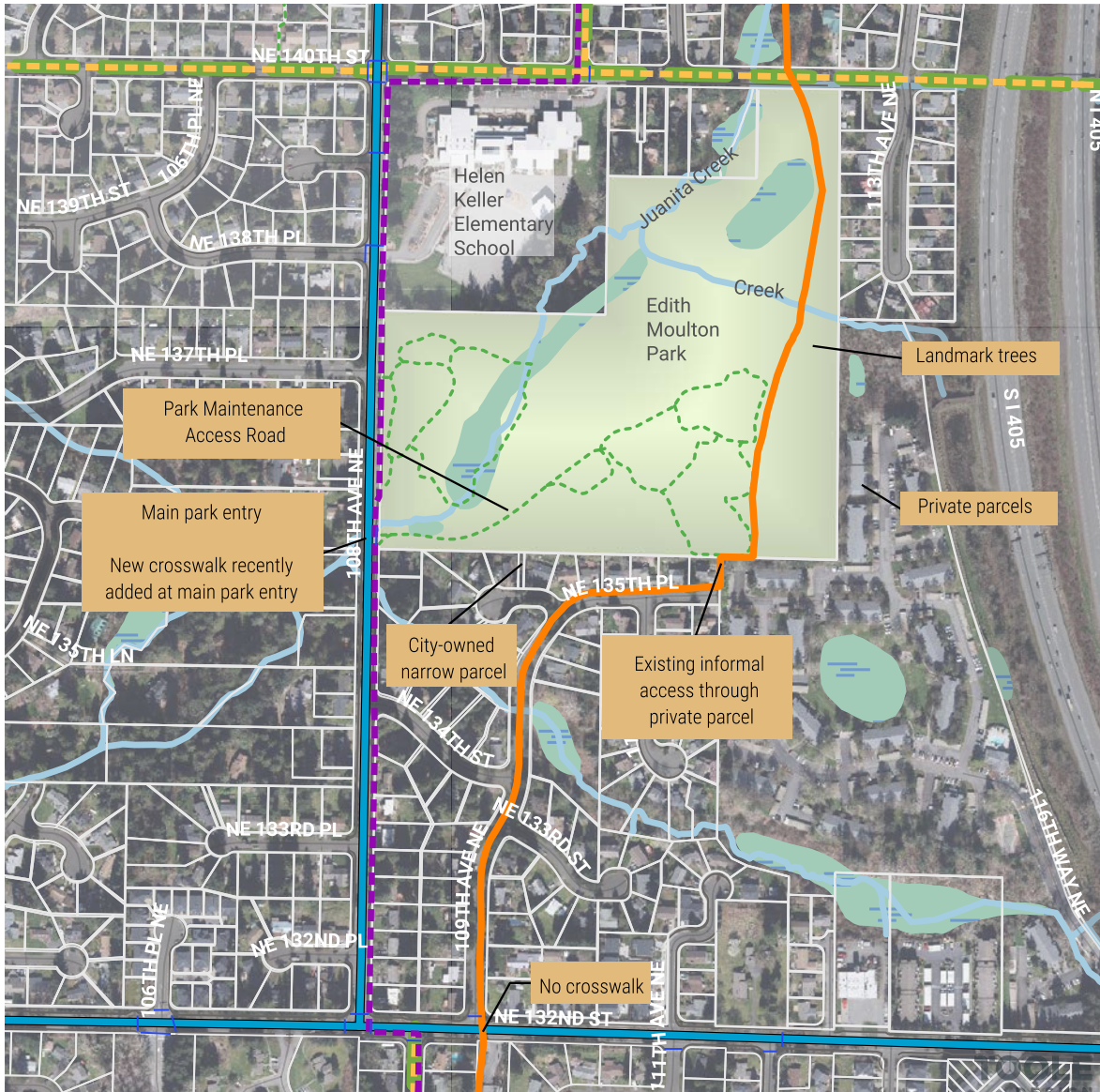
### NOTES

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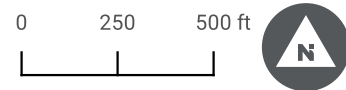
## Segment 2. NE 145th Street to Edith Moulton Park

FEASIBILITY EVALUATION CRITERIA	NOTES AND ANALYSIS	FEASIBILITY SCORE
<b>Connectivity &amp; Directness</b>	<ul style="list-style-type: none"> <li>Route is direct and would provide access to the neighborhood and Windsor Vista Park</li> <li>Route is roughly parallel with neighborhood greenways</li> </ul>	<b>HIGH</b>
<b>Access Points and Crossings</b>	<ul style="list-style-type: none"> <li>Access via NE 145th Street and NE 141st, and also via each side of Windsor Vista Park off 110th Ave NE and 111th Ave NE</li> <li>There is one bridge across the creek but no access points or bridges at the north or south ends of Windsor Vista Park</li> </ul>	<b>MED</b>
<b>Active Transportation Potential</b>	<ul style="list-style-type: none"> <li>The creek runs along the western side of the park in a ravine. There is not enough physical width or continuous level space on either side of the channel to create shared-use path</li> <li>Creek corridor is more suitable as a walking trail</li> </ul>	<b>LOW</b>
<b>Right-of-way</b>	<ul style="list-style-type: none"> <li>Much of the path through this segment lies within Windsor Vista Park.</li> <li>The right-of-way through the park, from NE 145th to NE 141st varies from approximately 40 ft to over 200 ft wide</li> <li>South of NE 140th St, the path is proposed to cut through a private parcel to reach NE 140th St so would require right-of-way acquisition</li> </ul>	<b>MED</b>
<b>Critical Areas</b>	<ul style="list-style-type: none"> <li>The path would create stream buffer and tree impacts</li> <li>There is also a mapped wetland on large parcel just north of 140th Street, with active and planned restoration areas.</li> </ul>	<b>LOW</b>
<b>Potential structures</b>	<ul style="list-style-type: none"> <li>In addition, the path would require extensive retaining walls to create a level trail, and potentially an additional bridge for a stream crossing</li> </ul>	<b>LOW</b>
<b>User Experience: Physical safety and Sense of Personal Security</b>	<ul style="list-style-type: none"> <li>Path would be very close to property lines of residences on east side of creek; privacy and security will likely be a concern for those residents</li> </ul>	<b>MED</b>
<b>User Experience: Access to Nature and Scenic Quality</b>	<ul style="list-style-type: none"> <li>Path through park and along creek would provide high scenic and access to nature</li> </ul>	<b>HIGH</b>
<b>RECOMMENDATION</b>	<b>Use on-street route (ATP/greenway recommendations) and maintain existing walkway through park as pedestrian (soft-surface) trail</b>	

### Segment 3. Edith Moulton Park to NE 132nd Street



Data Source: City of Kirkland  
 Date Prepared: 5/20/24  
 Prepared by: Toole Design Group



#### Existing Conditions

- - - Soft Surface Trail
- Street
- Crosswalk
- Sidewalk
- Stream
- Right-of-Way
- Parcel Boundary
- Wetlands
- Park

- Recommended Kirkland ATP Bicycle Facilities
- Improve Existing Bike Lanes
- - - Recommended Greenway

#### Alignment Options

- JNA Proposed Alignment
- - - Potential On-Street Alternative

## Segment 3. Edith Moulton Park to NE 132nd Street

### Overview and Summary

This segment traverses Edith Moulton Park and then uses neighborhood access streets to connect to NE 132nd St. There are no existing trails at the north end of the park off NE 140th St, so a new trail would need to be constructed in this area, and that path would require stream crossing. At the south end of the park, there is a soft-surface pedestrian path from the park maintenance access road to the dog park and down to NE 135th St, through informal access via the Woodlake Apartments property. The park is heavily wooded, so access to nature is high, though perhaps a little isolated at certain times of day. The City owns a narrow lot off the NE 135th PI cul de sac that could provide access to the park, but the access would pass closely between two homes and meet steep slopes in the park.

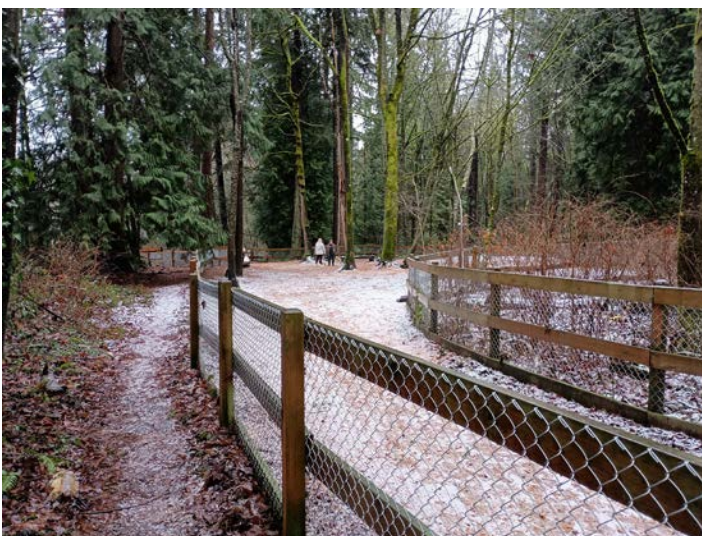
The surrounding streets - 108th Ave NE, NE 140th St, and NE 132nd St - all have existing and planned biking and walking facilities that connect to the city's active transportation network. The crosswalk on NE 132nd St is at 108th Ave NE.



Start of soft-surface trail in Edith Moulton Park



Soft-surface trail by dog park in Edith Moulton Park. Note existing trees

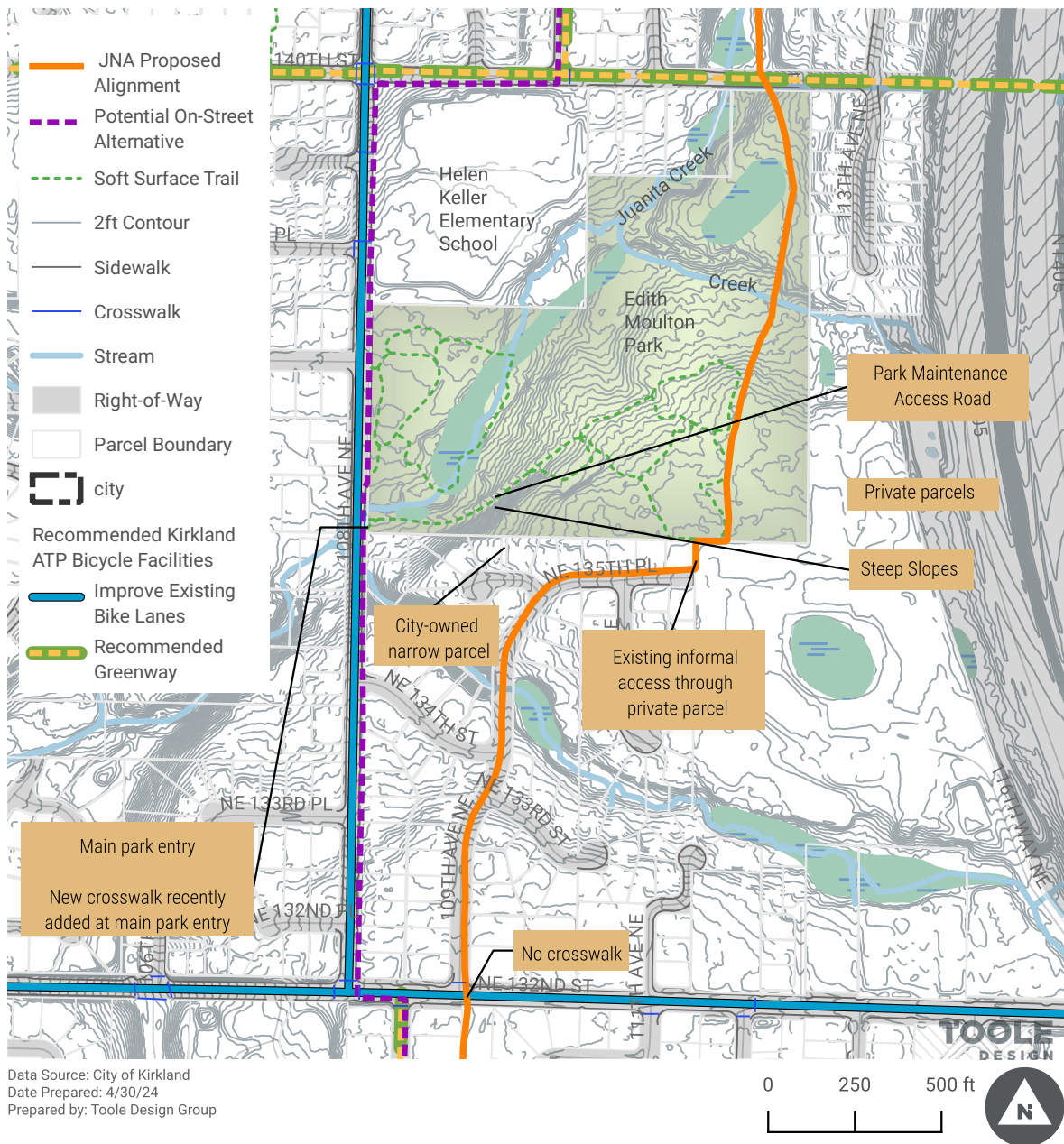


Soft-surface trail through park



Informal access from park to NE 135th PI

### Segment 3. Edith Moulton Park to NE 132nd Street



#### Planning Level Cost Opinion

ITEM	UNITS	\$/UNIT	TOTAL	NOTES
Shared-use path	0.66 miles	1,550,000	\$1,027,462	Likely to require retaining walls, longer path alignment, stormwater detention or piping
Bridges and/or boardwalks	1 each	750,000	750,000	Prefab bridge, 12 ft wide
Critical areas documentation, permitting, mitigation	Lump sum	1,500,000	1,500,000	Likely to require tree removals, mitigation and monitoring
<b>TOTAL</b>		<b>\$3.2 to \$3.5 million</b>		

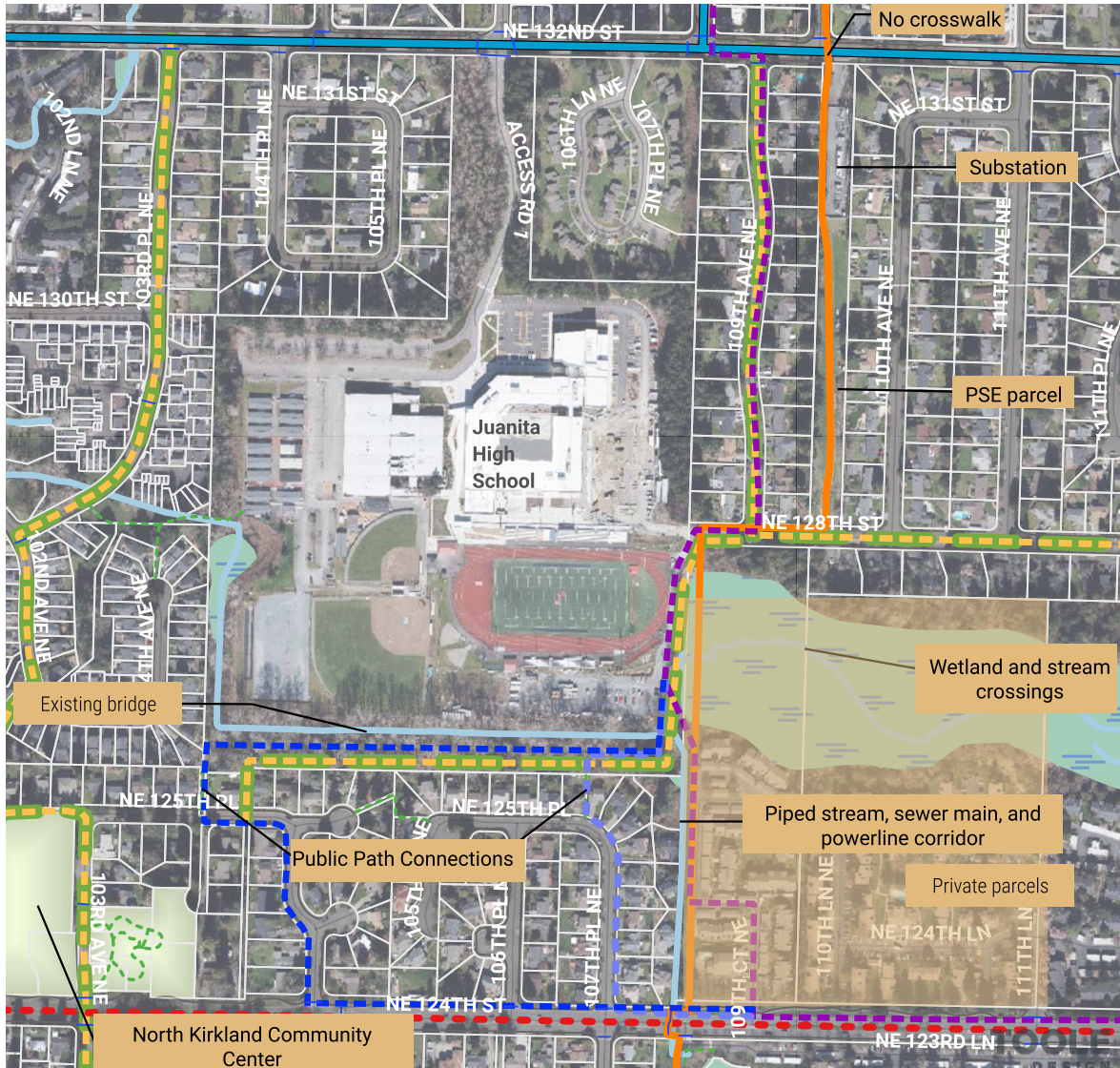
#### NOTES

Cost opinions are intended to be general and used only for planning purposes. Right of-way acquisition costs not included. Full design development is required to identify all costs and impacts and thus these cost opinions are likely low-end estimates. See Cost Opinion Development section on p. 7 for details about how cost opinions were developed.

### Segment 3. Edith Moulton Park to NE 132nd Street

FEASIBILITY EVALUATION CRITERIA	NOTES AND ANALYSIS	FEASIBILITY SCORE
<b>Connectivity &amp; Directness</b>	<ul style="list-style-type: none"> <li>Proposed path would create a north-south connection through the park, which does not currently exist, and would provide access between neighborhoods to both the north and south of the park</li> <li>The path through the park would not be very direct</li> <li>South of the park, the route follows 109th Ave NE to NE 132nd and is very direct</li> </ul>	<b>MED</b>
<b>Access Points and Crossings</b>	<ul style="list-style-type: none"> <li>The proposed path through the park would be accessed via new connections off NE 140th St to the north and via NE 132nd St to the south</li> <li>Currently the park can only be accessed from the west side along 108th Ave NE</li> </ul>	<b>LOW</b>
<b>Active Transportation Potential</b>	<ul style="list-style-type: none"> <li>It could be possible to upgrade existing walking paths or add a shared-use path through the park but the park is heavily vegetated and in some locations has steep topography - primarily along the banks of the creek, so creating a wide, level path would require careful routing to avoid impacting natural resources</li> </ul>	<b>LOW</b>
<b>Right-of-way</b>	<ul style="list-style-type: none"> <li>South of the park, existing informal access point at the eastern end of NE 135th Place (east of 110th Pl NE) is private</li> <li>There is a narrow public parcel off the NE 135th Pl cul de sac but it appears to connect to the park at location with steep slopes. Houses on either side of the parcel are quite close; there may be privacy concerns and fencing would likely be required.</li> </ul>	<b>HIGH</b>
<b>Critical Areas</b>	<ul style="list-style-type: none"> <li>Juanita Creek runs through the park and the area around the stream is a mapped wetland</li> <li>The path alignment as proposed would impact the stream, the stream buffer, and the wetland, and may also require a stream crossing. Cut and fill of the wetland would likely be required to create a level path</li> </ul>	<b>LOW</b>
<b>Potential structures</b>	<ul style="list-style-type: none"> <li>Depending on the alignment, the path could require crossing the stream, as well as retaining walls depending on the topography</li> </ul>	<b>LOW</b>
<b>User Experience: Physical safety and Sense of Personal Security</b>	<ul style="list-style-type: none"> <li>Path could feel isolated in heavily vegetated areas; the distance could be between half and three-quarters of a mile long; utilizes local neighborhood streets to the south</li> </ul>	<b>MED</b>
<b>User Experience: Access to Nature and Scenic Quality</b>	<ul style="list-style-type: none"> <li>Path through park and along creek would provide high scenic quality and access to nature</li> </ul>	<b>HIGH</b>
<b>RECOMMENDATION</b>	<b>Use on-street route (ATP recommendations) and maintain existing path through walkways as pedestrian (soft-surface) trail</b>	

## Segment 4. NE 132nd Street to Juanita High School and NE 124th St



Data Source: City of Kirkland  
 Date Prepared: 4/30/24  
 Prepared by: Toole Design Group

### Existing Conditions

- - - Soft Surface Trail
- Street
- Sidewalk
- Crosswalk
- Stream
- Right-of-Way
- Parcel Boundary
- Wetlands
- Park
- Recommended Kirkland ATP Bicycle Facilities
- Improve Existing Bike Lanes
- - - Recommended Protected Bike Lanes
- - - Recommended Greenway

### Alignment Options

- JNA Proposed Alignment
- - - Potential On-Street Alternative
- - - Potential Alternative High School Access 1
- - - Potential Alternative High School Access 2

## Segment 4. NE 132nd Street to Juanita High School and NE 124th St

### Overview and Summary

This segment starts on the south side of NE 132nd. The proposed route does not align with the existing crossing one block east at 109th Ave NE (a recommended greenway). From there, the segment proposes use the power line right-of-way. There is a substation just south of NE 132nd which utilizes the full 90 ft right-of-way with fences, noise walls, and vegetative buffers including trees and shrubs. To the south of the substation, the right-of-way has a maintenance vehicle access road. South of NE 128th St, the path proposes to use private parcels to reach NE 132nd. The use of these parcels would likely be constrained by wetland and stream issues.

There are existing and proposed biking and walking facilities along 109th Ave NE and NE 128th providing access to the high school.



Looking north from NE 128th St up power line corridor toward substation



Existing bridge connecting to high school



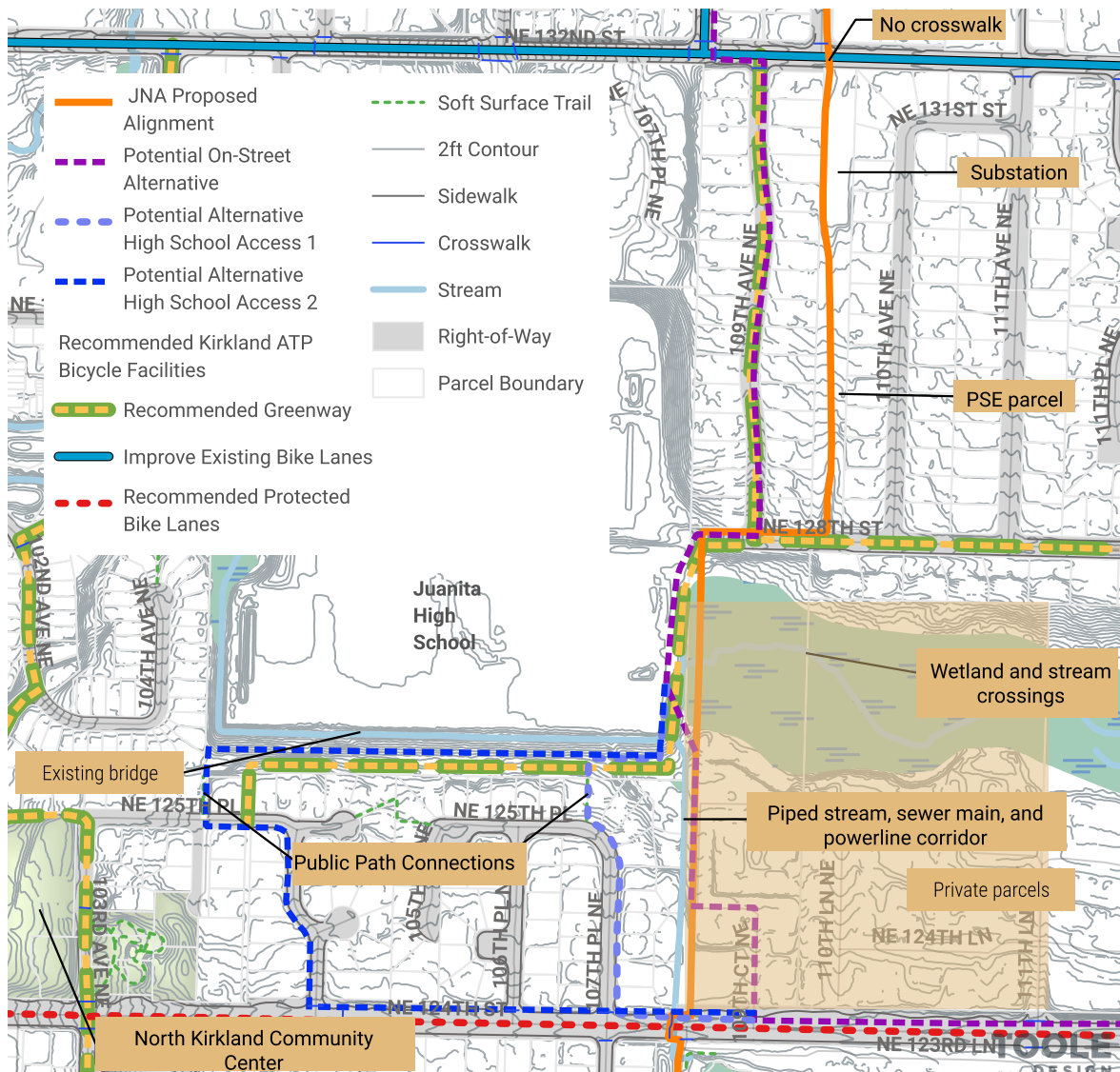
View south from NE 128th St along power line corridor



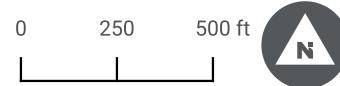
View to high school field from bridge



## Segment 4. NE 132nd Street to Juanita High School and NE 124th St



Data Source: City of Kirkland  
 Date Prepared: 5/20/24  
 Prepared by: Toole Design Group



### Planning Level Cost Opinion

ITEM	UNITS	\$/UNIT	COST	NOTES
Shared-use path	0.6 miles	1,550,000	\$880,862	Would require easement through the PSE property and partial acquisition of at least three additional parcels; likely requires retaining walls (not incl)
Bridges and/or boardwalks	1 each	750,000	\$750,000	
Critical areas documentation, permitting, mitigation	Lump sum	1,500,000	\$1,500,000	Likely requires mitigation and monitoring
TOTAL		\$3.2 to \$3.5 million		

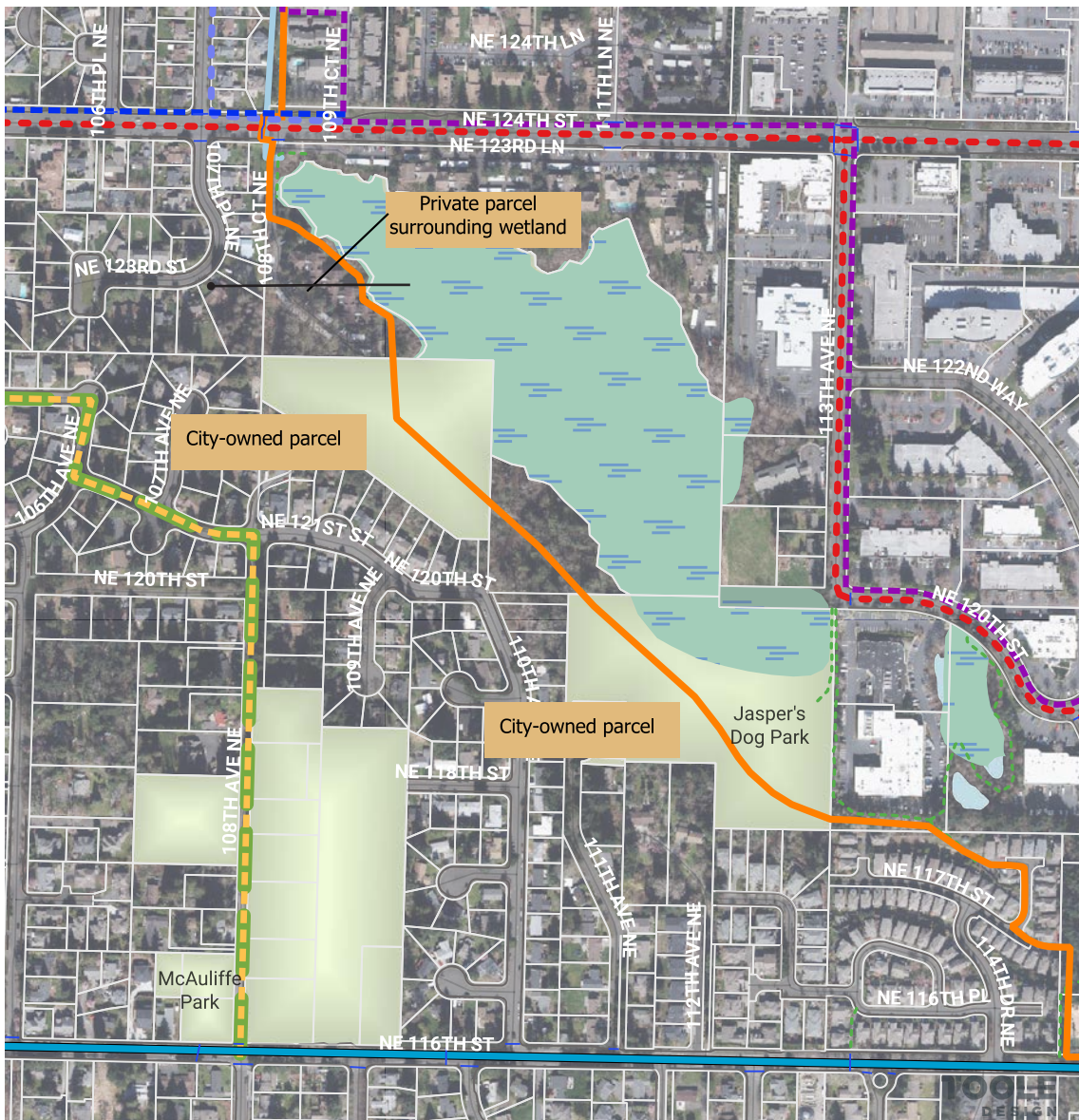
### NOTES

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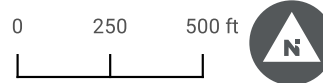
## Segment 4. NE 132nd Street to Juanita High School and NE 124th St

FEASIBILITY EVALUATION CRITERIA	NOTES AND ANALYSIS	FEASIBILITY
<b>Connectivity &amp; Directness</b>	<ul style="list-style-type: none"> <li>Path is direct and would provide access between neighborhoods, bike lanes on NE 132nd St, and to high school</li> <li>The proposed path parallels a neighborhood greenway between NE 132nd St and NE 128th St</li> <li>The proposed path would enhance connectivity between the high school and NE 124th St</li> </ul>	<b>HIGH</b>
<b>Access Points and Crossings</b>	<ul style="list-style-type: none"> <li>Multiple access points: from the north via NE 132nd St, in the middle via NE 128th St and Juanita High School, and from the south via NE 124th St</li> </ul>	<b>HIGH</b>
<b>Active Transportation Potential</b>	<ul style="list-style-type: none"> <li>The power line right-of-way between NE 132nd and NE 128th St is fairly level</li> <li>South of NE 128th St, there a grade drop and it may be challenging to create an accessible path</li> </ul>	<b>MED</b>
<b>Right-of-way</b>	<ul style="list-style-type: none"> <li>The entire segment is proposed on private parcels</li> <li>The Puget Sound Energy (PSE) power line corridor is not public land (PSE owns the full parcel between NE 132nd and NE 128th. South of NE 128th PSE has an easement on private property for the power poles and overhead lines). The substation with noise walls and vegetated buffer takes up the northern part of the right-of-way</li> <li>On the parcels to the south of NE 128th St, there is no publicly-owned right-of-way and the southern part is fully built out. The proposed alignment would mostly like need to follow along the property line</li> <li>Two easements between the high school property and NE 125th PI were identified, on either side of 10326 NE 125th PI and 10636 NE 125th PI</li> </ul>	<b>LOW</b>
<b>Critical Areas</b>	<ul style="list-style-type: none"> <li>On the parcels south of NE 128th St, there is a stream running southeast to northwest as well as a large mapped wetland and stream.</li> <li>The path alignment as proposed would impact the stream, the stream buffer, and the wetland, and may also require a stream crossing. Cut and fill of the wetland would likely be required to create a level path</li> </ul>	<b>LOW</b>
<b>Potential structures</b>	<ul style="list-style-type: none"> <li>The proposed path would require a bridge over the stream</li> </ul>	<b>LOW</b>
<b>User Experience: Physical safety and Sense of Personal Security</b>	<ul style="list-style-type: none"> <li>At the northern end of the proposed path, the user experience would be negatively impacted by being immediately adjacent to the substation</li> <li>At the south end, the proposed path would likely be into a narrow space between parking areas and the property line</li> </ul>	<b>LOW</b>
<b>User Experience: Access to Nature and Scenic Quality</b>	<ul style="list-style-type: none"> <li>Only the middle segment has scenic potential</li> </ul>	<b>LOW</b>
<b>RECOMMENDATION</b>	<ul style="list-style-type: none"> <li><b>Recommend use of alternative on- street route (ATP/greenway plan recommendations) between NE 132nd St and NE 128th St.</b></li> <li><b>Recommend exploring use of easements between the southern border of high school and NE 125th PI to connect the high school to NE 124th St</b></li> </ul>	

## Segment 5. NE 124th St to Jasper's Dog Park



Data Source: City of Kirkland  
 Date Prepared: 4/20/24  
 Prepared by: Toole Design Group



### Existing Conditions

- - - Soft Surface Trail
- Street
- Crosswalk
- Sidewalk
- Stream
- Right-of-Way
- Parcel Boundary
- Wetlands
- Lake
- Park
- Recommended Kirkland ATP Bicycle Facilities
- Improve Existing Bike Lanes
- Recommended Protected Bike Lanes
- Recommended Greenway

### Alignment Options

- JNA Proposed Alignment
- Potential On-Street Alternative
- Potential Alternative High School Access 1
- Potential Alternative High School Access 2

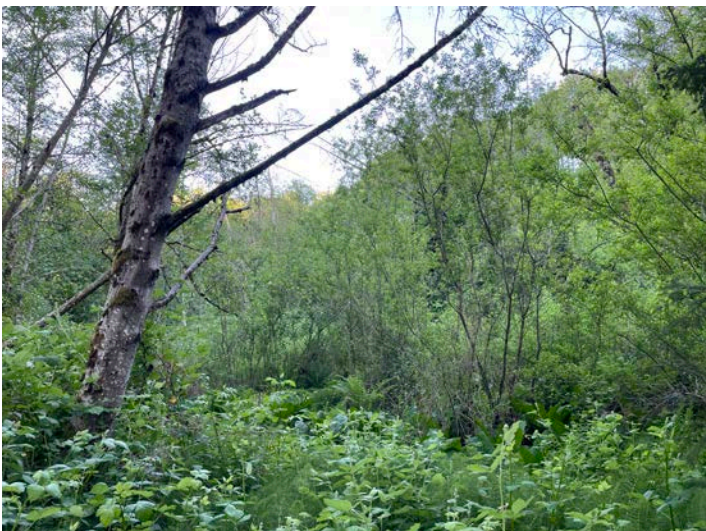
## Segment 5. NE 124th St to Jasper’s Dog Park

### Overview and Summary

The northern part of this segment proposes skirting to the west of Heronfield wetlands. There are some City-owned parcels in this area, but they do not connect, and fall within the erosion hazard areas, and thus are quite steep.

There is an existing formal gravel path walkway along the east property line of Jasper’s Dog Park (from 113th Ave NE/NE 120th St to Jasper’s Dog Park). The path is steep and narrow in places but provides park access.

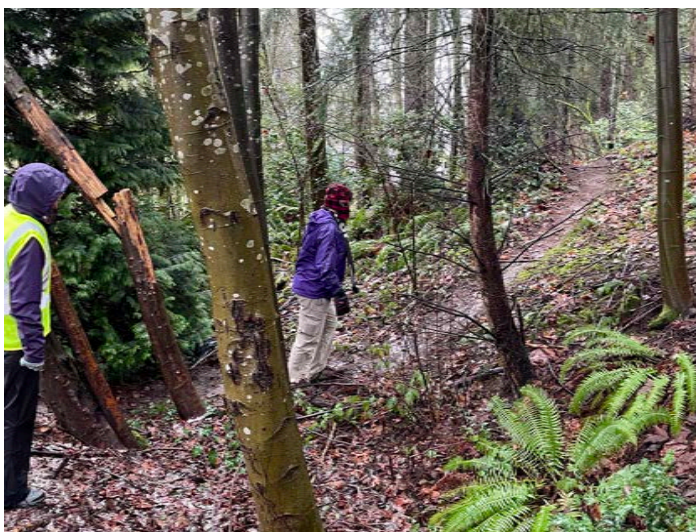
There are planned protected bike lanes on NE 124th St and 113th Ave NE/NE 120th St as a parallel on-street alternative



View into Heronfield Wetlands showing dense vegetation



Bridge just past the entrance to Jasper’s Dog Park

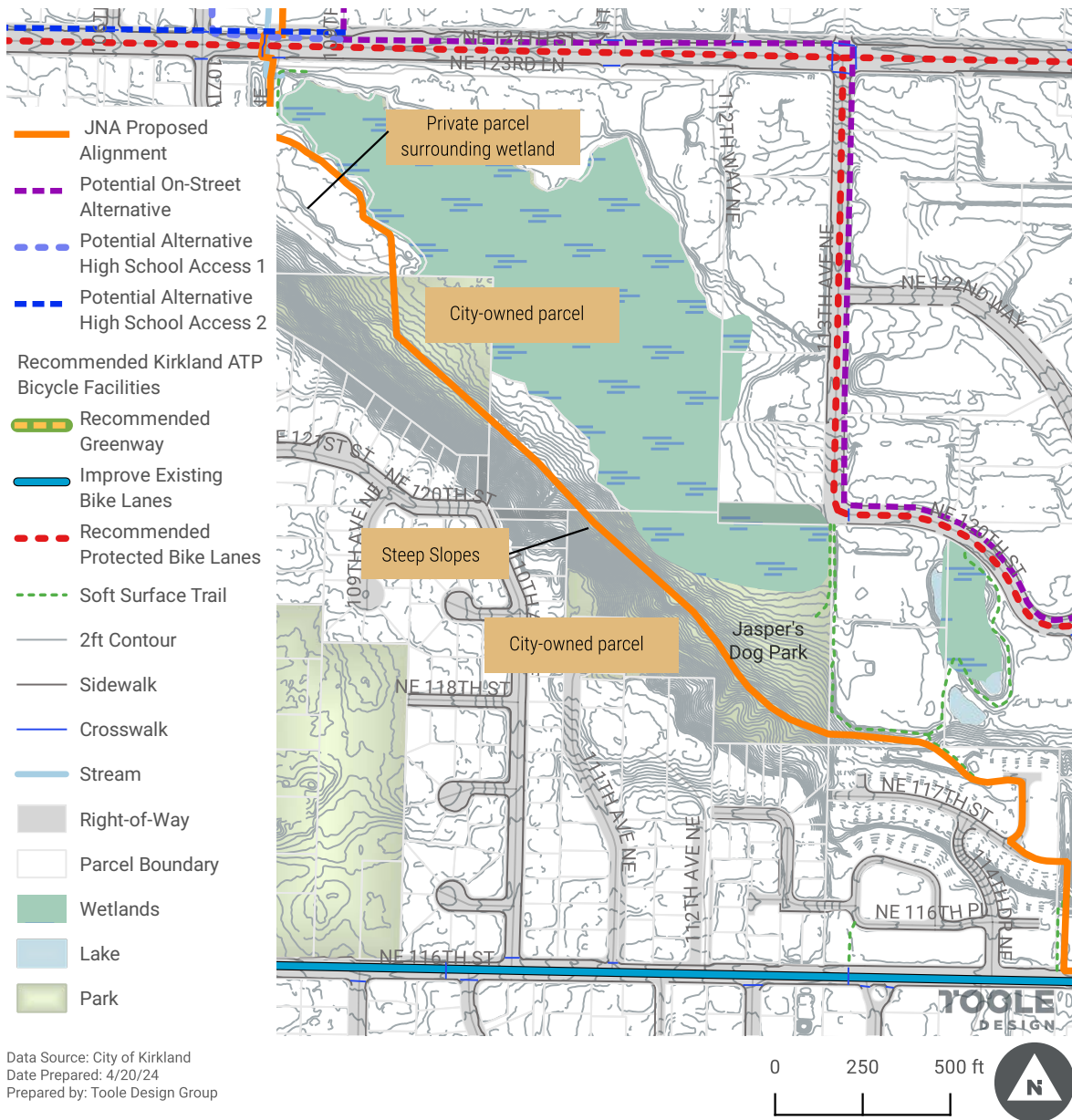


Trail up steep slope alongside Jasper’s Dog Park



Wetland sign in the park

## Segment 5. NE 124th St to Jasper's Dog Park



### Planning Level Cost Opinion

ITEM	UNITS	\$/UNIT	COST	NOTES
Shared-use path	0.85 miles	1,550,000	\$1,321,023	Would require full acquisition of one parcel and partial acquisition of another, retained slopes, walls
Boardwalks	300 LF	7,500	2,250,000	10 ft wide boardwalk
Critical areas documentation, permitting, mitigation	Lump sum	1,550,000	\$1,550,000	Likely to require tree removals, mitigation and monitoring. Would require stormwater detention (not incl.)
<b>TOTAL</b>		<b>\$5 to 5.3 million</b>		

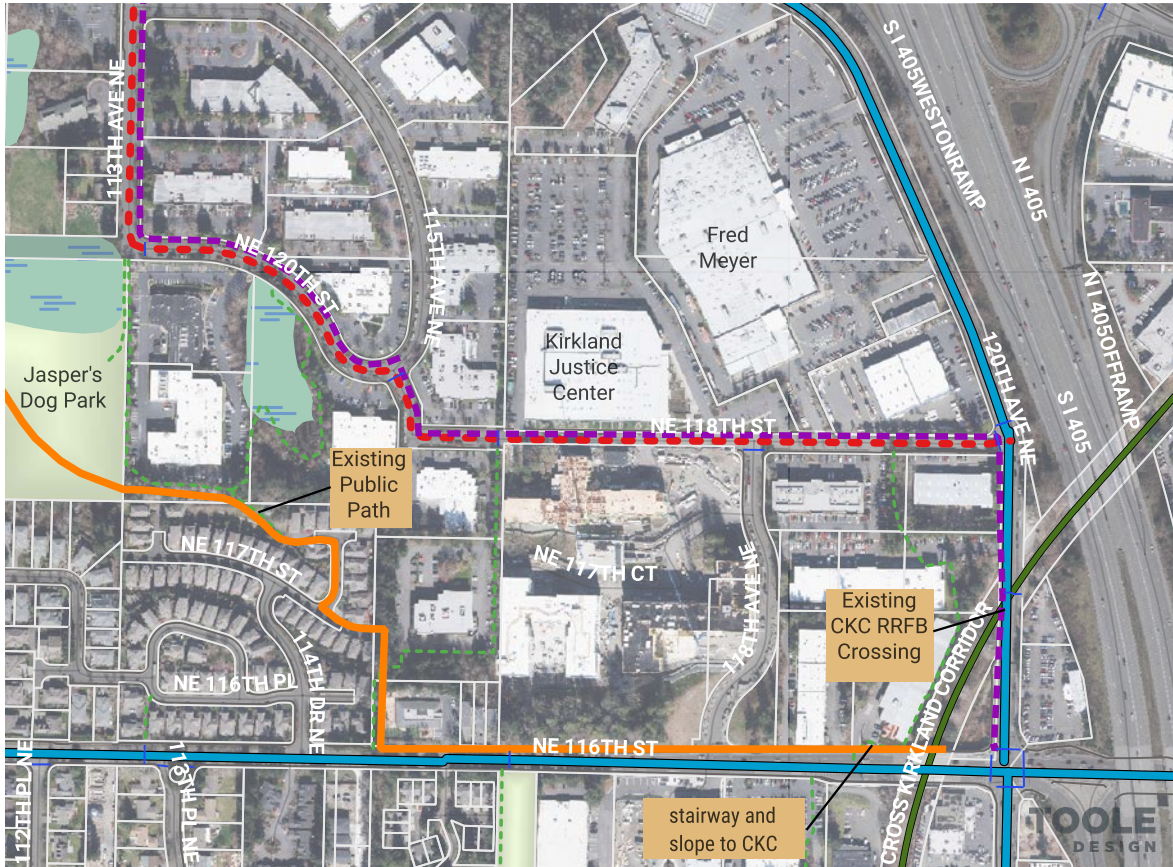
#### NOTES

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## Segment 5. NE 124th St to Jasper's Dog Park

FEASIBILITY EVALUATION CRITERIA	NOTES AND ANALYSIS	FEASIBILITY
<b>Connectivity &amp; Directness</b>	<ul style="list-style-type: none"> <li>Much of this area is undeveloped wetlands without any existing paths, except in Jasper's Dog Park, which has a north-south trail along the eastern property line</li> <li>The path would provide access through this area, providing an alternative to using the on-street network.</li> </ul>	<b>LOW</b>
<b>Access Points and Crossings</b>	<ul style="list-style-type: none"> <li>Access via surrounding arterial streets: from the north via NE 124th St and from the east via 113th Ave NE/NE 120th St</li> <li>No internal connections/access points between the two access points</li> </ul>	<b>LOW</b>
<b>Active Transportation Potential</b>	<ul style="list-style-type: none"> <li>The path is proposed along the west side, the steepest part of these parcels; a shared-use path may not be feasible</li> <li>This segment is more suitable as a walking trail</li> </ul>	<b>LOW</b>
<b>Right-of-way</b>	<ul style="list-style-type: none"> <li>There are two City owned parcels in this area, but they do not connect where the path is proposed. City owns only the interior part of this the parcel between NE 124th and 110th Ave NE/NE 117th Street; the edges of the parcel are in private ownership.</li> </ul>	<b>LOW</b>
<b>Critical Areas</b>	<ul style="list-style-type: none"> <li>There are mapped wetlands and a large area of erosion hazard/ steep slopes to the southwest the wetlands</li> <li>Development of a trail or path would be constrained by environmental protection regulations (wetland disturbance, potential cut and fill to retain slopes, vegetation removal)</li> </ul>	<b>LOW</b>
<b>Potential structures</b>	<ul style="list-style-type: none"> <li>Possible retaining walls on steep slopes to accommodate a path</li> </ul>	<b>LOW</b>
<b>User Experience: Physical safety and Sense of Personal Security</b>	<ul style="list-style-type: none"> <li>Path within the could feel isolated in areas</li> <li>Steeps grades changes could affect user experience for users with reduced mobility</li> </ul>	<b>LOW</b>
<b>User Experience: Access to Nature and Scenic Quality</b>	<ul style="list-style-type: none"> <li>High access to nature and scenic qualities</li> </ul>	<b>HIGH</b>
<b>RECOMMENDATION</b>	<ul style="list-style-type: none"> <li><b>Recommend use of alternative on- street route (ATP/greenway plan recommendations) between NE 124th St and NE 116th St.</b></li> </ul>	

## Segment 6. Jasper's Dog Park to Cross-Kirkland Corridor/NE 116th St



Data Source: City of Kirkland  
 Date Prepared: 5/20/24  
 Prepared by: Toole Design Group

0 250 500 ft



### Existing Conditions

- - - Soft Surface Trail
- Street
- Sidewalk
- Crosswalk
- Cross Kirkland Corridor
- Right-of-Way
- Parcel Boundary
- Wetlands
- Park

### Alignment Options

- Recommended Kirkland ATP Bicycle Facilities
- Improve Existing Bike Lanes
- - - Recommended Protected Bike Lanes
- JNA Proposed Alignment
- - - Potential On-Street Alternative

## Segment 6. Opportunities and Constraints

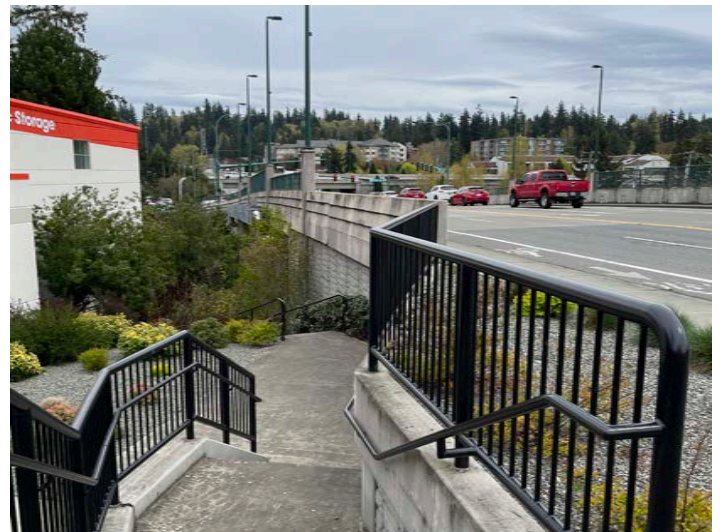
### Overview and Summary

At the north end, the path is proposed to cross a private parcel (11327 NE 120th St) and connect with 114th Pl NE and NE 117th St. It is then proposed to cross private properties 11533 NE 118th St and 11440 NE 116th St south to NE 116th St. From NE 116th St, there would need to be ramps to connect the CKC below the roadway. There is an existing public staircase from NE 116th St down to the public storage building, which ends approximately 12 ft in elevation above the CKC.

There are planned bike lanes on the streets to the east: 113th Ave NE, NE 120th St, NE 118th, and 120th Ave NE, which provides a connection to NE 116th St and to the Cross Kirkland Corridor.



Looking south along the walking path on the east side of Jasper's Dog Park



Stairwell to Public Storage from NE 116th St



View of vegetation and slopes along walking path



Looking east across the Cross Kirkland Corridor, steep slope and erosion hazard below NE 116th St





## Segment 6. Opportunities and Constraints

FEASIBILITY EVALUATION CRITERIA	NOTES AND ANALYSIS	FEASIBILITY
<b>Connectivity &amp; Directness</b>	<ul style="list-style-type: none"> <li>Path would connect Jasper's Dog Park to the Cross Kirkland Corridor, which would be shorter than using surface streets but not as direct (113th Ave NE, NE 120th St, NE 118th St, and 120th Ave NE)</li> </ul>	<b>LOW</b>
<b>Access Points and Crossings</b>	<ul style="list-style-type: none"> <li>From the north via Jasper's Dog Park and from the south via NE 116th Street</li> </ul>	<b>LOW</b>
<b>Active Transportation Potential</b>	<ul style="list-style-type: none"> <li>There are existing walking paths within Jasper's Dog Park but this area has grades exceeding 5% so are more suitable as walking paths</li> <li>It maybe be possible to create segments of shared-use paths in other parts of this segment but existing land use may pose constraints</li> </ul>	<b>LOW</b>
<b>Right-of-way</b>	<ul style="list-style-type: none"> <li>Much of the path is proposed on private parcels</li> </ul>	<b>LOW</b>
<b>Critical Areas</b>	<ul style="list-style-type: none"> <li>There is a large Erosion Hazard area running northwest to southeast in this area</li> </ul>	<b>LOW</b>
<b>Potential structures</b>	<ul style="list-style-type: none"> <li>There is a significant grade differential along NE 116th Ave NE between parcels and street, with tall retaining walls that would likely prevent any widening of the roadway/right-of-way to accommodate a trail</li> <li>NE 116th is elevated over the CKC. Creating a connection between the NE 116th and the CKC in this location would require long ramps, impacts to private properties, and other potential challenges</li> </ul>	<b>LOW</b>
<b>User Experience: Physical safety and Sense of Personal Security</b>	<ul style="list-style-type: none"> <li>The proposed path would pass through land uses that include light industrial and multi-family housing. Depending on lighting, sight lines, and vegetation, this area may provide a high level of comfort for users</li> </ul>	<b>LOW</b>
<b>User Experience: Access to Nature and Scenic Quality</b>	<ul style="list-style-type: none"> <li>Where proposed path would pass through developed area, the scenic quality would be low</li> </ul>	<b>LOW</b>
<b>RECOMMENDATION</b>	<b>Use on-street route (ATP/greenway plan recommendations) and existing path through park as pedestrian (soft-surface) trail</b>	

**Conclusion and Next Steps**

This document is an exploration and compilation of opportunities and constraints on a north-south public walking and bicycling path through the Juanita and Totem Lake neighborhoods. As opportunities arise, the City of Kirkland will look for opportunities to provide soft-surface trails to supplement the All Ages and Abilities facilities presented in the Kirkland Active Transportation Plan.

Overall, the proposed JNA alignment would be very high cost and have a number of feasibility constraints. It is recommended to follow the proposed walking and bicycling improvements identified in the ATP, and where opportunities arise through private development, explore additional pedestrian pathways such as the existing public pathway designated with brown wayfinding signs.



Trail through a residential neighborhood with wayfinding signage

