Kirkland Neighborhood Greenways

GUIDE FOR IMPLEMENTATION

Credits

NEIGHBORHOOD GREENWAY TASK FORCE

City Staff:
- Kathy Cummings, Communications Manager
- Tim Day, Deputy Fire Chief
- Laura Drake, Project Engineer
- Doug Honma-Crane, Budget Analyst
- Christian Knight, Outreach Coordinator
- Stephen Padua, AICP, Transportation Planner
- Joel Pfundt, AICP-CTP, Transportation Manager
- Jeff Rotter, Parks Maintenance Supervisor
- Mel Soares, GIS Analyst
- Ray Steiger, Operations Manager

Advocates:
- Vicky Clarke, Cascade Bicycle Club
- Michelle Plesko, Kirkland Greenways Group
- Matt Caracoglia, Kirkland Bicycle Shop
- Scott Emry, Lake Washington School District

Acknowledgements

City Council:
- Amy Walen, Mayor
- Jay Arnold, Deputy Mayor
- Dave Asher
- Tom Neir
- Toby Nixon
- Jon Pascal
- Penny Sweet
- Doreen Marchione (retired)

Transportation Commission:
- John Perlic, Chair
- Lisa A. McConnell, Vice Chair
- Michael Snow
- Grace Guerrero, Youth member
- Kurt Ahrensfeld
- Ken Dueker
- Xander Fiss
- Terry Marpert

City Staff:
- Kurt Triplett, City Manager
- Marilynne Beard, Deputy City Manager
- Tracey Dunlap, Deputy City Manager
- Kathy Brown, Public Works Director
- Iris Cabrera, PE Transportation Engineer
- Kathy Robertson, Traffic Control Coordinator
- Kelli Jones, Senior Surface Water Engineer
- Jesse Reynolds, GIS Consultant

City of Seattle Staff
- Brian Dougherty, Strategic Advisor
- Summer Jawson, Neighborhood Greenway Project Manager

This document is downloadable at kirklandwa.gov

Table of Contents

Introduction

In 2015, the City Council endorsed neighborhood greenways as a new element of Kirkland's transportation system in the Transportation Master Plan. Through the development of the TMP, the community identified a goal to better connect the city's neighborhoods with more options for all types of travel, including walking and riding a bike. The pursuit of this goal has led to several policies, programs and initiatives, which prioritize the movement of people. The first of these is Vision Zero, the main objective to eliminate by 2035 all transportation-related deaths or serious injuries. Manifesting this vision relies directly on safe, multi-modal road design, such as Neighborhood Greenways, which accommodate all kinds of travel for all ages and abilities.

The concept of a Neighborhood Greenways is to prioritize a select network of residential streets for people of all ages and abilities to feel safe to walk and ride bicycles. On an average day, fewer than 3,000 automobiles should travel through these streets--most at comfortable speeds, typically below 20 miles per hour. Greenways often have signs, pavement markings and traffic control measures that enhance walking and bicycling safety and comfort. As such, driving an automobile on a greenway, by design, is less convenient than driving on the other streets.

Purpose of Guidelines

This document is to establish a set of guidelines for city staff to approach each greenway project. The guidelines recommend a year-long outreach and design process during which city staff can carefully evaluate present-day conditions to better design future connections. In the outreach process, the project team solicits stakeholders' feedback, perspective and experience on existing issues and design considerations. The design of each greenway responds directly to this feedback. After the ensuing construction period, City staff evaluates the use of each Neighborhood Greenway's to identify opportunities for improvement for the neighborhood and subsequent greenway projects.

Planning Process

The process to develop this plan included regular meetings between internal staff groups, the formation of a citizen advisory group and discussions with the Transportation Commission. The Capital Improvement Program group and the Transportation group in the Public Works Departments led the development of this document. In coordination with multiple other city departments, multiple internal and external stakeholders were included in the process to design the first pair of greenway projects and to develop a process to pursue future greenway projects.

A task force consisting of City staff and external stakeholders were given the task to discuss major greenway concepts and guide a recommended template for all greenway projects. In the four meetings the task force assembled, the group discussions focused on three broad topics including routing, design tools, and how to prioritize future greenway projects.

Existing and Future Conditions

Many neighborhood streets already have the low speeds and low volumes that are essential for a safe multi-modal environment. But not all of them connect to important destinations, such as schools, parks and retail outlets. To create a safe and effective walking and bicycling route, a city must identify these connective residential roadways and enhance the qualities that discourage automobile speeds and volumes to create a place to go to, not just through.

On top of the neighborhood connections they enhance, Neighborhood Greenways also enhance a series of community values, according to the Transportation Master Plan. Those community values include:

- Quality of life
- Public health
- Neighborhood and street aesthetics
- Improve environmental health
- Affordable and convenient options for travel
- Safety
- Economic activity
- Improved real estate values
- Clean air
- Traffic flow

Seattle, WA

As described in the following map (Figure 1), the network proposed by Kirkland Greenways advocacy group and adopted in the Transportation Master Plan, accounts for existing and planned facilities in its vision of a fully connected transportation system of multiple levels of roadway facilities. When this network is fully built out, the majority of Kirkland residents and businesses will be within walking distance to a comfortable non-motorized facility and access to more local destinations. Increased access is necessary for the city to meet the goals defined in the Transportation Master Plan.

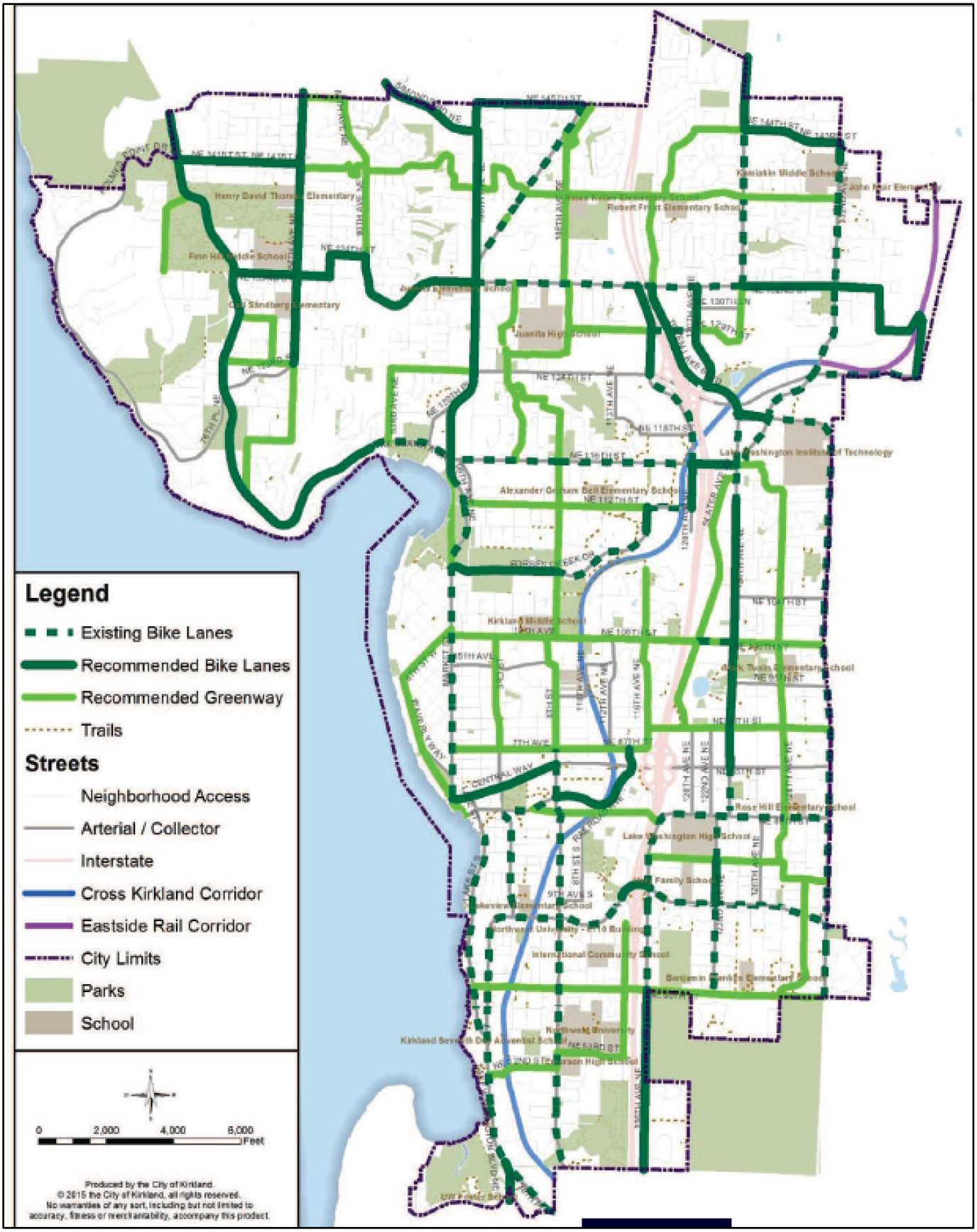


Figure 1: Existing and Planned Bicycle Facilities identified in the 2015 Transportation Master Plan

Figure 2: Network of Greenway Projects (Map updated 2017)

Task Force Direction for Routes

The routes described on the previous map (figure 2) show all the proposed neighborhood greenway route concepts defined in the Transportation Master Plan separate from the other layers. The routes are conceptual and not finalized so when each greenway project is pursued, city staff should evaluate alternative routes in accordance with the recommended considerations from the Task Force.

Routing

The advisory group highlighted the importance of destinations to better connect community assets, such as parks, churches and transit centers, and encourage more use of the greenway routes. The group said greenways should connect community services and amenities to residents with comfortable facilities designed for safe travel.

City staff must consider the connections a greenway project creates to maximize the use of the greenway project. The list below describes the Task Force's recommended priorities for considering greenway projects.

- Schools
- Parks
- Regional Trails
- Employment Centers
- Neighborhood Centers
- Transit Stops
- Shopping Areas

Recommendation from Transportation Commission

- Prioritize the route's directness; then balance existing hills and supporting transportation facilities.
- Minimizing a greenway route's hilliness is important, especially considering it must be accessible to all ages and all abilities. Minimizing the stress of hills, however, is not as important as ensuring the greenway offers a direct route to intended destinations. When hills are unavoidable, staff should assess the route for infrastructure that would accommodate all ages and abilities.

If there is a balance between directness and hilliness, staff should consider those existing facilities that provide an ideal level of safety for the neighborhood greenway. The graphic below describes the different type of facilities and the comfort level of pedestrians and bicyclists.

Neighborhood Greenway Design

TASK FORCE DIRECTION FOR DESIGN

The purpose of neighborhood greenways is to create a comfortable space for people when they are most vulnerable on the roadway, which is when they are walking or riding a bicycle. In Greenway development, City staff should limit conflict points between automobiles and people who are walking or riding bicycles. Additionally, regional partnerships or inter-city partnerships should be considered in the design process to maximize community support for each greenway project.

All Ages & Abilities

The City should be focused on designing greenways to accommodate people of all ages and abilities. The city must improve crossings so the level of comfort on the greenway is consistent through the corridor. Design should also balance the amount of devices, signs and pavement markings necessary to preserve the neighborhood roadway appeal, with the ability to effectively promote the safe travel on the greenway.
Partnership with neighborhood on art
Partner with advocates on design

Level of comfort and vehicle movement

To preserve the greenway's level of comfort and, at the same time, improve the conflict points, city staff may need to consider redirecting automobiles onto parallel streets. The City should also be more proactive in design with the expected increase in pedestrian and bicyclist volumes and prioritize the movement of people at greenway intersections. If the proposed greenway overlaps an arterial, modal separation should be considered to maintain the level of comfort ideal for any greenway corridor.

Intuitive Design

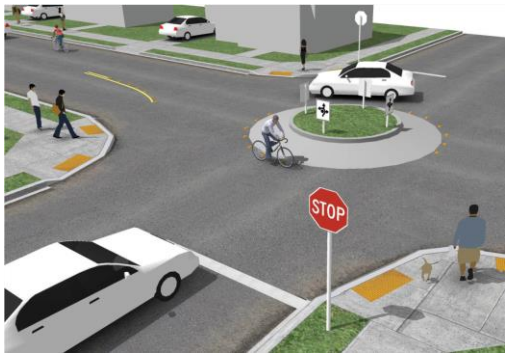
The elements that make a greenway highly comfortable include intuitive and predictable design. There needs to be good visibility so all users can be aware of each other and better predict movement. The design should self-enforce safe speeds for automobiles and bicycles. The design should also coordinate traffic calming devices, signs or markings to preserve intuitive design but also minimize clutter.

Each of the following elements are required for all greenway projects

Way-finding and Pavement Markings

Safe Speeds

Prioritized Movement



Investment in Arterial Crossings

Partnerships

Neighborhood support through the outreach process is also imperative to achieve a successful neighborhood greenway, however, more support should be sought. City staff should explore more opportunities to partner with other organizations which can help enhance neighborhood greenways in Kirkland.

As our regional partners on bicyclist and pedestrian topics, Cascade Bicycle Club and Feet First should be consulted in the initial stages for each greenway project. Each organization offers support staff with technical expertise and members located in Kirkland that would support every greenway project.

Locally, city staff should consult with the Kirkland Alliance of Neighborhoods and the respective neighborhood each greenway project is proposed to be located. Each of these groups is effective in supporting outreach efforts and providing important feedback for project design. Through these groups, city staff can highlight related issues identified by the neighborhoods and address them through the greenway project.

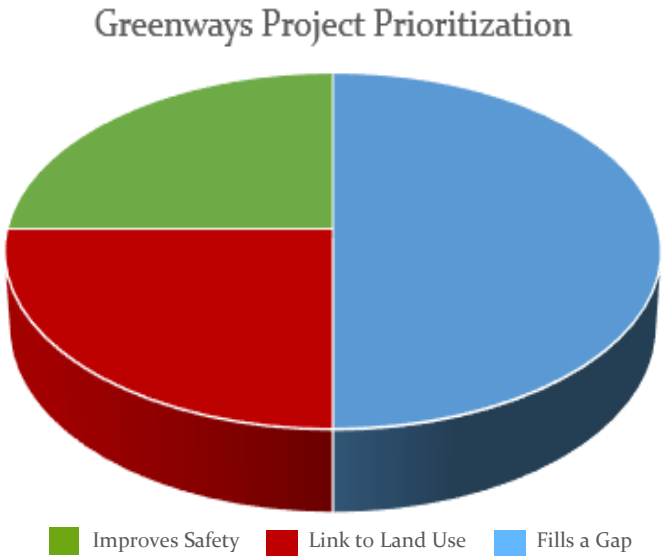
Kirkland is fortunate to have a local group focused on neighborhood greenway implementation. This group was paramount in the discussions with City Council to include greenways as part of the city's transportation network. The group includes on the ground knowledge of the proposed greenway network and includes residents with a passion for healthy transportation modes. This is a strong group to include in the outreach and design process for each greenway project the city pursues.

Within the City, Public Works will be the primary department implementing greenway projects city wide. Through the design process Police and Fire should be consulted to ensure the project supports access for emergency services and supports enforcement of traffic laws. These groups will be vital in the location and design for any new devices that impact vehicle movement.

Within the Public Works Department, the project manager for the greenway project should consult internal divisions, specifically, maintenance, operations and stormwater staff. In a region where the weather brings frequent rain and often high winds, the city must ensure the greenway corridors remain clear and in good condition to use. The project manager should also explore opportunities for art installations throughout the design of the greenway project. A full process for art design is outlined in Appendix C.

Greenway Network Prioritization

The Kirkland City Council currently designates funding for each Greenway project identified in the Capital Improvement Program. This means the city-wide network of greenways will be executed as the funding becomes available. As city staff evaluates each project, the following criteria should be applied for implementing the greenway network city-wide. The category, fills a gaps in the network will focus on the transportation network as a whole and prioritizes greenway projects which complete the future system. Connections to destinations considers the projects ability to improve access for greenway users to important destinations, for example, schools, parks and areas of focused development. Safety evaluation considers historical crash data to assess safety risk and prioritizing these areas for improvements



Fills a gap	• Links to regional connectors • Connects to improved facilities • City-wide Greenway network completion
Connects a destination	• Connect to schools • Connect to transit facilities • Connect to urban centers • Connect populations with highest transportation need
Improves safety	• Crash History

Greenway draft project schedule (2018 projection)

Potential Greenway Projects	Fills a Gap	Connects Destinations	Improve Safety	Total Score
128th Ave & 75th Steet Greenways	In Progress			
100th St & Waverly Beach Greenway	30	15	25	**70**
Snyders Corner to Lakefront Greenway	30	10	12	**52**
Norkirk Greenway	30	10	12	**52**
93rd Ave & 124th St Greenway	30	20	0	**50**
North Juanita Greenway	10	25	12	**47**
Kingsgate Greenway	10	25	12	**47**
Finn Hill Greenway	30	15	0	**45**
Juanita HS Greenway	8	20	12	**40**
Woodlands Greenway	21	7	0	**28**
90th St Greenway	15	10	0	**25**
90th Ave Greenway	10	15	0	**25**
Crestwoods Greenway	8	13	0	**20**
Totem Lake Greenway	6	14	0	**20**

*The above greenways may include multiple corridors and the numbers represent the corridor with the highest scores. The full point criteria and ranking can be found in Appendix B.

Implementation and Outreach

Designing each greenway will follow a two-year process, but the timing for implementation will be determined by the project manager and will be dependent on staff availability for executing the project's phases. Naturally, residents are going to be interested in any changes made within their neighborhood and how the neighborhood will be impacted. Throughout the design process, staff will engage the community, with a focus on meeting with neighborhood groups and local advocates for feedback on community needs and potential solutions. City staff will also consider right-of-way needs and the budget for each project to make the final decision on the schedule, the list of improvements, and project timeline.

Timeline	**Basic Implementation Process**	**Parallel Outreach Process**	
	Initial Conditions	• Initial meeting with Neighborhood Association • Meeting with Transportation Commission • Optional Neighborhood Survey	Stage 1
Spring - Year 1	• Evaluation of potential routes • Data collection • Route Audit/Field Check (Decided by project manager)		
Summer - Year 1	30% design • Consultant hired to advance design • 2nd Route Audit/Field Check (Decided by project manager)	• Consultation with Advocate Group(s) • 2nd Meeting with Neighborhood Association	Stage 2
Fall - Year 1	60% design • Meeting with PWPKHS Committee	• Follow-up with Advocate Group(s) • 2nd Meeting with Transportation Commission	Stage 3
Winter - Year 1	100% design & bid for construction • Proposal Review by City Council • Design finalized by staff • Construction contract advertisement	• 3rd Meeting with Transportation Commission	Stage 4
Spring - Year 2	Construction notification • Coordinate outreach with construction timeline • Construction contract award	• Outreach for upcoming construction • Potential Community Event	Stage 5
Summer - Year 2	Construction begins • Monitor construction and neighborhood impacts	• Potential Community Event for full greenway opening	Stage 6
Fall/Winter - Year 2	Process Evaluation • City Staff evaluate greenways implementation process • Process prioritization for next Greenway project	*Note* In the following spring, the process for the next greenway project restarts.*	

Performance Measures

Use of the greenway is dependent on three major factors: public knowledge of the greenway, the completion of an accessible, comfortable, and safe transportation network, and connectivity to destinations. The following performance measures are an essential piece of creating this low-stress environment for greenway users. These guidelines recommend four main measurements which will gauge the potential success of the greenway.

The quantitative targets for the performance measurements are based on Kirkland's experience, guidance analysis, research and the feedback staff received from the greenways task force. The qualitative goals are based on the priorities set in the Transportation Master Plan and the need for low automobile volumes and speeds on greenways and safe crossings.

The priority for Kirkland's greenway network is the comfort and safety of greenway users. Drivers pose the highest risk to greenway users which is why the majority of measurements are focused on driver behavior. Safe speeds are considered at or below 20 mph; additionally, vehicle volume on the greenway will contribute to the comfort level of greenway users.

Crossing conflicts are another element which present risks to greenway users so all crossings must be evaluated for any improvements. City staff will evaluate traffic volume and speed with on-site analysis to maintain the level of comfort and safety consistent with the goals for neighborhood greenways.

Greenway Performance Measures
Vehicle Speeds
• 20 mph (85^{th} percentile speed)
Automobile Volumes
• 1,000 Average Daily Traffic (ADT) as goal • 1,500 ADT as acceptable • 2,000 ADT maximum
Crossing Opportunities
• 100% safe crossings
Greenway use
• 1% increase per year post construction

Figure x: Vehicle performance goals for greenways

It is expected that the initial greenway projects will not have significant increases in non-motorized use immediately following construction. It will take time for more people to learn about what greenways offer before regular use increases.

Data for Collection		
Vehicles		
	Speeds	Before and After* 85^{th} percentile
	Volume	Before and After* ADT
	Collisions	Before and After*
Pedestrians & Bicyclists		
	Volume	Before and After*
	Neighborhood survey	(optional)
Figure x: Data collection methods		
*1 year post construction		

As the transportation network improves and becomes more accessible, regular use of the greenway will naturally increase. It is expected that more people will recognize the convenient connections to community assets. As the greenways network becomes more robust. Future additions to the network will have a multiplier effect of connectivity and access; and use will thus increase over time.

APPENDICES

A. Design Tools

B. Art Booklet

C. Greenways Rankings

Appendix A – Design Tools

SIGNAGE

All the following signs should be in accordance with the Manual on Uniform Traffic Devices (MUTCD) for regulatory and warning road signs, however, the colors for way finding signs can be unique to the jurisidiction.

Identification signs

These signs market the greenways network with unique symbols, colors and characteristics which become universally recognized.

These signs do not define what a neighborhood greenway is, but enhance the roadway as part of a group of improvements but not as a lone addition.

Install at intersection with arterials and at the greenway ends.

Cost estimate: $100-150 per sign including installation

Seattle DOT Example

Wayfinding Signs

These type of signs provide direction, distance and/or estimated travel times or distances to destinations. These should complement the identification signage so that signage does not cause confusion. Staff should be cognizant of sign and preserve the balance of the signage and the greenway comfort levels.

Install as frequent as necessary to minimize confusion for users.

Cost estimate: $100-150 per sign including installation

Staff should also coordinate the signage used with the rest of the transportation network.

Seattle DOT Greenway Example

Warning Signs

Warning signs alert roadway users of changes in the road condition, including traffic calming, traffic control devices and greenway route ends. Warning signs shall comply with MUTCD regarding type, color, size and placement requirements.

Cost estimate: $100-150 per sign including installation

City of Redmond example

Pavement Markings

In addition to the signage, pavement markings serve as reminders for all greenway users that greenway travel has the priority on the corridor.

Consider proper positioning for all users if the roadway is shared with motor vehicles. The frequency of marking placement can lead greenway users through confusing areas and add more value to the greenway.

Install in intervals approximately 200 feet apart

Install near driveways or other conflict points to emphasize a shared roadway to all users.

Methyl Methacrylate (MMA) Pavement Marking is the staff recommended material at the time these guidelines were created. This material has enough 'grip' to increase skid resistance and reflectivity which maximizes the visibility of the symbol.

Cost estimate: $200-300 per marking including installation

Portland Oregon marking

Seattle Greenway dual marking

Sharrow use for greenway wayfinding Portland, OR

Basic Sharrow design Seattle, WA

All traffic control devices including signs and markings shall be in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and the National Association for City Transportation Officials (NACTO) for design and placement.

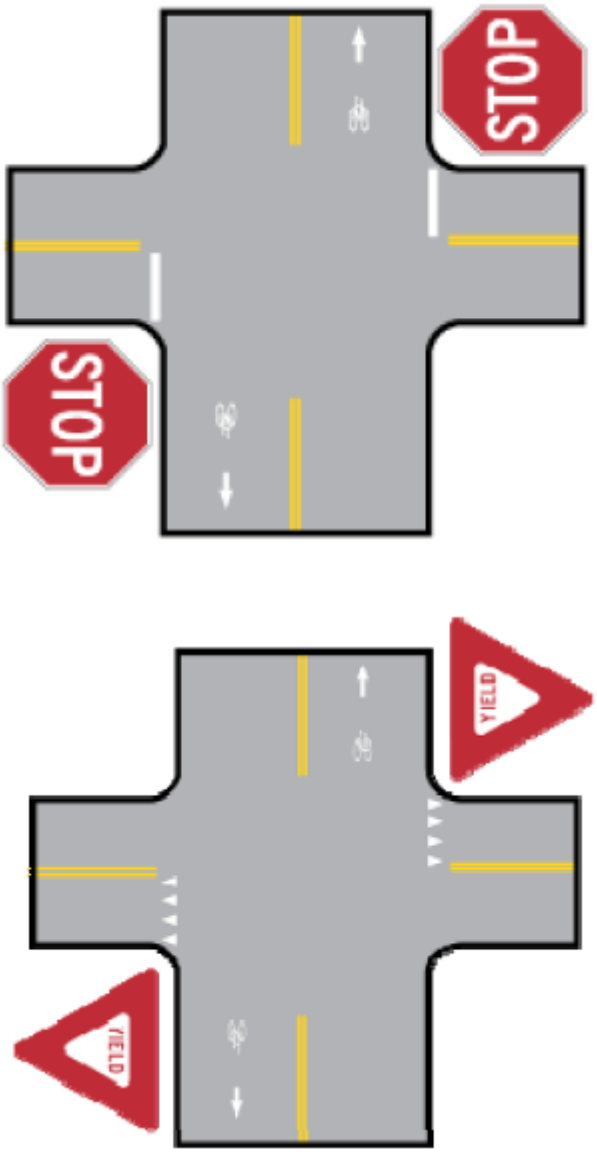
Stop/Yield Signs

Stop signs and yield signs will often be used to prioritize travel on the neighborhood greenway. This will maximize continuous travel with minimum number of stops.

Project considerations:

- If intersection control must be used, a yield sign is preferred in accordance with sight distance requirements.
- There may be the need to increase sight distance by removing parking near the intersection.
- Traffic control/calming mitigation may be necessary to prevent an increase in motor vehicle volume or speeds along the greenway. For example a diverter may be used to discourage motorized vehicles on the greenway.
- If a traffic circle already exists, stop signs and yield signs may be considered to complement an existing traffic circle.

Cost estimate: $200 including installation for each sign



20 MPH signs

To achieve safe speeds, all neighborhood greenways will establish a 20 mph speed limit. As a lone solution, this may not be effective, but in combination with the other listed measures, this can contribute to meeting the goal of a comfortable and convenient corridor.

Project Consideration:

- This is often the more controversial element of greenways, so early and clear communication on this is vital to the success of the greenway.
- Sign Spacing should be in accordance with MUTCD for residential signage.

Cost Estimate: $200 including installation for each sign

Greenwood Greenway Connector Seattle, WA

Diverter

A measure for prioritizing travel on the greenway may be redirection of motor traffic using diverters, but still allowing people walking or riding a bicycle through.

- Design for this device should consider safe through traffic for people on foot or riding a bicycle.
- Emergency Services needs to be consulted in the design process for these devices.
- These devices will need early outreach to impacted residents. Staff should consider additional measures to contact residents including door hangers, and mailers to maximize feedback for the project.

Cost Estimate: $10,000 - $60,000

2013 NACTO Guidelines - Diverter

Bike Boxes

These devices reduce right-turn conflicts at intersections by increasing visibility of people on bicycles.

Device Consideration:

- A public education campaign is highly suggested with each installation.
- The lead-in bike lane may also be filled in with the same green color
- The green color is necessary to differentiate and highlight the bike box area.
- Do not allow the bike box to extend into the crosswalk.
- Right turn on red may need to be prohibited through signage, an exception for people on bicycles is allowed.

Cost estimate: $5,000 per installation

2013 NACTO Guidelines – Bike Box Use

Bicycle activated signals

Assists people on bicycles travel through intersections by providing a means of activating the signal.

Detection options:

- Push Button
- In pavement loops
- Video detection (primary option in Kirkland)

Device Considerations:

- A separate signal head is used in areas with a high volume of people on bicycles.
- The City of Kirkland utilizes video detection equipment for recognizing people on bicycles at intersect ions. Loops and push buttons can be added as an additional option to support the greenway.

Cost estimate: $2,000 – 50,000 (depending on device)

2013 NACTO Guidelines – San Luis Obispo

2013 NACTO Guidelines

Crossing Islands

Primary use of islands is at crossings on major arterials with high volume traffic or multiple lanes of traffic. Islands provide a comfortable and safe crossing environment with a two-stage crossing process which allows people to focus on one direction of travel at a time. These can also be used to limit conflicts with turn movements Islands also allow additional street trees and landscaping in the corridor which enhance the greenway environment.

Device Considerations:

- 8 to 10 foot wide crossing spaces, which accommodate travel in both direction regardless of modes.
- Refuge island may be angled 45 degrees to redirect traffic.
- Raised medians will help enclose the safe area.
- If landscaped, native or low-maintenance plants are recommended to reduce maintenance costs.
- If using street trees, consider sight distance as well as shadows to avoid safety issues.
-

Cost Estimate: $10,000 – 50,000

Crossing Island Seattle, WA

2013 NACTO Guidelines,

Crossing Beacons

Flashing lights crossing major arterials either at mid-block crossings or where conventional signals aren't warranted, can improve comfort and safety. These beacons are activated by people with the intent of crossing the roadway, which increases visibility at conflict points.

Rapid Flashing Beacons

- Side post installation
- Push-button activation

Hawk Signal

- Overhead installation
- Push-button activation

Design Considerations:

- Push buttons may be located closer to the street to accommodate bicyclist's movements.
- The signal phases should consider timing all ages and abilities.
- Kirkland prefers no flashing signs installed in center of median.

Cost Estimate: $20,000 – 100,000

Hawk Signal Installation Edmonds, WA

Rapid Flashing Beacon Seattle, WA

TRAFFIC CALMING

Traffic Calming Devices in combination with other greenway improvements will encourage safe speed and traffic volume on the greenway route. Design traffic calming devices so as not to impede access for emergency services or inhibit travel for all people using the roadway.

Speed Humps

The City of Kirkland no longer utilizes speed humps as a traffic calming solution.

2013 NACTO Guidelines

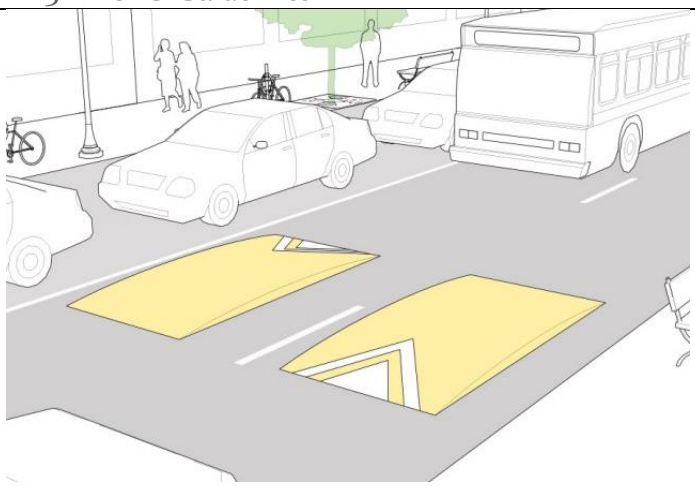
Speed Cushions

Speed Cushions are similar to speed humps in intent but the design is broken up for access of emergency service vehicles. A typical design includes multiple smaller humps lined up in a row across the roadway. Due to the broken up design, these devices are sometimes less effective in reducing traffic speeds at the same levels as speed humps

Design consideration:

- Avoid close proximity to driveways,
- Avoid placement on steep hills,
- Advance signage and pavement markings are required with this device,
- Device spacing 300-500 feet apart and from other traffic calming devices,
- Consider placement and impact on emergency services and people on bicycles.

Cost Estimate: $10,000 – 40,000 each



2013 NACTO Guidelines

Raised Crosswalks/ Speed Tables

A wider version of the speed hump, this device has a broad flat top with the intention of keeping vehicle traffic at safe speed. These devices are typically paired with crosswalks at intersections or at mid-block crossings to enhance the environment for people crossing the street.

Design consideration:

- Need to consider stormwater drainage at location
- Avoid close proximity to driveways
- Advance signage and pavement markings are required with this device.
- Device spacing 300-500 feet apart and from other traffic calming devices depending on location.
- Balance slope with proposed devices and accessibility of the neighborhood.
- Consider longer and broader devices to make the use more manageable for emergency services and people on bicycles.

Cost Estimate: $5,000 – 25,000 each

2013 NACTO Guidelines

Raised Intersection

The same traffic calming benefits of a speed table but the added benefit of enhancing all crossing locations for an intersection.

Design consideration:

- Proximity to
- Should consider stormwater drainage at location
- Avoid close proximity to driveways
- Advance signage and pavement markings are required with this device.

Cost Estimate: $25,000 – 70,000 each

2013 NACTO Guidelines – Raised Intersection

HORIZONTAL DEFLECTION TRAFFIC CALMING

These types of devices come with a potential partnership for Stormwater filtration improvements as part of the project.

Chicanes

These are raised curbs that create a shift in the travel lanes along a roadway. This device forces drivers to shift laterally and therefore reduces vehicle speeds by minimizing long straight corridors.

Design Considerations:

- Stormwater needs to be carefully designed.
- Raised medians for diverting traffic movement
- Placement of parking.
- Right-of-way limitations.

2013 NACTO Guidelines

Curb-extension (bulbout)

These devices extend out the sidewalk or curb face at an intersection often in combination with other improvements to enhance the environment with the primary purpose of reducing the crossing distance.

Design consideration:

- Should accommodate bicycle facilities where they exist so not to impede bicycle movement.
- Install at intersections or mid-block crossings.
- Should consider the turning movement of large vehicles at intersections.
- If the extension includes additional landscaping, it is recommended to use low height shrubs for preserving sight distance.
- Catch basin must be replaced if impacted.

Cost Estimate: $5,000 – 25,000

2013 NACTO Guidelines – Curb Extension

Traffic Circle

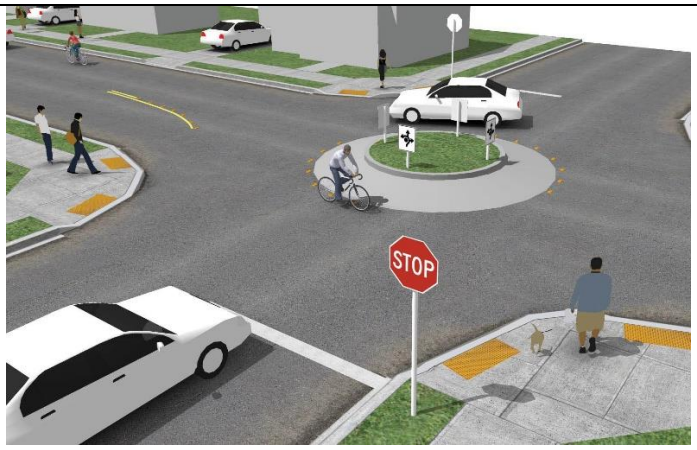
These devices are circular raised island in the center of intersections which force a right-turn circular movement encourages safe speeds.

Provides an opportunity to add landscaping and improve travel for all roadway users. These devices may replace use of stop or yield signs.

Design Considerations:

- Use CAD software to understand impacts to larger vehicles
- Larger vehicles may need to turn left to negotiate the turn around the circle island.
- If landscaping is chosen with the traffic circle, use low maintenance plantings.

Cost Estimate: $15,000 – 50,000



2013 NACTO Guidelines – Traffic Circle

Painted and Patterned Surfaces

As a cheaper alternative for greenway solutions, surface pavement can be painted to visually alert drivers to be more cautious.

This method can be used for narrowing the user vision of the roadway, provide tactile surface treatments and add an aesthetic appeal to the greenway.

Project Considerations:

- Use textured materials to prevent an uncomfortable surface.
- Painted surfaces should be slip resistant.

Cost estimate: $50 -200 per square foot

Seattle, WA

Street Murals

Murals can be mid-block or within intersections and act as art or a community building tool to promote connectivity in the neighborhood. This is not an official traffic calming device but is more of an outreach tool to maximize support for the project.

Design Considerations:

- Will require a ROW permit.
- Needs to be a neighborhood driven project
- Murals cannot replicate or be similar to any other traffic control designs.

Cost Estimate: $200-500

Seattle, WA

Appendix B – Greenways Rankings

The below table represents the criteria used to score corridors in the greenway network. The purpose of this scoring is to give staff the ability to prioritize and bundle greenway projects strategically, in accordance with the goals in the Transportation Master Plan.

Greenway Scoring Criteria							
Fills a gap in the Network			**Connects to destinations**				**Improves Safety**
50 possible points			25 possible points				25 possible points
Connects to constructed Greenway Network	Connect to improved regional non-motorized route	Connect to sidewalks or bike lanes	Connect to Transit	Connect to schools	Proximity to Low-Income Housing	Connection to Centers	Crash History
20	20	10	5	5	10	5	25

Greenway Name	Scored Corridors	Fills a Gap	Connections	Safety	Total Score
100th St & Waverly Beach Greenway	18th Ave	30	15	25	70
	NE 100th St	22	12	0	33
	6th St W	30	10	0	40
	Waverly Way	18	10	0	28
	Slave Ave NE (south)	10	10	0	20
128th Ave & 75th St Greenway	128th Ave	30	18	12	60
	75th Street	30	13	12	55
Snyders Corner to Lakefront Greenway	NE 60th Street (east)	20	20	12	52
	NE 60th Street (west)	23	12	0	35
Norkirk Greenway	7th Ave	30	10	12	52
	6th St	5	15	0	20
	3rd St	5	15	0	20
	116th Ave NE (south)	10	8	0	18

Greenway Name	Scored Corridors	Fills a Gap	Connections	Safety	Total Score
93rd Ave & 124th st Greenway	124th St (@100th AVE)	30	20	0	50
North Juanita Greenway	NE 140th ST #2 (west)	10	25	12	47
	NE 140th St #1 (west)	5	20	12	37
	NE 141st St #1	5	20	12	42
	NE 141st ST #2	8	20	0	28
Finn Hill Greenway	72nd Ave NE	30	15	0	45
Kingsgate Greenway	116th Ave NE (north)	10	25	12	47
	NE 140th St (east)	10	15	12	37
Juanita HS Greenway	108th Ave NE (north)	8	20	12	40
	NE 128th St (east)	10	20	0	30
	103rd Ave NE	8	17	0	25
Woodlands Greenway	84th Ave NE (south)	21	7	0	28
90th St Greenway	NE 90th St	15	10	0	25
90th Ave Greenway	90th Ave NE	10	15	0	25
Crestwoods Greenway	NE 112th St	8	13	0	20
	108th Ave NE (south)	10	10	0	20
Totem Lake Greenway	NE 128th St (west)	6	14	0	20

Appendix C – Art Booklet

CITY OF KIRKLAND

FRAMEWORK
CULTURAL PLACEMAKING

PUBLIC ART CONCEPTS

KIRKLAND NEIGHBORHOOD GREENWAYS

CONTENT

This booklet provides an overview of the primary goals for public art along the Kirkland Neighborhood Greenways. Three strategies are outlined, as well as a variety of design ideas and resources to aid in the process of bringing art to the Greenway.

OVERVIEW

LEFT: PROPOSED KIRKLAND GREENWAYS AND CROSSING IMPROVEMENTS MAP

BELOW: BIKE LANE; CITY OF KIRKLAND

Kirkland Greenways

Legend
- Proposed
- In Design / Construction
- City Limits
- Streets
- Freeway
- Cross Kirkland Corridor
- Eastside Rail Corridor
- Parks / Open Spaces
- Schools

0 3,000 Feet
0 0.5 Miles

Author: JN
Name: GreenwayMap_20170922
Date Saved: 9/26/2017 12:00:12 PM

Welcome to Kirkland Neighborhood Greenways!

Greenways help to create a scouted, signed and sustainable network of low-traffic, low-speed neighborhood streets for walking, jogging, rolling or riding is our goal.

Imagine being able to go from your Kirkland home to any other neighborhood destination (your kids' school, your favorite coffee shop, the library, city hall, that new restaurant you heard about from friends) all on a complete network of quiet residential streets where children ride bikes and play, families walk their dogs, neighbors stop to talk to each other and people in cars are extra cautious and anticipate sharing the road with all of these other people.

Now imagine this network connecting to Kirkland's current and future shared use trails so you can comfortably and safely ride your bike to destinations even farther away without ever having to ride in traffic on a high speed arterial. That's what a neighborhood greenway network is, and that's what a neighborhood greenway can do.

LEFT: WINDOW DECAL; PHILIP STIER

ABOVE: CITY OF KIRKLAND

GOALS

In addition to providing safe connections between neighborhoods, the Kirkland Greenways aim to utilize art to bring life to the streets and its communities. Through the use of permanent works of public art, neighbors can foster three important goals within the community:

1. Identity encourages residents and visitors to come together, share their stories, and express neighborhood pride in a meaningful way.

2. Wayfinding elements will provide users with the tools to locate themselves in their surroundings, and mark trails as welcoming public space to enjoy.

3. Gathering spaces provide opportunities for rest, relaxation, and recreation. These are areas that accommodate seating and daily community uses such as sharing libraries or bulletin boards. They are places where people choose to meet.

What is the art?

Greenway art is intended to be simple, neighborhood-conceived art that is specific to the place, supports wayfinding, and neighborhood identification or gathering objectives. In coordination with neighborhood groups and local advocate groups, the Public Works department will coordinate the vetting of design concepts and also assist with contractual arrangements for artists and materials.

Where will it go?

Locations for public art and wayfinding along the Greenways will be designated by the City of Kirkland and their consultant team. The neighborhood group will work with the location that is considered the most prominent entry into the Greenway, or the place that will most benefit from the multi-piece art. If there is enough funding for multiple locations, they will request additional location options from Public Works. This should be done after the artist is engaged.

STRATEGIES

LEFT: “WALKING ON LAND BY WATER” WALL POETRY; CAROLYN LAW AND LUCY PERILLO

ABOVE: CROSSWALK ART IN TOFINO, BC

RIGHT: “LOOPED IN” PUBLIC SEATING, PHILADELPHIA, PA; INTERFACE STUDIO ARCHITECTS

Three main strategies for public art design address our goals of fostering identity, providing wayfinding tools, and creating gathering spaces. By engaging the community, we can strengthen neighborhood identity through meaningful symbols.

Imprint

Make a mark! Imprinting involves social placemaking, physical wayfinding markers, cues for public space use, storytelling.

Illuminate

Call attention! Illuminating a space can happen with color, plantings, wayfinding markers, and identity formation.

Interact

Make places for people to meet! Interact includes bringing community together; play games; and share messages, histories, or maps.

IMPRINT

LEFT: SCORCHED TRUNKS, STUART FROST

CENTER: “FISH IN THE GARDEN”: TYSON M. WEISS

RIGHT: ROBIN’S HOOD BAY STACK, RICHARD SHILLING

These are ideas for small interventions that can be inserted into a simple concrete footing. Imprinting is about **making a mark** to foster and express a distinct identity for the neighborhood.

Imprinting is about placemaking, wayfinding, providing cues for public space and use, and telling a story. Sculpted or found objects can be combined in a variety of ways in order to create a marker—this can easily be replicated with a theme for each neighborhood, and can also be scaled up for different locations.

Suggested Materials:

- Concrete forms
- Stone
- Metal
- Found objects

Creative paving treatments can be used as a “welcome mat” that signals public space use or thresholds along the Greenways.

LEFT: DECORATIVE CASTING; IRON AGE DESIGNS

BELOW: LITHOCRETE ARCHITECTURAL CONCRETE, FREMONT PEAK PARK; BELARDE COMPANY

ILLUMINATE

LEFT: LANDSCAPE LIGHTING, AQUARIUS SUPPLY

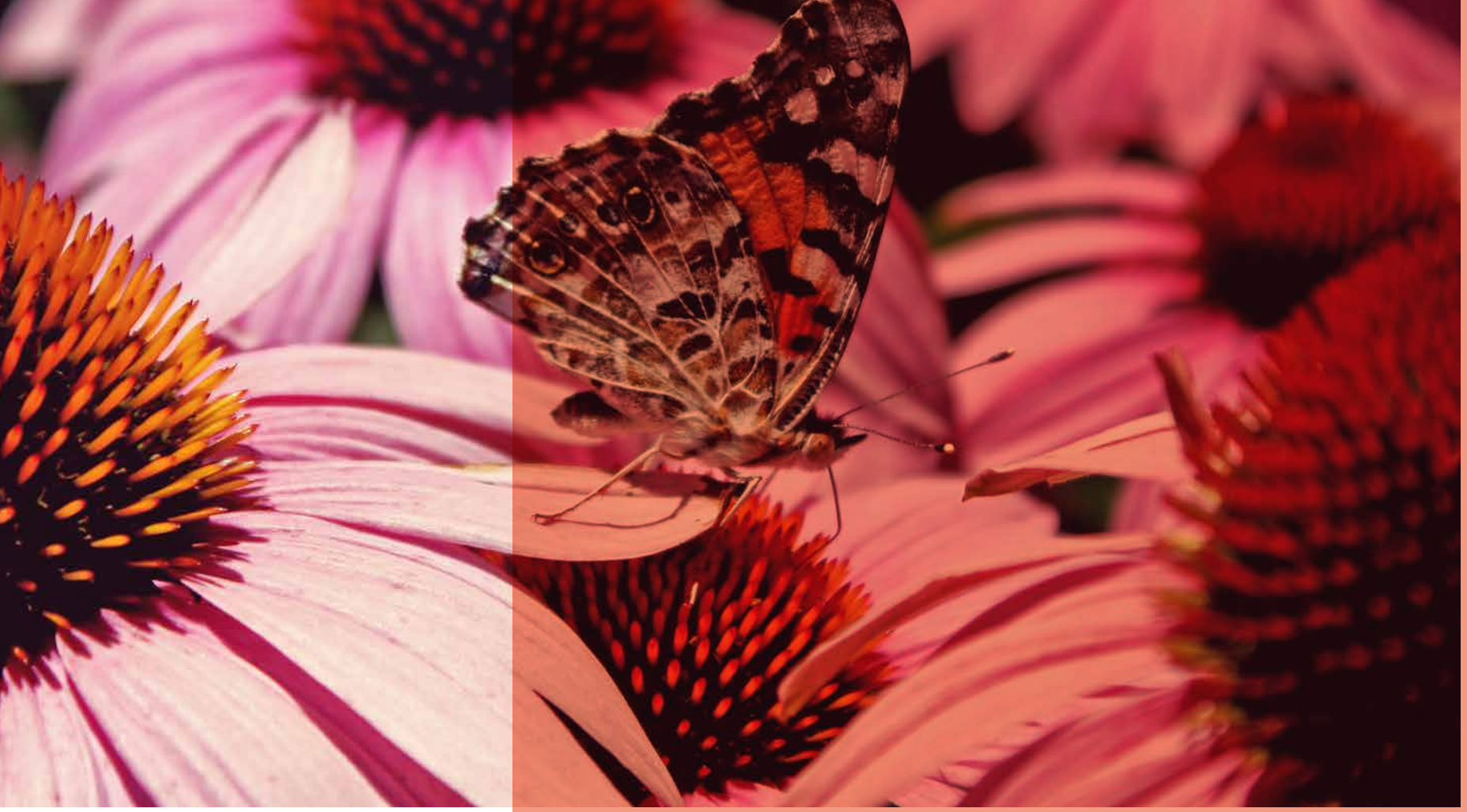
Illuminating the Greenways means **calling attention to** features along the path, and at crossings. This can help people find destinations and offer neighborhood information.

Suggested Materials:
- Plantings
- Paint
- Lighting

ABOVE: PHOTO BY ERIK FOSSEN, NORWAY STREET ART; KONTUR FORLAG/ANB

RIGHT: ECHINACEA PURPUREA

A colorful planting palette can bring beautiful seasonal interest to any segment of the Greenways. Consider perennial herbs and, plants that attract pollinators and support habitat.



INTERACT

RIGHT: 99 TINY GAMES, LONDON; HIDE & SEEK

BELOW: CITY OF KIRKLAND

The Greenways are not only intended for movement from one place to another, but also for enjoying small moments along the way. Interacting is about making a **place to gather** and foster community by encouraging people to enjoy each other's company, play games, or share resources.

Suggested Materials:
Metal
Glass
Wood

Activities

Lending libraries, message boards, historical interpretation, maps - things that can be housed in a piece of art can encourage individual contributions that will form and build upon a piece of art infrastructure.

Other ideas include: games, sculptures that are irresistible to interact with or are incomplete without human interaction, bright and inviting seating or gathering space that also provides a quick photo opportunity.

RIGHT: NICOE BUS STOP, SHIZUOKA, JAPAN; SUPPOSE DESIGN OFFICE

BELOW: APPEEL INTERACTIVE EXHIBITION, BERLIN; STUDIO THEGREENEYL

There are many local resources available to ensure quality work and community engagement. Throughout the process, double up on function and design where possible. Fabricators are often visual artists who can help communities determine thematic elements and shape their ideas into form.

The following page features a list of resources to help you bring public art into the Greenways.

Resources

City of Kirkland Public Works
Kirkland Cultural Arts Commission
Kirkland Arts Center
4Culture

Contact

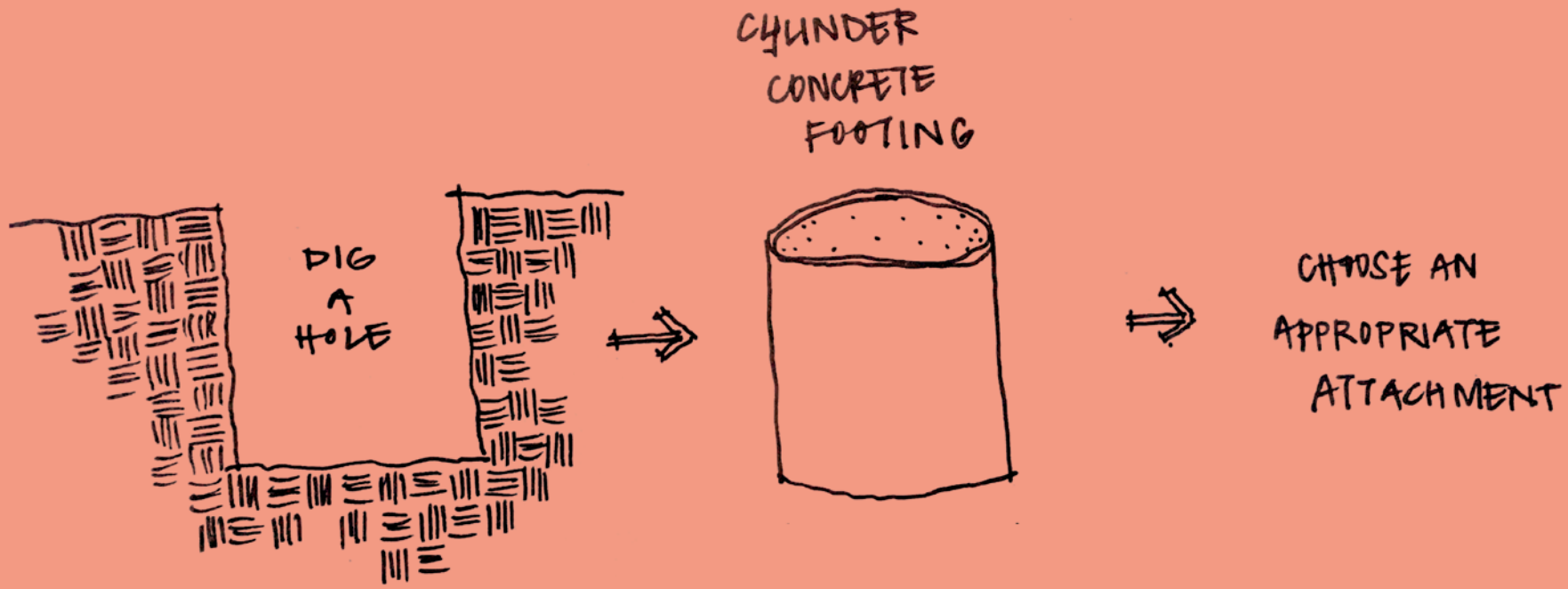
publicworks@kirklandwa.gov
arts@kirklandwa.gov
kdylla@kirklandartscenter.org
hello@4culture.org

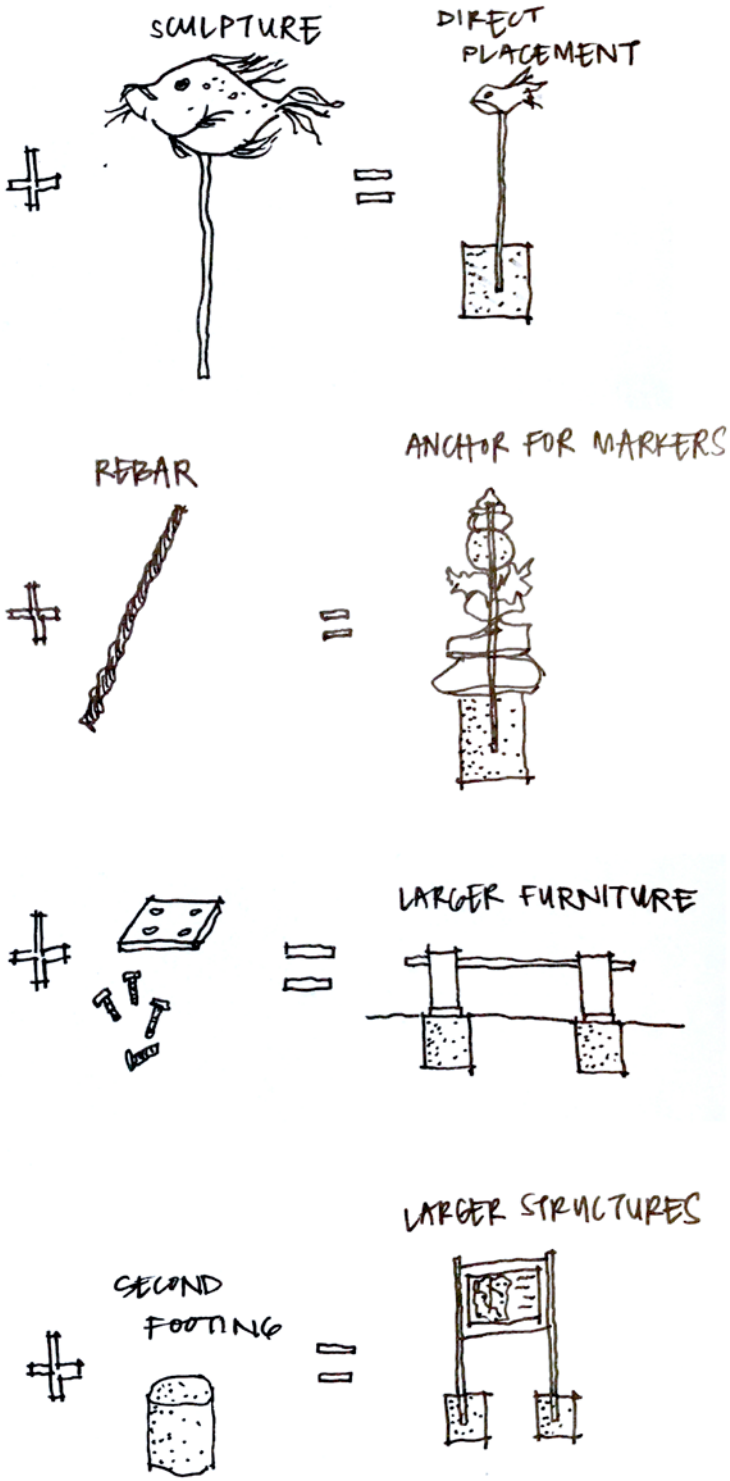
FABRICATE

LEFT: CRABAPPLES,
UW MEDICAL CENTER;
WHITESAVAGE AND LYLE

INSTALL

CONCRETE FOOTINGS





One cylindrical tube is all it takes to create a concrete footing for public art pieces to be placed along the Greenways.

Once installed in the appropriate locations, there are a variety of art options that can be placed within this framework with rebar and simple hardware—sculptures, cairns, furniture, bulletin boards, and other structures.


THANK YOU.

The success of public art along the Kirkland Neighborhood Greenways depends largely upon partnerships between City and community members representing their unique neighborhoods, coming together to share their visions for the Greenway.

Thank you for your commitment to your neighborhood and community, and your continued engagement in this process. We look forward to many more opportunities for collaborative public art in the future!

FOR MORE INFORMATION CONTACT:

LAURA DRAKE
PUBLIC WORKS DEPARTMENT
123 FIFTH AVENUE, KIRKLAND WA 98033

(425) 587-3833
LDRAKE@KIRKLANDWA.GOV

FRONT COVER IMAGE: NICOE
BUS STOP, SHIZUOKA, JAPAN;
SUPPOSE DESIGN OFFICE