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City of Kirkland



TRANSPORTATION MASTER PLAN

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Acknowledgments

Thanks to all the citizens of Kirkland who gave of their time and talent to help shape this document through their comments, suggestions, criticisms and encouragements.

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TABLE OF CONTENTS

Acknowledgmentsi

TABLE OF CONTENTS ii

Introduction..... vi

The Transportation Concept vii

Existing Conditions1

Summary of goals18

Chapter 1. SAFETY 19

 Goal T-0. By 2035, eliminate all transportation related fatal and serious injury crashes in Kirkland. 19

 Policy T-0.1 Develop a vision zero safety plan that is multi-disciplinary and focuses on innovative approaches to safety..... 19

Chapter 2. WALKING..... 21

 Background..... 21

 Goal T-1. - Complete a safe network of sidewalks, trails and improved crossings where walking is comfortable and the first choice for many trips. 22

 Policy T-1.1 Improve the safety of walking in Kirkland..... 22

 Policy T-1.2 Identify and remove barriers to walking 23

 Policy T-1.3 Make getting around Kirkland on foot intuitive..... 25

 Policy T-1.4 Prioritize, design and construct pedestrian facilities in a manner that supports the pedestrian goal and other goals in the TMP. 26

 Policy T-1.5 Develop world-class walking facilities along the Cross Kirkland Corridor with ample connections to the rest of Kirkland. Consider creating a plan for a Promenade along portions of the shore of Lake Washington. 27

 Policy T-1.6 Make it safe and easy for children to walk to school and other destinations..... 28

 Policy T-1.7 Improve street crossings 30

Chapter 3. BICYCLING..... 33

 Goal T-2 Interconnect bicycle facilities that are safe, nearby, easy to use and popular with people of all ages and abilities..... 33

 Background..... 33

 Policies 36

 Policy T-2.1 Make bicycling safer..... 36

 Policy T-2.2 Create new and improve existing on-street bike facilities..... 38

 Policy T-2.3 Build a network of greenways..... 41

 Policy T-2.4 Implement elements and programs that make cycling easier. 42

 Policy T-2.5 Make it easy to navigate the bicycle network. 43

 Policy T-2.6 Make the Cross Kirkland Corridor an integral part of the bicycle network and connect it to the region..... 44

City of Kirkland Transportation Master Plan December 2015

Chapter 4. PUBLIC TRANSPORTATION46

- Goal T-3 Support and promote a transit system that is recognized as a high value option for many trips.46
- Background.....46
- Policies50
 - Policy T-3.1 Plan and construct an environment supportive of frequent and reliable transit service in Kirkland.50
 - Policy T-3.2 Support safe and comfortable passenger facilities.52
 - Policy T-3.3 Integrate transit facilities with pedestrian and bicycle networks.52
 - Policy T-3.4 Support Transportation Demand Management in Kirkland particularly at the work sites of large employers and other locations as appropriate in order to meet adopted goals for non-drive alone trips.53
 - Policy T-3.5 Require new developments to establish appropriate Transportation Demand Management Plans.55
 - Policy T-3.6 Pursue transit on the Cross Kirkland Corridor.56
 - Policy T-3.7 Work with Sound Transit to incorporate investments in Kirkland. (See coordination policy T-7.1).56
 - Policy T-3.8 Partner with transit providers to coordinate land use and transit service (see Partner policy T-7.2).56

Chapter 5. MOTOR VEHICLES57

- Goal T-4 Provide for efficient and safe vehicular circulation recognizing congestion is present during parts of most days.57
- Background.....57
- Policies58
 - Policy T-4.1 Make strategic investments in intersections and street capacity to support existing and proposed land use.58
 - Policy T-4.2 Use Intelligent Transportation Systems (ITS) to support optimization of roadway network operations.60
 - Policy T-4.3 Position Kirkland to respond to technological innovations, such as electric vehicles and autonomous vehicles.62
 - Policy T-4.4 Take an active approach to managing on-street and off-street parking.63
 - Policy T-4.5 Work with the Washington State Department of Transportation and the State Legislature to improve the way I-405 and SR 520 meet Kirkland’s transportation interests. (See Partnership Policy T-7.3)63
 - Policy T-4.6 Reduce crash rates for motor vehicles.64
 - Policy T-4.7 Mitigate negative impacts of motor vehicles on neighborhood streets.65

Chapter 6. LINK TO LAND USE.....66

- Goal T-5 Create a transportation system that is united with Kirkland’s land use plan.66
- Background.....66
- Policies67

City of Kirkland Transportation Master Plan, December 2015

Policy T-5.1 Focus on transportation system developments that expand and improve walkable neighborhoods.....	67
Policy T-5.2 Design Streets in a manner that supports the land use plan and that supports the other goals and policies of the transportation plan.	67
Walkability	68
Policy T-5.3 Create a transportation network that supports economic development goals.	69
Policy T-5.4 Develop transportation improvements tailored to commercial land use districts such as Totem Lake, Downtown and neighborhood business areas.....	70
Policy T-5.5 Require new development to mitigate site specific and system wide transportation impacts.	71
Policy T-5.6 Create a system of streets and trails that form an interconnected network.	72
Chapter 7. BE SUSTAINABLE	73
Goal T-6 As the transportation system is planned, designed, built, maintained and operated, provide mobility for all using reasonably assured revenue sources while minimizing environmental impacts.	73
Background.....	73
Policies	75
Policy T-6.1 Balance overall public capital expenditures and revenues for transportation.	75
20 year Transportation Project List / Transportation Capital Facilities Plan.	76
Policy T-6.2 Place highest priority for funding on maintenance and operation of existing infrastructure rather than on construction of new facilities. Identify and perform maintenance to maximize the useful lifetime of the transportation network at optimum lifecycle cost.	83
Policy T-6.3 Support modes that are energy efficient and that improve system performance.	84
Policy T-6.4 Minimize the environmental impacts of transportation facilities, especially the contribution of transportation to air and water pollution. Comply with Federal and State air and water quality requirements. Reduce vehicle miles of travel.	85
Policy T-6.5 Safeguard the transportation system against disaster.	86
Policy T-6.6 Create an equitable system that provides mobility for all users.	86
Policy T-6.7 Implement transportation programs and projects in ways that prevent or minimize impacts to low-income, minority and special needs populations.	86
Policy T-6.8 Actively pursue grant funding and innovative funding sources.	88
Chapter 8. BE AN ACTIVE PARTNER.....	89
Goal T-7 Coordinate with a broad range of groups; public and private, to help meet Kirkland’s transportation Goals.	89
Background.....	89
Policies	90
Policy T-7.1 Play a major role in development of Sound Transit facilities in Kirkland.	90
Policy T-7.2 Establish commitments from transit providers to provide high quality transit service in exchange for land use and transportation commitments that support transit. Partner with King County Metro to meet mutual interests.....	91
.....	Error! Bookmark not defined.

Policy T-7.3 Work with the Washington State Department of Transportation and the Washington State Legislature to achieve mutually beneficial decisions on freeway interchanges and other facilities.94

Policy T-7.4 Participate in and provide leadership for regional transportation decision making. ..95

Policy T-7.5 Work closely with the Lake Washington School District to encourage more children to walk and bike to school.96

Policy T-7.6 Coordinate multi-modal transportation systems with neighboring jurisdictions.97

Policy T-7.7 Partner with the private sector and other “new” partners.97

Chapter 9. TRANSPORTATION MEASUREMENT98

 Goal T-8 Measure and report on progress toward achieving goals and completing actions.....98

 Background.....98

 Policies99

 Policy T-8.1 Use a multi-modal plan based concurrency method to monitor the rate at which land use development and the transportation system are constructed.99

 Policy T-8.2 Establish an acceptable level of service for all modes. 100

 Policy T-8.3 Adopt a Mode split goal for the Totem Lake Urban Center. 101

 Policy T-8.4 Ensure implementation of the Goals and Policies in the Transportation Element and monitor progress toward those goals. 102

Table of Goals, Policies and Actions..... 103

Introduction

Purpose

To address current and future conditions, the plan takes a multi-modal approach, emphasizing the critical role of transit, bicycle, and pedestrian networks. It sets forth new transportation policy for the City of Kirkland. It also recognizes existing transportation needs and current congestion problems. This plan also serves two technical functions. One purpose is to serve as the Transportation Element of the Comprehensive Plan, with the Goals and Policies used as the primary content in the Transportation Element. The other purpose is to expand upon the Comprehensive Plan and give more detail, context and background to the goals and policies. For example, Actions are associated with many of the policies and additional background is provided through sidebars, maps and illustrations.

Relation to other elements of the Comprehensive Plan

In keeping with the rest of the Comprehensive Plan, this is a 20 year document with a target year of 2035. To ensure consistency across the plan, the assumptions in other elements of the Comprehensive Plan have been used in the **Transportation Master Plan** (TMP). For example, the land use forecasts from the Land Use Element were used to predict traffic volumes and there is a link between the sustainability section of the plan and the Comprehensive Plan's Environment Element.

Relationship between the Transportation Master Plan and the Capital Improvement Program

The Transportation Master Plan contains a set of projects that will improve the multimodal transportation network. Programming of these projects for funding in future years is accomplished through the [Capital Improvement Program](#). In concert with the TMP, the City's capital Improvement Program (CIP), now has a far greater emphasis on multi-mode projects. The Plan also includes priorities that are to be used in deciding the order in which projects are funded.

Multimodal

A main principle of the Master Plan is the need for the transportation system to support multiple *modes* of transportation: Walking, Biking, Transit, Auto. Through much of the document, material presented is organized by four modes: walking, bicycling, transit and auto travel.

Concurrency

A new concurrency method for Kirkland is described in this plan. The concurrency method is multimodal and measures completion of the transportation network against the realization of new trips (from land use development) to determine if the proper balance exists between growth and the facilities needed to support that growth.

Level of Service

Fundamentally, **Level of Service** (LOS) for various modes is determined by the extent to which the network for that mode is completed. This stems from the assumption that the proposed 20 year Transportation Network is adequate to support the 20 year land use plan at an acceptable level of service and therefore its completion is sufficient to meet the City's level of service.

Public Involvement

The Transportation Master Plan has been developed with considerable comment from the Public in a variety of settings including numerous workshops and presentations. The Transportation Commission has been instrumental in steering the course of the TMP's development.

The Transportation Concept

In 2010, the Transportation Commission proposed, and City Council endorsed, four principles for transportation in Kirkland in a document titled [*Transportation Conversations*](#):

Safely Move People	Support a transportation system and related government and private actions that promote all viable forms of transportation.
Link to Land Use	Ensure consistency between land use, transportation planning and implementation.
Be Sustainable	Support a transportation system that can be sustained over the next 50 years.
Be an Active Partner	Actively build and maintain partnerships locally, regionally and nationally, to further our transportation goals.

These themes serve as the foundation of the Transportation Concept for the City of Kirkland.

Livable, vibrant cities like Kirkland offer safe, accessible, well maintained and fully connected alternatives for getting people where they need to go. An approach to safety that permeates multiple aspects of the transportation system is fundamental to achieving a city where there are no fatalities or serious injuries due to transportation. Safe and approachable interconnected walking and biking networks designed for “all ages and abilities” can offer everyone options for all kinds of trips. When efficient, frequent, easy to understand transit routes connect popular destinations, transit offers a good choice for many trips. Auto congestion will continue to be heavy during some of the day; it has been recognized that it is not desirable nor financially feasible to build auto capacity sufficient to remove all congestion, nor is this in keeping with the City’s land use plan. Efficient deliveries are the major component of the local freight system which supports economic development.

Land use and transportation visions are inextricably linked. The TMP tailors a transportation network to a land use vision and the companion land use plan is based on realistic transportation expectations. Economic development is nurtured through a careful balance between land use and Transportation. Level of Service is established based on the completion of the 20-year Land Use and Transportation networks rather than aspiring to a certain standard of performance. The 20-year transportation network is planned to serve the community’s transportation needs for all modes of travel in a safe and efficient manner.

Sustainability is a multi-dimensional concept. It refers to transportation practices that value the health of the environment, particularly those that affect air quality, water quality and climate change. It also encompasses fiscal prudence --spending within likely revenue--, sound maintenance policies emphasizing repair of what we have and equitable accessibility for all, as well as considering and removing a range of barriers to the transportation system.

Transit providers and the Washington State Department of Transportation immediately come to mind as important partners in implementing Kirkland’s Transportation Plan. In order for the Plan’s goals to be fully recognized however, entities such as schools, neighboring cities, regional groups and the private sector must become active partners.

Measurement and reporting of progress toward accomplishing goals, policies and actions is critical to ensuring that this plan is well understood and effectively carried out. A revised concurrency system offers a simpler, more multimodal approach to balancing land use changes and network development.

With the expressed purpose of moving people, goods, and services, the City's transportation decisions will generally reflect a hierarchy of modes:

1. Walking
2. Biking
3. Transit
4. Motor vehicles

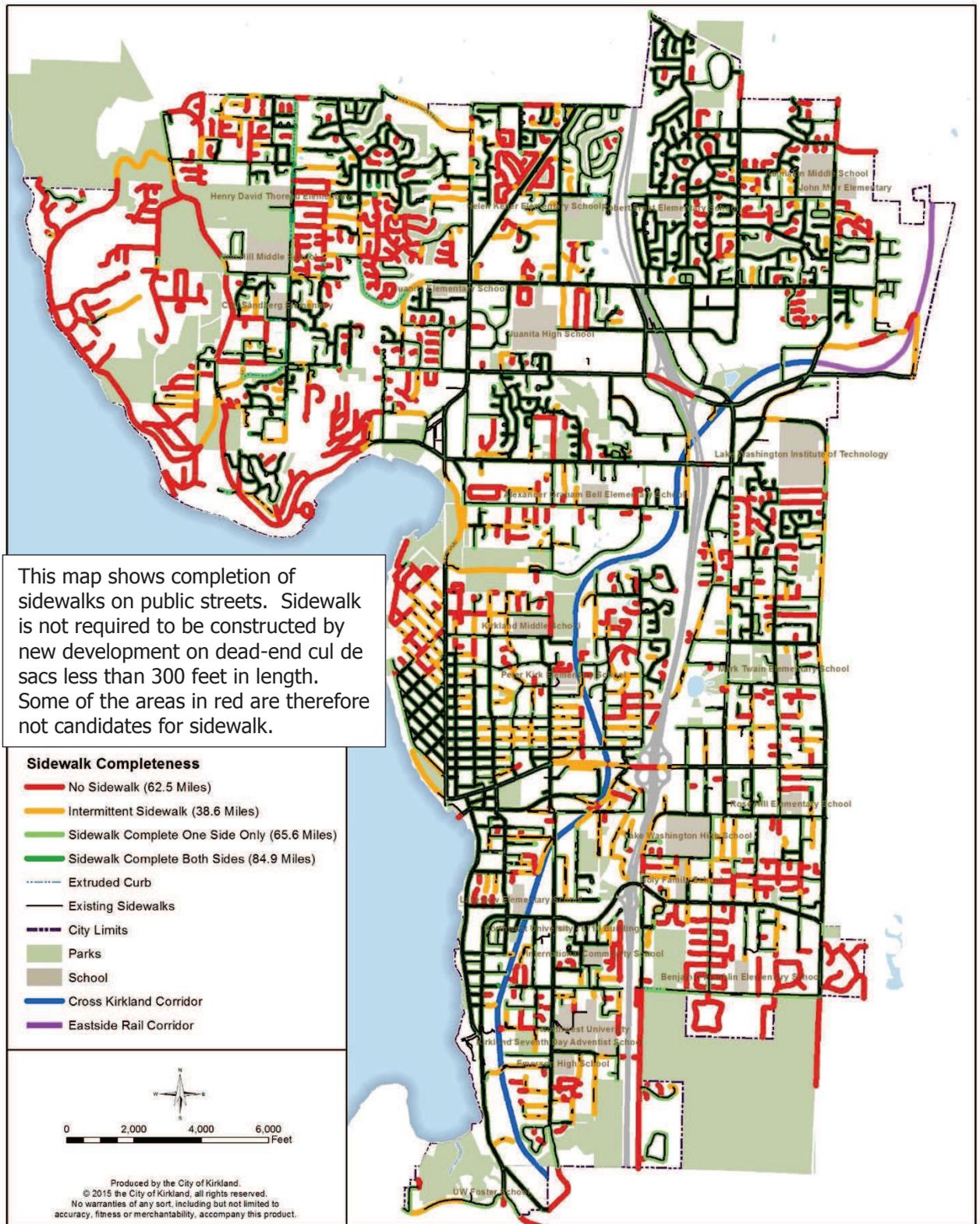
This hierarchy is intended to help ensure that the needs of each group of users is considered in the City's planning process. This approach does not mean that users at the top of the hierarchy will always receive the most beneficial treatment on every street. It is not possible to provide ideal accommodations for every mode in every location. Nor does it mean that certain modes will necessarily receive greater funding. However, when lower hierarchy modes are prioritized above higher priority modes, the underlying reasons for this approach will be shared and the City will make special efforts to provide reasonable alternative accommodations such as parallel routes.

Some examples of transportation mode hierarchy in the current system include Juanita Drive, Lake Street, Central Way and other locations, where pedestrians use crosswalks that cause motor vehicles to stop and, in this sense, pedestrians have a higher priority than motor vehicles at these locations. There are no current plans to install bicycle facilities on sections of NE 124th Street in Juanita/Totem Lake nor on NE 85th Street on Rose Hill. This exemplifies a case where motor vehicle traffic could be said to receive a higher priority than bicycles, but this decision was carefully considered and documented in the Active Transportation Plan. An example of future implementation of the hierarchy could occur where transit receives priority over other motor vehicles through traffic signal prioritization, or by providing dedicated transit corridors.

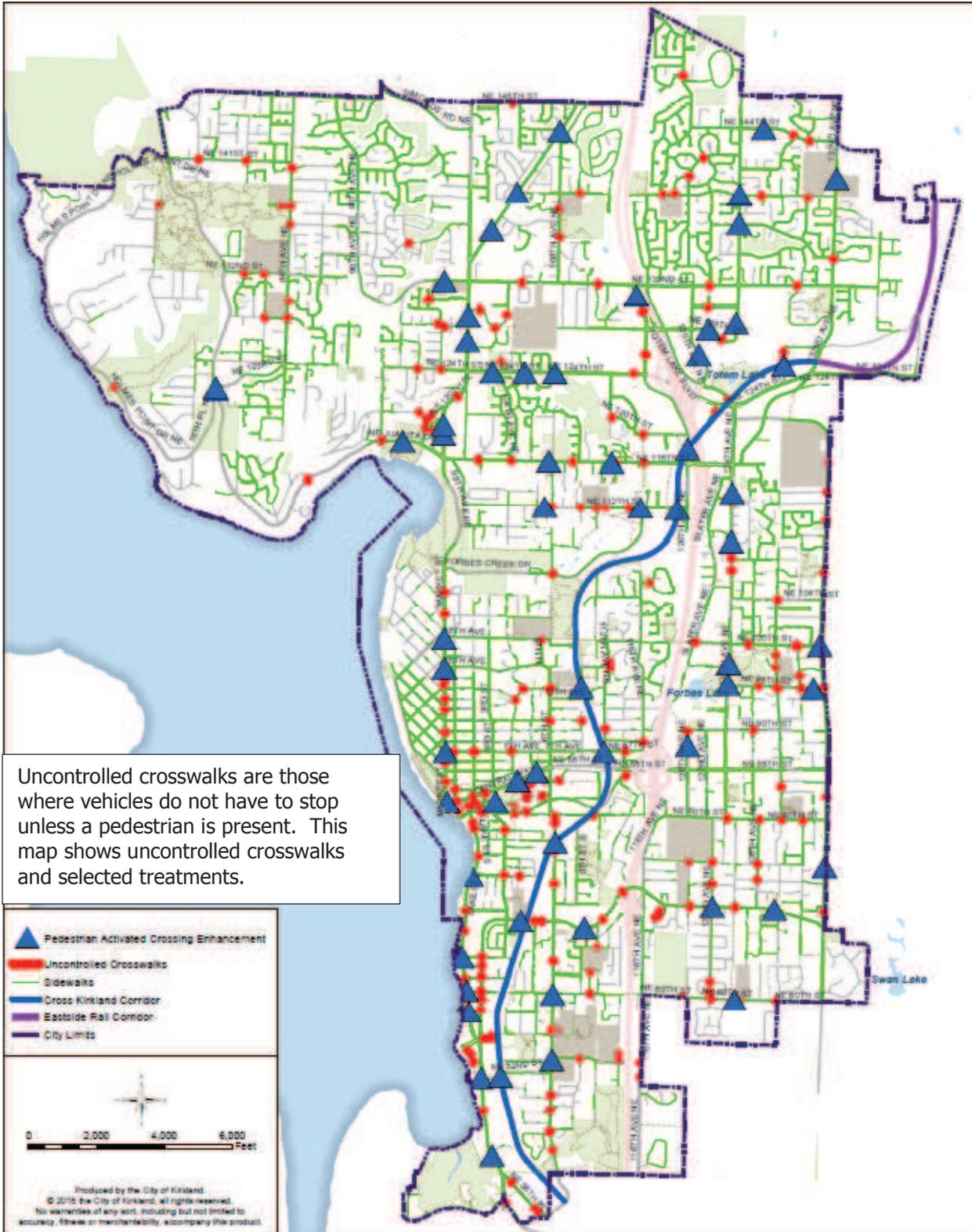
Existing Conditions

The existing condition of the Kirkland's transportation system is shown in the following maps:

1. Sidewalks Completion: Where sidewalks are completed on streets
2. Uncontrolled Crosswalks: Crosswalks and improvements
3. Walkability: Walkability by street segment
4. Trails and pedestrian easements
5. Existing on street bike lanes
6. Completion of sidewalks on school walk routes
7. Transit Routes in the Kirkland vicinity: King County Metro and Sound Transit routes
8. Volume of riders and location of shelters at transit stops
9. Location of Transportation Management Program and Commute Trip Reduction sites
10. Pavement condition index
11. Signals and other devices maintained by the City of Kirkland
12. Freight volume on selected routes
13. Parking locations in downtown Kirkland
14. Existing traffic congestion
15. Functional Classification of Streets
16. Volume of auto traffic on selected streets



Sidewalk Completion



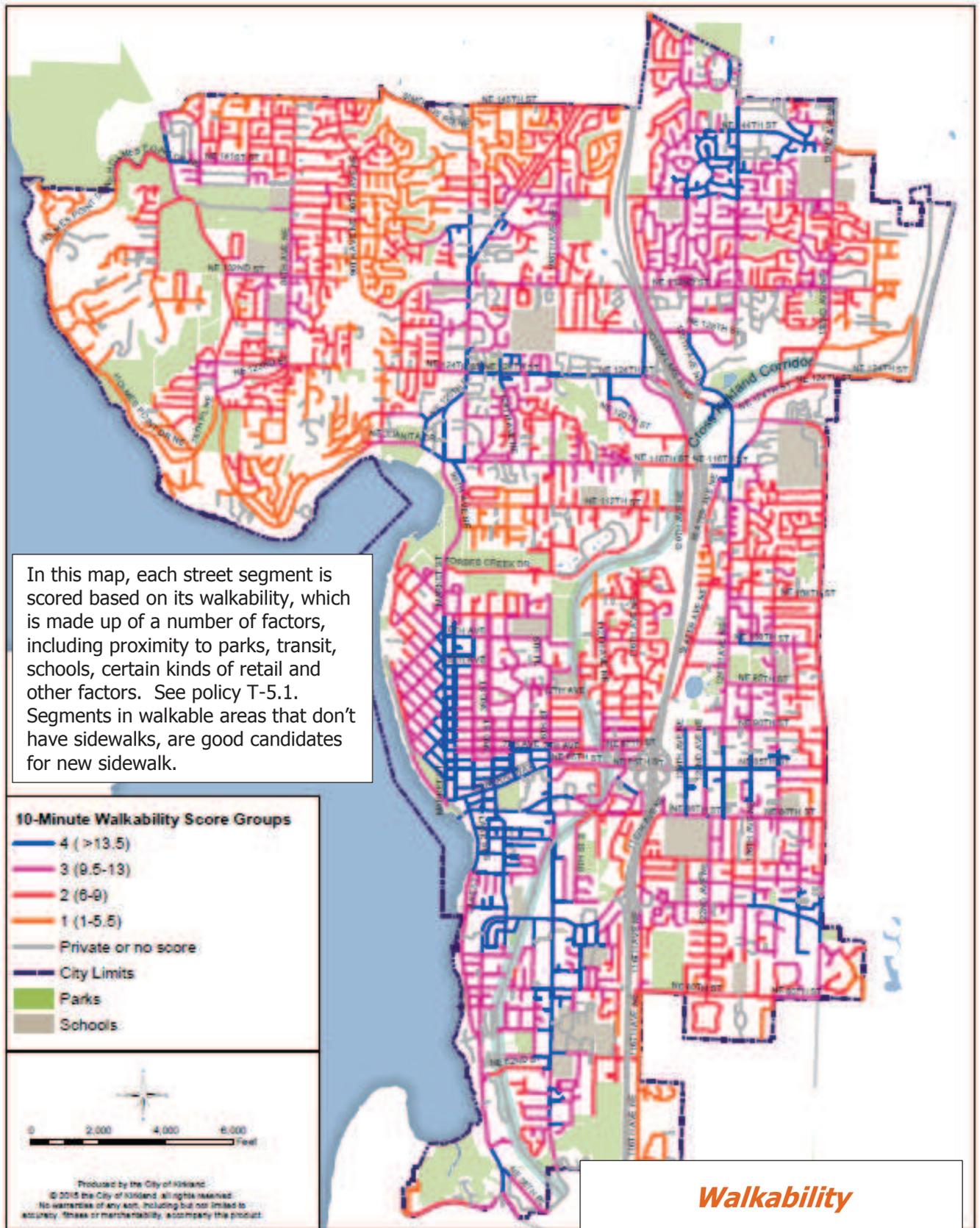
Uncontrolled crosswalks are those where vehicles do not have to stop unless a pedestrian is present. This map shows uncontrolled crosswalks and selected treatments.

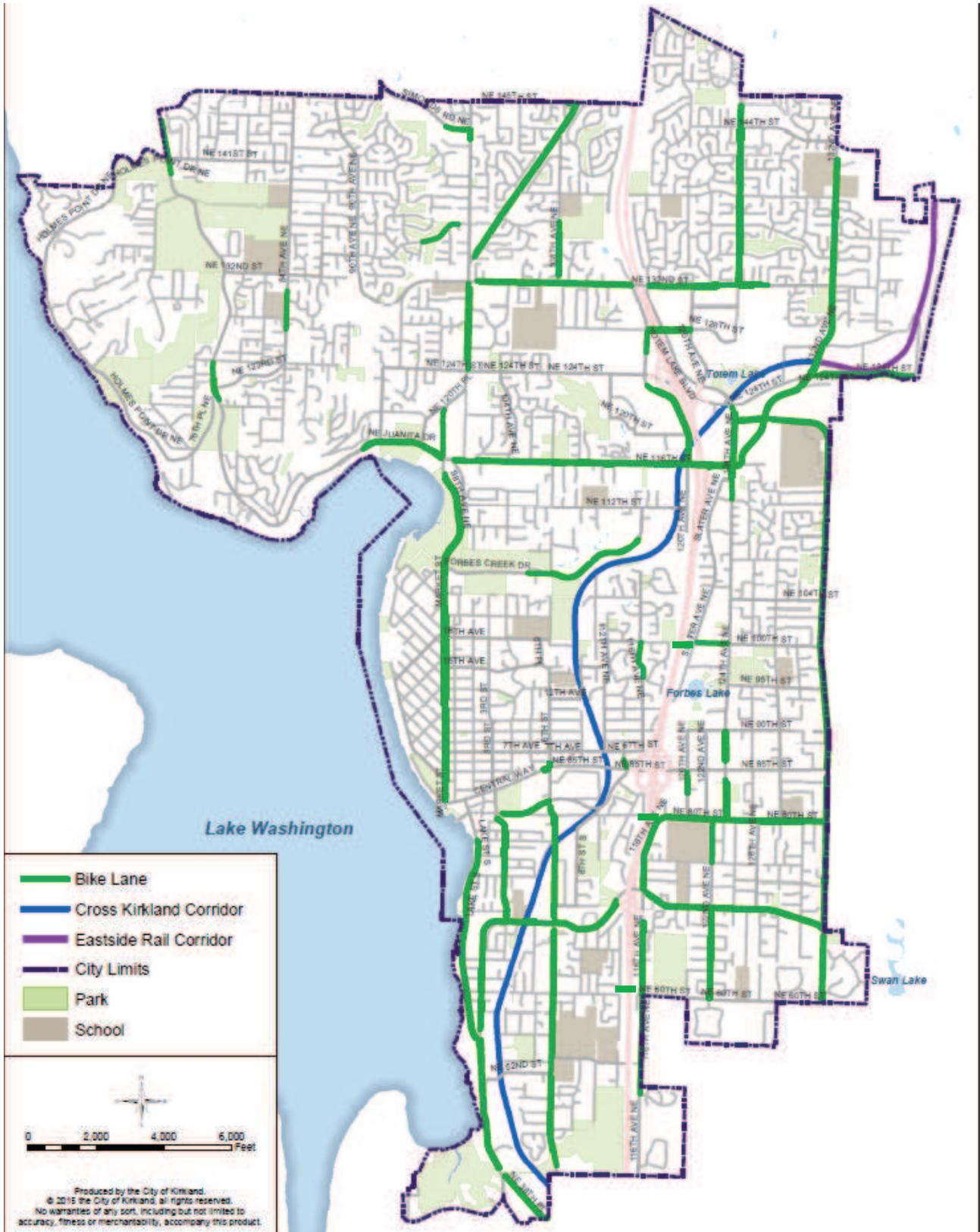
-  Pedestrian Activated Crossing Enhancement
-  Uncontrolled Crosswalks
-  Sidewalks
-  Cross Kirkland Corridor
-  Eastside Rail Corridor
-  City Limits

0 2,000 4,000 6,000 Feet

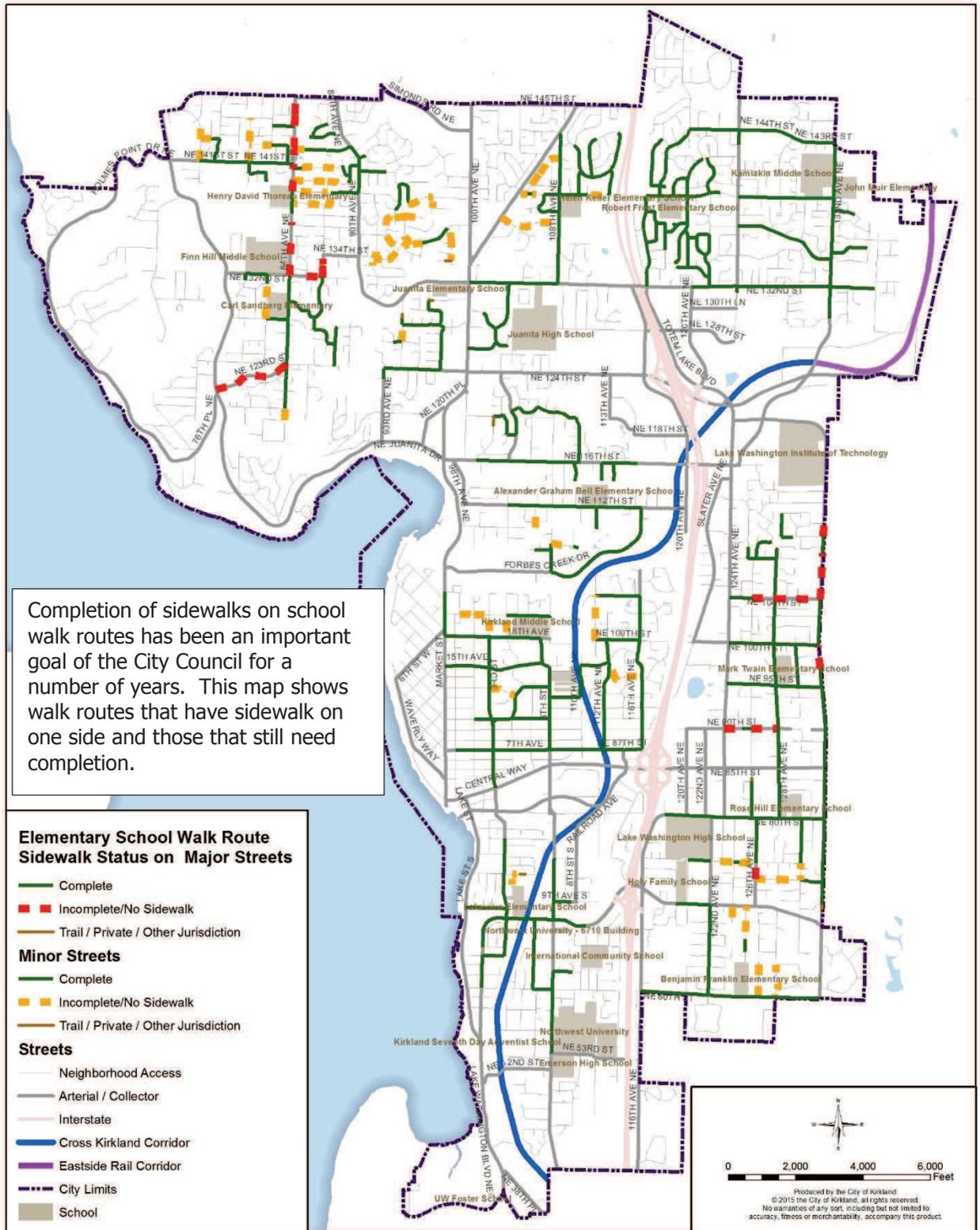
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Uncontrolled Crosswalks





Existing on Street Bike Lanes

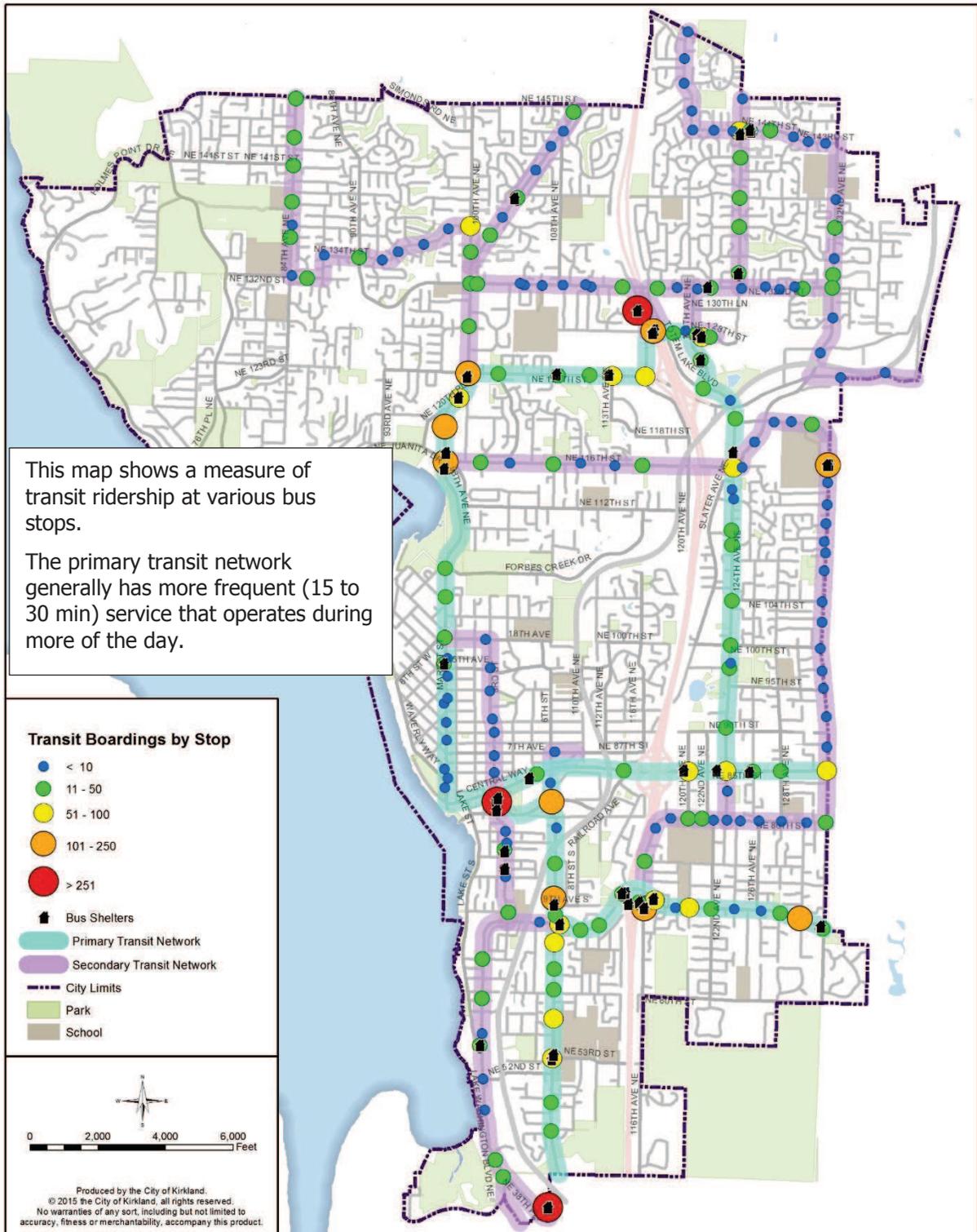


Completion of Sidewalks on School Walk Routes

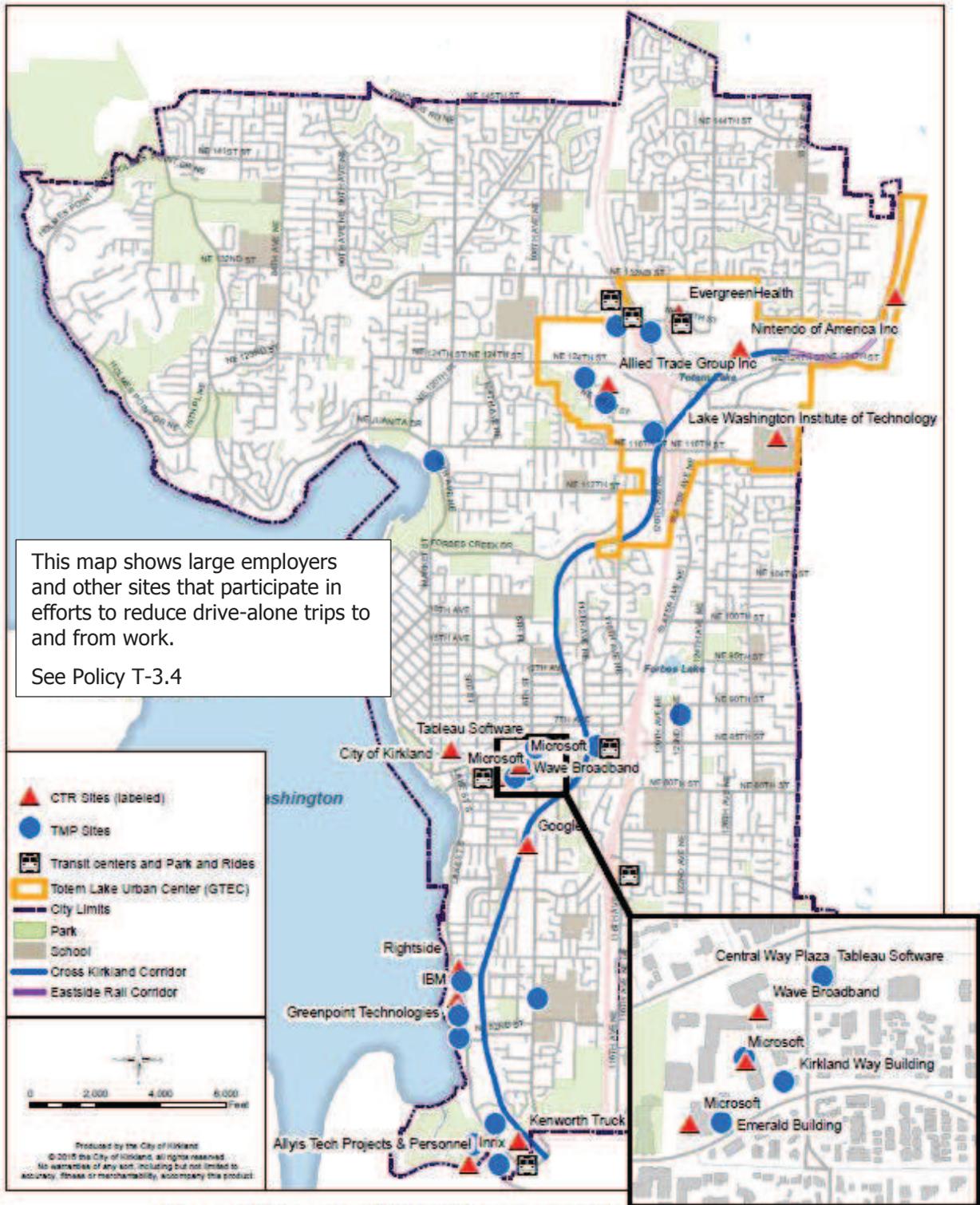
City of Kirkland Transportation Master Plan, December 2015



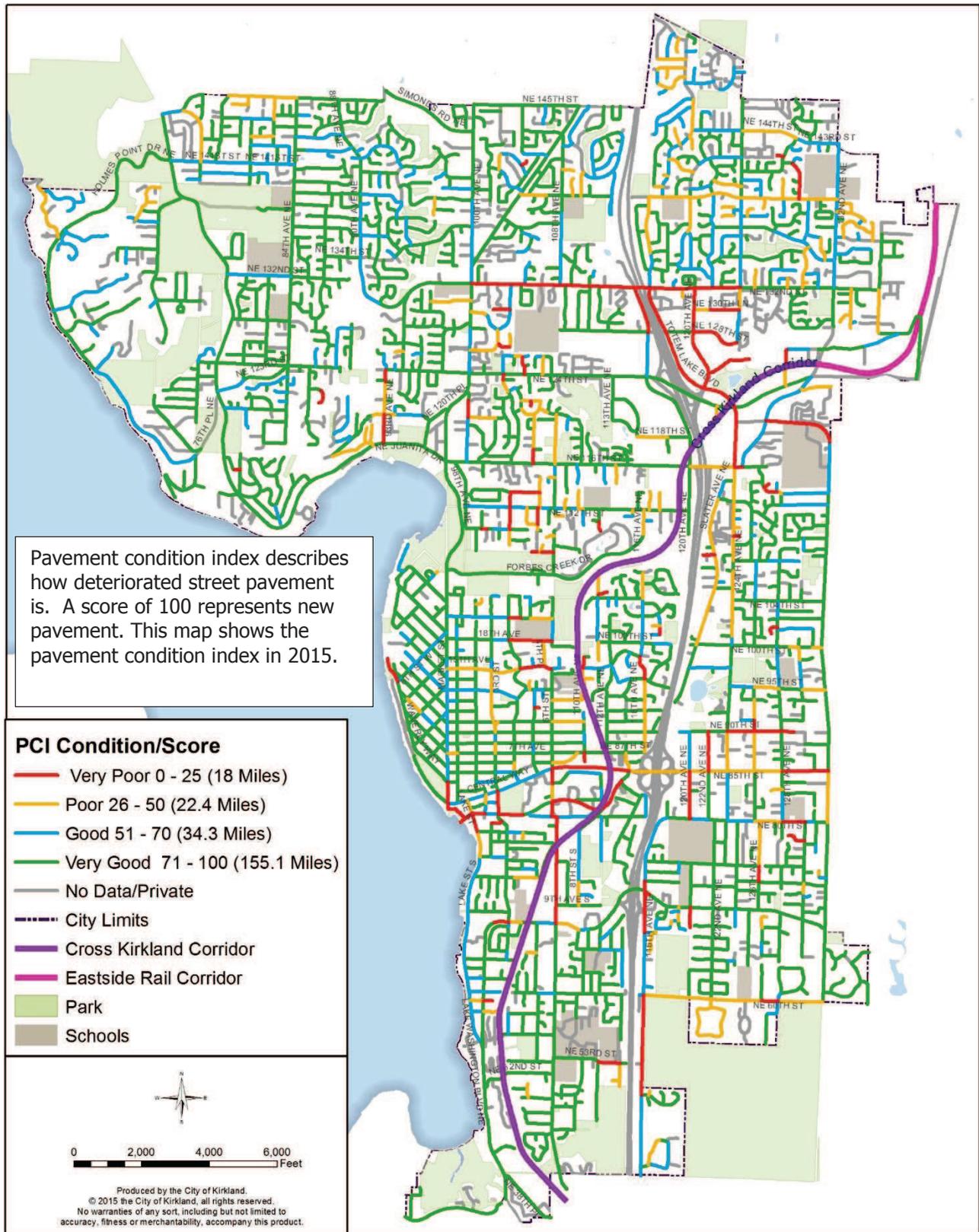
Transit Routes in the Kirkland Vicinity



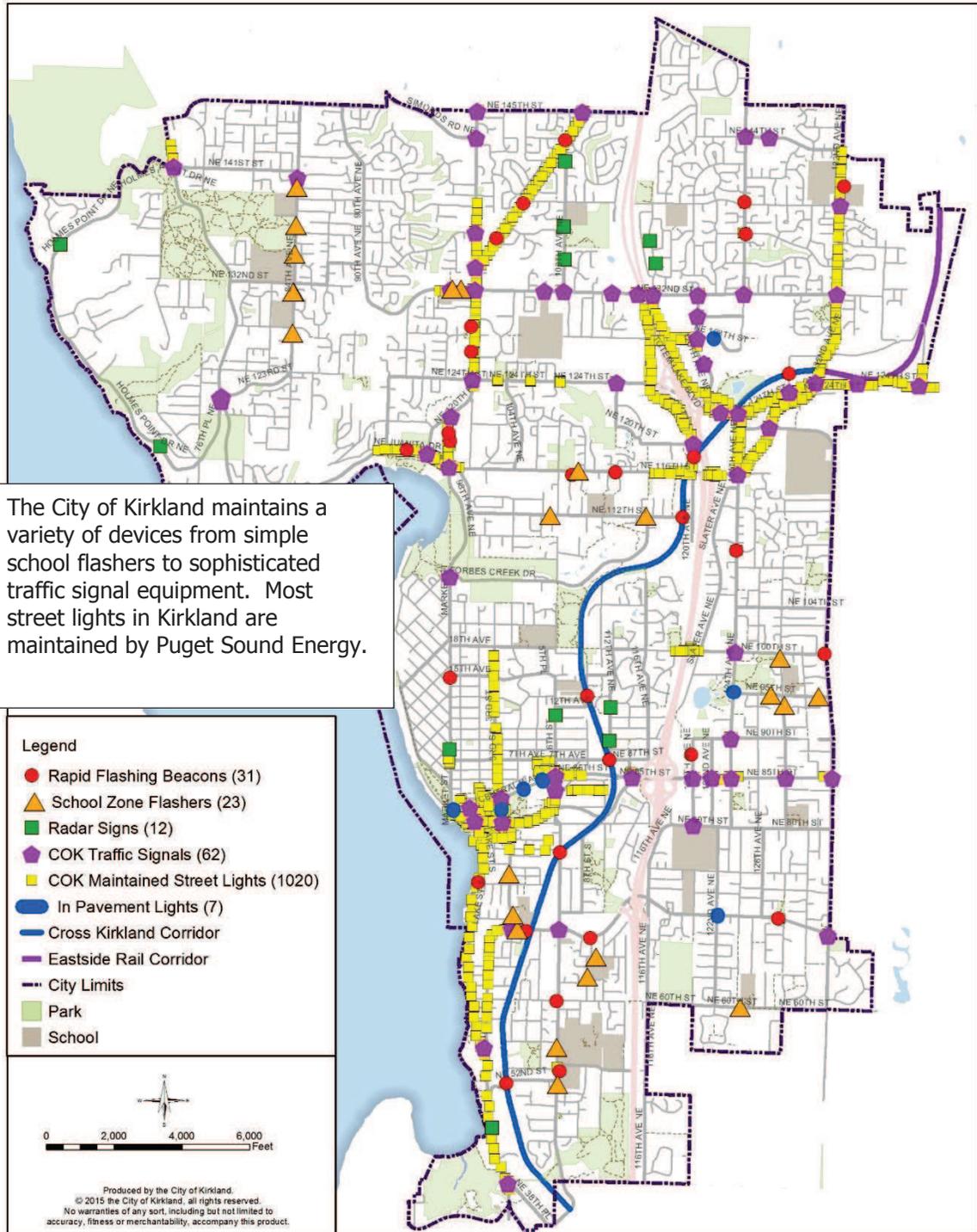
Volume of Riders and Location of Shelters at Transit Stops



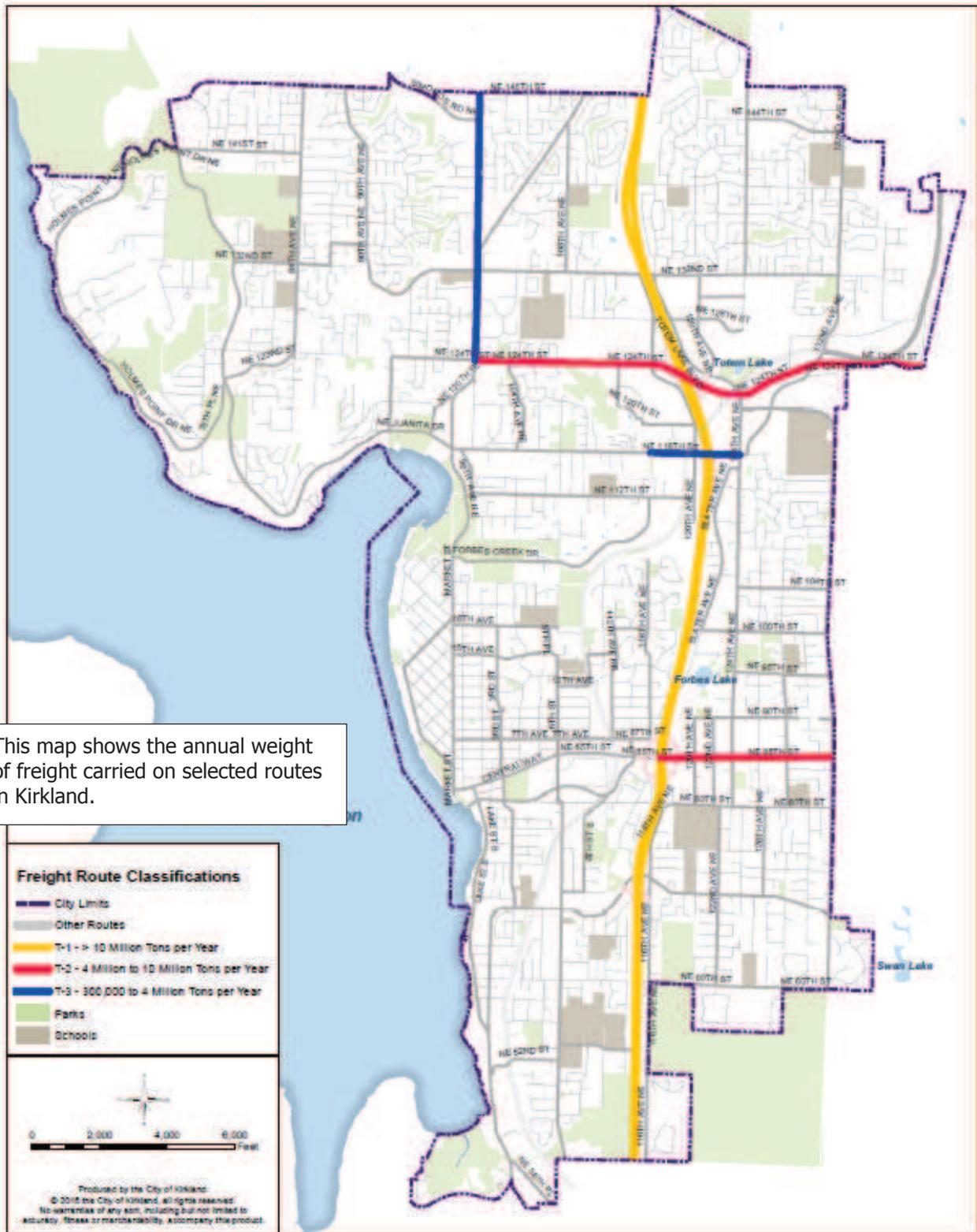
Location of Transportation Management Program and Commute Trip Reduction Sites



Pavement Condition Index



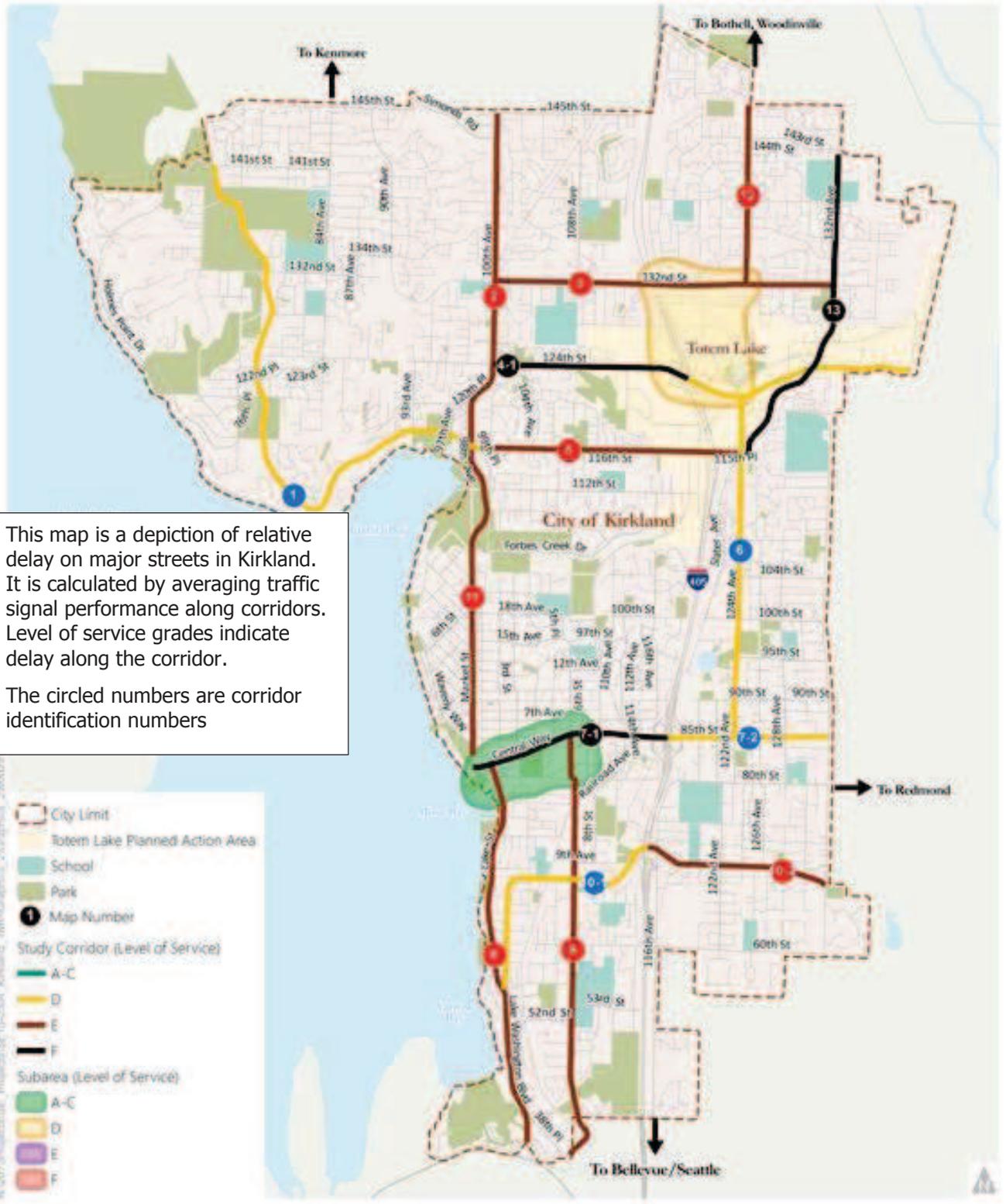
Traffic Signals and Other Devices Maintained by the City of Kirkland



Freight Volume on Selected Routes

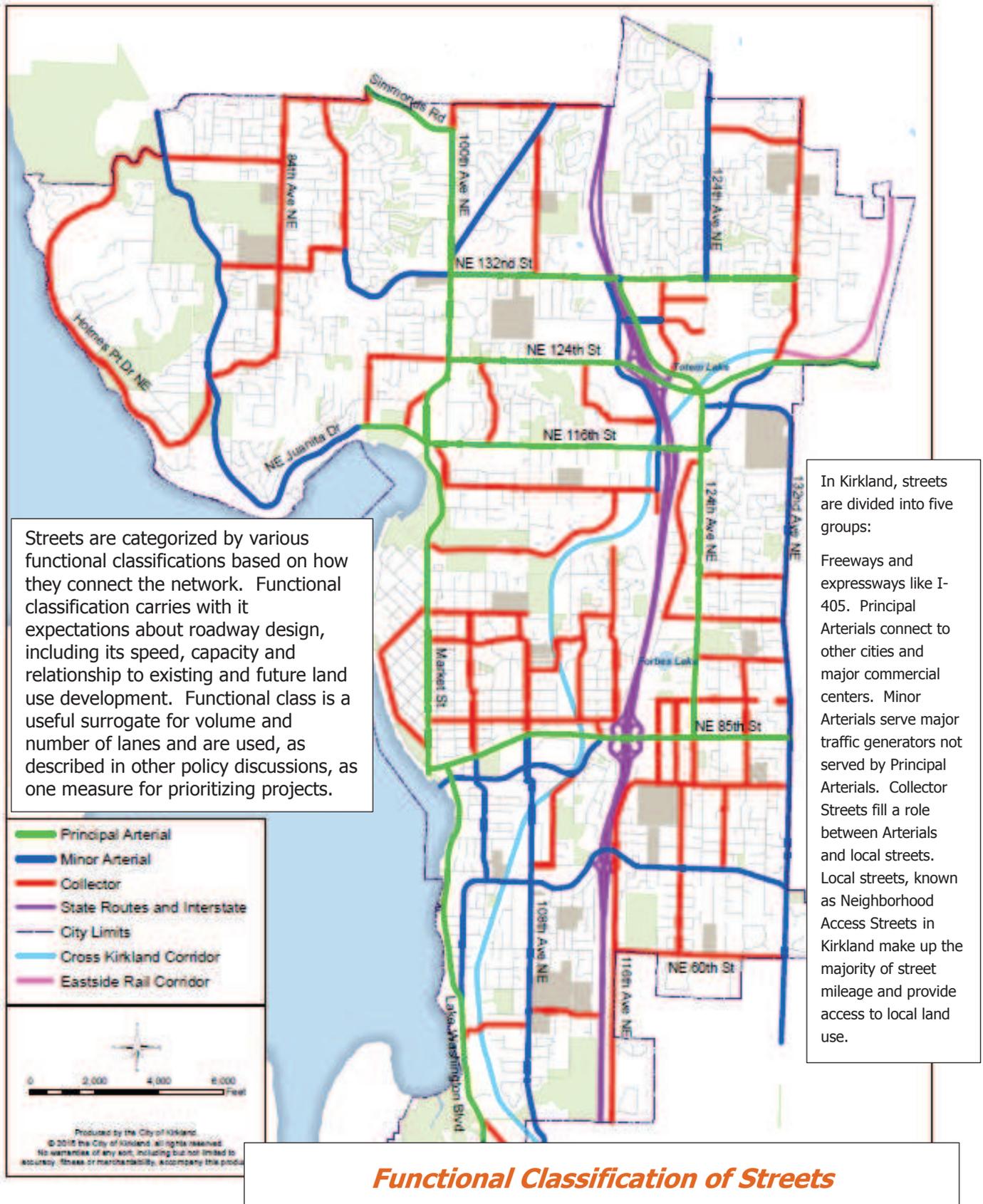


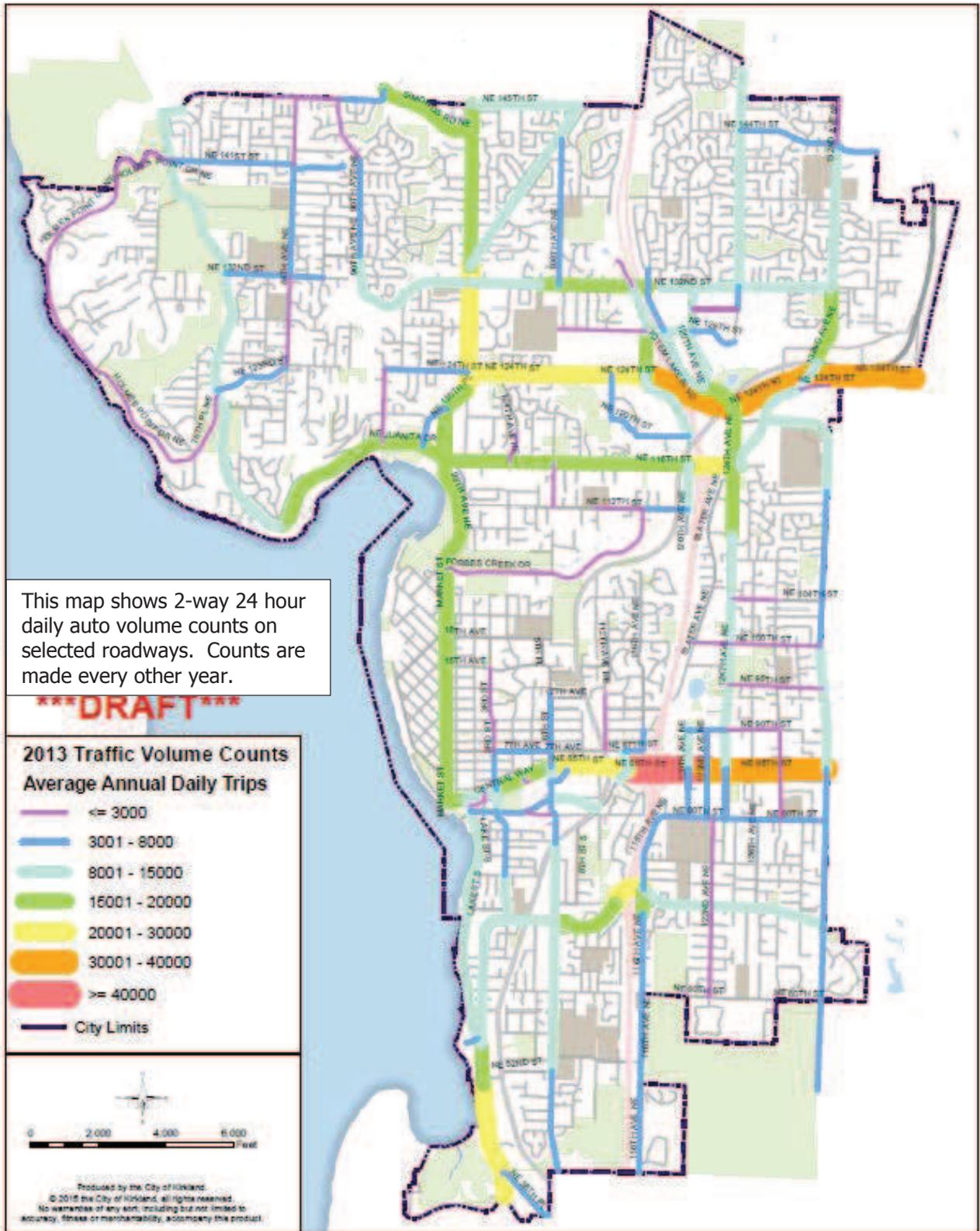
Parking Locations in Downtown Kirkland



This map is a depiction of relative delay on major streets in Kirkland. It is calculated by averaging traffic signal performance along corridors. Level of service grades indicate delay along the corridor. The circled numbers are corridor identification numbers

Existing Traffic Congestion





Volume of Auto Traffic on Selected Streets

Summary of goals

The goals that guide the Transportation Master Plan support the plan vision and are consistent with previous work done by the Transportation Commission. They are also consistent with the Regional Transportation 2040 Plan and County wide goals and policies.

Goal T-0 Safety By 2035 eliminate all transportation related fatal and serious injury crashes in Kirkland.

Goal T-1 Walking - Complete a safe network of sidewalks, trails and crosswalks where walking is comfortable and the first choice for many trips.

Goal T-2 Biking – Interconnect bicycle facilities that are safe, nearby, easy to use and popular with people of all ages and abilities.

Goal T-3 Public Transportation - Support and promote a transit system that is recognized as a high value option for many trips.

Goal T-4 Motor Vehicles - Provide for efficient and safe vehicular circulation recognizing congestion is present during parts of most days.

Goal T-5 Link to Land Use - Create a transportation system that supports Kirkland’s land use plan.

Goal T-6 Be Sustainable – As the transportation system is planned, designed, built, maintained and operated, provide mobility for all using reasonably assured revenue sources while minimizing environmental impacts.

Goal T-7 Be an Active Partner - Coordinate with a broad range of groups; public and private to help meet Kirkland’s transportation goals.

Goal T-8 Transportation Measurement - Measure and report on progress toward achieving goals and completing actions.

Chapter 1. SAFETY

Vision Zero safety Plan: 4 Key elements

1. **Emphasis:** On crashes resulting in fatalities and serious injuries, with a date specific goal.
2. **Partnerships:** Policy makers, Enforcement, Education, Advocacy, Engineering, Emergency Medical Services, Vehicle Manufactures all work together.
3. **System Approach:** Rather than exclusively faulting drivers and other users of the transportation system, Vision Zero places the core responsibility for accidents on the overall system design.
4. **Data:** Carefully analyze crashes and use data to make decisions for improvements.

Goal T-0. By 2035, eliminate all transportation related fatal and serious injury crashes in Kirkland.

Background

An idea that began in Sweden in 1994, “zero based” safety goals have been adopted by a number of states and cities including Washington State. Since 1997, traffic fatalities fell 25% faster in the group of States with a target zero policy when compared to states without such a policy¹. Because the Kirkland City Council feels that no lives should be lost on our streets and sidewalks, the Council has also adopted a zero fatality, zero serious injury safety goal as a part of Kirkland’s transportation policy.

The point of a zero based safety plan is to raise awareness by setting aspirational goals going beyond typical engineering and enforcement based efforts. Vision Zero programs involve creating a multi-faceted approach, involving engineering and enforcement components, while adding emergency response, strong behavior programs, and working with advocacy and private sector interests.

In some ways, Vision Zero is an aspirational goal. Therefore, when considering Vision Zero there is a need to consider balance across the goals for Transportation. There is a limit to the pursuit of Vision Zero when it significantly infringes on the pursuit of other goals.

At the same time, working toward Vision Zero may make progress toward other goals easier; for example increased safety for people on bikes will encourage more bike use and potentially reduce traffic congestion.

Vision Zero is a new goal and reporting to Council in the future will be necessary to evaluate the effectiveness of investments.

Policy T-0.1 Develop a vision zero safety plan that is multi-disciplinary and focuses on innovative approaches to safety.

More specifics around this policy are included in the policies for walking, biking, motor vehicles and in other areas of the plan.

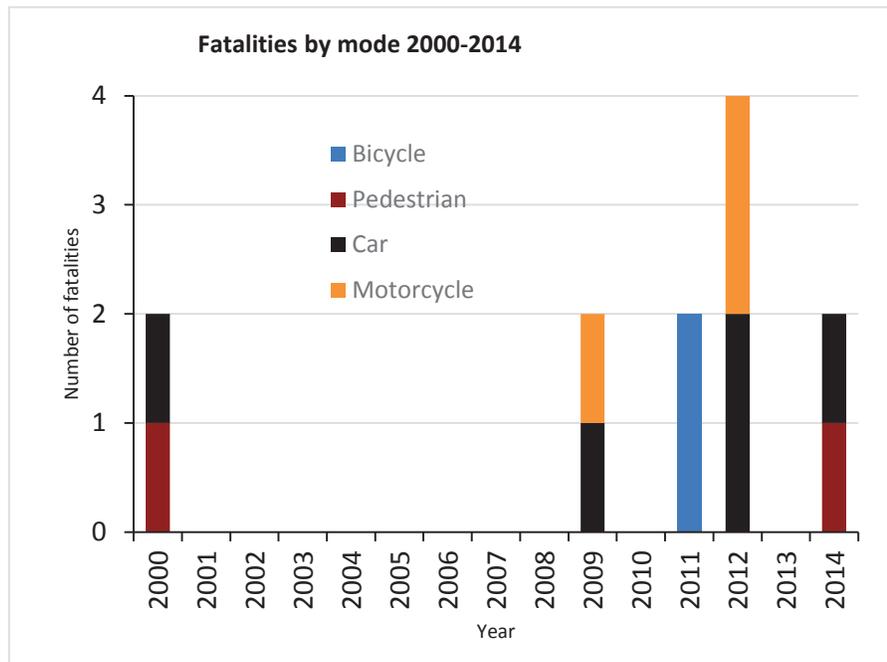
Action T-0.1.1: Report back to Council at regular intervals, for example 12 months after the plan has been adopted, on the nature and effectiveness of Target Zero initiatives.

¹ [New York City Vision Zero Action Plan](#)

City of Kirkland Transportation Master Plan, December 2015

The chart below shows the number of fatalities in Kirkland for the period 2000 through 2014. Note that number of fatalities is slightly greater than the number of fatal crashes; for example a single motorcycle crash in 2012 resulted in two fatalities.

The boundaries of Kirkland were expanded through annexation in 2011. All the crashes resulting in fatalities after 2009 were in the new area of Kirkland, with the exception of a motorcycle crash in 2012. The pre-2011 annexation area of Kirkland has been fatality-free since 2000 for pedestrians, and for more than 20 years when considering bicycle crashes.



Chapter 2. WALKING

Walking in Kirkland



View from I-405 ped bridge



Cross Kirkland Corridor



Crosswalk with flashing lights



Crossing a school walk route

Background

Walking supports a livable community through increased interpersonal interaction, commerce, and health. Pedestrians, including people who use wheelchairs or other mobility aids, are an important priority on Kirkland's transportation network because every traveler is a pedestrian at some stage of their trip, regardless of travel mode.

Walking has long been a cornerstone of the transportation system in Kirkland as evidenced by the creation of lakefront walkways, use of innovative crossing treatments and, most recently, through the purchase of the Cross Kirkland Corridor for use as a multi-modal transportation corridor. Because of an emphasis on walking facilities around schools, improvements have been made at almost every school in Kirkland during the past few years.

Despite these efforts there is more to be done. I-405 is a barrier to walking and too many busy streets do not have sidewalks. Crosswalks need upgrades and there are still areas around schools, parks and commercial areas that need improvements. Better lighting, separation from traffic, wayfinding, and facilities to help those who rely on curb ramps and other aids are also areas where improvement is needed. Safe and simple walking connections to reliable public transit is also needed.

Focusing on what makes a great walking environment – accessibility, safety, comfort, clarity, completeness -and applying these concepts throughout Kirkland is fundamental to this goal. Two places in particular, the shores of Lake Washington and the Cross Kirkland Corridor offer the opportunity to create places that are both multi-modal transportation facilities and spaces offering truly remarkable experiences for walking.



The Cross Kirkland Corridor is a well loved asset.

Goal T-1. - Complete a safe network of sidewalks, trails and improved crossings where walking is comfortable and the first choice for many trips.

Policy T-1.1 Improve the safety of walking in Kirkland.

Protecting pedestrians is one of the most important values held by Kirkland’s residents and also by the current City Council, City Councils of the past, and, it is safe to assume, City Councils of the future. Therefore this policy is foundational to the planning of the transportation system.

Data necessary for an accurate and cost-effective safety evaluation is critical to improving safety and must be gathered over time. Rate-based measures like crashes-per-unit-of-pedestrian-volume are more helpful than simply the number of pedestrian crashes because they help prioritize where crash countermeasures are most needed.

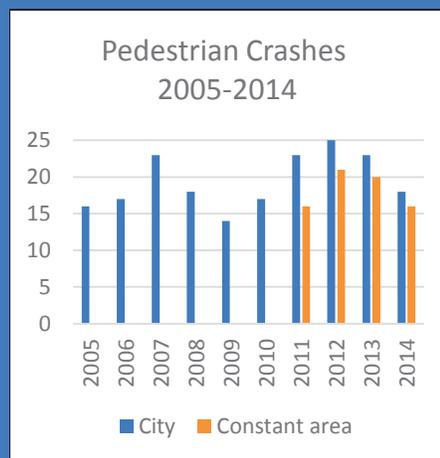
Meaningful increases in pedestrian safety require a multi-disciplinary, multi-agency approach addressing more than the implementation of engineering solutions and simply keeping track of the number of crashes involving pedestrians. Washington State’s Target Zero Campaign and other programs throughout the US are examples of this approach. Such efforts should be adopted fully by the City of Kirkland. (See Policy T-0.1)

Action T-1.1.1: Develop a program to count pedestrian volume in a manner that is meaningful for measuring safety trends.

Action T-1.1.2: Integrate efforts between the Public Works and Police Departments to ensure timely reporting and accurate cataloging of crash data.

Action T-1.1.3: Revise Kirkland’s pedestrian safety program using a vision zero style program.

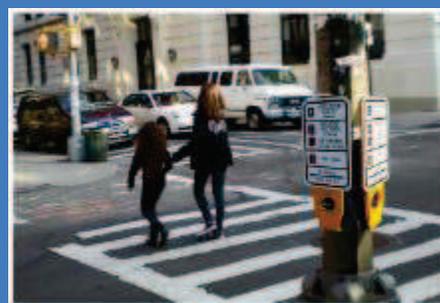
Safety



The chart above shows the number of pedestrian crashes in the City of Kirkland for the past 10 years. In 2011 the city boundaries expanded. The orange lines show the number of crashes within the pre-2011 city boundaries.

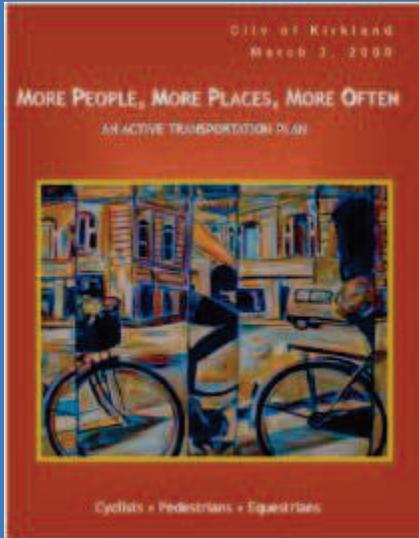
A starting place for a vision zero, approach to safety is formation of a cross-department city staff team, bolstered with members from organizations including:

- Evergreen Health Care
- King County Public Health
- Feet First
- Cascade Bicycle Club
- Kirkland Greenways
- Lake Washington School District
- Kirkland Youth and Senior Councils



Smart pedestrian pushbuttons can send count information back to a central site and are part of an intelligent transportation system.

More detailed planning



Kirkland’s ground breaking 1995 Non-Motorized Transportation Plan was revised in 2001 and rewritten as the Active Transportation Plan (ATP) in 2009.

Revised versions of the goals and policies in the ATP are now largely in this plan. The role for a revised ATP is to fill in the details that are not covered in this broader plan. Examples could include topics like wayfinding, crosswalk treatments, and a plan for trails on Finn Hill.

Below: Perhaps the best example of removing barriers is the lake front access that is required of new developments.



Policy T-1.2 Identify and remove barriers to walking

All the policies and actions associated with Goal T-1 are associated in one way or another with removing barriers to walking. This policy serves not only as the basis for the removal of specific barriers but also the policy by which general actions are supported.

Kirkland’s **Active Transportation Plan** (ATP) is a means for coordinating pedestrian needs on a more detailed level than is done here and the ATP should be updated regularly, ideally at least every five years.

Common physical barriers to walking include vegetation that extends into walkways from public and private property. Solid waste receptacles are a common source of obstructed walkways because often there is no place for their storage besides sidewalks. Because of our long fall and winter evenings, lighting is a necessary feature in the pedestrian network.

Making facilities accessible to all users is a large and important undertaking. The City of Kirkland carefully scrutinizes new construction and maintenance activities to make sure that those projects meet the most current standards for accessibility. There is a large fraction of existing facilities that need comprehensive review and possible mitigation. Those mitigations represent a sizable investment relative to the amount of funding that has traditionally been available for capital projects.

Projects that remove barriers to historically underserved populations such as low income and senior populations should be prioritized. Often these communities have relatively low auto-ownership rates and therefore draw substantial benefit from pedestrian improvements. Young people should be considered in the design of the pedestrian network for all types of trips, not just for the journey to school.

Because it bisects the City from north to south, I-405 is an effective barrier to pedestrian travel. This barrier should be made more permeable wherever feasible. This could include new bridges and improved pedestrian facilities at interchanges.

Connections between cul-de-sacs and dead end streets that remove barriers to pedestrian travel should be planned and implemented. Connections to Lake Washington are of particular importance. Many of these connections are built with new development. (See Policy T-5.5)

Action T-1.2.1: Regularly (every 5 years as a goal) update the ATP to further guide implementation of the policies in this plan for walking and biking.

Action T-1.2.2: Reduce sidewalk blockages by reviewing, revising and enacting regulations or other measures.

Action T-1.2.3: Finalize an **Americans with Disability Act (ADA)** Transition Plan for transportation facilities. Fund improvements that come from the plan in a manner that allows for completion of an accessible network in a timely manner.

Action T-1.2.4: Engage Washington State Department of Transportation and other agencies in discussions in order to advance improvement of existing interchanges with the intention of securing funding to design and construct new interchanges at NE 124th Street, NE 85th Street and NE 70th Street. (See policy T-7.3).

Action: T-1.2.5: In order to provide the best possible designs, review and revise pre-approved plans and other design guidelines that affect pedestrians. Adopt street design guidelines in keeping with guidance published by the **National Association of City Transportation Officials (NACTO)** and the **American Association of State Highway and Transportation Officials (AASHTO)**.

Barriers at I-405



Built in a time when pedestrians were not actively considered, the I-405 interchange at NE 124th Street is a barrier to pedestrian travel. This has been mitigated in part by a new walkway.

3 ways to make walking accessible to more people.



Curb ramps allow easier access for those who have difficulty seeing or navigating changes in elevation.



Brightly colored and detectable surfaces indicate that users are about to enter traveled ways.



Removing obstructions such as trash receptacles.

Good wayfinding is deceptively difficult to perfect; many details have to be coordinated to lead people easily to their destinations. The examples below show the use of multiple styles, the incorporation of color and the need to choose appropriate destinations for inclusion in the system.



Policy T-1.3 *Make getting around Kirkland on foot intuitive.*

A complete wayfinding system for pedestrians complements and makes a sidewalk and trail network more functional. Wayfinding systems that move beyond signing only, for example those that integrate web-based systems, should be explored. Up-to-date mapping that is convenient for those traveling by foot is also beneficial to activating neighborhoods where people can walk regularly for daily tasks. Making this information available in multiple formats and across multiple platforms will increase its usefulness.

Action T-1.3.1: Develop and implement a pedestrian-scaled wayfinding system available in multiple formats and across multiple platforms. This will involve identifying destinations, choosing routes, designing and installing infrastructure.

Action T-1.3.2: Regularly update Kirkland’s walking map, ideally every 5 years or less.

This illustration is a portion of a walking map of Kirkland. It shows transit routes, certain types of retailers and other elements that are valuable to pedestrians but which change from time to time, therefore requiring regular updating.



Policy T-1.4 *Prioritize, design and construct pedestrian facilities in a manner that supports the pedestrian goal and other goals in the TMP.*

Safe and convenient walkways of the appropriate size are a foundation for pedestrian activity. Kirkland’s existing codes call for sidewalks on both sides of almost all streets. Because of the high cost to construct sidewalks everywhere, they are missing in many points of Kirkland’s system, it is important that clear priorities are used to assign funding to the most worthy projects first. Locations should be prioritized using the following factors:

- **Improve safety**— prioritize locations based on crash history and indicators of crash risk like adjacent street auto volume, speed and number of lanes.
- **Link to Land Use**— choose sidewalks that expand and enhance walkability and places where current pedestrian volumes are high.
- **Connect to the Cross Kirkland Corridor**—make numerous strong links to the CKC.
- **Make Connections**— give high priority to projects that fill gaps by connecting existing sidewalks.
- **Connect to Transit**—complete walkways that allow easy access to transit, particularly regional transit.
- **Community input**—because of the scale of pedestrian projects, gathering the on-the-ground knowledge through community input is particularly important in selecting pedestrian projects.
- **Cost/likeliness to receive grant funding** – projects that have lower cost or that are good candidates for grant funding should generally have a higher priority. However, caution must be exercised so that high cost, high value projects are also considered.

Design of sidewalks should include features that make them safe and comfortable. The need for planter strips and wider sidewalks increases where land use is more intense and where the number of auto lanes and speeds on adjacent streets are greater. On-street parking can also serve as a buffer between pedestrians and moving vehicles.

Action T-1.4.1: Develop a method for prioritizing sidewalk projects within the Capital Improvement Program.

Action T-1.4.2: Review and revise design requirements for sidewalks.

10 minute neighborhoods equals walkability

If you live in a “10 minute” neighborhood, you can conveniently walk to stores, parks, jobs, buses and schools within 10 minutes.



Streets in 10 minute neighborhoods that don’t have good sidewalks are excellent candidates for new sidewalk projects.



10 minute scores can be developed given the location of parks, schools, certain kinds of retail, etc. The northern part of Kirkland is shown in the map above. Lighter areas have a higher 10 minute score than darker areas. For example, note the bright areas around Juanita Village and near the I-405/NE 124th St. interchange. White lines show streets that have a relatively high 10 minute score, but incomplete sidewalk.

CKC Master Plan 4 Goals:

1. **Connect:** link the corridor to the community; trails, schools, parks, businesses.
2. **Place:** Make it a place to go *to* not just *through*.
3. **Evolve:** The corridor has the ability to change parts of the City, for example the Par Mac area. Transit is envisioned for the corridor.
4. **Green:** Environmental sustainability should be woven through the corridor. Central to this is the corridor as a bicycle transportation facility.

Policy T-1.5 *Develop world-class walking facilities along the Cross Kirkland Corridor with ample connections to the rest of Kirkland. Consider creating a plan for a Promenade along portions of the shore of Lake Washington.*

Kirkland is fortunate to have two walking environments that distinguish it from many other cities. The first is the 5.75 mile long **Cross Kirkland Corridor** (CKC), part of the 42 mile Eastside Rail Corridor. The corridor Master Plan recognizes that the corridor is at once a place for both transportation and recreation, a place to go through and a place of activity in its own right. Realizing the Master Plan's multi-modal vision will result in a corridor of the highest value to the pedestrian network and to the community.

The second environment of note is the shore of Lake Washington, south of downtown Kirkland, a popular spot for recreational walking. Like the CKC, it can be imagined as the site of a richer walking experience; not only a place to walk through, but a lively gathering place that enhances the

entire community. A planning study would be a logical first step in evaluating if and how the space along the lake could and should be used.

Action T-1.5.1: Construct the CKC according to the Master Plan vision.

Action T-1.5.2: Consider developing a Master Plan for a lake front Promenade.

Below: The CKC Master Plan considers the corridor in a series of zones, each with its own character.



Policy T-1.6 *Make it safe and easy for children to walk to school and other destinations.*

Because of the many benefits of walking, encouraging children to walk to school is a long standing priority of the Kirkland City Council and a Goal in the current Active Transportation Plan. As a result of this focus, the number of school walk routes with sidewalks has steadily increased. Completion of improved walkways on all school walk routes is an ultimate objective. Paved paths that are separated from auto traffic with a planter strip are considered complete. Areas without sidewalk or where walkers are separated from auto traffic by an extruded curb are not considered complete. Within the realm of school walk routes, projects should be prioritized based on the factors in Policy T-1.4.

The City has adopted and maintains a set of elementary school walk routes. In order to get substantial numbers of children to walk to school however, more than walk routes with sidewalks are needed. A multi-dimensional approach that identifies and systematically removes barriers to walking is necessary. This may include programs within schools that promote walking like “walking school buses.” Planning must address the safety concerns of parents. The City should encourage, coordinate and be a resource for improving school walking programs but should not necessarily be responsible for their implementation.

In addition to travel to and from school, youth should be encouraged to walk to other activities; for example to a friend’s house or to run errands. The same principles that support walking to school should be used to encourage walking for these other purposes.

Action T-1.6.1: Plan and prioritize school walk route projects.

Action T-1.6.2: Increase the number of children who walk to school by helping school communities develop and implement programs.

Action T-1.6.3: Help youth to be able to walk to activities by connecting places such as parks and practice fields with safe walkways.

The Parks Department’s Senior Stepper Program supports walking by older Kirklanders.

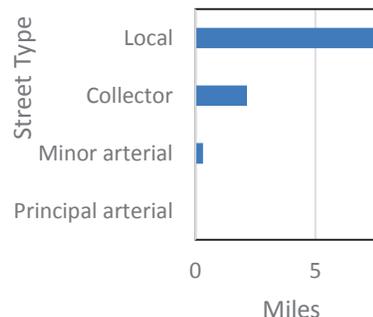


Walking to school



Completion of school walk routes is an important goal for the City of Kirkland.

Length of school walk route without complete sidewalk by street type



The chart above shows the number of miles of school walk routes that don’t have complete sidewalk on at least one side by type of street. Local streets make up the bulk of these streets, the busiest streets are mostly complete.

6 possible barriers to kids walking to school and other places:

Lack of walkways, safe street crossings.

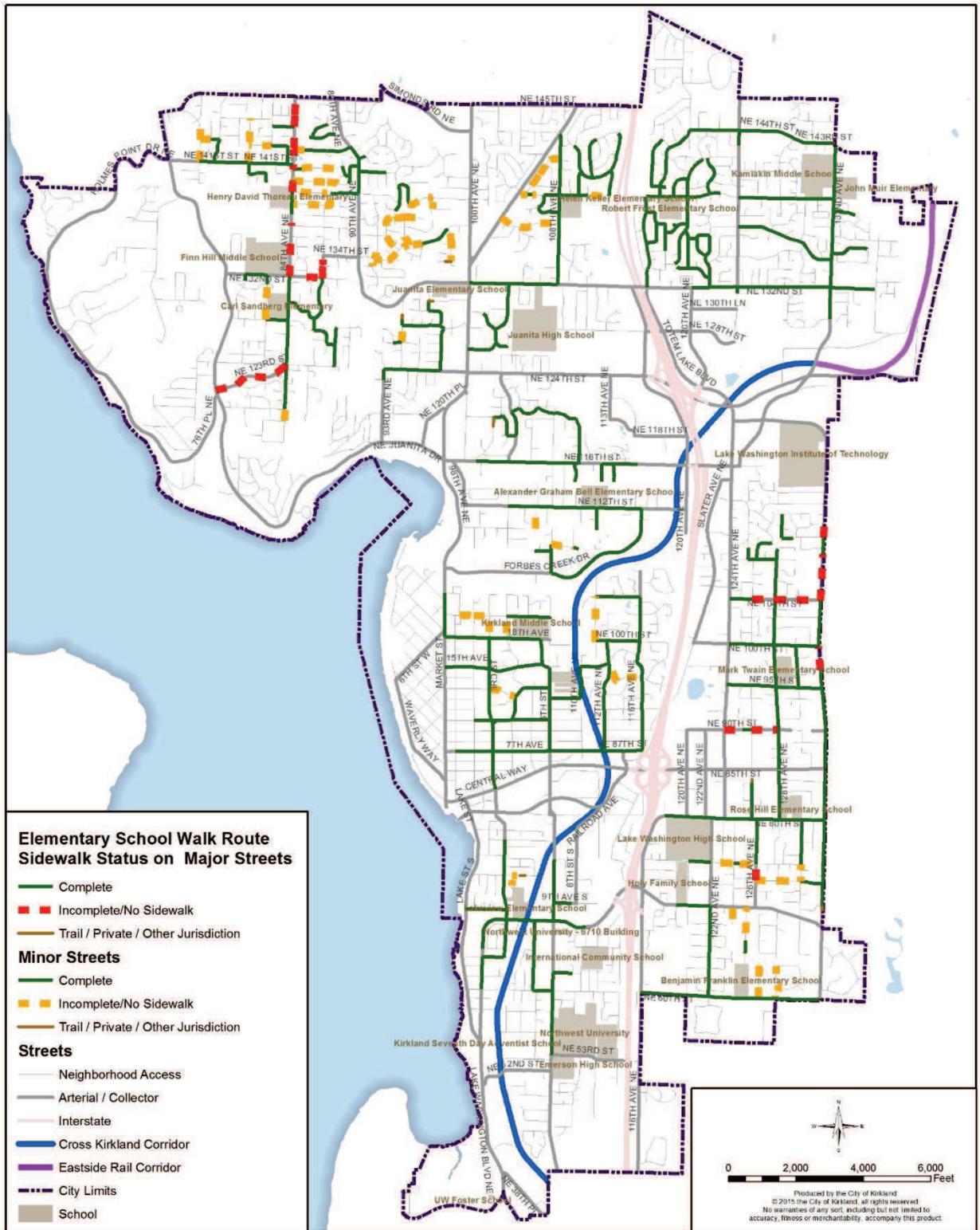
Takes too long, kids have to get up earlier to go to school.

Parents are driving anyway, might as well drop the child off.

Lack of certainty that the child arrived at destination.

Perceived danger outweighs perceived benefits.

Societal pressures not to let kids walk.



School Walk Routes

Policy T-1.7 *Improve street crossings*

Street crossings are critical to the success of a pedestrian network. Kirkland has a history of innovation in treatments at uncontrolled (crosswalks where vehicles are not required to stop) crossing locations and this should continue. Rapid flashing beacons or other state of the art devices should be used to enhance pedestrian visibility. Best practices and research² should be used to guide decisions.

The pedestrian flag program should be continued at crosswalks where volunteers are available to help stock and maintain the flags. Program improvements that increase flag usage should be sought.

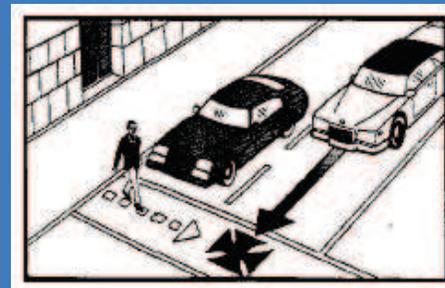
Prioritization for street crossing improvements should be similar to those used for sidewalk projects:

- **Improve safety**— within the context of a vision zero program, consider crash history and indicators of crash risk such as vehicle speed.
- **Link to Land Use**—prioritize crossings on routes with sidewalks that expand and enhance walkability or that otherwise help achieve Kirkland’s land use goals. Improvements in the Totem Lake Urban Center should be given priority.
- **Connect to the Cross Kirkland Corridor**—improve crossings on routes that lead to or are near the CKC.
- **Connect to Transit**—give priority to crosswalks that allow easy access to transit, particularly regional transit, including near stops or at locations where multiple routes converge.
- **Community input**—continue to involve the community in deciding where crosswalks should be located and improved.
- **Cost/likeliness to receive grant funding** – prioritize projects that have lower cost or that are good candidates for grant funding, but apply caution so that high cost, high value projects are also included.

Medians have been proven to have high value in improving pedestrian safety, and should be given special consideration at multi-lane locations where vehicle volumes are high. Adequate lighting and accessibility are other features that are a basic requirement at any crossing location. Because turning vehicles pose special risk to pedestrians, the proximity of crosswalks to turning movements should be considered. The bulk of pedestrian crashes occur at intersections and turning vehicles are often involved. Features that reduce pedestrian exposure to risks at signalized intersections should be incorporated into the design of all intersections.

3 factors that most influence crosswalk safety:

1. **Number of lanes.** Multi-lane streets can leave pedestrians vulnerable to the “double threat” crash where one vehicle stops, the pedestrian begins to cross and the other vehicle, not seeing the pedestrian proceeds through the crosswalk.



2. **Traffic volume.** When the number of cars increases, more protection is needed at a crosswalk.
3. **Traffic Speed.** It’s intuitive that increased traffic speeds lead to higher pedestrian risk.

All three of these factors interact to determine what’s needed at a particular crosswalk. As lanes, speed and volumes increase, a marked crosswalk alone is less appropriate and more protection is needed.

²For example [Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations Final Report and Recommended Guidelines](#), FHWA, 2005

4 Treatments for Safety at Crosswalks

1. Medians



Median islands provide a location for lighting and warning devices which gain people's attention.

2. Rapid Flashing Beacons



Kirkland has installed RFBs at a number of locations often as an upgrade to in-pavement lights.

3. Shorten crossing distances.

Shorter crossing distances are easier to navigate. Examples are shown in the photos to the right.

4. Signal control.

Signal control can be used to help people feel comfortable crossing streets at traffic signals through techniques such as:

- Display walk sign without needing to push a button.
- "All walk" phases.
- Show the walk sign before displaying green for cars.
- Prohibit right turns on red signals.

Traffic signal operation should regularly implement features that make crossing easier and safer for pedestrians.

Action T-1.7.1: Continue to support the Pedestrian Flag program; measure and improve its performance.

Action: T-1.7.2: Develop a prioritization method for crosswalk improvements including priority for islands on multilane streets.

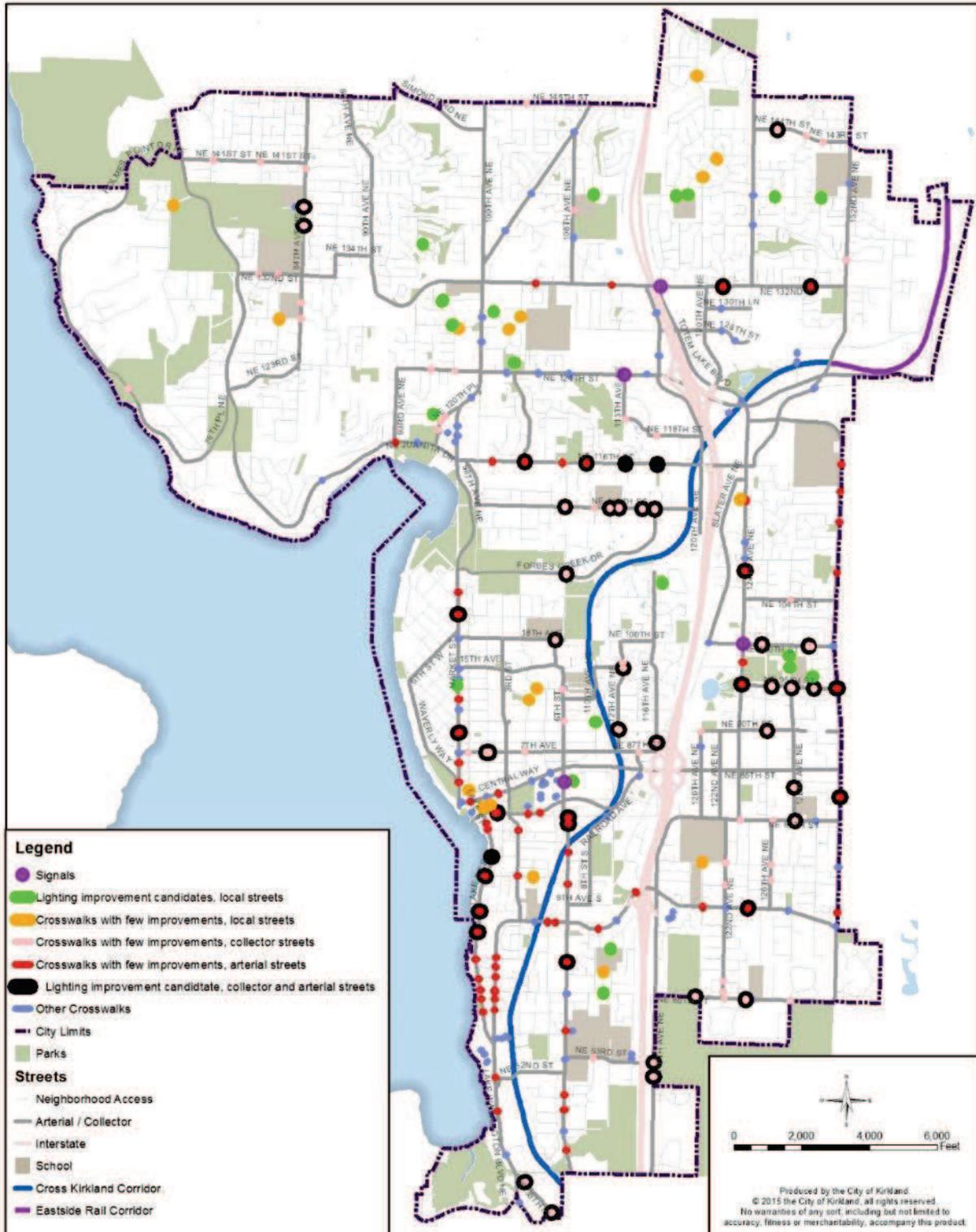
Action: T-1.7.3: Adopt traffic signal operational procedures that include practices such as advance pedestrian phases, generous walk intervals and protected left turn phasing.

Shorter Crossing distances



Source: Google Maps

The photos above show the intersection of 6th Street and Central Way. In the before photo (top) a separate right turn lane increased the speed of right turning traffic conflicting with pedestrians and the distance that pedestrians had to cross. In the lower after photo, the right turn lane has been removed, and a shorter fully signalized crossing is in place.



Potential Crosswalk Treatment Candidates

Chapter 3. BICYCLING

Goal T-2 Interconnect bicycle facilities that are safe, nearby, easy to use and popular with people of all ages and abilities.

Background

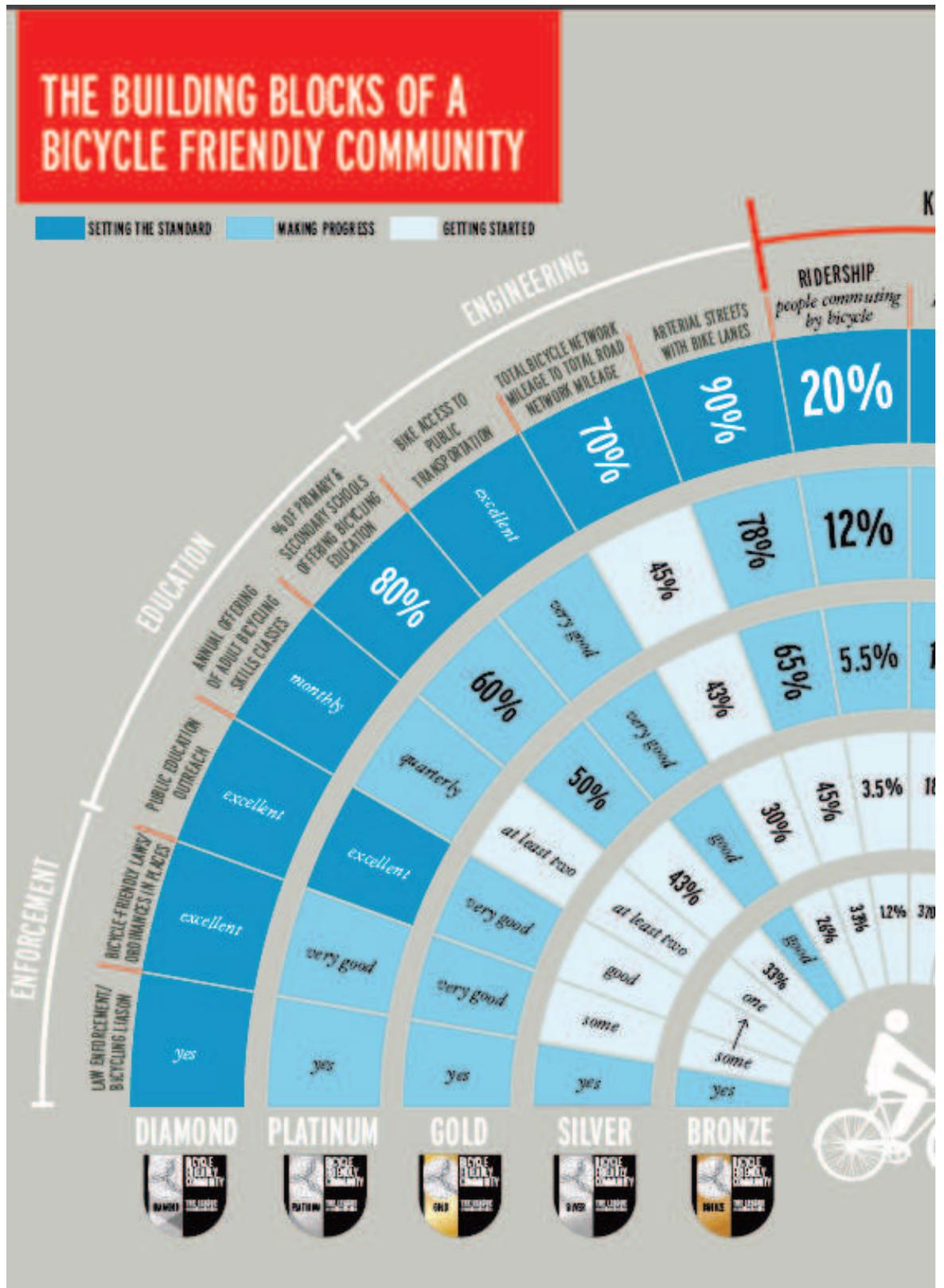
Like walking, bicycling is a clean, healthy and efficient way to make many trips in a livable city. Today, many Kirkland residents would like to make more trips by bicycle; one reason they do not is because the current network of on-street bicycle lanes does not meet their needs for safety and convenience. In order to unlock the potential of bicycling, the existing network of on-street bicycle lanes should be improved with facilities that people of all ages and abilities find safe and welcoming. A large toolbox of options including, but not limited to, buffering and or widening bike lanes, creating physical separation from traffic with parking or other means, building Greenways and off-street trails should be developed to improve bicycle facilities.

Cities around the globe, including Portland, OR and Vancouver, BC have documented the relationship between more facilities for bicycling and improved safety. When top notch facilities are available, bicycle ridership increases and safety for all modes improves. This leads to more cycling, support for more facilities and further safety improvements.

For bicycling to be a viable for people of all ages and abilities to make a wide variety of trips, bicycle parking must be widespread and plentiful, not just at commercial locations but at parks and transit facilities. Signing and marking for the bicycle network should be applied generously but in a way that fits with the surrounding neighborhood. Routes need to be supported by carefully chosen wayfinding that is integrated with that of neighboring cities. Kirkland’s terrain means that special treatments for bicycles like runnels should be considered at stairways and steep grades to help cyclists get up and down elevation changes.

The graphic on the next page shows The League of American Bicyclists’ definition of attributes that make a bicycle friendly community.





Policies

Policy T-2.1 *Make bicycling safer.*

As with pedestrian safety, the vulnerability of cyclists to motor vehicles dictates that bicycle safety must be relentlessly pursued.

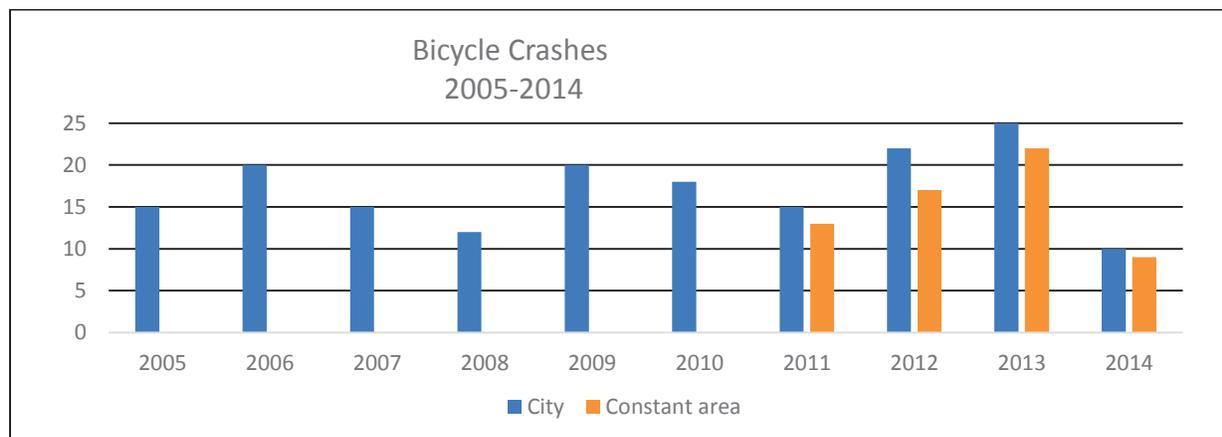
Bicycle use should be measured to understand trends in usage, where new facilities are needed. The impact of improved facilities on ridership must be measured. Volume data is needed to assess improvements while also used to identify and improve crash rates.

The same principles that apply to safety for other transportation modes apply to bicycling. Increases in safety will require a multi-disciplinary, multi-agency approach addressing more than the implementation of engineering solutions and more than simply keeping track of the number of bicycle crashes. Such efforts should be expanded at the City of Kirkland. (See Policy T-0.1)

Action T-2.1.1: Use vision zero techniques to revise and implement Kirkland’s bicycle safety program.

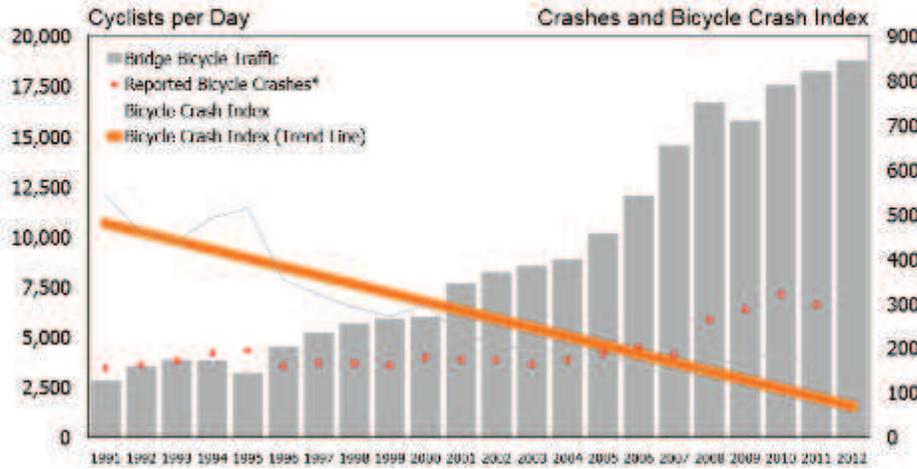
Action T-2.1.2: Develop a program to gather bicycle volume at key points in the City in a manner that is meaningful for measuring safety and ridership trends. Reporting from bicycle detectors can be one means of obtaining this information.

Action T-2.1.3: Integrate efforts between the Public Works and Police Departments to ensure timely reporting and accurate cataloging of crash data.

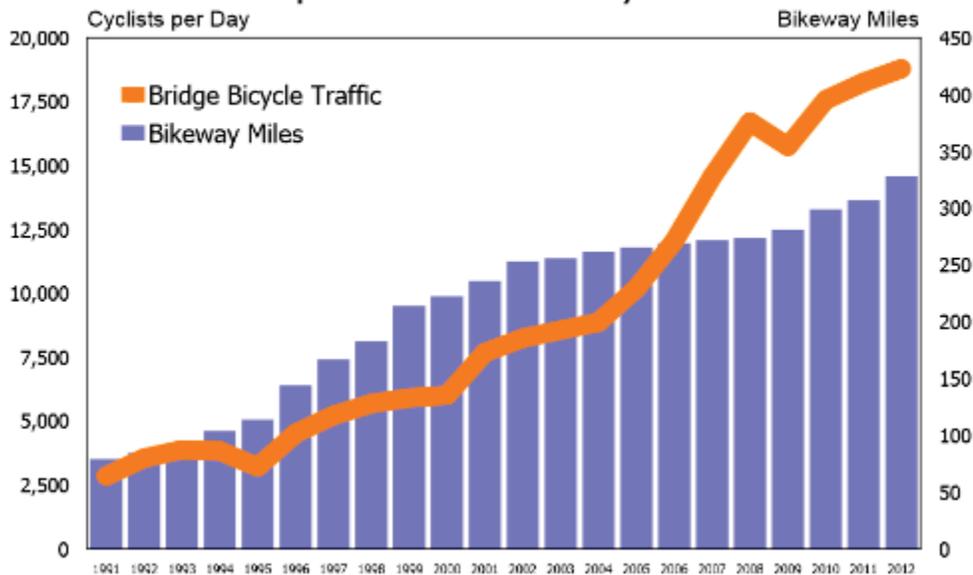


The chart above shows **the number of bicycle crashes in the City of Kirkland** for the past 10 years. In 2011 the city boundaries expanded. The orange bars show the number of crashes within the pre-2011 city boundaries.

Combined Bicycle Traffic over Five Main Portland Bicycle Bridges Juxtaposed with Bicycle Crashes



Bicycle Traffic across Five Main Portland Bicycle Bridges Juxtaposed with Bikeway Miles



Safety in numbers. The upper chart from the City of Portland shows a negative correlation between bicycle traffic (grey columns) and crashes (gold line). As the numbers of bicycle riders has increased from 1991 to 2012, the crash rate has decreased. The lower chart shows that bicycle traffic has increased along with an increase in miles of bikeway. In combination, the charts suggest that one of the best ways to increase safety is to increase the number of safe and convenient facilities for cyclists.

Policy T-2.2 Create new and improve existing on-street bike facilities.

A system of on-street bicycle lanes currently forms the basis of Kirkland's bicycle network and is likely to do so in the near future. Most of these bicycle lanes are of minimum width and have no barriers between auto and bicycle traffic. Research has shown that improving on-street bicycle lanes by widening, separating and/or buffering from auto traffic makes bicycling more attractive. The Map in this section shows a proposed network of bicycle facilities. One of the ongoing challenges for a bicycle network is the limited number of north-south arterials in Kirkland. The paucity of arterials forces auto and bicycle traffic together through the need for both auto and bicycle travel.

Many of Kirkland's existing bicycle facilities can be made wider relatively inexpensively, through changing pavement markings; for example, new bicycle lanes can sometimes be created by narrowing auto lanes.

High quality, separated on-street bicycle facilities (formerly known as cycle tracks) should be part of Kirkland's bicycling network. This concept is especially important along high volume/high speed arterials where bicyclists are threatened by automobile traffic and from door openings of parked vehicles. Sometimes these facilities may require separate traffic signal indications for bicycles. Higher levels of signing and marking could significantly improve the on-street bicycling experience and therefore the viability of bicycling. Continuing bike facilities through intersections where they are currently dropped, and including better signal detection would have similar effects. Methods for making these improvements and others should be detailed in a revised Active Transportation Plan.

Guidelines that illustrate enhanced bicycle facility design are becoming widely available and should be adopted by Kirkland.

Improvements to bicycle facilities should be prioritized based on their ability to meet the following goals:

- **Improve safety** - consider safety history and the potential to reduce conflicts.
- **Link to Land Use** - make connections to local and regional destinations and trails with particular emphasis on the CKC and the Totem Lake Urban Center.
- **Fill gaps in the network and evenly fill in the network** – prioritize projects that add geographic balance to the network or fill gaps between completed portions of the network. Consider routes on both sides of I-405 because of the impact of 405 as a barrier for east-west connections and the limited number of north-south arterials.
- **Connect to Transit** - give higher priority to bicycle connections that lead to locations on the regional transit network.
- **Community support** – give priority to projects that have broad community support.

Doing more with less. In the early 1990's, 100th Avenue between NE 132nd and NE 124th Streets was built with five lanes for cars. In 2009, the City won a grant to narrow the car lanes and add bike lanes without altering the curb to curb distance. This helped close the gap in bike lanes on an important north-south link in the bicycle network.

3 ways to separate bike lanes.

These examples show that paint—in a variety of patterns—markers, or other methods can be used to separate bike lanes from car lanes.



Source: NACTO Urban Bikeway Bicycle Design Guide

Parking can also be used to separate bikes and cars, but extra width is needed. Separated lanes can be single direction or, if appropriate, two direction.

4 Potential Treatments for Bicycles

Colored pavement can be used in areas of conflict.



This photo is from NE 116th Street at I-405

Bike boxes are marked at signalized intersections to help prevent crashes between bicycles and cars. Cars stop behind the box, bike stop in the box. This allows bikes to move in front of cars and avoid conflicting movements.

Bike detection. Marks like those below show cyclist where to stop in order to activate a green signal.



Video detection uses virtual detection zones that can be created where cyclists naturally stop; rather than forcing cyclists to move to where the detector is located.

Bicycle signals. Signals specifically for bicycles can be used to give direction to cyclists, for example where two-way, separated bike lanes cross signalized intersections.



Source: USA TODAY

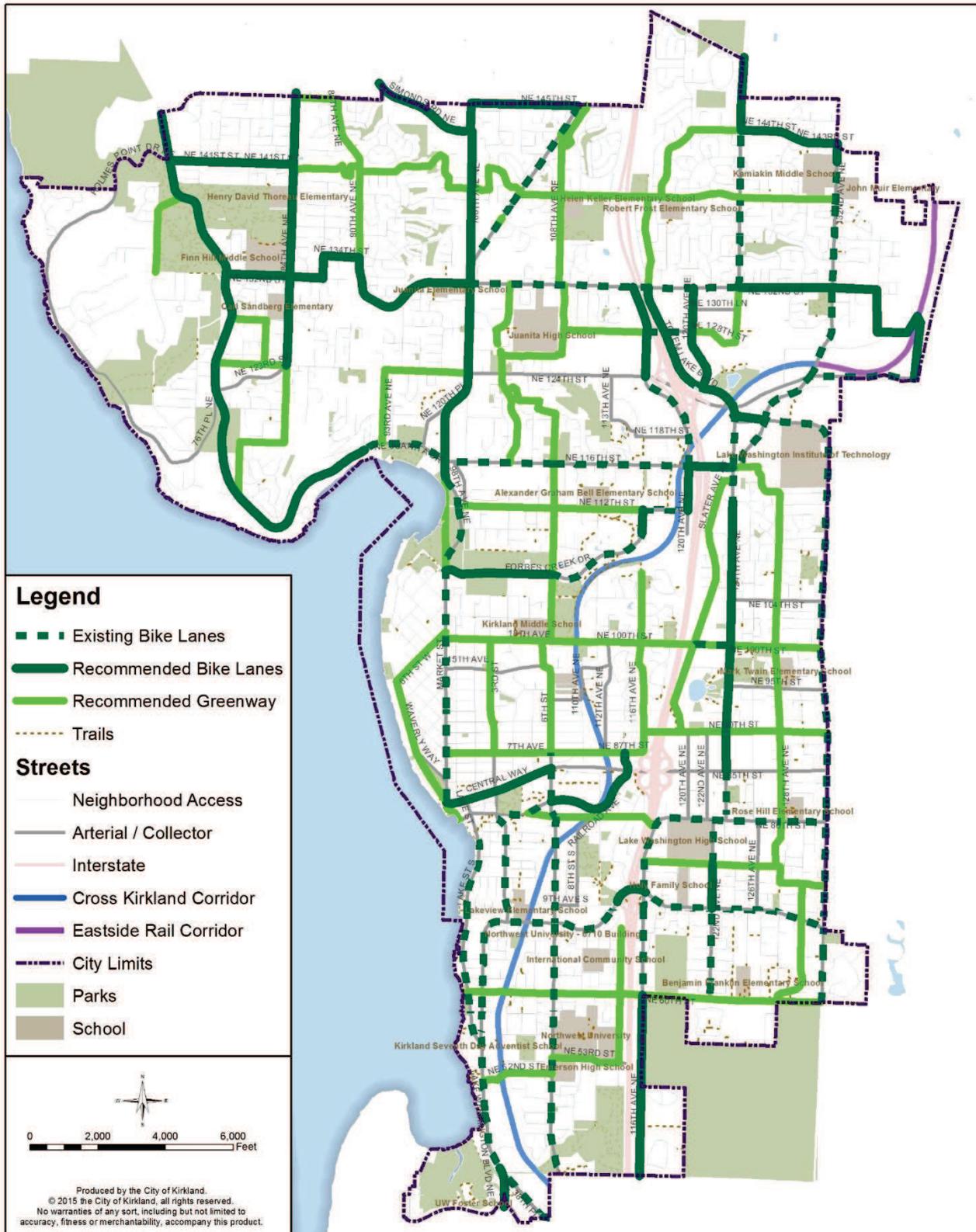
- **Cost/likeliness to receive grant funding** – prioritize projects that have lower cost or that are good candidates for grant funding, but apply caution so that high cost, high value projects are also included.

Action T-2.2.1: Recognize the National Association of City Transportation Officials and the American Association of State Highway and Transportation Officials bicycle design guidelines and adopt them into pre-approved plans used by the City of Kirkland.

Action T-2.2.2: Guide implementation of the policies in this plan and develop a set of standards for improving the bicycle network by updating the Active Transportation Plan.

Action T-2.2.3: Study and implement improvements to the system of on-street bicycle lanes.

Action T-2.2.4: Develop a prioritization system for on-street bicycle improvements.



Bicycle Network

3 attributes of an ideal greenway

According to the NACTO Urban Bikeway Design Guide:

1. Volume of cars is low, less than 3000 vehicles per day
2. Speed of cars is low, less than 15% of drivers are traveling faster than 25 MPH
3. Crossings of major streets are designed to help bicyclists cross safely and efficiently.

The ideal volume and speed requirements often suggest traffic calming measures. There may be situations where it is important to complete a segment of greenway even if the speed and or volume targets can't be achieved.



Source: City of Seattle

Greenway systems usually have consistent branding and naming along with strong wayfinding.



To reduce car volumes, this diverter in Vancouver B.C. allows people on bicycles to pass through, but not motor vehicles.

Policy T-2.3 *Build a network of greenways.*

Greenways are bicycle facilities on streets that have lower auto speeds and volumes. Greenways have special signing and marking and may have traffic calming features.

Traditionally, they are on streets that are parallel to major streets to provide quick access to destinations located on such streets. Greenways can also include trails and paths that are off the street networks. Examples of this could include trails between cul-de-sacs or through parks. Other trail connections that are not necessarily part of Greenways should also be completed with special emphasis on connections to Lake Washington and the Cross Kirkland Corridor. Where Greenways cross arterial streets special treatments are usually needed. Ideally, Greenways form a network that supports bike travel by itself, but together with the on-street network make an even more comprehensive network.

Priorities for Greenway construction should reflect those in Policy T-2.2, including higher priority for those in 10-minute neighborhoods and those connecting to the CKC, parks or transit.

The bicycle network map on the previous page shows a network of bicycle facilities including a proposed Greenway network. Adjustment to routes may be needed during the design of Greenway improvement projects. Finalizing Greenway routes should be done in consultation with neighborhood associations.

Action T-2.3.1: Develop standards for Greenways in Kirkland.

Action T-2.3.2: Prioritize and construct greenway projects.



Greenways can have special facilities for people who walk.

Policy T-2.4 Implement elements and programs that make cycling easier.

Secure, convenient parking is an important part of most bicycle trips. Policies that affect bicycle parking must accommodate increased bicycle usage and optimize the location of bicycle parking. The City should actively partner with the private sector to facilitate bicycle parking on both public and private property.

Bikeshare has launched in Seattle and the City should actively pursue bringing bikeshare to Kirkland. Kirkland should implement policies that remove barriers to bike sharing, including facilitating the location of bike share stations throughout the City. Bikeshare should complement transit, with stations at transit centers and hubs.

Because of Kirkland's terrain, innovative devices that make climbing hills and using stairs more easily should be pursued. Additionally route selection, wayfinding and other bicycle infrastructure should be designed to minimize the impacts of hills with the idea of making cycling accessible to many different types of cyclists.

Bike Stations where a range of support items for cyclists are available such as day use lockers, repairs, sales of bike parts, etc., should also be considered.

High-use cycling routes should be given more priority for bicycle friendly signal timing, street sweeping (including bike lanes), paving repair and other maintenance activities.

Action T-2.4.1: Provide high quality bicycle parking convenient to all business districts.

Action T-2.4.2: Create a strategy to increase the supply of public bicycle parking in Kirkland. Adopt guidelines that encourage business and property owners to provide bicycle parking on private property.

Action T-2.4.3: Work with bike share providers to create regulations that facilitate bike share such as making stations easy to site and operationally sound.

Action T-2.4.4: Adopt roadway and bicycle way maintenance policies that support high-use cycling routes.

What makes for great bike parking?

Shape. Simple racks that hold bikes at two points. The rack in the photo below is Kirkland's standard. **Space.** Racks against walls or other obstructions can't be used easily. **Site.** Short term parking should be close to popular destinations.



Source: Jim Hunt

Runnels help bicycles navigate stairs



Source: City of Seattle

In 2014, **Pronto! Bike share** began in Seattle with the intention of expanding to Kirkland and other cities on the eastside.



Source: Pronto!

Wayfinding



Good wayfinding begins with an agreed upon set of destinations to which users should be directed. In Kirkland this includes destinations like Downtown and Totem Lake, the CKC, neighborhood business destinations, etc. Often bicycle guide signs list the distance and in some cases an estimated time to a destination.



Cities across the country including Bellevue, Redmond and Seattle are examples of places that are using signs in this format for directing cyclist to their destinations.



Signs like this are used to designate specific routes. The Lake Washington Loop route passes through Kirkland, but is not currently signed.

Policy T-2.5 *Make it easy to navigate the bicycle network.*

A system of bicycle wayfinding makes bicycling easier. It should be tied into the systems of surrounding cities and should identify direction and distance to important destinations along major routes. Advanced wayfinding techniques that incorporate more than signs should also be considered. Maps that provide value to cyclists should be developed. Because of the distance cyclists cover, this may mean partnering with other agencies to create a regional map that also covers Kirkland effectively. Bicycle wayfinding should be coordinated with pedestrian wayfinding and mapping efforts.

Action T-2.5.1: Work with surrounding jurisdictions to establish a set of destinations and routes for wayfinding. These may include techniques that allow information to be obtained across a wide range of platforms.

Action T-2.5.2: Site and install wayfinding signs and/or other systems.

Action T-2.5.3: Develop mapping as appropriate, possibly in combination with transit mapping.

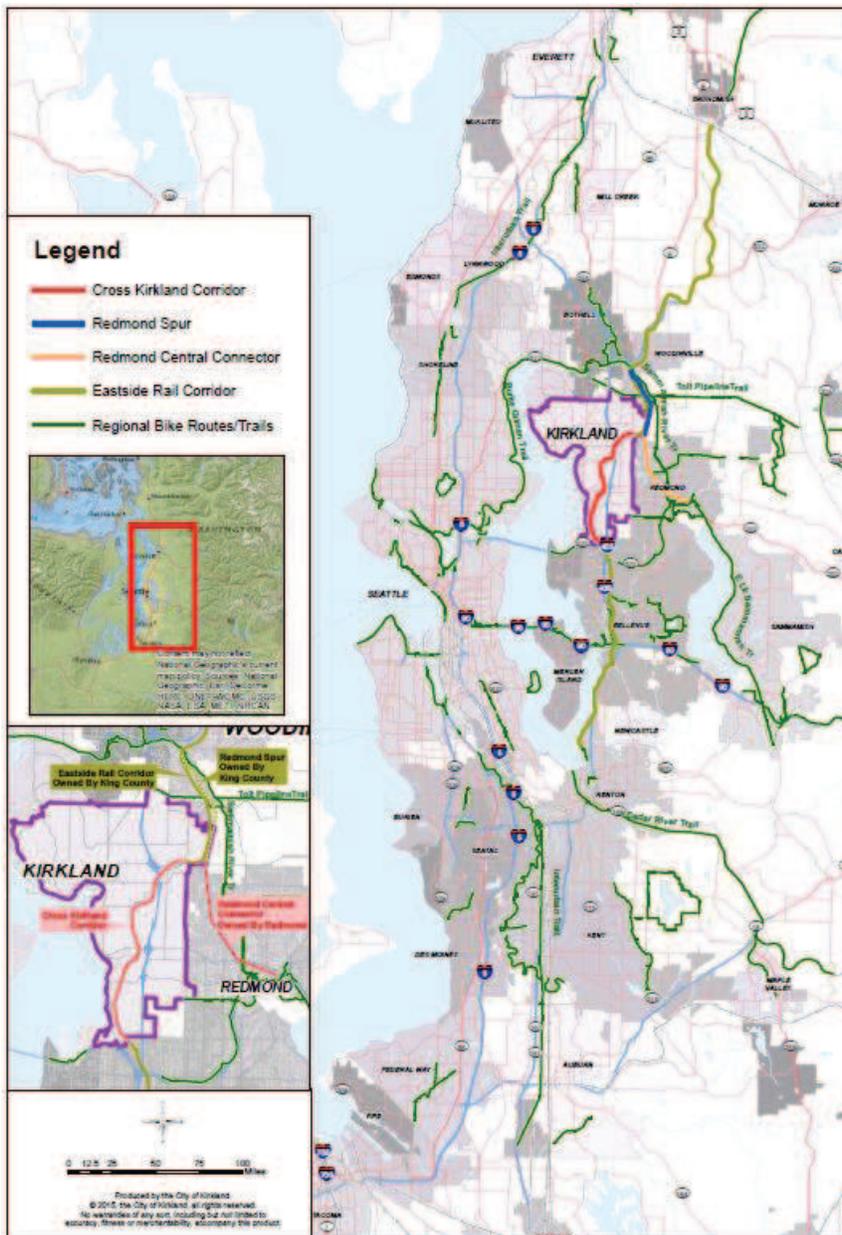
Policy T-2.6 Make the Cross Kirkland Corridor an integral part of the bicycle network and connect it to the region.

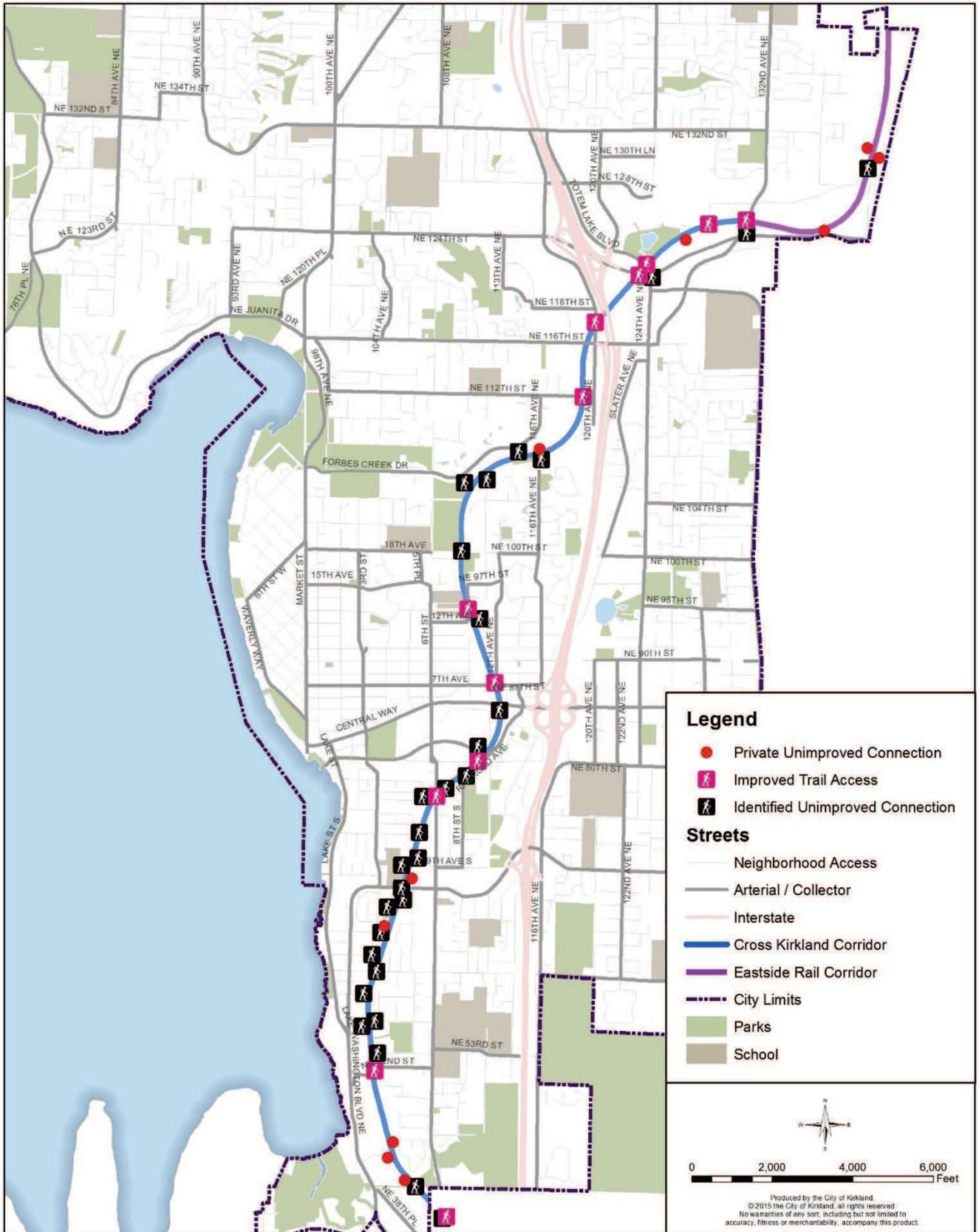
The Cross Kirkland Corridor is uniquely situated to serve many bicycle trips in Kirkland. The CKC Master plan describes how the corridor itself should be developed to suit this purpose. Links to the CKC have to be constructed and well signed to make the corridor fully connected and integrated to the bicycle network. (See Policy T-1.) Of particular importance is a connection to the Redmond Central Connector in the vicinity of Willows Road and NE 124th Streets and a connection to the 520 Trail in Bellevue.

Action T-2.6.1: Construct the CKC with the Master Plan vision.

Action T-2.6.2: Develop bicycle connections to the CKC, particularly at its north and south ends.

Below: Cross Kirkland Corridor's connections to trails throughout the region.





Cross Kirkland Corridor & Connections

Chapter 4. PUBLIC TRANSPORTATION

Goal T-3 Support and promote a transit system that is recognized as a high value option for many trips.

Background

Historically, transit in Kirkland focused on connections oriented to Seattle in the morning and from Seattle in the afternoon. Bus frequencies were sometimes as low as one hour especially in off-peak periods. Today, Kirkland is served by a number of routes connecting to a variety of Eastside destinations as well as Seattle. Frequency on some routes is 15 minutes, with most service at 30 minute intervals over most of the system. Additionally, instead of being solely a source for trips to employment centers, Kirkland is becoming an employment center that attracts transit trips.

Transit with the right characteristics can make an important contribution to Kirkland’s transportation system. At its best, transit is as follows:

Fast – making long trips competitive and cost effective with driving.

Frequent – frequencies of 15 minutes or less with service hours extending from early morning to late night.

Reliable – trip times are consistent from day-to-day and riders trust they’ll arrive on time.

Accessible – facilities and vehicles are designed for all users.

Comfortable – all elements of the system are sized to meet demand and offer amenities that make trips pleasant.

Complete – popular destinations are served and transfers between routes are easy and clear.

Transit providers will continue to be faced with constrained resources for maintaining existing service hours thus limiting their ability to add new service. This, combined with the characteristics described above, suggest that Kirkland’s transit needs will best be served by a focused network of higher frequency service near major concentrations of residential and commercial land uses.

This plan challenges the idea that because Kirkland does not provide transit service, it has little effect on the quality of that service. Because transit, more than any other mode, is dependent on land use for success, Kirkland’s land use choices will have an important influence on where and how transit service is deployed.

Transit



Metro Route 255 runs every 15 minutes between Totem Lake, Juanita, Downtown, Houghton and Seattle.



Source: Daily Journal of commerce

Juanita Village is an example of **transit supportive land use**—a mixed use development located adjacent to good transit service.



Transit oriented development.

Working with several partners, Kirkland created a mix of housing types and retail at the South Kirkland Park and Ride



Technology that changed the way taxi trips are delivered may offer opportunities to change the way transit is delivered in the future.



King County Metro and Sound Transit operate bus service of various types that connects Kirkland to other areas.

Source: King County Metro

City of Kirkland Transportation Master Plan, December 2015

Kirkland is, of course, responsible for maintaining the streets on which transit travels. Additionally, Kirkland can make improvements to waiting areas, including improved lighting, more shelters and wayfinding that is more understandable. Parking policy—such as pay parking at destinations—that is favorable to transit and projects that increase transit speed and frequency are other ways that Kirkland can support good transit.

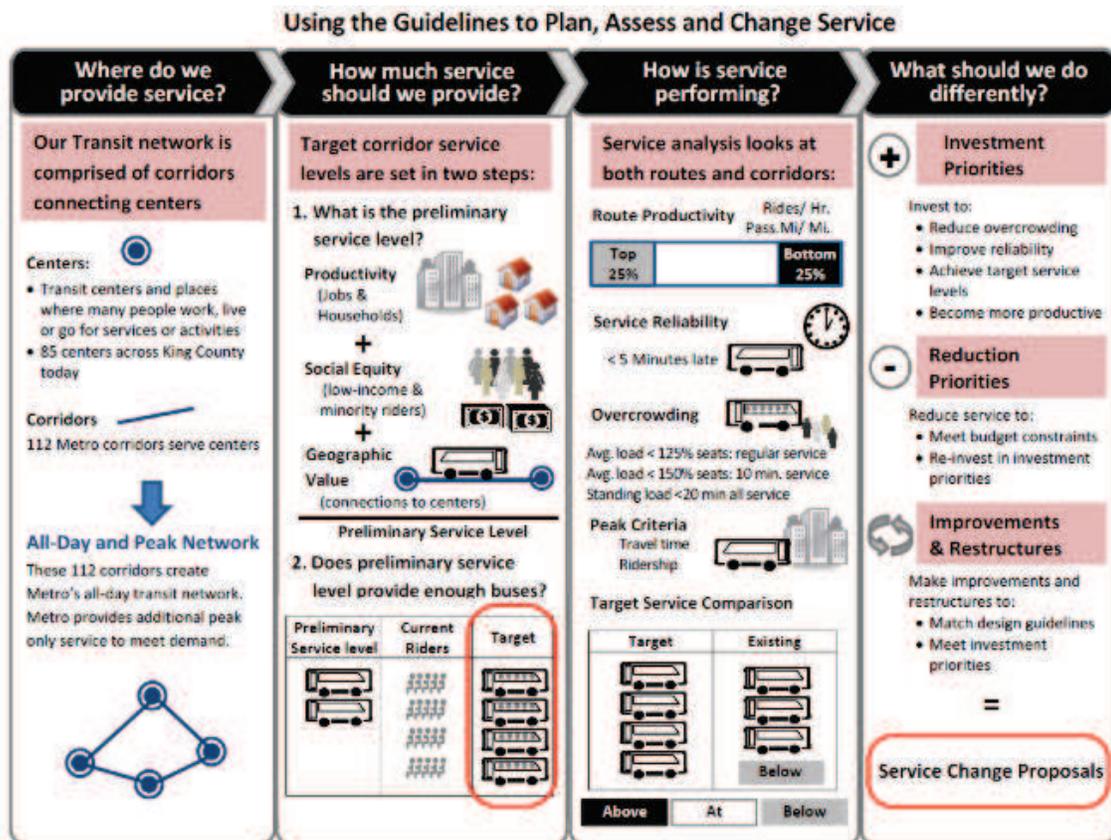
In the future, Sound Transit will have a greater service presence in Kirkland. This is likely to come in the form of bus rapid transit on I-405 and/or Link light rail, both of which will connect to the Totem Lake Urban Center, downtown Kirkland and the 6th Street corridor. Additionally, transit has been assumed as an element throughout the planning of the Cross Kirkland Corridor and Sound Transit holds a transit easement on the Corridor. Regardless of where Sound Transit provides service, walking, biking and local transit connections to the regional transit system are paramount for its success.

The successful aspects of the development of the South Kirkland Park and Ride into a Transit Oriented Development should be explored at the Kingsgate and Houghton Park and Rides and at the remaining space at the South Kirkland Park and Ride. The transit system should be operated so that excess parking does not inappropriately impact neighborhoods.

Other modes of public transportation such as taxis and ridesharing can help fill gaps in transit service that are created when residents have mobility needs that traditional public transit cannot serve. Also, Kirkland should consider other forms of service provision such as partnering with the private sector, human service agencies and aggressive adoption of new technology that make sharing rides easier.

The City of Kirkland is responsible for monitoring and encouraging the efforts of employers located in Kirkland and that are affected by the State of Washington's Commute Trip Reduction Act.

The chart below shows how Metro Transit plans service. More information on Metro service is in the [service guidelines available on line](#).



Sound Transit Long Range Plan



The map at left shows Sound Transit's long range plan (LRP). Projects from the LRP can become elements of a voter approved plan. The Long Range Plan does not have a specific forecast year, nor is it financially constrained.

Connecting the Totem Lake Urban Center to the regional transit system was Kirkland's main interest in the latest plan update.

The LRP includes possible connections via: The Eastside Rail corridor (including Cross Kirkland Corridor), I-405 and SR 522 with all four of Sound Transit's modes; Light Rail, Commuter Rail, and Bus Rapid Transit and Regional Express Bus.

Policies

Policy T-3.1 *Plan and construct an environment supportive of frequent and reliable transit service in Kirkland.*

A Kirkland Transit Plan should be created and maintained that coordinates and describes in detail that actions needed to meet the policies in this goal.

Transit operates primarily on facilities owned and operated by the City of Kirkland. Kirkland should make improvements that increase the speed and reliability of transit in order to attract more riders to the service. These improvements could include Intelligent Transportation System elements such as signal priority or more significant projects such as separate lanes for transit. In return for these improvements, transit providers should agree to maintain high frequency transit service.

Improvements should be prioritized by their ability to decrease rider hours spent delayed in traffic, and effects on other street traffic.

In areas that do not lend themselves to productive service by standard transit modes, innovative solutions should be examined with the intent of providing coverage at a reasonable cost. This could include direct investment by the City in transit service.

Ideally, transit riders should not drive an auto as a part of their trips. Every effort should be made to make walking and bicycling integral components of travel to the transit site. Such efforts may include making bicycle storage available at transit stops.

Transit riders should not be prohibited from using on-street parking, near where they board, but there may be cases where impacts of on-street parking need to be managed.

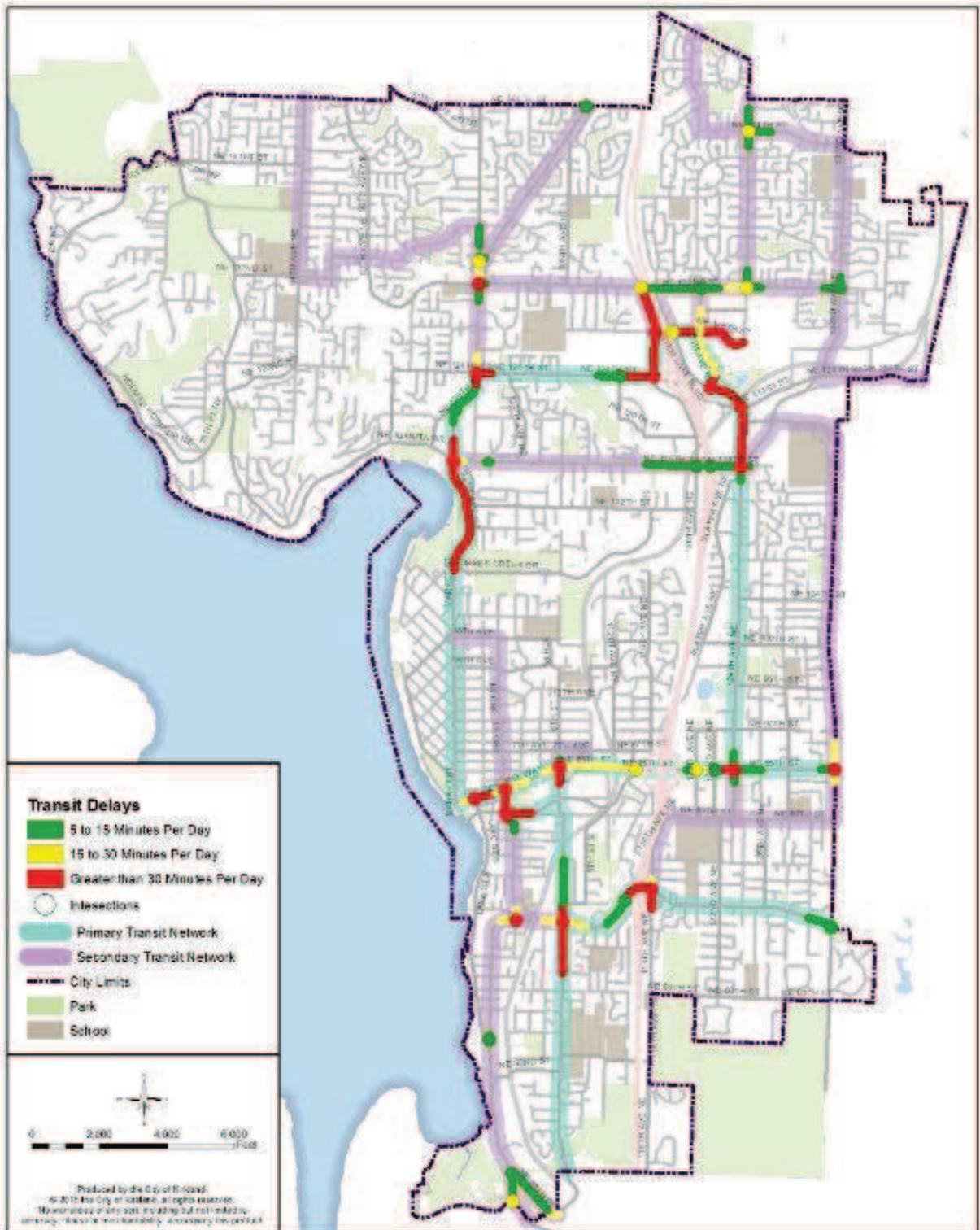
The need for high quality transit service is also discussed in **Goal 7, Active Partnerships.**

Action T-3.1.1: Create Transit Plan for Kirkland that details how to achieve the policies of this goal and related service concepts (see Goals 7.1 and 7.2)



Source: City of Bellevue

Examples for reducing bus delays are shown above, ranging from systems that give buses priority at traffic signals to separate roadways. Bus pullouts are a way of reducing delays to autos that queue behind buses that are stopping to pick up or drop off passengers.



Transit Delay in Kirkland (2014)

Policy T-3.2 Support safe and comfortable passenger facilities.

Passenger facilities must be clean, well lit, accessible to all and comfortable. The location of stops should be coordinated with adjacent land use. Bus arrival information and the ability to pay fares before boarding are examples of features that should be available. Improvements should be prioritized first to higher ridership stops served by higher frequency, longer span service.

Action T-3.2.1: Develop standards for improvements at transit stops.

Action T-3.2.2: Develop a prioritization system for improvements at transit stops.

Action T-3.2.3: Working with transit providers, fund and construct improvements at transit stops.

Action T-3.2.4: Manage the effects of parking from transit users in an appropriate manner.

Policy T-3.3 Integrate transit facilities with pedestrian and bicycle networks.

Ideally people can walk or bike to transit facilities. Making this possible requires the construction of pedestrian walkways and crosswalks and bicycle facilities so that people can walk and bike to transit, particularly when transit is on arterial streets. The City should work with transit providers to locate bus stops at areas that facilitate walking and biking to transit. A quarter of a mile (about 1200 feet or about a 5 minute walk) is considered a maximum distance for a convenient walk trip to transit. Transit facilities must be accessible to all users. (See policy T-1.3) A great resource for transit integration is the Cross Kirkland Corridor (CKC). The CKC provides a particularly critical multi-modal transportation corridor, for future use by pedestrians, bicycles and transit.

Action T-3.3.1: Coordinate prioritization and construction of pedestrian and bicycle facilities based on the Transit Plan and proven ways to improve use of transit.

Passenger stops

The illustrations below show a **high quality bus stop**. Note the covered waiting area, route information, integrated lighting, trash receptacle, and integration with adjacent walkway.



At some of Metro's "Rapid Ride" stations, real-time information about the arrival of the next bus is available.



Source: King County Metro Transit

Five goals for a City of Kirkland Transit Plan:

1. Document route-level goals for service.
2. Provide a detailed look at capital needs for passenger and route facilities.
3. Clarify transit options for the CKC.
4. Integrate with the long range plans of Metro and Sound Transit.
5. Bring Kirkland citizens more fully into the transit planning process.

5 Things that make a good Transportation Demand Management Program

- 1. Support from the employer.**
Employers are most successful when they have committed upper management and dynamic people implementing the program. Ideally, TDM fits with the company's mission.
- 2. Economic incentives.**
Employers may offer free transit passes and/or have limited or fairly expensive parking. Many employers offer free-ride-home programs for their employees who carpool.
- 3. Availability of and connections to transit.**
Locating in an area where transit is plentiful and easy to access makes it a much more likely commute option.
- 4. Surrounding land use.**
Employees are less likely to drive personal vehicles when they can walk or bike for errands or other needs throughout the day.
- 5. Facilities that support bicycling.** Secure, covered parking, showers, lockers and areas where simple repairs can be made are examples of facilities that make biking to work easier.



The Evergreen Health campus in the Totem Lake Urban Center has several of the characteristics of a good TDM program.

Policy T-3.4 Support Transportation Demand Management in Kirkland particularly at the work sites of large employers and other locations as appropriate in order to meet adopted goals for non-drive alone trips.

Kirkland has a number of employers that fall under the requirements of [Washington's Commute Reduction \(CTR\) Law](#) and has established goals for several measures such as vehicle miles of travel and drive alone trips for these employers. Additionally the City of Kirkland is required to set a goal for the aggregate performance of CTR sites. Both of the goals are established in the City's CTR Plan and must be within the framework established by the CTR Law. The current goals are as follows:

Performance Goals for individual CTR employers	
Measure	2020 Goal for change from baseline*
Non Drive Alone Trips	+18.0%
Vehicle Miles of Travel	-18.0%
Greenhouse Gas Emissions	

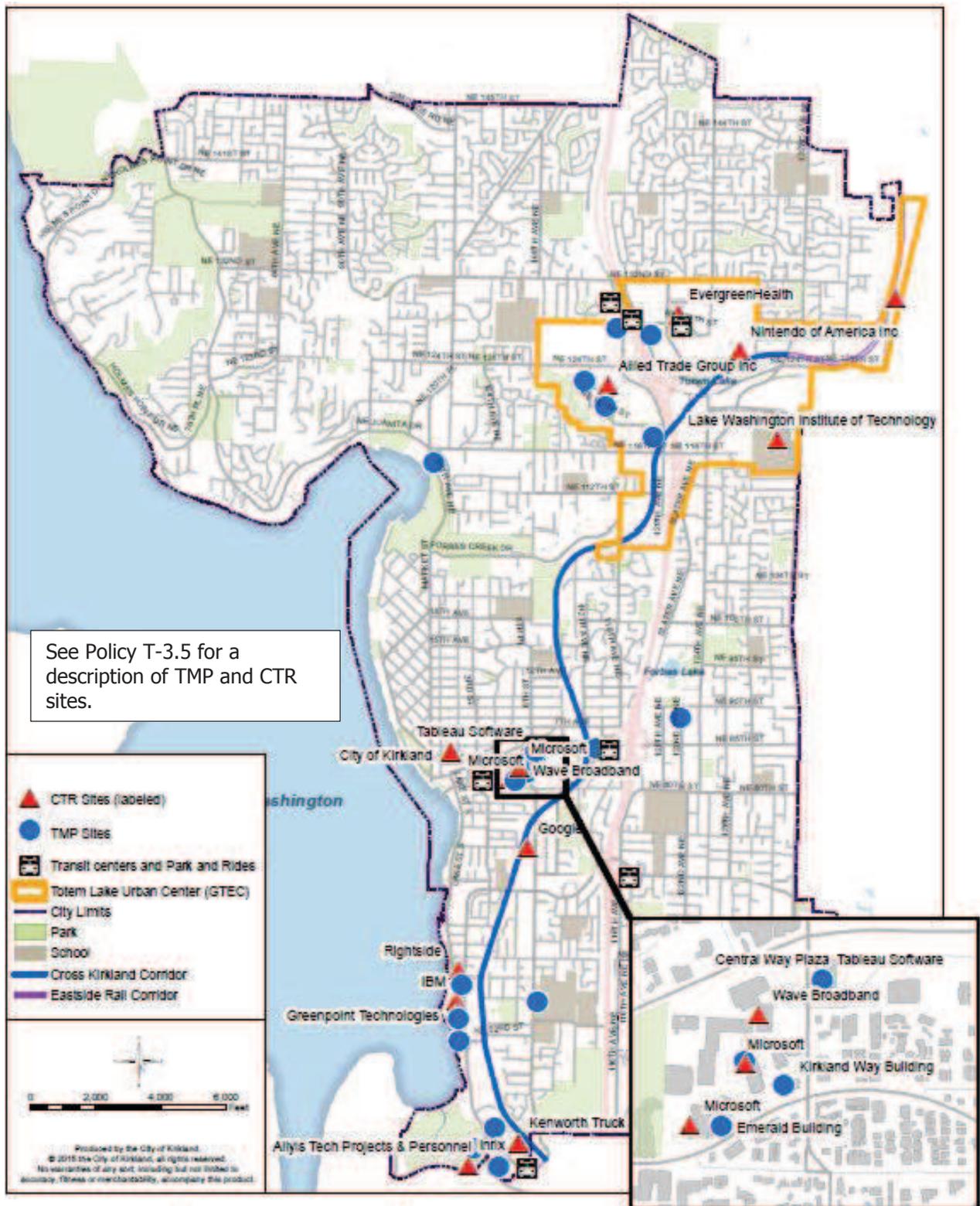
*2008 or first year of CTR survey, whichever comes later

These goals have been approved by the State Department of Transportation. The ability of a particular worksite to meet goals is influenced primarily by the resources provided by the employer. However, Kirkland should encourage and support these employers by providing tools and resources to support Transportation Demand Management in general and CTR employers in particular. The City is responsible for annually monitoring and reporting results.

The City Council has designated the Totem Lake Urban Center as a Growth and Transportation Efficiency Center (GTEC) as described in [Washington State Law](#). The Totem Lake GTEC is required to have separate goals for performance above and beyond the CTR goals. These goals are established in the Totem Lake GTEC Plan

Performance Goals for TLUC GTEC	
Measure	Goal
Non Drive Alone Trips	55 %
Vehicle Miles of Travel	-28.0%
Greenhouse Gas Emissions	

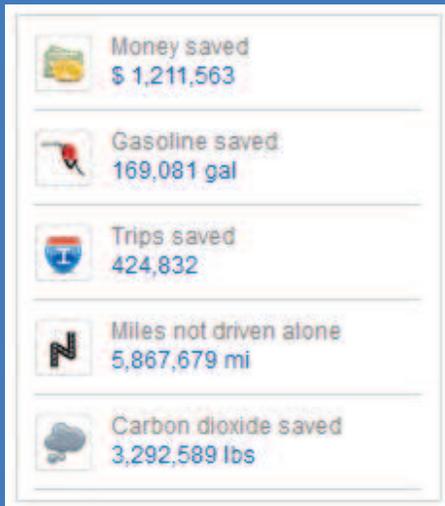
There is room for innovation in order to significantly improve ridesharing, and innovations should be made, whether it be new ways of helping people find ridesharing partners, allowing new kinds of taxi-like services or other measures. Given the relatively small numbers of vanpools serving Kirkland employers, an opportunity exists to increase their number. The City's CTR Plan provides further details on CTR and TDM plans.



Commute Trip Reduction and Transportation Management Plan Sites

Totem Lake Green Trips

The Totem Lake Green Trips Project was funded with federal grant funding. Its purpose was to reduce drive alone auto trips by giving people incentives to choose other modes. As shown in the illustration below it has been very successful. Between 2011 and 2013, 121,388 trips were reduced with a program cost of \$644,452. The cost of \$5.31 per trip saved is about one-third the cost of similar programs operated by other agencies.



[Rideshare Online](#) began at King County Metro and has spread throughout Washington and expanded to Idaho and Oregon. It allows commuters to easily see the destinations and schedules of others who are looking to carpool and vanpool. The ubiquity of mobile devices offers the opportunity to build on such as system and offer real-time connections between people looking to share rides.



Kirkland may be able to more easily meet its transit goals if its control over transit funding was broadened. This idea is explored further in Goal T-8 *Be an Active Partner*. Because the cost of fuel and drivers make up a large portion of the fixed cost of the transit system, automated vehicles and alternative fuels may be helpful in making transit service more affordable and therefore should be pursued.

Programs that support ridesharing should be results focused and cost effective. Grant funding should be sought for the bulk of program costs and partnering with transit and other agencies should be promoted.

Action T-3.4.1: Create targeted programs that monitor and encourage increases in non-drive alone travel rates.

Action T-3.4.2: Develop codes and policies to ensure support of innovative ridesharing.

Action T-3.4.3: Maintain the City's CTR and GTEC plans to comply with state and regional requirements and guidelines and to support the goals of the Transportation Master Plan.

Policy T-3.5 Require new developments to establish appropriate Transportation Demand Management Plans.

If the vision of the Transportation Master Plan is to be met, developers and property owners will have to establish **Transportation Management Plan (TMP)** sites at the direction of the City. Transportation Management Plans are required at sites where, for example, there may be several employers, none of which are by themselves, affected by CTR law but together constitute a sizeable population of employees. TMPs may have a wide set of requirements that need to be enforced by the City; from basic requirements such as providing transit passes up to a cap on the number of trips a site can generate. These sites also need monitoring and support by the City if they are to meet performance goals for trip reduction.

Action T-3.5.1: Codify requirements for the types of developments that are subject to Transportation Management Plans and the elements that make up such plans.

Policy T-3.6 Pursue transit on the Cross Kirkland Corridor.

The vision for the Cross Kirkland Corridor includes quiet, low or no emission transit. This could be regional level light rail or more local service that connects to regional service, for example to Bellevue. New types of transit should be considered where they offer advantages to more standard modes. Appropriate transit on the CKC may well be something for which the City must lead the way as opposed to waiting for traditional transit providers to act. Heavy rail is not a mode that meets Kirkland's interests for transit on the CKC.

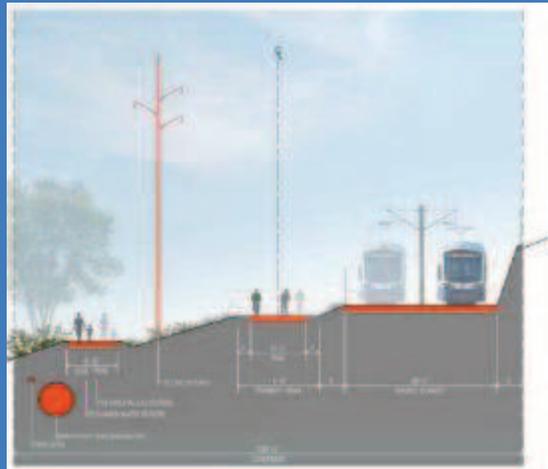
Action T-3.6.1: Implement transit on the CKC in keeping with the CKC Master Plan.

Policy T-3.7 Work with Sound Transit to incorporate investments in Kirkland. (See coordination policy T-7.1).

Policy T-3.8 Partner with transit providers to coordinate land use and transit service (see Partner policy T-7.2).

Transit on the Cross Kirkland Corridor

is an integral part of the Master Plan. As the cross-section below shows, the corridor is wide enough to simultaneously accommodate excellent bicycle and pedestrian facilities, utilities and transit.



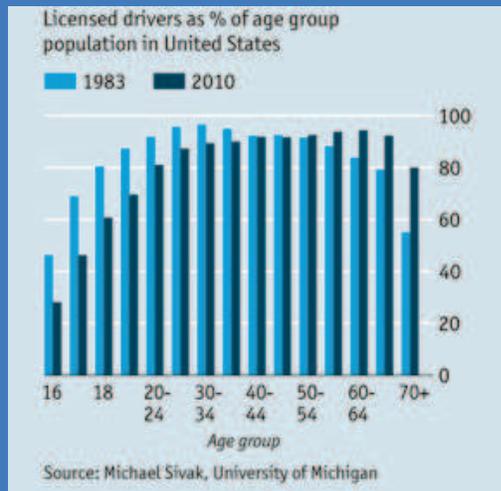
Source: City of Kirkland, University of West Virginia

The best mode of transit for the CKC is yet to be identified. Creative, forward thinking ideas should be used as inspiration for this decision.

Chapter 5. MOTOR VEHICLES

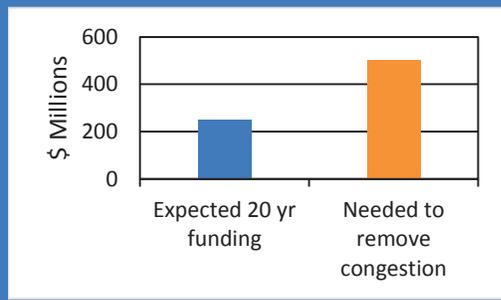
Rites of Passage

The chart below shows that people are getting their driver's licenses later, perhaps signaling decreased reliance on motor vehicles; older drivers are more abundant than they were 30 years ago.



Building our way out?

It's estimated that a program of widening streets to "eliminate" peak hour congestion would cost more than \$500 million and require widening of streets that would be in conflict with Kirkland's vision and goals for transportation. Funding for all types of transportation programs is estimated to be about \$250 over 20 years



new connections will be needed. Completion of this grid may require dedication of property for the transportation system from those who develop it.

Parking policy is an important factor in determining how vehicles will be used in Kirkland. Totem Lake and Downtown are areas where active refinement of parking policy will remain an important issue. Over the long term, changes in how people use cars such as car sharing, autonomous vehicles and innovative

Goal T-4 Provide for efficient and safe vehicular circulation recognizing congestion is present during parts of most days.

Background

Currently, many Kirkland residents travel by private automobile for a high proportion of their trips. In the peak travel period there is congestion at many signalized intersections resulting in poor levels of service. Both of these phenomena are expected to continue over the next 20 years. Other trends, such as decreased motor vehicle ownership, decreased vehicle miles of travel and the increased age at which young people obtain their driver's licenses, mark fundamental change from trends of the past 50 years.

Over 20 years ago, Kirkland recognized that an attempt to entirely eliminate vehicle congestion with wide ranging automobile capacity improvements was not in keeping with Kirkland's desired urban form nor would such expansions be financially sustainable. Because the sole measure of level of service was performance of motor vehicles at signalized intersections, fulfillment of the land use vision may have suffered in favor of providing capacity for motor vehicles.

The TMP seeks to maximize the operational efficiency and safety of the existing road network rather than look to continuing expansion. **Intelligent Transportation Systems (ITS)** will play a role in this, but so will the aggressive promotion of other transportation technologies. Autonomous vehicles, or vehicles that can change speeds in relationship to the vehicles around them in order to maximize safety and flow are examples.

Businesses continue to rely on motor vehicles for deliveries and customer access critical to their operations and these needs must be served.

The Totem Lake neighborhood was developed around the assumption that people would be traveling mainly by automobile. The current Land Use vision for the future at Totem Lake is completely different. In order to support this new vision and associated economic development, a finer grid of smaller scale streets and

City of Kirkland Transportation Master Plan, December 2015

taxi-style services will change the way parking is used and is expected to decrease the amount of parking that is needed.

More uniform implementation of a broad set of Transportation Demand Management strategies can be used to increase walking, transit and bicycling.

I-405 and SR 520 are important travel arteries for Kirkland which are under the jurisdiction of the Washington State Department of Transportation. New and revised interchanges will be needed to better fit Kirkland's Transportation and Land Use goals. Operating policies such as tolling and HOT lanes have promising benefits but require careful monitoring because of their potential downsides for Kirkland.

Motor vehicles can have negative impacts on neighborhood streets, where higher speeds and volumes need mitigation to improve livability.

Policies

Policy T-4.1 Make strategic investments in intersections and street capacity to support existing and proposed land use.

The vision for the Comprehensive Plan supports walkable, livable communities and the TMP makes a change from previous plans by placing less emphasis on intersection performance for cars as the main measure of effectiveness for the transportation system. Therefore, there is less emphasis on widening intersections where such projects do not support the surrounding land use vision.

Some areas, such as NE 132nd Street, may have substantial reductions in congestion from modest intersection improvements that are in keeping with the surrounding land use. Priorities for street improvements should include the following:

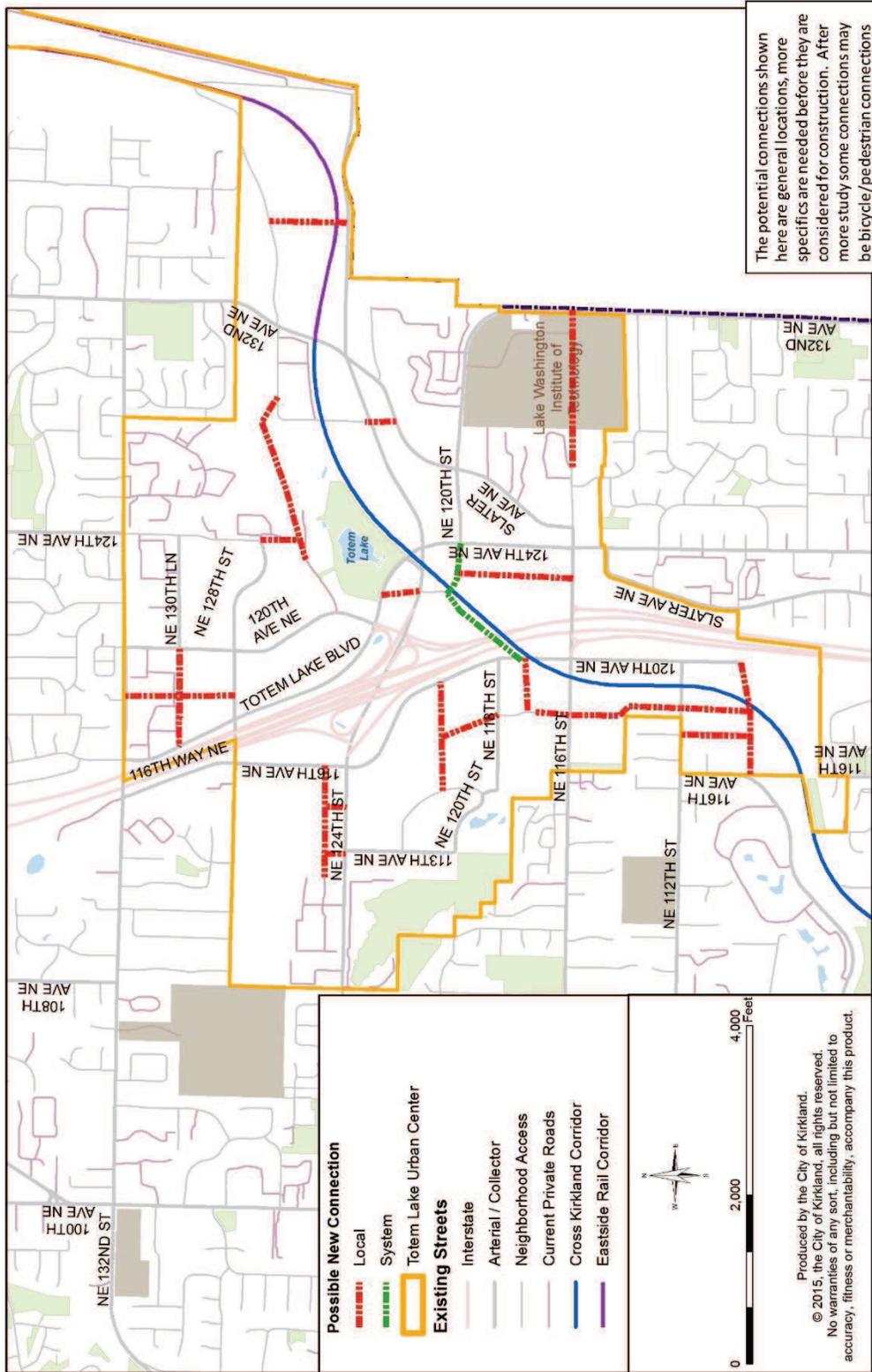
- Increasing safety
- Minimizing person delay and queuing for motor vehicles
- Linking to land use; focus improvements in Totem Lake Urban Center
- Supporting economic development
- Improving bicycle and pedestrian connections
- Funding/Cost effectiveness
- Community support

In Totem Lake for example, new streets can help with economic development and general circulation. They should be developed in keeping with neighborhood plans but coordinated with the interests of private development.

Large roundabouts can be useful tools in managing busy intersections, sometimes having better performance than traffic signals and should be considered for use in Kirkland. The safety of pedestrians and bicycles should be carefully considered when designing roundabouts.

Action T-4.1.1: Using the priorities in this plan, prioritize and construct intersection and roadway projects.

Action T-4.1.2: Review and update as necessary, street network concepts for Totem Lake that focus on efficiency as well as expansion.



Possible New Connections in the Toteam Lake Urban Center

Policy T-4.2 Use Intelligent Transportation Systems (ITS) to support optimization of roadway network operations.

With less emphasis on capacity projects, there is more need for elements like **Intelligent Transportation Systems (ITS)** to get the most from existing roadways. ITS makes signal operations easier so that the benefits to drivers can be realized more readily. The City has made sizable investments in ITS, including installation of a Transportation Management Center. These investments are still being brought on-line and their potential has not been fully realized. Once the existing projects have been completed, the current ITS Plan should be revised and updated regularly, beginning with the base of finished projects and emphasizing steps needed to make the system more productive.

Parking management is another area in which ITS projects can be deployed. Connections to devices that take payments and to signs that show the number of available stalls are two examples of ITS in parking.

ITS projects should be prioritized on their ability to provide the benefits in the chart below and improve the following:

- Transit speed and reliability; person throughput
- Parking management
- Funding opportunities/cost effectiveness.

Over the next 20 years changes in technology will result in major changes to the types of ITS projects that are available and the way they are delivered. Kirkland's ITS system will have to be continually improved to take advantage of such changes.

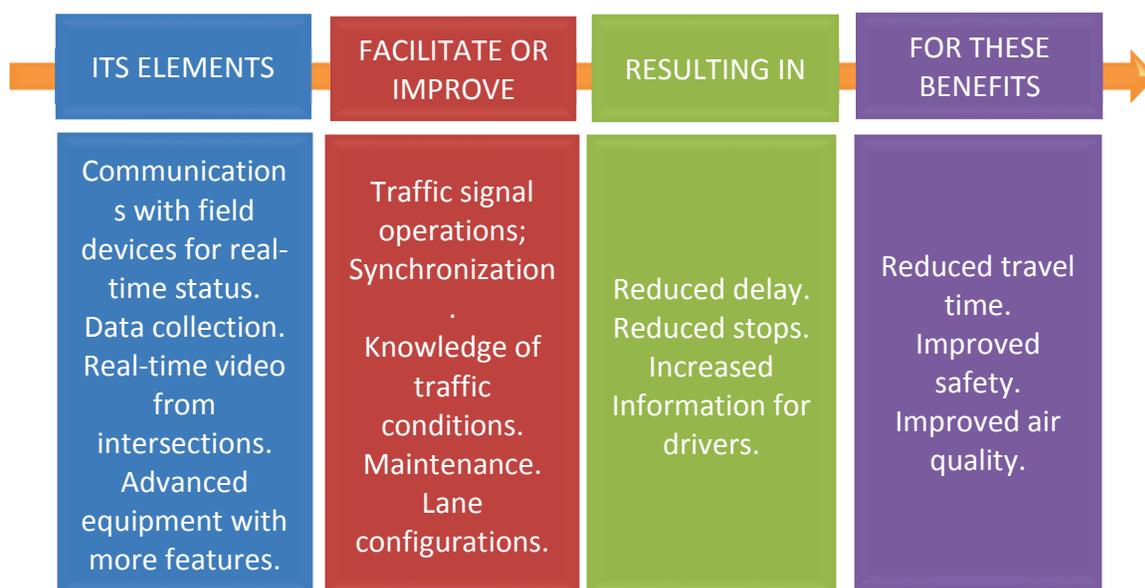
Action T-4.2.1: Complete construction of and make operational ITS phases that have already been funded for construction.

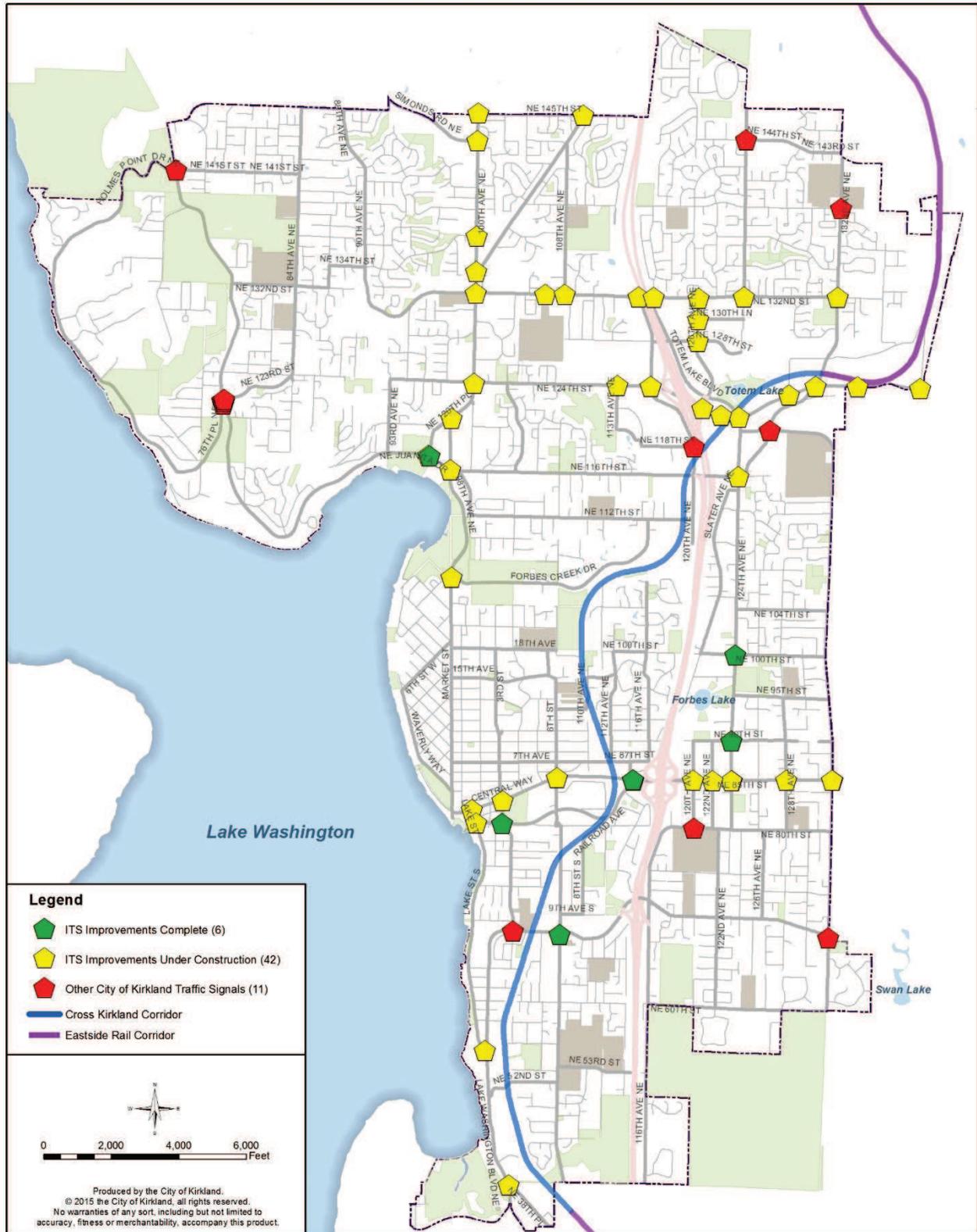
Action T-4.2.2: Update the City's ITS Plan on a regular basis.

Action T-4.2.3: Prioritize and Construct ITS projects.

Making Connections:

A basic element of ITS is making communication linkages between equipment in the field and the control center at City Hall. This allows devices to be monitored and adjusted remotely.





Intelligent Traffic System Development

Policy T-4.3 *Position Kirkland to respond to technological innovations, such as electric vehicles and autonomous vehicles.*

It is difficult to predict how changes over the next 20 years will affect the way we currently drive. Over the next few years vehicles with features that can communicate with other cars, the roadway, and that can avoid hazards are likely to become more common. Kirkland should stay aware of these trends and look for ways to be a leader in innovative transportation. This could include partnering with other groups to test and deploy pilot projects.

Action T-4.3.1: Work with regional groups such as the Puget Sound Regional Council to identify trends in vehicle innovation and seek opportunities to implement them in Kirkland. (See Partnership Policy T-7.4)



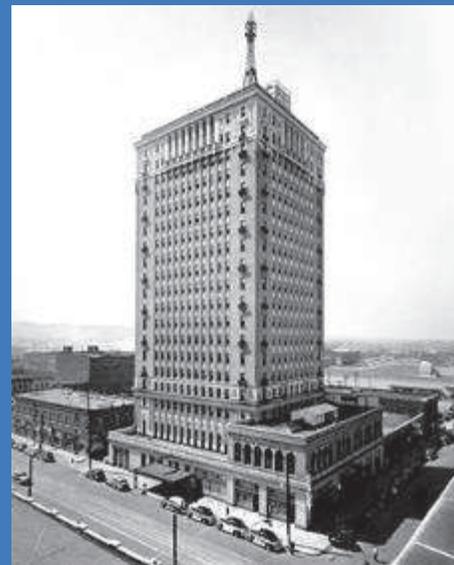
This vision of an electrically powered autonomous vehicle from the 1950s shows that elements of the future can be predicted but often the context in which those elements occurs is difficult to pinpoint.

Cars of the future

“And so we have to recognize that for companies, like Ford, to reach that younger consumer it’s not going to be about aspiration or status symbol. It’s going to be about a lifestyle accessory, a toolbox on wheels that allows them to stay connected to the things that are most important to them.” –Sheryl Connelly, Manager of Global trends for Ford Motor Company. *Source: NPR*

What will the future look like?

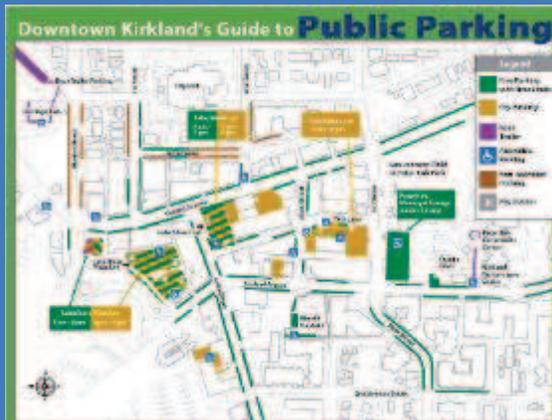
It is very difficult to predict future transportation technologies. Even more difficult to predict, but perhaps more important with regard to how transportation will change in the future are societal changes. For example, the increase in woman in the workplace led to large increases in driving in the 1970’s and 1980’s.



Source: Jefferson County Historical Association

Built in 1929, this hotel in Birmingham, Alabama, included a mooring mast on the roof to accommodate guests arriving by dirigible. The mast was never used but is still in place today.

Parking



The City of Kirkland's website includes a [map of downtown parking](#) colored by cost and time limits. There are approximately 1400 stalls; about half the stalls are off-street and about half are located on-street.

Who pays for parking?



Parking experts contend that there is no free parking. Instead, the costs associated with parking such as land acquisition, operation, maintenance and enforcement are hidden to the parker. When parking is "free" these costs are paid for by:

Property owners –these costs are generally passed on to customers.

Tax payers – Construction of the Kirkland's library garage was funded in part by bonds paid with general revenue.

When "pay" parking is in place Parkers pay directly for some of the costs of parking.

ensure they require appropriate amounts of supply.

Action T-4.4.2: Develop strategies for parking issues and regularly monitor parking occupancy and other factors by periodically undertaking parking studies.

Action T-4.4.3: Prioritize and construct/implement projects and policies that improve the parking experience in Kirkland.

Policy T-4.5 *Work with the Washington State Department of Transportation and the State Legislature to improve the way I-405 and SR 520 meet Kirkland's transportation interests. (See Partnership Policy T-7.3)*

Policy T-4.4 *Take an active approach to managing on-street and off-street parking.*

Parking policy can have substantial effects on Urban Form. Ideally, parking occupancies are around 85 percent; at this level, parking spaces are available, but there is not a large vacancy indicating oversupply. Pricing can be used to influence the choices people make about where and how long to park. Pay parking also generates revenue that can be used for a variety of purposes.

Kirkland's business areas (Downtown, Totem Lake, and neighborhood business districts) have different needs for parking and should be treated individually.

Large amounts of new parking supply are often expensive and difficult to site. Therefore, efforts should focus on increasing supply strategically in smaller amounts. Where occupancy rates are high, pay parking has the potential to decrease demand for the best stalls and generate revenue for other improvements, but it is implementable only when supported by the community. Effective signing and information about available stalls are other ways to get the most from existing supply. How employee parking is provided also has implications that affect Kirkland's downtown parking supply and therefore employee parking policy should be carefully considered. Parking spillover from commercial areas can have impacts on residential neighborhoods and those impacts should be monitored and appropriately mitigated.

Over the long term, increasing use of walking, biking and transit, along with changes in land use, will make differences in the amount of parking that is needed. Similarly, car sharing and other changes in car ownership may change the way parking is used; for example places for cars to wait for shorter times may be an increasing need.

Action T-4.4.1: Review and update parking codes to

Policy T-4.6 Reduce crash rates for motor vehicles.

Crash severity, rates and frequency are starting places for prioritizing safety projects. As described in other safety related goals and policies, taking a comprehensive look that involves all aspects of the system is the best approach for reducing crashes.

As with other modes, a sizable fraction of auto crashes occur at signalized intersections and involve turning vehicles so these areas should be a focus of safety efforts.

Factors used to prioritize safety projects should include a given project’s ability to:

- Reduce crash severity,
- Reduce the number and rate of crashes
- Address locations with highest risk.

Action T-4.6.1: As described in other policies, monitor and evaluate crash data in a comprehensive way. Use a zero fatality/zero serious injury safety approach for revising and implementing Kirkland’s auto safety program.

Action T-4.6.2: Prioritize and construct projects that improve safety.

Flashing yellow arrows are used at traffic signals to more safely manage left turns. They increase the signal’s operational flexibility and can improve efficiency. Because they can increase certain types of pedestrian crashes, they need to be used selectively.



Source: startribune.com

Auto Crash Data

Considering the 10 year period 2005 to 2014...

900 average number of crashes per year.

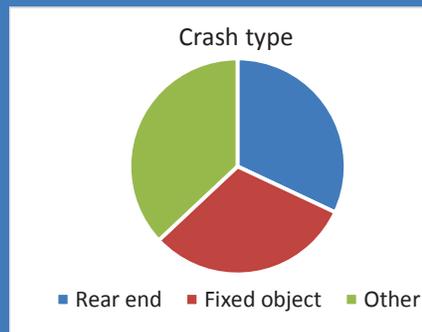
33% of all crashes occur at signalized intersections but they account for

70% of all left turn crashes

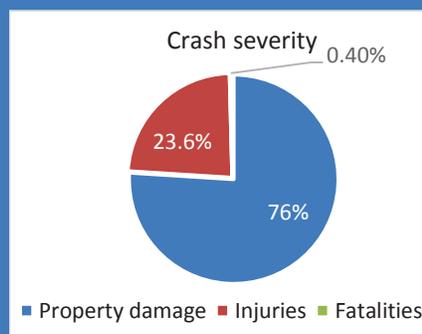
57% of sideswipe crashes

42% of rear-end crashes

15% of all injuries

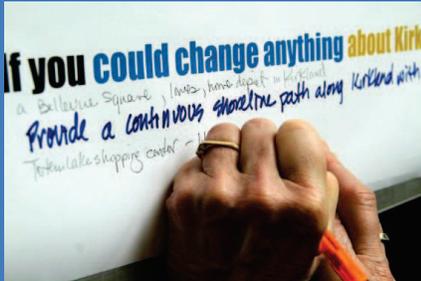


Rear end, fixed object and other types of crashes each account for about 1/3 of the total crashes.



About three fourths of all crashes result in property damage only. Although only a fraction of 1% of crashes result in a fatality, there have been 11 fatal crashes over the past 10 years.

Public involvement is a foundational principle of the Neighborhood Traffic Control Program. Groups of citizens, in cooperation with City Staff make decisions about proposals for physical improvements like speed cushions. These proposals are then considered by the larger neighborhood.



3 facts about speed limits.

1. On streets like those in Kirkland, **changing speed limits** alone does not change driver behavior in a meaningful manner.
2. **Lower vehicle speeds have a significant safety benefit.** For example, fatality rates in pedestrian crashes decrease exponentially with decreases in speed.
3. **Speed limits are set based on how most people drive.** This is founded on the premise that 85% of people drive reasonably.



The Kirkland Police and Public Works Departments work closely to control speeds on neighborhood streets. It is difficult to manage speeds through enforcement alone.

Policy T-4.7 *Mitigate negative impacts of motor vehicles on neighborhood streets.*

The livability of neighborhoods is improved when vehicle traffic does not dominate the streetscape. There is a tension between limiting volume on neighborhood streets and creating a network over which traffic is diffused.

While the volume on neighborhood streets is relatively low, neighborhood streets make up the vast majority of the City's street network so they require special attention. Excessive speed and volume are the most commonly cited negative effects of motor vehicles on neighborhood streets and should be the focus of the City's neighborhood traffic control program. Traditionally, these effects have been treated with speed humps and traffic circles on a neighborhood-wide basis as opposed to viewing individual streets in isolation. Although the tools may continue to evolve, the practice of looking at projects across neighborhoods should continue.

In 2012, Kirkland voters approved a dedicated source of funding for neighborhood safety projects and this source should be used as appropriate to help fund projects that increase safety.

Many concerns on neighborhood streets stem from issues related to parking, sight distance and other issues that do not require major projects in order to resolve them but the resolution of which contributes greatly to citizens' quality of life.

Action T-4.7.1: Help citizens solve neighborhood traffic concerns by maintaining a program focused on addressing such concerns.



Chapter 6. LINK TO LAND USE

Goal T-5 Create a transportation system that is united with Kirkland's land use plan.

Background

The Land Use Element of the Comprehensive Plan provides a blueprint to complement Kirkland's transportation network. "Transportation improvements" should truly be improvements to the community that help create a sense of "place" and reflect the character of Kirkland, not only improvements to mobility. Because the built environment influences travel behavior in so many ways, it's often said that the best transportation plan is a good land use plan. This is demonstrated by the land use transportation connections illustrated in the following "smart growth Ds:"

Density: Higher densities shorten trip lengths, allow for more walking and biking, and support quality transit.

Diversity: A diverse neighborhood allows for easier trip linking and shortens distances between trips. It also promotes higher levels of walking and biking and allows for shared parking because of varied demand times amongst the uses.

Design: Good design is that which improves connectivity, encourages walking and biking, and reduces travel distance.

Destinations: Destination accessibility links travel purposes, shortens trips, and offers transportation options.

Distance to Transit: Close proximity to transit encourages its use, along with trip-linking and walking, and often creates accessible walking environments.

Development Scale: Appropriate development scale provides critical mass, increases local opportunities, and supports transit investment.

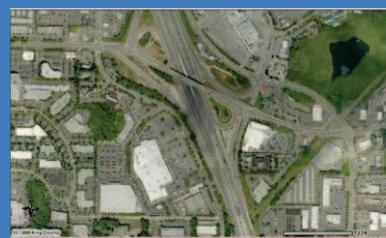
The Land Use-Transportation Connection is a two way connection. For example, increased density should be supported by an emphasis on transit, but at the same time, increased density should be planned in areas that are easy to serve by transit. Land use should coordinate with travel patterns as well. For example currently in the mornings, there is more capacity northbound than southbound on parts of I-405, while the opposite is true in the afternoons. There may be land use choices in Kirkland that can take advantage of this capacity.

The Totem Lake Urban Center is transitioning from an auto oriented district to one that relies on a range of modes to support increased density. In particular, improved access to transit hubs by walking and bicycling access should be a focus.

In neighborhoods where larger areas of single family residences make it difficult to support high quality, nearby transit, Greenways, on-street bike lanes and sidewalks will offer options that help support a more livable community. Connections should focus on schools, parks, transit and commercial areas.

For employers in Kirkland to be competitive with those in other cities, their employees must be able to get to job sites quickly and easily and have adequate auto and bicycle parking.

Two views of Totem Lake



The interchange at I-405 and NE 124th. In 1936, (top photo) the area was rural. A modest freeway interchange supported the suburban land of the mid 1960's. However, the fact that there was an interchange at all presented an opportunity to intensify the land use. As the land use changes increased, more capacity was added to the interchange which in turn spurred additional land use growth as shown in the bottom photo from 1997. This has left a legacy of auto-oriented land use and transportation facilities.

Skinny Streets

Kirkland adopted skinny street standards in 1995.

Local streets can be as narrow as 20' with parking allowed on one side. Skinny streets have several advantages over wider streets:

- Narrow streets use less material, and therefore cost less to build and maintain.
- Speed is reduced on narrower streets, especially when parking is present.
- The reduced crossing width of skinny streets is beneficial for pedestrians.
- Less impervious surface means less surface water impact.



This Kirkland Street is 34' wide and was built to King County standards before annexation. Speed humps were installed to slow traffic.



A 20' wide skinny street where parking is allowed on one side.

Policies

Policy T-5.1 *Focus on transportation system developments that expand and improve walkable neighborhoods.*

The prioritization of transportation improvements should be weighted toward those projects that expand or enhance connections within 10 minute neighborhoods (see Land Use Element of Comprehensive Plan). These could include building missing sidewalks within such neighborhoods or creating new trails that expand high quality walkable neighborhoods. (See Policy T-1.3)

These areas should serve as focal points for local and regional transit service and should include high quality passenger environments. (See Policy T-1.4)

Similarly, bicycling should be easy and comfortable for a wide range of users in and between 10 minute neighborhoods. (See Policy T-2.2, T-2.3)

Based on the Vision for the Comprehensive Plan, street improvements that add vehicle capacity should be designed to facilitate walking, biking and transit as well.

Action T-5.1.1: As described in connection with Goals T-1 through T-4, ensure that walkable neighborhoods are considered in the planning of transportation projects and programs.

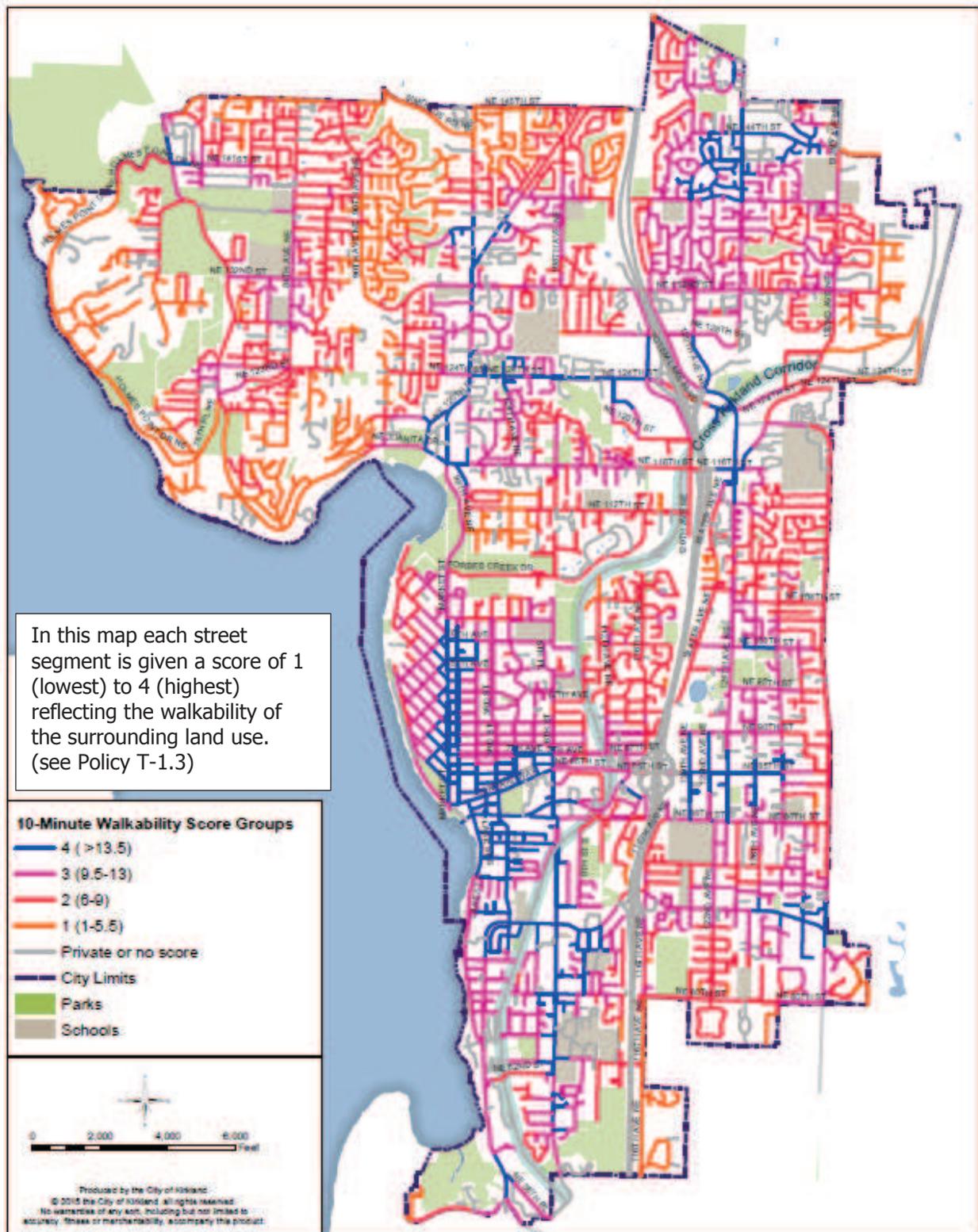
Policy T-5.2 *Design Streets in a manner that supports the land use plan and that supports the other goals and policies of the transportation plan.*

Street design should be guided by modern, urban focused design guidelines such as those published by the National Association of City Transportation Officials Urban Street Design Guidelines. (See Policy T-1.1) and should include lighting, green spaces, street trees, wayfinding, street furniture, etc. Kirkland's Zoning Code contains policies for street widths.

Street design should preserve existing significant trees and include new street trees and landscaping in the right-of-way to enhance the streetscape. Where significant trees are removed, they should be replaced

or the loss should be otherwise mitigated. Street trees should be selected to minimize interference with other infrastructure and obstruction of public views from streets.

Action T-5.2.1: Review design standards and adopt guidelines that are in keeping with policies in this plan and that consider the best design practices in the industry.



Walkability

Freight and Loading

Most of the freight traffic through Kirkland travels on I-405.

Freight traffic most impacts Kirkland through deliveries in downtown. Loading zones give businesses needed space to load, but also take valuable parking from customers.



On-street parking is in low demand early in the morning and can be used for loading without creating conflicts



In addition to loading zones, alleys can also be used for loading.



The truck using this loading zone is encroaching into a bike lane, illustrating the overlapping uses of street space; for parking, loading, cars and bikes.

Policy T-5.3 Create a transportation network that supports economic development goals.

All transportation improvements should be evaluated in terms of their ability to support economic development. In addition to street improvement projects that build capacity for new commercial development, examples of projects that support economic development include bicycle parking improvements that bring bicycle customers to local businesses, transportation demand programs that make it easier for employees to get to work by a variety of modes, and creation of loading zones that expedite delivery of goods. (See the Economic Development Element of the Comprehensive Plan). Benefits to economic development goals need to be balanced with impacts that may be created by pursuing these benefits.

Action T-5.3.1: As described in connection with Goals T-1 through T-4, ensure that economic development goals are considered in the planning of transportation projects and programs.

Policy T-5.4 Develop transportation improvements tailored to commercial land use districts such as Totem Lake, Downtown and neighborhood business areas.

Fostering growth in Kirkland will require careful consideration of transportation facilities. This is particularly important in areas where traffic congestion occurs regularly and where increases in growth are planned.

The Land Use Vision must not be lost in a quest to remove traffic congestion. For example, it should not be expected that street or intersection widening will be a primary tool in developing walkable, bikeable, livable neighborhood business areas, because this strategy would contradict the very land use vision it is intended to support. Instead, transportation facilities that allow safe and convenient travel by other modes should be promoted. This is not to suggest that cars will be abandoned, but rather to recognize that over the next 20 years, the City of Kirkland is pursuing a transportation approach consistent with its vision: a path that is different than the one laid out in previous plans.

Totem Lake and Downtown Kirkland should have primary connections to regional transit. Because of the size of the Totem Lake Urban Center it is important to make sure that regional transit effectively serves the entire center. (See Policy T-7.1) Transit availability on the Cross Kirkland Corridor and I-405 will be particularly important.

New and reconfigured interchanges with I-405 will improve transportation for all modes and should be pursued. (See Policy T-7.3) As discussed in the chapters on walking and biking, the existing freeway interchanges are barriers and, in the case of NE 124th Street, severely constrain, the ability to move from one side of the Totem Lake Urban Center to the other. The space dedicated to the NE 124th Street interchange is substantial and if the interchange were designed more efficiently, valuable space could be freed up for more productive purposes. While reconstructing interchanges has large benefits, it also has high costs and long time frames.

The illustration below shows the I-405/NE 124th interchange superimposed on downtown Kirkland to give a relative sense of its footprint.



Four elements of development review

1. **Concurrency** ensures that the rate at which new trips from new development is in keeping with construction of the 20 year network to accommodate those trips has been constructed.
2. **State Environmental Protection Act (SEPA)** This state legislation allows jurisdictions to require developments to mitigate site-specific impacts, for example building a traffic signal at a project driveway.
3. In contrast to SEPA which covers site-specific issues, **Impact Fees** are paid by development to help fund system-wide improvements.
4. **Frontage improvements**, such as sidewalks.

Tale of 2 Cities. The illustration below shows the differences in travel options between two street networks. The connecting streets in the lower half of the figure make it possible to walk or bike between destinations. Cul-de-sacs and loop roads in the upper part of the drawing make trips between destinations longer and more likely to be auto oriented; even short trips.



The photo below shows a new connection that was made as a part of new development.



Policy T-5.5 Require new development to mitigate site specific and system wide transportation impacts.

A sizable number of public improvements are built by the private sector as part of new development projects. Therefore, it is critical that policies, guidelines and practices used to plan, design and construct private improvements are consistent with the Transportation Goals.

For individual development, the nature and timing of the mitigation should be based on the magnitude and proportionate share of the impacts and the timing of development. Mitigation may be necessary for impacts to intersections and local roadways, including pedestrian, bicycle and transit facilities. In addition, mitigation may be needed for site access to and from the local roadway system, including the connection or consolidation of driveways between parcels under separate ownership. The City maintains guidelines to establish the basis for mitigation, its timing and its extent.

Throughout the City, private development is required, as part of the development process, to fund improvements needed to mitigate the impacts of their developments such as new streets, traffic signals and turn lanes.

To reduce the risk of crashes and or to mitigate traffic congestion, it is sometimes necessary to limit access between roadways and driveways or to connect parking lots. This may come in the form of fewer driveways or limitations on the driveways that are allowed. In other cases private development will be required to provide turn lanes to ease access.

Private development is often required to dedicate land for construction of streets, sidewalks, bicycle facilities,

through connections and other improvements needed to support transportation goals and policies.

City of Kirkland Transportation Master Plan, December 2015

Kirkland maintains a transportation demand planning model (the Bellevue-Kirkland-Redmond or BKR Model) in cooperation with the Cities of Redmond and Bellevue. This planning model should continue and the model should be improved to recognize advances in regional modeling such as better modeling of transit, biking and walking.

Action T-5.5.1: Review, streamline and codify as reasonable, components of transportation-related development review.

Action T-5.5.2: Participate in the maintenance and improvements of the BKR model.

Policy T-5.6 Create a system of streets and trails that form an interconnected network.

As a part of land development, new connections to the existing street system are often required. These may be full streets or connections for emergency vehicles, bicycles and pedestrians.

Traffic spread over a grid of streets, balances and minimizes impacts across the network. Therefore, the fact that new connections may increase traffic volume on some existing streets is not a sufficient reason for rejecting such new connections.

Emergency response times are shorter and more reliable when responders have several routing options and new connections often provide these additional options.

Time saving and safe bicycle and pedestrian connections can be made by adding trail connections between cul-de-sacs.

Action T-5.6.1: Develop a plan for connections between street ends and complete those connections.

Travel Forecasting

The BKR model was originally developed in the early 1990s by City of Bellevue staff as a tool for transportation planning and concurrency monitoring. The model has been periodically updated over the years by Bellevue staff and consultants to incorporate changes in land uses and travel patterns. The last major overhaul to the model framework occurred in 2008, which incorporated travel pattern data from the PSRC's 2006 household travel survey.

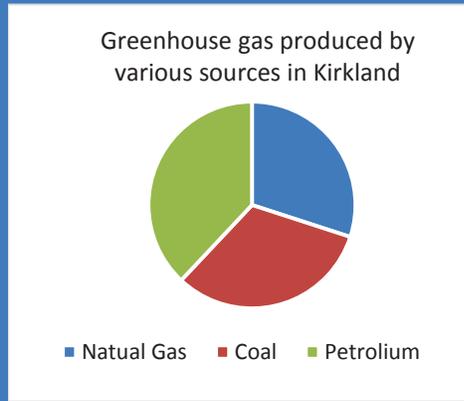
The BKR model is a classic four-step model. For over half a century, four-step models have been the primary tool for estimating future travel demand for transportation planning projects in the United States. These models use a series of calculations that determine trip characteristics based on assumed land use patterns, socio-economic data and transportation system parameters.

The 20 year land use assumptions, as described in the Land Use Element of the Comprehensive Plan, were input to the BKR model to perform travel modeling. The BKR model also assumes growth throughout the region, as forecast by PSRC.

The travel modelling assumed the planned improvements along SR 520 and in the I-405 Master Plan, including Express Toll Lanes. The overall land uses in the BKR model were reasonably consistent with the land uses assumed in the modeling done for the WSDOT projects. Given the consistency with recent state efforts, the City did not undertake a separate study of freeway operations. Instead, the Comprehensive Plan includes policies to coordinate with the state to maintain mobility along state routes, which are vital transportation facilities connecting Kirkland with the rest of the region.

Chapter 7. BE SUSTAINABLE

A Greener Future



It's estimated that about 38% of Kirkland's greenhouse gas emissions are attributable to the consumption of petroleum in transportation. Coal and natural gas are the source of about two thirds of greenhouse gas emissions.

Kirkland has a goal of reducing greenhouse gas emissions to 50% of their 2007 levels by 2030. There are several components that are forecast to be needed in order to accomplish that goal such as: higher reliance on renewable energy sources, greater energy conservation, etc. One of the components is the reduction of vehicle-miles-of-travel by 40%. This is an ambitious goal and will require the realization of the goals and objectives in this plan.

2012 Street Levy for Maintenance

The 2012 Street Levy raises about \$2.7 million per year over the next 20 years. 5% of the levy is set aside for school walk routes and 5% for neighborhood safety. The remainder will be added to the approximately \$1.75 million of annual non-levy funding for pavement maintenance. This funding is set aside by policy for pavement maintenance.

Goal T-6 As the transportation system is planned, designed, built, maintained and operated, provide mobility for all using reasonably assured revenue sources while minimizing environmental impacts.

Background

Kirkland faces challenges related to both fiscal and environmental sustainability that affect the transportation system.

Fundamental to economic sustainability is the need to keep costs for transportation in line with expected revenue. A list of unfunded transportation projects should be developed to provide opportunities for grant funding or other unexpected revenue sources and as a way of indicating future aspirations for the transportation system. Transportation Impact fees are a source of revenue that can be used for a variety of transportation projects, including the Cross Kirkland Corridor, that meet certain criteria.

Maintaining existing infrastructure in good condition is a critical requirement of sustainability. Kirkland's residents have continued to show support for maintenance efforts by passing a Street Levy in 2012. The bulk of the funding from the levy goes toward pavement maintenance. (See sidebar) There are a number of other systems – sidewalks, traffic signals, lighting systems, that do not currently have robust maintenance programs and this plan proposes remedying that shortcoming.

Because roughly half of greenhouse gas emissions are transportation related, it is virtually impossible to meet adopted climate change goals without changing the way we travel. Electric vehicles may be one way that technology can help meet this challenge. Auto-based transportation is also a primary contributor to water and air pollution. It is increasingly being recognized that active transportation like walking and bicycling can play important roles in promoting public health in a community.

Natural disasters have the potential to severely damage or destroy key links and systems in the transportation network. Sustaining the transportation system requires planning for the prevention of and recovery from such events.

Sustainability also encompasses accessibility of transportation. The transportation system should be accessible and provide benefit to all users throughout Kirkland regardless of mobility, vision, hearing and cognitive capabilities.

In accordance with Federal and State law, care is needed to ensure that low-income, special needs and minority populations are not unduly subject to negative impacts from transportation improvements and that they are fully included in decision making processes.

Cars and surface water

Car wash runoff

Dirty car wash water contaminates waterways with petroleum hydrocarbons, heavy metals, phosphorus, nitrogen, and sediments. Soaps (including biodegradable soaps) dissolve the protective mucous layer on fish and the natural oils in gills, making fish more susceptible to disease. Commercial car washes help solve this problem by sending dirty water to treatment plants.

Vehicle leaks

Vehicles drip an estimated 7 million quarts of motor oil into the Puget Sound watershed each year. This accounts for slightly less than two-thirds of the total estimated release of petroleum-related compounds into Puget Sound. Watching for and fixing leaks right way can minimize this form of contamination.

Exhaust particulates

Vehicle emissions send large amounts of harmful contaminants into our air which are deposited onto our roads and into local rivers, lakes, and streams.

Brake pads and tires

As brake pads and tires wear down, copper, zinc and other metals are deposited on roadways, where they are washed into our streams and rivers. Copper is highly toxic to fish and other aquatic species. Young salmon are especially susceptible to the effects of copper. Washington's Better Brakes Law, passed in 2010, restricts the use of several heavy metals and asbestos and provides a phase out of copper.



How much is enough?

This plan’s funding assumptions are based on conservative estimates of past performance.

As the plan is revised in the future these assumptions may need to be adjusted for changes in revenue or costs or the goals of the plan. Over time, the goals of the Plan may be altered with a resulting need to change the blend of transportation projects to be constructed.

In any case, regular adjustments should be made to funding and expenses to ensure that the goals of the Plan are met in a manner.

Non-Capital expenses

Fulfilling some of the policies of the plan will require funding from sources other than the Capital Facilities Program.

Support for bicycling. Counting bicycle volumes, promoting bike use and creating wayfinding maps are examples of important projects that would not be typically be funded with capital revenue. (see policy T-2.4) Support for walking has similar funding needs.

Transit service. The City may wish to provide funding for transit service, either as scheduled service or in some other form (see Goal T-3). Transit service would likely not be funded by Capital funds.

Policies

Policy T-6.1 *Balance overall public capital expenditures and revenues for transportation.*

Because certain projects are good candidates for specific types of funding and for other reasons, there is a need to maintain a list of “unfunded” projects, but the cost of all unfunded projects should be a small percentage of the expected revenue over the 20 year plan. The unfunded list should also be focused on the goals of the plan rather than a collection of unconnected projects.

Impact fees are a means for new growth to pay for a fair share of system improvements, funding projects that benefit the entire transportation system, not just a particular development. In Kirkland, Transportation Impact fees represent up to about 15 percent of the expected revenue over the next 20 years.

Fundamental to Kirkland’s transportation vision is the concept that Kirkland’s transportation system is multimodal. Therefore, all types of projects contribute to the capacity of the transportation system and are therefore, eligible for impact fees. Because of this, impact fee calculations should be based on person trips rather than vehicle trips.

Notably, the Cross Kirkland Corridor is eligible for impact fees because of the capacity it provides for as a vital link for north-south transportation.

Action T-6.1.1: Revise the Impact Fee policy to support the goals of the Transportation Master Plan.

Many types of funding are used to fund the transportation system

Capital project funding	
Source	Annual Amount (million)
Gas tax	\$ 0.56
Business Licenses	\$ 0.27
Real estate excise tax	\$ 1.42
Street levy	\$ 2.60
Solid waste fund	\$ 0.30
Surface water fund	\$ 0.50
Impact fees	\$ 2.00
Grants	\$ 3.50
Developer Fees	\$ 1.25
Other	\$ 0.25
TOTAL	\$12.65
<i>\$12.50 million per year \$250 million over 20 years.</i>	

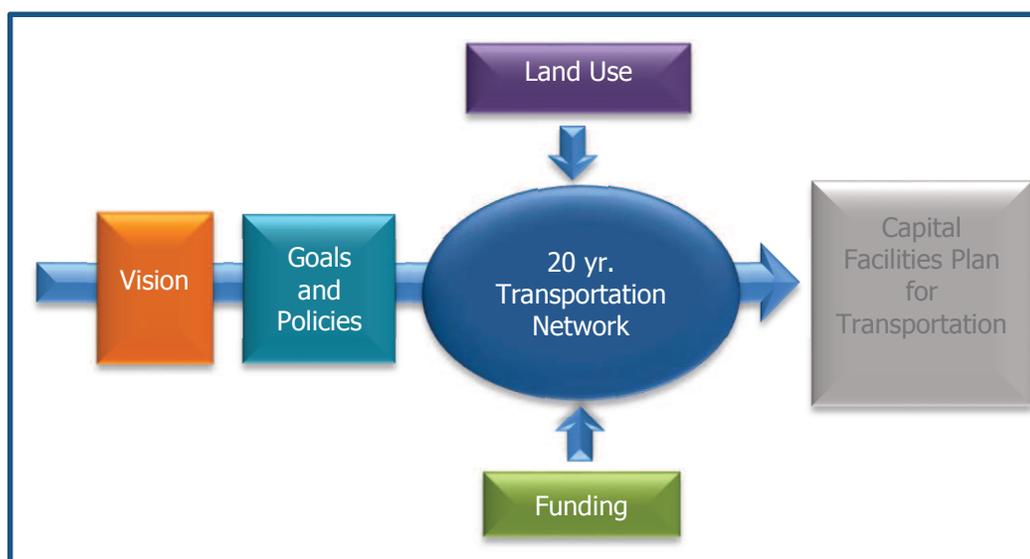
20 year Transportation Project List / Transportation Capital Facilities Plan.

A 20 year project list is a required component of the Transportation Element and of the Capital Facilities Element of the Comprehensive Plan. It is a set of projects that is estimated, at a high level, to be funded within reasonably expected revenue. As described below, for some categories project detail is available, and in other areas, less detail is available. In these cases, a placeholder amount of funding is shown as necessary to complete the 20 year list. The costs projected for many projects is at the early planning level. The 20 year project list is formally adopted as the Transportation Capital Facilities Plan.

Because the 20 year Transportation Project List will be updated regularly, it should be viewed as a document that gives planning direction and that reflects the policy direction, rather than spelling out the specifics of each project to be completed between now and 2035. Revisiting the 20 year Transportation Project List when the Capital Improvement Program is updated would be a logical course of action. The 6-year Capital Improvement Program is the document that draws on the 20 year Transportation Project List to develop a set of specific projects that can be programmed with immediately available revenue. Consistent with the Totem Lake Business District plan, spending on the 20 year Transportation Project List is prioritized to support development of the Regional Center. One example of this prioritization is the designation of an opportunity fund to respond to and support development in the Totem Lake Urban Center. (See Policy T-5.3)

Once overall funding levels are established, the 20 year project list is established as follows:

1. By policy, recognize a 20 year street maintenance budget of approximately \$85 million of street levy and other committed funds.
2. Following the Goals and Policies in this document, establish project categories within each main area of the Plan (Safety, Maintenance, Walk, Bike, Transit, Auto) (see Table below).
3. For each project category, develop a recommended set of funded projects. For most project categories, this is based on a combination of factors: a) projects that will meet the goals and policies in the TMP selected from a variety of sources; b) fiscal balance across project types, c) projects that have been previously considered; and, d) judgment of a sensible level of completeness for a project category. Sometimes it represents a placeholder amount awaiting another level of analysis. Often a study is called for that will provide guidance for more detailed project analysis.



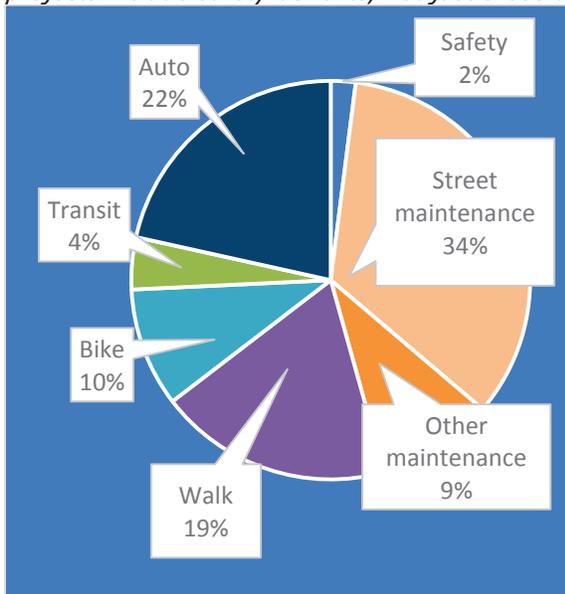
The illustration (above) shows how vision, goals and policies, funding and land use influence the 20 yr. transportation network. The network is the source of projects for the 6 yr. funded CIP and unfunded projects are also part of the list.

It is expected that the 20 year Transportation Project List will serve a main source of future transportation Capital Improvement Program projects and individual projects will be prioritized within groups based on the prioritization criteria in the Goals and Policies of this plan. As mentioned above, the 20 year Project List should be updated at least every two years in coordination with the Capital Improvement Program process. Revenue assumptions and level of funding will be adjusted with each biennial budget.

An initial allocation of funding has been made as summarized in the following Table which contains eight columns as follows:

1. *Mode:* This is the general category of project. In addition to Walk, Bike, Transit and Auto, Safety and Maintenance are included as modes for simplicity. The Safety and Maintenance areas actually have projects in several modes.
2. *Category:* Categories divide the Modes into project areas, like school walk routes vs. projects that support sidewalks in 10 minute neighborhoods. This column includes Map reference number.
3. *Basis for 20 year funding:* This describes how the funding amount was set for the 20 year Transportation Project list in a particular category.
4. *20 Yr. funding:* This a planning level estimate of the amount needed to fund the basis for the 20 year list in millions of dollars.
5. *Early Priorities:* As the title suggests, this is staff’s recommendation for the first projects that should be funded in the CIP from this category. Projects that meet multiple policy objectives and grant funded projects were ranked as high priority and should be reflected in the current CIP process.
6. *Key Unfunded Elements:* Projects that are not included in the *Basis for 20 year funding* column are described here. Not all categories have an entry in this column.
7. *Unfunded Costs:* Funding necessary for the key unfunded elements
8. *Transportation Master Plan Policy Support:* Policies from the Master Plan that support the mode

This chart shows the split, by mode, of funding for the 20 yr. Transportation Plan. Note that many projects include safety benefits, not just those designated as safety projects.



20 year project Table part a

MODE	CATEGORY	BASIS FOR 20yr FUNDING	20 YR FUNDING (million)	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST (millions)	TRANSPORTATION MASTER PLAN POLICY SUPPORT
Safety	Vision Zero Safety	Opportunity fund for projects that result from Vision Zero process.	\$ 1.0	Develop a vision zero program.	Unsure until Vision zero gets started.		Develop a vision zero safety plan that is multi-disciplinary and focuses on innovative approaches to safety.
	New signals, driveway management, flashing yellow arrow.	Opportunity fund. Estimate of need.	\$ 3.0	Flashing yellow candidate intersections	May need more or different new signal locations, driveway mitigation areas etc.	New signals at around \$.75 m each.	Reduce crash rates for motor vehicles, mitigate impacts of motor vehicles on neighborhood streets.
	Neighborhood Traffic Control Program.	Opportunity fund. Same funding level as when program was previously funded.	\$1.0	Previously identified locations; Slater Ave.	This level of funding should be adequate to meet the currently anticipated need.		
Maintenance	Pavement.	Pavement Condition Index, meeting 20 year targets of 70 for arterials and collectors and 74 for other streets.	\$85.0	Based on existing condition.	Should be adequate to achieve PCI target.		Previous policy decision.
	Signals.	Basic replacement schedule.	\$7.5	Oldest signals/equipment.	Some items will be obsolete before they are replaced.	\$13.5	Place high priority on maintenance, Use ITS.
	Markings.	Estimate of need.	\$ 12.0	Annual inspection.	Funding level should be adequate; reevaluate in the future.		Place high priority on maintenance, increase safety, improve facilities, and build networks for bikes.
	Sidewalk.	Opportunity fund. Same funding level as past years.	\$ 4.0	Base on inventory of sidewalk conditions. Expected to be completed in 2015.	Reassess after inventory is completed.		Place high priority on maintenance, Remove barriers to walking improve safety of walking, integrate transit with ped/bike networks.

City of Kirkland Transportation Master Plan December 2015

20 year project Table part b

MODE	CATEGORY	BASIS FOR 20yr FUNDING	20 YR FUNDING (million)	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST (million)	TRANSPORTATION MASTER PLAN POLICY SUPPORT
Walk	School Walk Routes	Complete sidewalk on one side of arterials and collectors.	\$ 4.5	Places where these 3 categories overlap. Also Revised Active Transportation Plan.	Local streets.		Walking: remove barriers, increase safety, improve walk to school. Improve pedestrian connections to transit. Improve walkable neighborhoods, connect to commercial areas. Promote energy efficient modes, reduce pollution, and provide mobility for all users.
	10 min Neighborhoods	Top 2 groups on arterials and collectors.	\$ 6.0		Other categories of 10 minute walkability, other street classifications.	\$9	
	Arterials and Collectors	Missing sidewalks on Principal arterials.	\$ 3.0		Complete sidewalk on other streets.	Has not been estimated.	
	New crosswalks, poor lighting, fewer improvements, at signals MAP 8.	Improving lighting at candidate locations on all streets, locations with few improvements on arterials, new crosswalks, improvements at signals.	\$ 9.5	Groups of crosswalks on arterials, NE 124/113 NE signal.	Crosswalks on local streets.	Has not been estimated.	All policies for sidewalks (above) plus, improve crossings for pedestrians
	CKC	Opportunity fund. Some design and some construction of the CKC to master plan vision and completion of some connections to the corridor.	\$ 15.0	Design of NE 124 th /124 th NE bridge, South Kirkland Park and ride to 6 th Section. Connections to Park Place, Forbes Creek drive.	Complete design and construction of corridor and connections.	Design and construction of complete corridor is estimated at \$70 to \$80 m. Full connection costs have not been estimated.	Develop CKC for walking and biking, integrate ped and bike networks with transit, promote energy efficient modes, reduce pollution, implement transit on CKC, Provide mobility for all users.
	Other trails	Opportunity Fund. Need plan from revised Active Transportation Plan.	\$ 2.0	Connections between Finn Hill and Juanita Beach area.	Reassess after Plan is completed.		
	Accessibility	Opportunity fund, placeholder funding amount.	\$ 7.0	Complete ADA Transition plan.	Reassess after Plan is completed.		Remove barriers to walking, provide mobility for all users, minimize impacts to special need populations.

City of Kirkland Transportation Master Plan, December 2015

20 year project Table part c

MODE	CATEGORY	BASIS FOR 20yr FUNDING	20 YR FUNDING (million)	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST (million)	TRANSPORTATION MASTER PLAN POLICY SUPPORT
Bike	On-Street / Protected	Juanita Drive, Protected lane placeholder, other restriping.	\$ 18.0	Juanita Drive and Lakefront grants.	Need to define after revised Active Transportation Plan.		Improve safety, create and improve on-street bikeways, bicycle connections to transit, connect to commercial areas.
	Greenways	Complete network.	\$ 6.0	NE 75 th /Kirkland Way, NE 140 th , NE 100 th 128 th Ave	Bridges over I-405 at NE 90 th and NE 140 th Streets. Redefine after revised Active Transportation Plan.	\$9	Improve safety, build a network of greenways, bicycle connections to transit, connect to commercial areas.
Transit	Speed and Reliability	Placeholder -need transit plan.	\$ 6.5	Complete transit plan.	Transit on CKC.	Has not been estimated.	Create environment to support transit service, partner to provide transit projects in exchange for service.
	Passenger environment	Improvements at 30 high ridership stops - need transit plan.	\$ 4.0	Complete transit plan.	Kingsgate P&R TOD.	\$30 (placeholder estimate)	Support safe and comfortable passenger facilities.
Auto	Efficiency	Placeholder amounts for connecting additional signals, updating control methods, better traveler information.	\$ 5.5	Complete existing ITS projects, Revise ITS plan.	Need to define after revised ITS Plan.		Use ITS to support optimization of roadway networks.
	Respond to Support Development	Opportunity fund for downtown, Totem Lake and parking.	\$ 13.0	Totem Lake Mall improvements (funded separately) downtown parking solutions.	Connections in Totem Lake have not been estimated.		Make investments in capacity to support proposed land use, support economic development goals, tailor improvements to commercial land use districts.
	Other Auto projects	NE 132nd, Juanita Drive, 100th Avenue, interchange development funds.	\$ 35.0	100 th Avenue design and construction.	Many other projects are on the current unfunded CIP list.		Make strategic investments in intersection and street capacity, Work with WSDOT on interchange improvements.

City of Kirkland Transportation Master Plan December 2015

In addition to the capital projects in the proceeding tables, there are non-capital expenditures needed to support the vision and goals of this plan.

Mode	Category	Description	20 yr. funding (\$m)
Walk	Support	Maps, wayfinding, encouragement, promotion (see chart in Goal T-2 Background section)	\$1.3
Bike			\$1.6
Transit	Service	Kirkland may wish to purchase or provide transit service.	\$10.0
	Support/Transportation Demand Management	Promotion of transit, management of CTR and TMP sites, matching funds for grants (see Policy T-3.4)	\$1.3

The Transportation Capital Facilities Plan is shown on the next page. More detailed information is presented in the Capital Facilities Element of the Comprehensive Plan.

City of Kirkland Transportation Master Plan, December 2015

Transportation Capital Facilities Plan

Transportation Capital Facilities Plan 2015-2035													
CIP Project Number	Project Title	Included in Impact Fee calculation?	Capacity project for concurrency?	Funded in CIP						Funded CIP 2015-2020	Unfunded CIP 2021	Candidate Projects for Unanticipated Revenue	
				2015	2016	2017	2018	2019	2020				
ST 0006	Annual Street Preservation Program	No - maintenance	No - maintenance	\$ 1,750,000	\$ 1,750,000	\$ 1,750,000	\$ 1,750,000	\$ 1,750,000	\$ 1,750,000	\$ 10,500,000	\$ 26,250,000		
ST 0006 002	Annual Street Preservation Program-One-time Project	No - maintenance	No - maintenance	\$ 1,768,500						\$ 1,768,500	\$ -		
ST 0006 003	Street Levy Street Preservation	No - maintenance	No - maintenance	\$ 2,300,000	\$ 2,300,000	\$ 2,326,000	\$ 2,352,000	\$ 2,379,000	\$ 2,406,000	\$ 14,063,000	\$ 36,000,000		
ST 0070	120th Ave NE/Totem Lake Plaza Roadway Improvements	No - developer funded	Yes		\$ 3,000,000					\$ 3,000,000			
ST 0080	Annual Striping Program	No - maintenance	No - maintenance	\$ 350,000	\$ 400,000	\$ 400,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,650,000	\$ 7,500,000		
ST 0083 101	100th Ave NE Roadway Design	Yes R10	Yes	\$ 1,065,200	\$ 2,144,000					\$ 3,209,200			
ST 0083 102	100th Ave NE Roadway Improvements	Yes R10	Yes					\$ 5,000,000	\$ 5,485,000	\$ 10,485,000			
ST 0087	6th Street South Corridor Study	No - study	No - study	\$ 150,000						\$ 150,000			
ST 0088	Arterial Streetlight LED Conversion	No - maintenance	No - maintenance	\$ 82,000	\$ 900,000					\$ 982,000			
ST 9990	Regional Inter-Agency Coordination	No - not capacity	No - not capacity	\$ 150,000	\$ 82,000	\$ 82,000	\$ 82,000	\$ 82,000	\$ 82,000	\$ 492,000	\$ 1,230,000		
NM 0006 100	Street Levy Safe School Walk Routes	Yes NM4*	Yes	\$ 150,000						\$ 150,000			
NM 0006 200	Street Levy-Pedestrian Safety	No - safety	No - safety	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 900,000			
NM 0006 201	Neighborhood Safety Program Improvements	No - safety	No - safety	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,200,000	\$ 3,000,000		
NM 0007	Cross Kirkland Corridor Connection - NE 52nd Street Sidewalk	Yes NM3	Yes	\$ 682,000	\$ 454,900					\$ 1,136,900			
NM 0012	Crosswalk Upgrade Program	Yes NMS*	Yes	\$ 70,000				\$ 50,000	\$ 50,000	\$ 170,000			
NM 0012 001	NE 116th Street Crosswalk Upgrade	Yes NMS	Yes		\$ 200,000		\$ 230,000			\$ 430,000			
NM 0012 002	NE 124th Street Crosswalk Upgrade	Yes NMS	Yes		\$ 80,000					\$ 80,000			
NM 0012 003	132nd Avenue NE Crosswalk Upgrade	Yes NMS	Yes				\$ 250,000			\$ 250,000			
NM 0024 301	King County Eastside Rail Acquisition in North Kirkland	No - not capacity	No - not capacity				\$ 300,000	\$ 300,000		\$ 600,000			
NM 0057	Annual Sidewalk Maintenance Program	No - maintenance	No - maintenance	\$ 200,000	\$ 200,000			\$ 200,000	\$ 200,000	\$ 800,000	\$ 3,000,000		
NM 0084	South Kirkland TOD/CKC Multi-Modal Connection	No - not capacity	No - not capacity	\$ 2,021,400	\$ 132,600					\$ 2,154,000			
NM 0086 001	NE 124th St/124th Ave NE Pedestrian Bridge Design	Yes NM3	Yes	\$ 750,000		\$ 750,000				\$ 1,500,000			
NM 0086 002	NE 124th St/124th Ave NE Pedestrian Bridge Construction	Yes NM3	Yes			\$ 4,060,000	\$ 7,300,000			\$ 11,360,000			
NM 0087	Citywide School Walk Route Enhancements	Yes NM4*	Yes	\$ 1,000,000		\$ 864,200	\$ 869,000	\$ 450,000	\$ 400,000	\$ 3,583,200			
NM 0087 001	North Kirkland/IFK School Walk Route Enhancements	Yes NM4*	Yes					\$ 500,000	\$ 500,000	\$ 1,000,000			
NM 0089	Lake Front Pedestrian and Bicycle Improvements	Yes NM1	Yes	\$ 106,400	\$ 893,600					\$ 1,000,000			
NM 0090	Juanita Drive 'Quick Wins'	Yes NM1	Yes	\$ 200,800	\$ 485,800	\$ 663,400				\$ 1,350,000			
NM 0090 001	Juanita Drive Multi-Modal (On-Street) Improvements	Yes NM1	Yes					\$ 500,000		\$ 500,000			
NM 0092	Active Transportation Plan Update	No - study	No - study			\$ 75,000				\$ 75,000			
NM 0095	124th Avenue NE Sidewalk Improvements	Yes NM4	Yes	\$ 420,000	\$ 630,000					\$ 1,050,000			
NM 0098	Kirkland Way Sidewalk Improvements	Yes NM4	Yes				\$ 2,120,000			\$ 2,120,000			
NM 0109	Citywide Trail Connections (Non-CKC)	No - not capacity	No - not capacity					\$ 275,000		\$ 275,000			
NM 0109 001	Finn Hill Connections	No - not capacity	No - not capacity				\$ 250,000			\$ 250,000			
NM 0109 002	Lake Front Promenade Design Study	No - study	No - study					\$ 75,000		\$ 75,000			
NM 0110	Citywide Accessibility Transition Plan	No - study	No - study	\$ 50,000						\$ 50,000			
NM 0110 001	Citywide Accessibility Improvements	No - not capacity	No - not capacity				\$ 100,000	\$ 100,000	\$ 100,000	\$ 300,000			
NM 0113	Citywide Greenways Networks	Yes NM2	Yes					\$ 250,000		\$ 250,000			
NM 0113 001	Citywide Greenways Network Project-NE 75th Street	Yes NM2	Yes	\$ 250,000	\$ 250,000					\$ 500,000			
NM 0113 002	Citywide Greenways Network Project-128th Avenue NE	Yes NM2	Yes				\$ 400,000	\$ 400,000		\$ 800,000			
NM 0114	CKC Bridge Connecting to Houghton Shopping Center	No - not capacity	Yes	\$ 175,000						\$ 175,000			
NM 0115	CKC Emergent Projects Opportunity Fund	Yes NM3*	Yes	\$ 100,000	\$ 100,000					\$ 200,000			
NM 0116	Rose Hill ped path ROW acquisition	No - not capacity	No	\$ 100,000						\$ 100,000			
PT 0001	Citywide Transit Study	No - study	No - study			\$ 300,000				\$ 300,000			
PT 0001 -100	Sound Transit 3 Project Study	No - study	No - study	\$ 250,000						\$ 250,000			
TR 0079 001	NE 85th St/14th Ave Intersection Improvements Phase II	No - developer funded	Yes			\$ 1,800,000				\$ 1,800,000			
TR 0082	Central Way/Park Place Center Traffic Signal	No - developer funded	Yes			\$ 200,000				\$ 200,000			
TR 0099	120th Ave/Totem Lake Way Intersection Improvements	No - developer funded	Yes	\$ 2,845,500						\$ 2,845,500			
TR 0100 100	6th Street & Central Way Intersection Improvements Phase 2	No - developer funded	Yes			\$ 1,866,800				\$ 1,866,800			
TR 0103	Central Way/4th Street Intersection Improvements	No - developer funded	Yes			\$ 31,000				\$ 31,000			
TR 0104	6th Street/4th Ave Intersection Improvements	No - developer funded	Yes			\$ 580,000				\$ 580,000			
TR 0105	Central Way/5th Street Intersection Improvements	No - developer funded	Yes			\$ 564,000				\$ 564,000			
TR 0109	Totem Lake Plaza/Totem Lake Blvd Intersection Imprv.	No - developer funded	Yes	\$ 1,500,000						\$ 1,500,000			
TR 0110	Totem Lake Plaza/120th Ave NE Intersection Imprv.	No - developer funded	Yes	\$ 1,500,000						\$ 1,500,000			
TR 0116	Annual Signal Maintenance Program	No - maintenance	No - maintenance	\$ 150,000	\$ 150,000	\$ 150,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 850,000	\$ 3,000,000		
TR 0117	Citywide Traffic Management Safety Improvements	No - safety	No - safety		\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 400,000	\$ 1,500,000		
TR 0117 001	Flashing Yellow Signal Head Safety Improvements	No - safety	No - safety	\$ 50,000						\$ 50,000			
TR 0117 002	Vision Zero Safety Improvement	No - safety	No - safety	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 250,000	\$ 750,000		
TR 0117 003	Neighborhood Traffic Control	No - not capacity	No - safety	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 150,000	\$ 375,000		
TR 0118	General Parking Lot Improvements	No - not capacity	No - not capacity	\$ 720,000	\$ 100,000					\$ 820,000			
TR 0119	Kirkland Citywide Intelligent Transportation System Study	No - study	No - study		\$ 75,000					\$ 75,000			
TR 0120	Kirkland Intelligent Transportation System Phase 3	Yes R19,R20	Yes			\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 1,350,000			
TR 0122	Totem Lake Intersection Improvements	Yes depending on scope*	Yes	\$ 6,000,000						\$ 6,000,000			
FUNDED TOTAL											\$ 102,884,100		
ST 0059 000	124th Ave NE Roadway Improvements (North Section)	Yes R24	Yes								\$ 10,000,000		
ST 0063	120th Avenue NE Roadway Improvements (north)	Yes R18*	Yes								\$ 4,500,000		
ST 0072	NE 120th St Roadway Improvements	Yes R25	Yes								\$ 15,780,600		
ST 0077	NE 132nd St Rdwy Imprv - Phase I (West Section)	Yes R1	Yes								\$ 1,348,000		
ST 0078	NE 132nd St Rdwy Imprv-Phase II (Mid Section)	Yes R2	Yes								\$ 316,000		
ST 0079	NE 132nd St Rdwy Imprv-Phase III (East Section)	Yes R3	Yes								\$ 1,119,000		
ST 0081	Totem Lake Area Development Opportunity Program	Yes*	Yes								\$ 500,000		
ST 0089	Juanita Drive Auto Improvements	Yes R12	Yes								\$ 6,600,000		
PT 0002	Public Transit Speed and Reliability Improvements	Yes T1	Yes								\$ 500,000		
PT 0003	Public Transit Passenger Environment Improvements	Yes T2	Yes								\$ 500,000		
TR 0091	NE 124th St/124th Ave NE Intersection Improvements	Yes R13	Yes								\$ 1,598,000		
TR 0092	NE 116th St/124th Ave NE N-bound Dual Left Turn Lanes	Yes R14	Yes								\$ 1,375,000		
TR 0093	NE 132nd St/Juanita H.S. Access Rd Intersect'n Imp	Yes R4	Yes								\$ 916,000		
TR 0094	NE 132nd St/108th Avenue NE Intersect'n Imp	Yes R5	Yes								\$ 618,000		
TR 0095	NE 132nd St/Fire Stn Access Dr Intersect'n Imp	Yes R6	Yes								\$ 366,000		
TR 0096	NE 132nd St/124th Ave NE Intersect'n Imp	Yes R7	Yes								\$ 5,713,000		
TR 0097	NE 132nd St/132nd Ave NE Intersect'n Imp	Yes R8	Yes								\$ 889,000		
TR 0098	NE 132nd St/ 116th Way NE (I-405) Intersect'n Imp	Yes R9	Yes								\$ 300,000		
TR 0125	ITS phase 4	Yes R19,R20	Yes								\$ 2,620,000		
NM 0012-999	Crosswalk Upgrade program	Yes NMS*	Yes								\$ 4,100,000		
NM 0086-003	CKC Roadway Crossings	Yes NM3	Yes								\$ 3,370,100		
NM 0090-100	Juanita Drive Bicycle and Pedestrian Improvements	Yes NM1	Yes								\$ 10,650,000		
NM 0113-999	Citywide Greenway Network	Yes NM2	Yes								\$ 4,450,000		
NM 8888-100	On-street Bicycle Network	Yes NM1	Yes								\$ 4,400,000		
NM 9999-100	Sidewalk completion program	Yes NM4*	Yes								\$ 6,096,800		
FUNDED TOTAL + UNFUNDED TOTAL = 20 YEAR TOTAL											\$ 171,230,500		
FUNDED TOTAL + UNFUNDED TOTAL = 20 YEAR TOTAL											\$ 274,114,600		
NM 0024 301	Cross Kirkland Corridor Opportunity Fund	No	No								\$ 500,000		
NM 0031	Crestwoods Park/CKC Corridor Ped/Bike Facility	No	No								\$ 2,505,000		
NM 0080	Juanita-Kingsgate Pedestrian Bridge at I-405	No	No								\$ 4,500,000		
NM 0081	CKC to Redmond Central Corridor Regional Connector	No	No								\$ 1,500,000		
NM 0106	Citywide CKC Connections	No	No								\$ 360,000		
NM 0107	CKC to Downtown Surface Connection	No	No								\$ 2,000,000		
CANDIDATE TOTAL											\$ 11,365,000		
20 YEAR TOTAL + CANDIDATE TOTAL = GRAND TOTAL											\$ 285,479,600		

* Depending on project scope; see Rate Study and Transportation Master Plan

3 sources of transportation maintenance

Public Works Street Division

The Streets Division performs everyday maintenance and operation of the facilities in public rights-of-way.

Private Development

Sidewalks, drainage facilities and pavement are examples of improvements made by private developments. These improvements may reduce maintenance costs by replacing items near the end of their useful lives or installing items with lower on-going maintenance costs.

Capital Improvement Program

Some maintenance elements are funded by the Capital Improvement Program due to their size and the fact that they are provided by contractors. These include:

- Pavement maintenance
- Pavement markings
- Sidewalk maintenance



Higher quality bicycle facilities often require more pavement markings and their maintenance warrants an increase in maintenance budget.

Policy T-6.2 Place highest priority for funding on maintenance and operation of existing infrastructure rather than on construction of new facilities. Identify and perform maintenance to maximize the useful lifetime of the transportation network at optimum lifecycle cost.

Maintaining what we have before constructing new facilities is a foundation of sustainability. Therefore, when funding decisions are being made, an amount adequate to fund maintenance and operation should be identified before allocating funding to other needs.

In some areas of the transportation system, true maintenance costs and optimum investment levels need to be identified so that accurate information about deferred maintenance and life cycle cost is available for decision makers.

Action T-6.2.1: Identify and sustain reasonable maintenance funding levels for a complete set of transportation assets.

Action T-6.2.2: Develop and maintain inventories of assets that require maintenance such as pavement markings, traffic signals, sidewalks, etc.

Action T-6.2.3: Develop lifecycle costs for capital and maintenance projects.

"Life-cycle cost analysis is a process for evaluating the total economic worth of a usable project segment by analyzing initial costs and discounted future costs, such as maintenance, user, reconstruction, rehabilitation, restoring and resurfacing costs, over the life of the project segment."

-Transportation Equity Act for the 21st Century

The Kirkland City Council has identified performance standards around pavement maintenance calling for a Pavement Condition Index (PCI) of 70 on arterial and collector streets. The least cost PCI is 85. The City may wish to consider pavement maintenance funding that will eventually achieve this least cost PCI.

Policy T-6.3 Support modes that are energy efficient and that improve system performance.

Bicycling and walking may be the most efficient transportation modes available and consistent with other policies in this plan, those modes should be supported. Over the next 20 years, energy efficiency of other modes and transportation related elements will be improved, this may include improvements to auto and truck technology, transit alternatives or more energy efficient street lighting systems. Kirkland's Transportation network should support these innovations. Intelligent Transportation Systems can help reduce auto delay and stops thereby reducing energy use and improving system performance.

Action T-6.3.1: Work with regional groups such as the Puget Sound Regional Council and King County Climate Change Collaborative to identify trends in vehicle innovation and seek opportunities to implement them in Kirkland. (See Partnership Policy T-7.4)

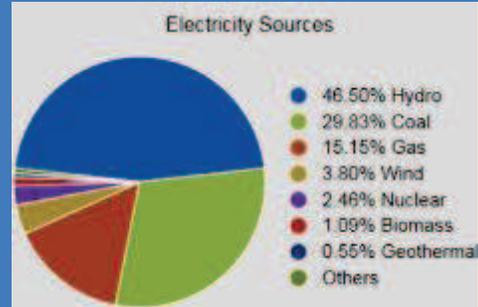


Source alledlighting.com

Above: In addition to their energy saving benefits, many people find the color of LED light (right) more pleasing than lighting provided by high pressure sodium lights (left).

Well to wheels

The sustainability of electric vehicles depends on the source of the electricity used to power them. The chart below approximates the source energy mix for electricity in Kirkland.



Source energy.gov

LED street lighting

LED street lights can replace conventional lamps and can use less energy to provide similar amounts of light, especially where the conventional lights being replaced are lower wattage. LED street lights are evolving and increasing the amount of light per unit of energy consumed and therefore becoming a more cost effective option.

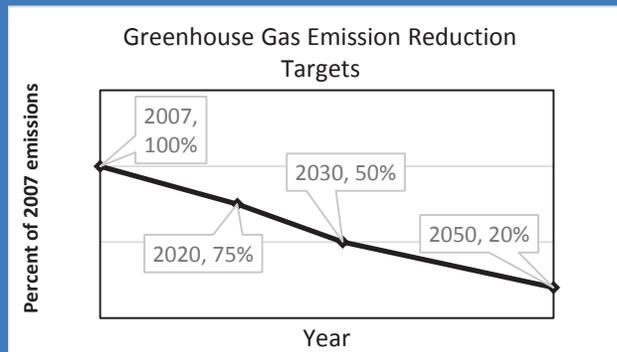
Climate Change

Climate change refers to the rise in average surface temperatures on Earth. Climate change has the potential to impact public and private property, infrastructure investments, water quality, and health. The consequences from warming temperatures can be significant: rising sea levels, decreasing snowpack, and increased flooding.

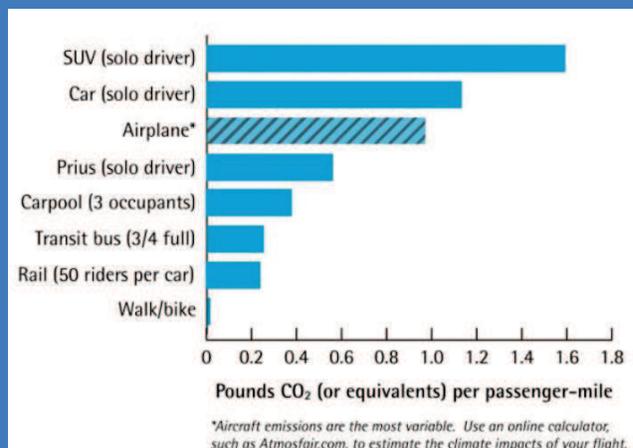
An overwhelming scientific consensus maintains that climate change is due primarily to the human use of fossil fuels, which releases carbon dioxide and other greenhouse gases into the air and trap heat within the atmosphere.

Since almost 1/3 of Kirkland’s current greenhouse gas emissions are attributable to transportation, it’s clear that changes in transportation; using less fossil fuels and reducing vehicle miles of travel for example, will be needed to achieve the targets shown below.

Kirkland’s greenhouse gas emissions reduction targets are based on a 2007 baseline and reductions increase over time:



Emissions per passenger-mile for various vehicle types



Source: Sightline.com

Policy T-6.4 Minimize the environmental impacts of transportation facilities, especially the contribution of transportation to air and water pollution. Comply with Federal and State air and water quality requirements. Reduce vehicle miles of travel.

Motorized transportation is the chief contributor to air and water pollution. This comes in many forms from tailpipe emissions to the production of petroleum products used for paving to substances that drip from cars, trucks and buses and which eventually find their way to water sources.

When planning transportation facilities, both public and private, the environmental impacts of the facility need to be evaluated and minimized, and appropriate mitigation included. Environmental impacts of transportation facilities and services can include shoreline, wetland and stream encroachment, vegetation removal, air quality deterioration, noise pollution, and landform changes.

Kirkland has adopted goals for reducing greenhouse gases (see Comprehensive Plan Environment Element Goal E-5). Because of the role that vehicle emissions play in greenhouse gas production, reducing those emissions is a requirement if the goal is to be met. The Environment Element cites promotion of cleaner fuels, a reduction in vehicle miles of travel and more reliance on renewable energy as three key transportation related actions to meet the City’s Greenhouse Gas reduction targets.

Many actions that will reduce greenhouse gas production and will decrease vehicle miles of travel are included in other goals. Primary among these is making walking, biking and transit more viable for more trips.

Action T-6.4.1: Coordinate transportation improvements and programs with goals from the Environment Chapter of the Comprehensive Plan to meet the City’s greenhouse gas emission targets.

Action T-6.4.2: Report on reductions in vehicle miles of travel. (See Policy T-8.4)

Policy T-6.5 Safeguard the transportation system against disaster.

Because of the risk that natural and other disasters can pose to the transportation system, prevention and recovery should be actively planned for. This should be done in coordination with goals and policies in the Comprehensive Emergency Management Plan.

Action T-6.5.1: Develop and keep current strategies for preventing and recovering from disasters that impact the Transportation System.

Policy T-6.6 Create an equitable system that provides mobility for all users.

Our transportation system has many potential barriers. A sustainable transportation system is open to users of all abilities. There may be cost barriers such as tolls or transit fares that prevent some citizens from using public transportation facilities. Language may be a barrier to some users and this should be considered in the design of written materials. Kirkland should be sensitive to the potential barriers and treat them as required by law or by the need to make the transportation system as open as possible to all users. (See Policy T-1.1)

Action T-6.6.1: Periodically review existing procedures and if needed, adopt new procedures to ensure accessibility to the transportation system.

Policy T-6.7 Implement transportation programs and projects in ways that prevent or minimize impacts to low-income, minority and special needs populations.

As required by applicable state and federal regulations, Kirkland should continue to make sure that all citizens are involved in decision making about transportation projects and that impacts (such as health, environmental, social and economic impacts) do not fall disproportionately on vulnerable populations.

Action T-6.7.1: Ensure inclusion of vulnerable populations and ensure that impacts to these populations are not disproportionate by periodically reviewing existing procedures and when needed, adopting new procedures.

FAQ on ADA

The American with Disabilities Act requires accessibility to civic life by people with disabilities. One part of this is making sure that the transportation system is accessible to everyone.

Does every new sidewalk have to be accessible, no matter the cost?

Access can usually be provided at a reasonable cost. In rare cases where it is extremely expensive or physically impossible to provide access, it does not have to be provided.

Do all routes to the CKC have to be accessible?

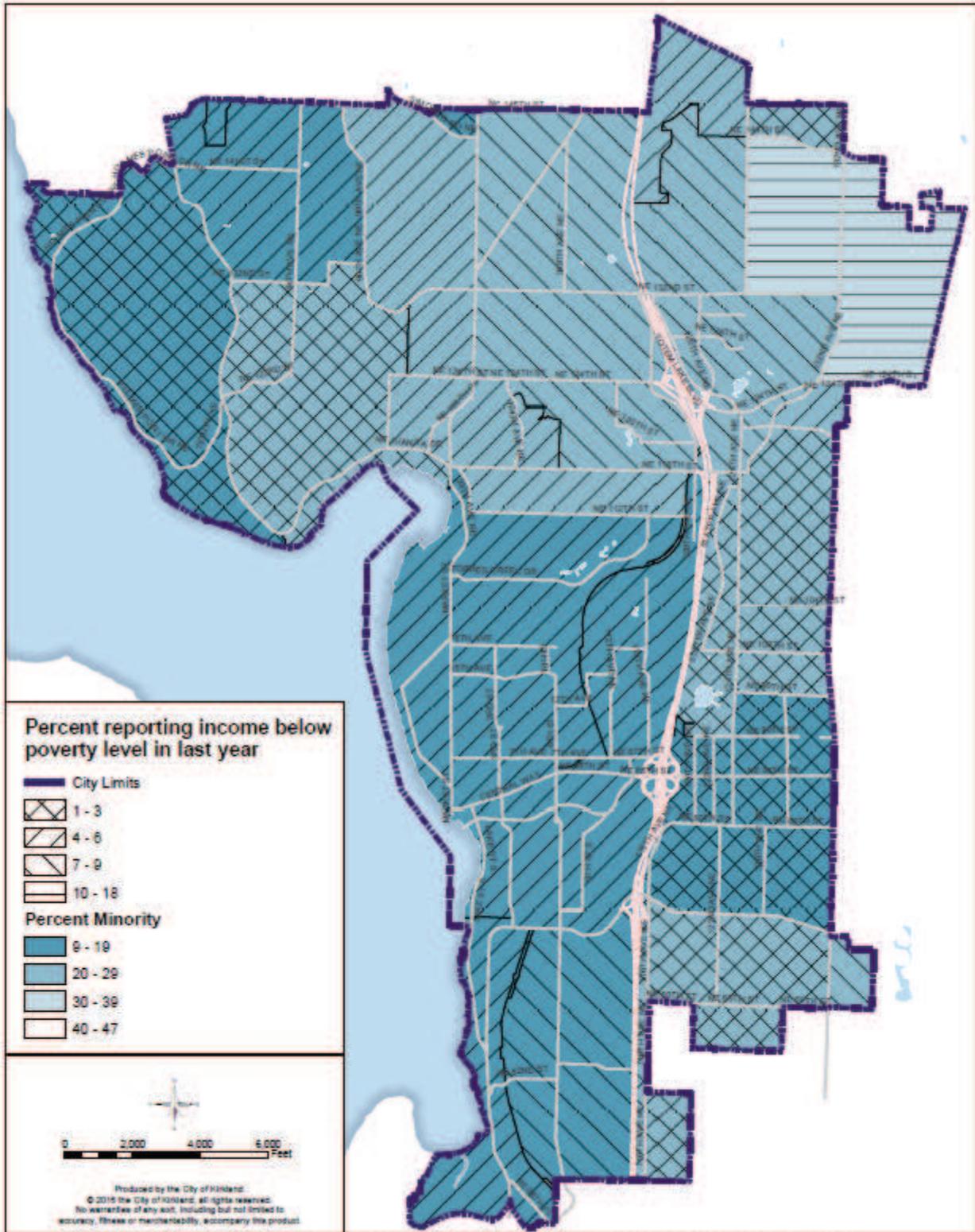
No, but some accessibility does have to be provided. For example there may be several ways of accessing a park from the CKC; at least one of them must be accessible.

Why do perfectly good sidewalk ramps have to be replaced?

Because the standards for ADA have evolved some ramps that were built several years ago look “perfectly good” but don’t meet current standards. Often they are too steep or don’t have adequately sized landings for wheel chairs.

When will work on accessibility be completed?

It will take time to complete all the improvements that are needed, that’s why it’s important to properly prioritize projects and comply with the most recent standards.



Minority Percent of Population and Percent of Population that Reported Income Below Poverty Level in last year (2007 – 2011)

Policy T-6.8 Actively pursue grant funding and innovative funding sources.

Kirkland has a history of successfully pursuing a wide range of grant funding opportunities for transportation projects and this should continue. Grant funding is expected to make up more than a quarter of transportation funding over the next 20 years. Projects that are a good candidates for particular grant funding sources should have a prominent place in the lists of potential projects. Sidewalk projects on School Walk Routes and Safe Routes to School grants are an example of this type of pairing.

Action T-6.8.1: Ensure that all applicable grant opportunities are reviewed and competitive grant applications are submitted by periodically reviewing grant application procedures.

State and Federal transportation grant funding

State funding can be allocated by the legislature directly to programs like Safe routes to School or through organizations such as the Transportation Improvement Board.

The Washington State Department of Transportation administers some Federal grants such as the Highway Safety Improvement Program and oversees expenditure of other federal funds.

Other federal funds are allocated by the Puget Sound Regional Council; allocations for some grants are recommended to the PSRC by groups at the county level.

Examples of grant funded projects:



CKC interim trail Federal Congestion and Air Quality Mitigation, 2013.



Slater Avenue, State Transportation Improvement Board, 1998



Redesigned pedestrian flags, Federal non-motorized grant, 2007



Kirkland Green Trips, Congestion and Air Quality Mitigation, 2013.

Chapter 8. BE AN ACTIVE PARTNER

Howdy Partner!

The Washington Department of Transportation (WSDOT) maintains and operates traffic signals at the intersections of city streets and freeway interchanges. These are some of the busiest intersections in the City so coordinated operations with WSDOT are important.

The **Eastside Transportation Partnership** is made up of elected officials from Eastside Cities, King County and other transportation related agencies. The Partnership meets monthly to receive information and influence policy decisions.

Cascade Bicycle Club, Feet First and Kirkland Greenways are examples of important advocacy partners in the areas of bicycling and walking. Partnering with advocacy groups makes sure that solutions have broad support in the community.



Goal T-7 Coordinate with a broad range of groups; public and private, to help meet Kirkland's transportation Goals.

Background

Travel doesn't stop at city borders. Cars, buses, bicycles and pedestrians all travel between cities. Kirkland is bisected by I-405, a facility which is the responsibility of the **Washington State Department of Transportation** (WSDOT). Transit service is provided by King County Metro and Sound Transit, both of which are governed by separate boards of elected officials. Regional policy determines, to a large extent, the minimum number of person trips that Kirkland must plan for. For all these reasons, working with other agencies is a requirement for achieving Kirkland's transportation goals.

Kirkland must be proactive in its work with regional partners and Kirkland should come to other partners with a strong sense of our needs rather than reacting to what is offered by others. An example of this can be seen in the work of our City Council and State Legislature, where recent sessions have resulted in securing important funding for the Cross Kirkland Corridor.

At the county-wide and regional levels, there are a number of groups that influence funding decisions and transportation policy. These are often structured with staff groups making recommendation to boards of elected officials. Kirkland should have an active role in these groups.

Partnerships should not end with the transportation agencies such as the Washington State Department of Transportation or King County Metro. Partnering with the private sector, schools, advocacy groups and neighboring cities and sub-regional coalitions will inform and build support to achieve Kirkland's transportation goals.

The transit policies in this Chapter are closely associated with the policies in Chapter 4, Public Transportation.

Policies

Policy T-7.1 *Play a major role in development of Sound Transit facilities in Kirkland.*

Sound Transit will likely be implementing one or more new phases of high capacity transit over the life of this plan and each new phase should build on the preceding phase.

Each of these phases require an update to Sound Transit's Long Range Plan, followed by a System Plan revision that describes projects that are on a ballot put before voters. Connecting the Totem Lake Urban Center, downtown Kirkland and the 6th Street Corridor with the regional transit system is Kirkland's primary interest for regional transit.

Bus Rapid Transit and light rail are the preferred modes and the preferred route is the Cross Kirkland Corridor. However, Bus Rapid Transit operating in Express Toll Lanes on I-405 may be the first Regional High Capacity Transit link serving Totem Lake.

It is important that any such system travels through the Urban Center, and includes connections to all parts of Kirkland, particularly Downtown and the 6th Street Corridor. Rebuilding freeway interchanges, fixed guideway connections, people movers using the Houghton and Kingsgate Park and Rides are ways by which this may be accomplished.

The City sees Transit Oriented Developments (TOD) as essential for its continued growth and economic development, with the Totem Lake Urban Center at the heart of this goal. This includes both TOD on publically owned land, such as the Kingsgate P&R, but also TOD on privately owned land.

Kirkland can best affect these plans by cultivating productive and ongoing working relationships with Sound Transit and by being active and persistent advocates for our interests, as directed by the City Council, at both the staff and Sound Transit Board level.

Kirkland should work with Sound Transit, Metro and other partners to make investments as part of a seamless and integrated transit network.

Action T-7.1.1: Advocate for increases in meaningful Sound Transit services in Kirkland, with a connection to Totem Lake as a first priority.

Sound Transit Modes

Link Light Rail



Source: Sound Transit

Powered by electricity, operates on tracks, sometimes in mixed traffic. High frequency, high passenger capacity. Preferred connection to Totem Lake.

Regional Express Bus



Source: Sound Transit

Buses that operate mainly on freeway HOV lanes; wide stop spacing.

Other modes Sound Transit may operate in the future.

Bus Rapid Transit

Service levels and vehicles similar to Light Rail, but operates mainly on highways, such as I-405. Has the capability of operating on city streets.

Street Car

Lower speed, lower capacity, operates on tracks and often in mixed traffic.

Who runs the buses?

Metro Transit is a function of King County Government and is therefore governed by the King County Council. **The Regional Transit Committee** (RTC) makes recommendations to the King County Council on certain transit issues including the Strategic Plan for Public Transportation. The RTC consists of four County Councilmembers, two Seattle Councilmembers and eight representatives from other cities in King County.

Policy T-7.2 Establish commitments from transit providers to provide high quality transit service in exchange for land use and transportation commitments that support transit. Partner with King County Metro to meet mutual interests.

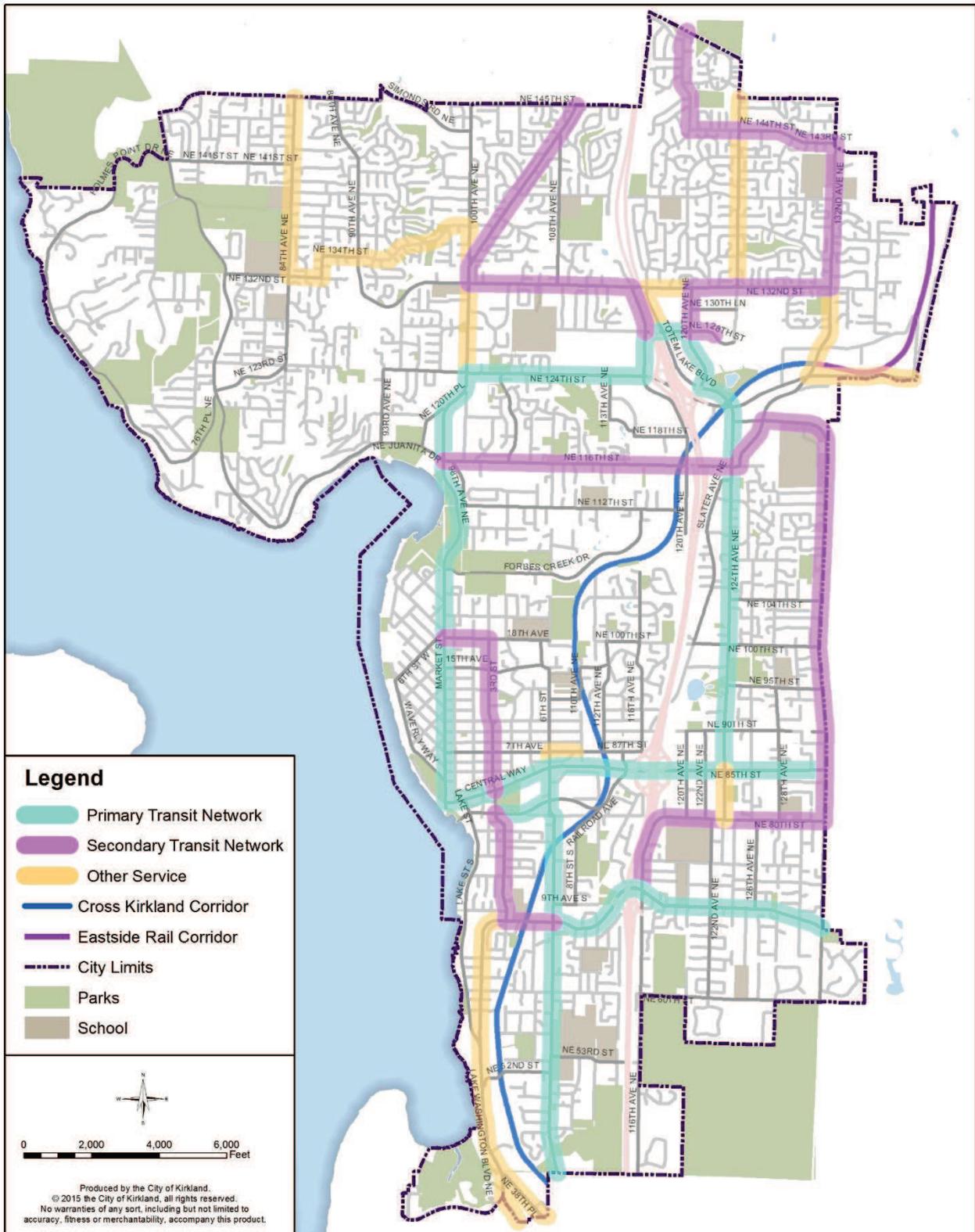
Final decisions about King County Metro transit service rest with the King County Council and therefore change can happen without the approval of the City of Kirkland. This lack of certainty weakens the foundations of both the land use and transportation plans, both of which rely heavily on high quality transit service.

In order to thrive, transit service needs certain land use and transportation elements and those elements are largely within the control of cities. Therefore, Kirkland should pursue, ideally in cooperation with other jurisdictions, an agreement by which risk for both transit agencies and cities is reduced by agreeing to transit service levels in exchange for items cities can provide.

As described in the transit section of this plan, the City should maintain a Transit Plan that details its expectations for transit service and capital facilities. At a minimum, 15 minute frequency service should be provided on the network shown in the map on the following page.

In order to meet Kirkland's goals for transit, it may be necessary for Kirkland to fund and/or operate its own transit services.

Action T-7.2.1: Actively pursue agreements with transit providers that help support Kirkland's land use and transportation plans.



Transit Network

City of Kirkland Transportation Master Plan December 2015

A region-wide coalition of businesses, developers, local governments, transit agencies, and nonprofit organizations—the Growing Transit Communities Partnership—spent three years working together to create solutions that will encourage high-quality, equitable development around rapid transit. The table (below) shows the strategies and actions that are the primary recommendation of the Puget Sound Regional Council’s Growing Transit Communities Strategy. Kirkland is a signatory to the Growing Transit Communities Compact that supports these strategies and actions.



Foundation Strategies

1. Establish a regional program to support thriving and equitable transit communities
2. Build partnerships and promote collaboration
3. Engage effectively with community stakeholders
4. Build capacity for community engagement
5. Evaluate and monitor impacts and outcomes



Attract Growth

6. Conduct station area planning
7. Use land efficiently in transit communities
8. Locate, design, and provide access to transit stations to support TOD
9. Adopt innovative parking tools
10. Invest in infrastructure and public realm improvements



Housing Choices

11. Assess current and future housing needs in transit communities
12. Minimize displacement through preservation and replacement
13. Increase housing support transit-dependent populations
14. Implement a TOD property acquisition fund
15. Expand value capture financing as a tool for infrastructure and affordable housing
16. Make surplus public lands available for affordable housing
17. Leverage market value through incentives
18. Implement regional fair housing assessment



Access to Opportunity

19. Assess community needs
20. Invest in environmental and public health
21. Invest in economic vitality and opportunity
22. Invest in equitable mobility options
23. Invest in equitable access to high quality education
24. Invest in public safety in transit communities

Policy T-7.3 Work with the Washington State Department of Transportation and the Washington State Legislature to achieve mutually beneficial decisions on freeway interchanges and other facilities.

As described elsewhere in this document, decisions made by the **Washington State Department of Transportation** (WSDOT) on how facilities are designed and operated have significant bearing on Kirkland's transportation system. Because WSDOT traditionally has viewed the Land Use-Transportation Connection from an auto-oriented viewpoint, previous decisions have resulted in facilities that are less than optimal for meeting Kirkland's goals in a modern urban setting. Age of facilities and prioritization of Kirkland's projects in a statewide context are also complicating factors. These issues could potentially be mitigated by working more closely and regularly with WSDOT leadership, inclusion of transportation and land use items on Kirkland's legislative agenda, and advancing Kirkland's interests by funding initial design work for projects like interchange designs on I-405. Also, Kirkland should advocate for improving the interchange of I-405 and SR 520 including new HOV connectivity.

WSDOT must approve any changes to functional classifications on Kirkland's streets to ensure that they meet federal guidelines and are coordinated with neighboring jurisdictions. Functional classification carries with it expectations about roadway design, including its speed, capacity and relationship to existing and future land use development. They are a useful surrogate for volume and number of lanes and are used, as described in other policy discussions, as one measure for prioritizing projects.

Action T-7.3.1: Foster a strong working relationship with WSDOT leadership.

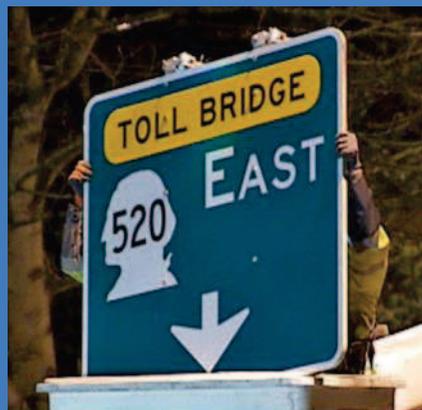
Action T-7.3.2: Advance Kirkland's transportation interests with actions on legislative agendas.

Action T-7.3.3: Fund initial studies in order to make it easier to secure funding for construction projects.

Action T-7.3.4: Periodically review and update, when needed, functional classifications of roadways.

WSDOT and Roadway pricing

There are two primary reasons for roadway pricing. One is to raise revenue, for example the tolling of the SR 520 bridge was implemented to help pay for the new bridge. The other is to improve operations. Express Toll Lanes on I-405 are designed to keep flow in the



managed lanes moving at 45 MPH. This policy can also benefit general purpose traffic.

The City of Kirkland has been a proponent of roadway pricing for a number of years. This support is caveated with the need to mitigate negative impacts of pricing such as toll avoidance to other routes.

Street classifications

In Kirkland, streets are divided into five groups:

Freeways and expressways like I-405.

Principal Arterials that connect to other cities and major commercial centers.

Minor Arterials serve major traffic generators not served by Principal Arterials. **Collector Streets** fill a role between Arterials and local streets.

Local streets, known as Neighborhood Access Streets in Kirkland make up the majority of street mileage and provide access to local land use. More information on street classification is available at the [Federal Highway Administration](#) website

A street classification map is located in the existing conditions section of this plan.

Puget Sound Regional Council

The Puget Sound Regional Council is our region's Metropolitan Planning Organization (MPO). MPO's were established by Federal regulation in the early 1960s. Main roles of the MPO include allocation of federal funding and helping to coordinate regional planning including a regional transportation planning model.

As a City in King County, Kirkland is a member agency of PSRC. Because of the size of its population, Kirkland has a seat on the PSRC Executive Committee. Kirkland Staff supports the elected officials that serve on this committee.

Kirkland has been active in the following PSRC committees:

Regional Project Evaluation Committee

Makes recommendations on criteria and specific projects for federal funding and deal with related transportation planning issues.

Regional Traffic Operations Committee

Works to create a collaborative and coordinated approach to regional traffic operations investments and practices in the Central Puget Sound region.

Land Use Technical Advisory Committee

Advises on demographic, economic, and land use data and modeling projects and technical long-range land use planning activities.

TDM Steering Committee

Coordinates with and advises PSRC staff, policy boards, and other advisory committees on the various transportation demand management-related activities happening throughout the region.

Kirkland would benefit from a more active role in the

Bicycle Pedestrian Advisory Committee

Coordinates with and advises PSRC staff, policy boards, and other advisory committees on a variety of bicycle and pedestrian-related planning issues.

Policy T-7.4 Participate in and provide leadership for regional transportation decision making.

Multiple regional groups impact funding and policy decisions that affect transportation in Kirkland. As an example, Puget Sound Regional Council has a host of boards and groups. Some of these groups are made up of staff members, others are exclusively for elected officials. Kirkland is a member of the King County-Cities Climate Collaboration, a partnership between the County and these cities to coordinate and enhance the effectiveness of local government climate and sustainability efforts.

Action T-7.4.1: Develop a clear plan for being a part of groups to allow for the efficient representation and support of Kirkland's transportation interests.



[Vision 2040](#) is a regional strategy and [Transportation 2040](#) is focused on transportation solutions. Both are produced by the PSRC.



Policy T-7.5 Work closely with the Lake Washington School District to encourage more children to walk and bike to school.

Reducing the number of students who are driven or who drive to school is a multifaceted task. **The Lake Washington School District (LWSD)** is a necessary partner in this effort. Close communications between LWSD and Kirkland staff should be pursued. Contacts at individual schools are usually highly effective and should also be pursued.

Action T-7.5.1: Schedule regular reviews of school walk routes with School District personnel.

Action T-7.5.2: Advance Kirkland’s transportation goals by maintaining relationships with schools and the school district.

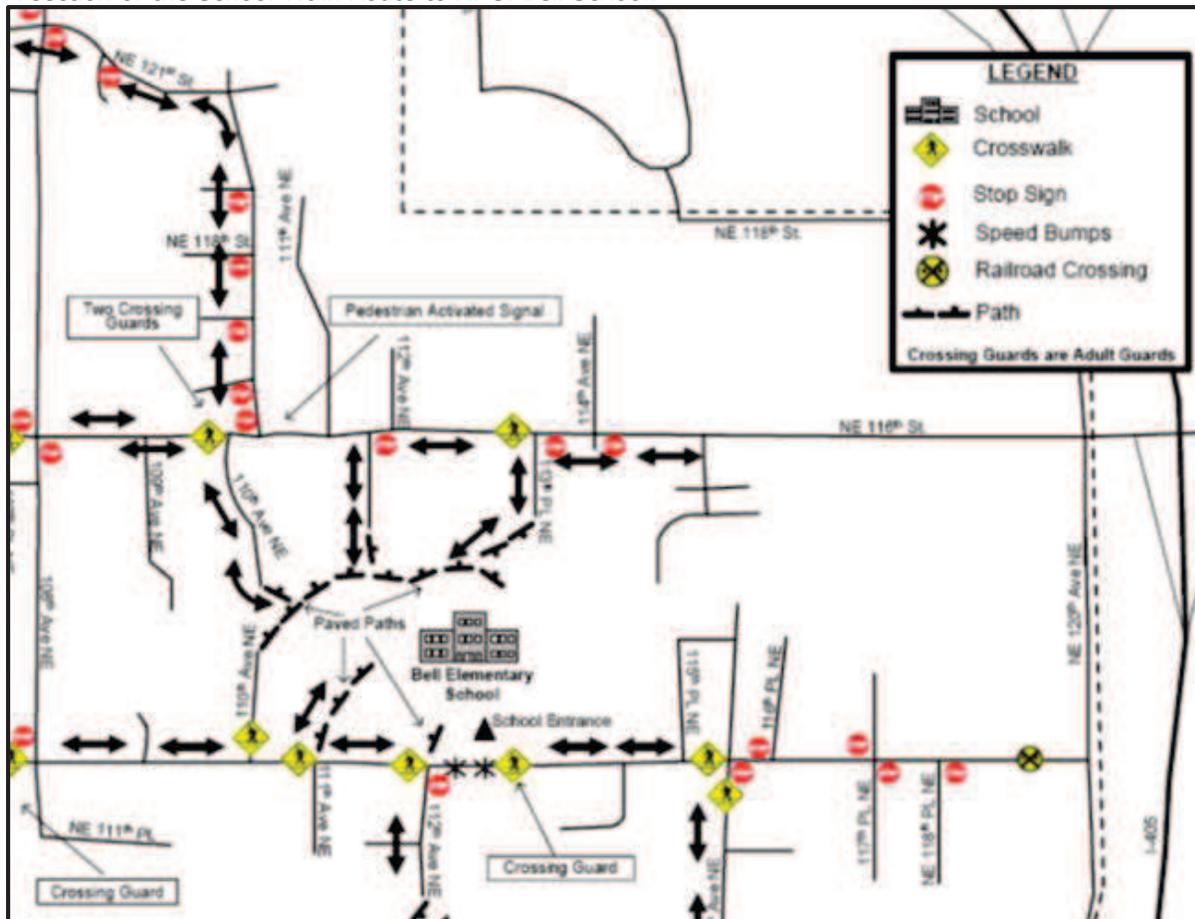
School walk routes

By State Law, (RCW 28A.160.160) the Lake Washington School District is responsible for establishing safe School Walk Routes.

The City of Kirkland has adopted a set of school walk routes to establish a benchmark for various purposes.

In addition to safe routes to school, getting more children walking and biking to school will require examining the reasons why parents make choices about how children travel and overcoming barriers. Another element that needs consideration may be the District’s policy on children biking to school.

A section of the School Walk Route to A. G. Bell School.



Policy T-7.6 Coordinate multi-modal transportation systems with neighboring jurisdictions.

Kirkland has strong ties with neighboring jurisdictions. These ties should be reinforced and used to make sure that projects like bike share, wayfinding, traffic signal operation, pavement marking, traffic impacts of new developments and other transportation projects are carefully coordinated so that transportation users can move seamlessly across jurisdiction borders. This includes working with other jurisdictions to obtain and develop the extension of the CKC within Kirkland's city limits north to Woodinville.

Policy T-7.7 Partner with the private sector and other "new" partners.

Kirkland should look for partners outside governmental agencies. Identifying and connecting with other partners could help fund or deliver a range of projects and services including bike share, transit alternatives, traffic data, parking solutions, and a range of improvements on the Cross Kirkland Corridor.

Chapter 9. TRANSPORTATION MEASUREMENT

Goal T-8 Measure and report on progress toward achieving goals and completing actions.

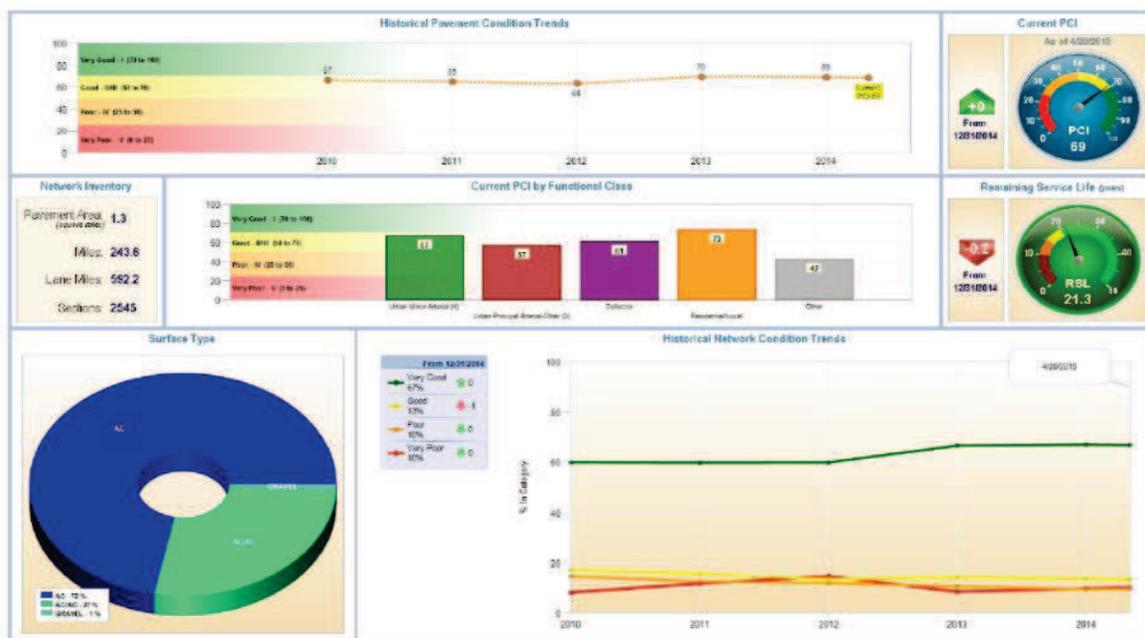
Background

For several years Kirkland’s Transportation Commission and City Council have contemplated a revised concurrency system that eliminates some of the deficiencies of the existing system. The new system is multi-modal and meets the interest of many stakeholders to be easier to understand.

“Level of service” is a term for the performance of the transportation system. One of the required parts of the Transportation Element of the Comprehensive Plan is a level of service for each mode. The underlying philosophy for Kirkland’s level of service is that an acceptable level of service is, by definition, the level of service resulting from the completed 20 year transportation network and the fulfillment of the Land Use Plan. The reason for this is that the projects selected for the transportation network are derived from the goals and policies of the plan including financial constraints, and were chosen because of the performance they provide as a group given the number of trips forecast for the future. (See 20 Year Transportation Project List)

Mode split refers to the fraction of trips using various modes: auto, bike, walking and transit. Mode split percentages for the Totem Lake Urban Center are required to be adopted.

Successful implementation of Kirkland’s transportation goals and policies are aided by a clear plan of action. This should take the form of a distillation of the actions of the Transportation Master Plan over the short term presented in a way that is easy to understand and accessible for a wide range of stakeholders. In addition to those actions, other information about the transportation system should be summarized in a way that is meaningful and so that progress toward a handful of measures is simple to track over time. This could include crash rates, delay at intersections, length of school walk routes without sidewalks and the levels of completion identified in Policy T-8.2. Progress toward the goals of this plan should be reported annually to the City Council and Transportation Commission.



The Pavement Condition dashboard is an example of a convenient reporting methodology.

Policies

Policy T-8.1 Use a multi-modal plan based concurrency method to monitor the rate at which land use development and the transportation system are constructed.

Why change Concurrency?

The new system better fits the multimodal nature of Kirkland’s transportation plan and removes complications from the system.

Current system:

- Focuses on Signalized Intersections; only projects at these intersections provide capacity that counts toward concurrency.
- Complicated calculations.
- Hard to understand the number of trips left in the system.

New system:

- Multi modal; all kinds of projects are considered to provide mobility.
- Once the system is set up, it is fairly easy to implement and monitor. Results can be interpreted by all participants.

Concurrency is implemented through an ordinance that is approved by the City Council.

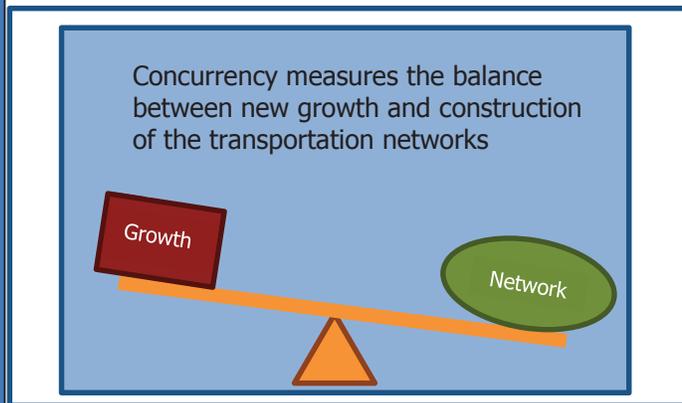
How much is too much?

Concurrency measures the number of trips that are added from new growth and compares that to the fraction of the transportation network that is completed. New growth “uses” trips and new projects “supply” trips in the form of capacity. Particular projects supply capacity in proportion to their cost as a fraction of the 20 year network plan.

The main function of concurrency is to make sure that the impacts of land use growth are balanced with transportation projects and programs. If growth is far out-pacing the rate at which transportation improvements are constructed, then permits for new developments can be halted. Such a moratorium represents a failure of the system. Ideally concurrency is managed so that development continues.

Concurrency should be no more complicated than is necessary and should consider transit, bicycling and walking along with auto travel. Concurrency should principally monitor the approved land use and transportation plans to ensure that they are being completed in relative balance. It should help achieve land use and transportation goals, rather than being an impediment to achieving those goals.

Action T-8.1.1 Develop and implement a multi-modal concurrency system.



As shown above, concurrency is designed to monitor the relationship of new growth and the construction of the transportation network. For this to work properly, the future land use and future network have to be accepted before concurrency is put into place. Concurrency is not designed to determine good growth from bad growth or to determine the projects that are needed to mitigate a specific development.

Policy T-8.2 Establish an acceptable level of service for all modes.

Under Washington’s Growth Management Act, Level of Service is a requirement of transportation elements in each city’s Comprehensive Plan. Level of service serves as a useful evaluation tool. For example, it can be used as a prioritization factor for transportation projects.

Level of service standards for each mode primarily address completeness of various aspects of the transportation network, in order to complement the concurrency system and to use a measure for which the city has control. This TMP uses the term “level of completion” in place of “level of service” when referring to the actual measure. Because the Growth Management Act requires agencies to use the term Level of Service, that’s the term used for the overall approach.

In general, the level of completion is an outcome of choices made based on available funding and on the goals and policies of the Transportation Master Plan. This is in contrast to being chosen as an objective performance measure. For example a set of auto projects could have been developed around a relatively low level of delay. This would be a very expensive set of projects that would have resulted in the types of road widening that is not in keeping with the adopted vision for transportation. Rather than using performance as an input, it is an outcome. Considering level of service as an outcome rather than an input is consistent with the manner in which it has been treated by the City of Kirkland since the early 1990s.

The level of completion choices made for each mode are aligned with the proposed 20 year network project list as shown in the table below.

Time is the basis for evaluating of the level of completion. Level of completion measures the rate of project completion over the course of the 20 year period. For example, after 5 years (one quarter or 25% of the 20 year period), the target is for at least one quarter or 25% of each type of project to be completed. Level of completion is to be reported annually.

Cities are required by RCW 36.70A.070(6)(a)(iii)(C) to reference the LOS standards for all state routes in the transportation element of their local comprehensive plans. The purposes of reflecting level of service standards for state highways in the local comprehensive plan are to monitor the performance of the system, to evaluate improvement strategies, and to facilitate coordination between the county's or city's six-year street, road, or transit program and the office of financial management's ten-year investment program. The only state route in Kirkland is I-405, which is a highway of statewide significance. The Washington State Department of Transportation has established a level of service “D” as defined by the Highway Capacity Manual for I-405.

Reporting on level of completion

Level of completion standard has 3 possible values:

- *Behind schedule* – completion is 90% or less of target
- *On schedule* – completion is between 90% and 110% of target
- *Ahead of schedule* – completion is more than 110% of target

Example after five years (level of completion is reported annually):

After 5 years (25% of 20 years) the fraction of completion of each area is compared to 25% and a value is determined.

Item	% complete	% of target/ value
Maintain	25%	100%/on schedule
School Walk	20%	80%/behind schedule
Greenway	27%	108%/on schedule
Auto	28%	112%/Ahead of schedule

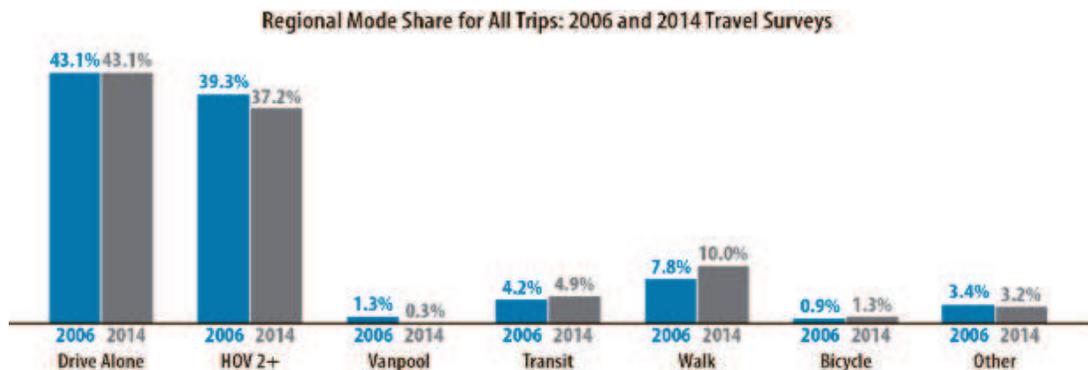
Level of Service

Level of Completion Area	What is to be completed with the 20 year plan
Maintain: Pavement condition	All collector and arterial streets have new surface.
Walk: School Walk Routes	Sidewalk on one side of school walk routes on collector and arterial streets.
Walk: 10 minute neighborhoods	Sidewalk on one side of collector and arterial streets in highest scoring 10 minute neighborhood routes.
Walk: Crosswalks	Upgrade 85 crosswalks on arterials that have limited improvements and 71 crosswalks with poor lighting.
Bike: On-street bike lanes	Improve the bike system to better than 5' wide unbuffered lanes.
Bike: Greenway network	Complete the greenway network ³
Transit: Passenger environment	Improve lighting, shelters, etc. at 30 highest ridership locations.
Transit: Speed and reliability	Transit signal priority at 45 intersections ⁴ on high priority transit routes.
Auto: ITS	Improvements to ITS system ⁵ including connecting signals, parking technology, advance control methods and improved traveler information.
Auto: projects	Completion of roadway projects that support plan goals such as NE 132 nd Street intersection and street projects 100 th Avenue design and construction I-405 Interchange design/development Juanita Drive Auto improvements

Action T-8.2.1: Report on Level of service annually.

Policy T-8.3 Adopt a Mode split goal for the Totem Lake Urban Center.

“Mode split” is the term used to describe how trips are allocated amongst various types of transportation, or modes. The illustration below shows mode split based on a region wide survey by the Puget Sound Regional Council.



Source: Puget Sound Regional Council

Mode Split Goals are required to be adopted for the Totem Lake Urban Center. A baseline estimate of mode split is 19% non-drive alone. This estimate is based on 2010 data from the Puget Sound Regional Council as shown in the table below.

Totem Lake Existing Mode Split (2010) Peak Hour, Work Trip Types

Mode	Fraction of Trips
Drive Alone	81%

³ Excludes two bridges over I-405

⁴ Placeholder improvements pending completion of transit plan

⁵ Improvements beyond work currently funded

City of Kirkland Transportation Master Plan, December 2015

HOV 2+, vanpool, Transit	16%
Walk and Bike	3%

The future goals for the Totem Lake Urban Center are shown below:

Totem Lake Mode Split Goals Peak Hour, All Trip Types

Mode	Fraction of Trips
Drive Alone	45%
HOV 2+, vanpool, Transit	46
Walk and Bike	9%

The goals were based on results from the Bellevue-Kirkland-Redmond (BKR) transportation model, but the BKR model does not fully recognize the reduction in vehicle trips that occur in and around mixed-use developments, such as Downtown Kirkland today and what is envisioned for the Totem Lake neighborhood. To better reflect the kind of travel that would occur in a more walkable, mixed-use environment, an innovative trip generation method was used that recognizes the relationship between travel and the built environment. This method supplements the BKR model by recognizing how built environment variables (known as the Ds) including density, diversity of land uses, destinations (accessibility), development scale, pedestrian and bicycle facility design, distance to transit services, and demographics affect travel. In short, places with higher densities, a rich variety of land uses close to one another, and high quality pedestrian, bicycle, and transit environments have lower vehicle trip generation rates.

These mode split targets should be coordinated with the city's Transportation Demand Management Program. (see Policy T-3.4)

Policy T-8.4 Ensure implementation of the Goals and Policies in the Transportation Element and monitor progress toward those goals.

An Action Plan should include enough information so that people who are not familiar with the Transportation Master Plan can readily understand the key points of the Plan and the actions necessary to accomplish its goals. The Action Plan should include a time component for completing each action. It may also be helpful to set objectives that further break down each action.

A "transportation report card" with a relatively few select measures, including a safety section, that address the key elements of the TMP, presented in a manner that is easily understood by the public, should be developed. These measures should be coordinated with the Action Plan, tracked by the Transportation Commission and City Council and be widely distributed. Reports should be timed to help inform decisions needed to prepare the transportation Capital Improvement Plan.

(For related information, see the Implementation Strategies Chapter of the Comprehensive Plan)

Action T-8.4.1: Prepare and maintain a succinct short term Action Plan, including a timeline that describes actions necessary to fulfill the goals and policies of this element.

Action T-8.4.2: Deliver annual transportation report cards.

Table of Goals, Policies and Actions		
Goal	Policy	Action
<p>Goal T-0. By 2035 eliminate all transportation related fatal and serious injury crashes in Kirkland.</p>	<p>Policy T-0.1. Develop a vision zero safety plan that is multi-disciplinary and focuses on innovative approaches to safety.</p>	<p>Action T-0.1.1: Report back to Council at regular intervals, for example 12 months after the plan has been adopted, on the nature and effectiveness of Target Zero initiatives.</p>
<p>Goal T-1. Complete a safe network of sidewalks, trails and improved crossings where walking is comfortable and the first choice for many trips.</p>	<p>Policy T-1.1. Improve the safety of walking in Kirkland.</p>	<p>Action T-1.1.1 Develop a program to count pedestrian volume in a manner that is meaningful for measuring safety trends.</p> <p>Action T-1.1.2 Integrate efforts between the Public Works and Police Departments to ensure timely reporting and accurate cataloging of crash data.</p> <p>Action T-1.1.3 Revise Kirkland’s pedestrian safety program using a vision zero style program.</p>
	<p>Policy T-1.2. Identify and remove barriers to walking</p>	<p>Action T-1.2.1 Update the ATP to cover all of Kirkland’s neighborhoods and to further guide implementation of the policies in this plan.</p> <p>Action T-1.2.2 Reduce sidewalk blockages by reviewing, revising and enacting regulations or other measures.</p> <p>Action T-1.2.3 Finalize an Americans with Disability Act (ADA) Transition Plan for transportation facilities. Fund improvements that come from the plan in a manner that allows for completion of an accessible network in a timely manner.</p> <p>Action T-1.2.4 Engage Washington State Department of Transportation in discussions in order to advance improvement of existing interchanges with the intention of securing funding to design and construct new interchanges at NE 124th Street, NE 85th</p>

City of Kirkland Transportation Master Plan, December 2015

		<p>Street and NE 70th Street. (See policy T-7.3).</p> <p>Action: T-1.2.5 In order to provide the best possible designs, Review and revise pre-approved plans and other design guidelines that affect pedestrians. Adopt street design guidelines in keeping with guidance published by the National Association of City Transportation Officials (NACTO) and the American Association of State Highway and Transportation Officials (AASHTO).</p>
	<p>Policy T-1.3. Make getting around Kirkland on foot intuitive.</p>	<p>Action T-1.3.1: Develop and implement a pedestrian-scaled wayfinding system available in multiple formats and across multiple platforms. This will involve identifying destinations, choosing routes, designing and installing infrastructure.</p> <p>Action T-1.3.2: Regularly update Kirkland’s walking map, ideally every 5 years or less.</p>
	<p>Policy T-1.4. Prioritize, design and construct pedestrian facilities in a manner that supports the pedestrian goal and other goals in the TMP.</p>	<p>Action T-1.4.1: Develop a sidewalk prioritization method for the Capital Improvement Program.</p> <p>Action T-1.4.2: Review and revise design requirements for sidewalks</p>
	<p>Policy T-1.5. Develop world-class walking facilities along the Cross Kirkland Corridor with ample connections to the rest of Kirkland. Consider creating a plan for a Promenade along portions of the shore of Lake Washington.</p>	<p>Action T-1.5.1: Construct the CKC according to the Master Plan vision</p> <p>Action T-1.5.2: Consider developing a Master Plan for a lake front Promenade</p>
	<p>Policy T-1.6. Make it safe and easy for children to walk to school and other destinations.</p>	<p>Action T-1.6.1: Plan and prioritize school walk route projects.</p> <p>Action T-1.6.2: Increase the number of children who walk to school by helping school</p>

City of Kirkland Transportation Master Plan December 2015

		<p>communities develop and implement programs.</p> <p>Action T-1.6.3: Help youth to be able to walk to activities by connecting places such as parks and practice fields with safe walkways.</p>
	<p>Policy T-1.7. Improve street crossings</p>	<p>Action T-1.7.1: Continue to support the Pedestrian Flag program; measure and improve its performance.</p> <p>Action: T-1.7.2: Develop a prioritization method for crosswalk improvements.</p> <p>Action: T-1.7.3: Adopt traffic signal operational procedures that include practices such as advance pedestrian phases, generous walk intervals and protected left turn phasing.</p>
<p>Goal T-2 Interconnect bicycle facilities that are safe, nearby, easy to use and popular with people of all ages and abilities.</p>	<p>Policy T-2.1. Make bicycling safer.</p>	<p>Action T-2.1.1: Use a vision zero template to revise and implement Kirkland’s bicycle safety program.</p> <p>Action T-2.1.2: Develop a program to gather bicycle volume at key points in the City in a manner that is meaningful for measuring safety and ridership trends. Reporting from bicycle detectors can be one means of obtaining this information.</p> <p>Action T-2.1.3: Integrate efforts between the Public Works and Police Departments to ensure timely reporting and accurate cataloging of crash data.</p>
	<p>Policy T-2.2. Create new and improve existing on-street bike facilities.</p>	<p>Action T-2.2.1: Recognize the National Association of City Transportation Officials and the American Association of State Highway and Transportation Officials bicycle design guidelines and adopt them into pre-approved plans used by the City of Kirkland.</p> <p>Action T-2.2.2: Guide implementation of the policies in this plan and development of a set of standards for improving</p>

City of Kirkland Transportation Master Plan, December 2015

		<p>the bicycle network by updating the Active Transportation Plan.</p> <p>Action T-2.2.3: Study and implement improvements to the system of on-street bicycle lanes.</p> <p>Action T-2.2.4: Develop a prioritization system for on-street bicycle improvements.</p>
	<p>Policy T-2.3. Build a network of greenways</p>	<p>Action T-2.3.1: Develop standards for Greenways in Kirkland.</p> <p>Action T-2.3.2: Prioritize and construct greenway projects.</p>
	<p>Policy T-2.4. Implement elements and programs that make cycling easier.</p>	<p>Action T-2.4.1: Provide high quality bicycle parking convenient to all business districts.</p> <p>Action T-2.4.2: Create a strategy to increase the supply of public bicycle parking in Kirkland. Adopt clear guidelines that encourage business and property owners to provide bicycle parking on private property.</p> <p>Action T-2.4.3: Work with bike share providers to create regulations that facilitate bike share such as making stations easy to site and operationally sound.</p> <p>Action T-2.4.4: Adopt maintenance policies that emphasize high-use cycling routes.</p>
	<p>Policy T-2.5. Make it easy to navigate the bicycle network.</p>	<p>Action T-2.5.1: Work with surrounding jurisdictions to establish a set of destinations and routes for wayfinding. These may include techniques that allow information to be obtained across a wide range of platforms.</p> <p>Action T-2.5.2: Site and install wayfinding signs and/or other systems.</p> <p>Action T-2.5.3: Develop mapping as appropriate,</p>

City of Kirkland Transportation Master Plan December 2015

		possibly in combination with transit mapping.
	Policy T-2.6. Make the Cross Kirkland Corridor an integral part of the bicycle network and connect it to the region.	Action T-2.6.1: Construct the CKC with the Master Plan vision. Action T-2.6.2: Develop bicycle connections to the CKC, particularly at its north and south ends.
Goal T-3 Support and promote a transit system that is recognized as a high value option for many trips.	Policy T-3.1. Plan and construct an environment supportive of frequent and reliable transit service in Kirkland.	Action T-3.1.1: Create Transit Plan for Kirkland that details how to achieve the policies of this goal.
	Policy T-3.2. Support safe and comfortable passenger facilities.	Action T-3.2.1: Develop standards for improvements at transit stops Action T-3.2.2: Develop a prioritization system for improvements at transit stops Action T-3.2.3: Working with transit providers, fund and construct improvements at transit stops Action T-3.2.4: Manage the effects of parking from transit users in an appropriate manner.
	Policy T-3.3. Integrate transit facilities with pedestrian and bicycle networks.	Action T-3.3.1: Coordinate prioritization and construction of pedestrian and bicycle facilities with transit.
	Policy T-3.4. Support Transportation Demand Management in Kirkland particularly at the work sites of large employers and other locations as appropriate in order to meet adopted goals for non-drive alone trips .	Action T-3.4.1: Create targeted programs that monitor and encourage increases in non-drive alone travel rates. Action T-3.4.2: Develop codes and policies to ensure support of innovative ridesharing. Action T-3.4.3: Maintain the City's CTR and GTEC plans to comply with state and regional requirements and guidelines and to support the goals of the Transportation Master Plan.
	Policy T-3.5. Require new developments to establish appropriate Transportation Demand Management Plans.	Action T-3.5.1: Codify requirements for the types of developments that are subject to Transportation Management Plans and the elements that make up such plans.

City of Kirkland Transportation Master Plan, December 2015

	Policy T-3.6. Pursue transit on the Cross Kirkland Corridor.	Action T-3.6.1: Implement transit on the CKC in keeping with the CKC Master Plan.
	Policy T-3.7. Work with Sound Transit to incorporate investments in Kirkland. (see coordination policy T-7.1)	
	Policy T-3.8. Partner with transit providers to coordinate land use and transit service (see Partner policy T-7.2)	
Goal T-4 Provide for efficient and safe vehicular circulation recognizing congestion is present during parts of most days.	Policy T-4.1. Make strategic investments in intersections and street capacity to support existing and proposed land use.	Action T-4.1.1: Using the priorities in this plan, prioritize and construct intersection and roadway projects. Action T-4.1.2: Review and update as necessary, street network concepts for Totem Lake that focus on efficiency as well as expansion.
	Policy T-4.2. Use Intelligent Transportation Systems (ITS) to support optimization of roadway network operations.	Action T-4.2.1: Complete construction of and make operational ITS phases that have already been funded for construction. Action T-4.2.2: Update the City's ITS Plan on a regular basis. Action T-4.2.3: Prioritize and Construct ITS projects.
	Policy T-4.3. Position Kirkland to respond to technological innovations, such as electric vehicles and autonomous vehicles.	Action T-4.3.1: Work with regional groups such as PSRC to identify trends in vehicle innovation and seek opportunities to implement them in Kirkland. (See Partnership Policy T-7.4)
	Policy T-4.4. Take an active approach to managing on-street and off-street parking.	Action T-4.4.1: Review and update parking codes to ensure they require appropriate amounts of supply. Action T-4.4.2: Develop strategies for parking issues and regularly monitor parking occupancy and other factors by periodically undertaking parking studies. Action T-4.4.3: Prioritize and construct/implement projects

City of Kirkland Transportation Master Plan December 2015

		and policies that improve the parking experience in Kirkland.
	Policy T-4.5. Work with the Washington State Department of Transportation and the State Legislature to improve the way I-405 and SR 520 meet Kirkland’s transportation interests. (see Partnership Policy T-7.3)	
	Policy T-4.6. Reduce crash rates for motor vehicles.	Action T-4.6.1: As described in other policies, monitor and evaluate crash data in a comprehensive way. Use a zero fatality/zero serious injury safety approach for revising and implementing Kirkland’s auto safety program. Action T-4.6.2: Prioritize and construct projects that improve safety.
	Policy T-4.7. Mitigate negative impacts of motor vehicles on neighborhood streets	Action T-4.7.1: Help citizens solve neighborhood traffic concerns by maintaining a program focused on addressing such concerns.
Goal T-5 Create a transportation system that is united with Kirkland’s land use plan.	Policy T-5.1. Focus on transportation system developments that expand and improve walkable neighborhoods.	Action T-5.1.1: As described in connection with Goals T-1 through T-4, ensure that walkable neighborhoods are considered in the planning of transportation projects and programs.
	Policy T-5.2. Design Streets in a manner that supports the land use plan and that supports the other goals and policies of the transportation plan.	Action T-5.2.1: Review design standards and adopt guidelines that are in keeping with policies in this plan and that consider the best design practices in the industry.
	Policy T-5.3. Create a transportation network that supports economic development goals.	Action T-5.3.1: As described in connection with Goals T-1 through T-4, ensure that economic development goals are considered in the planning of transportation projects and programs.
	Policy T-5.4. Develop transportation improvements tailored to commercial land use districts such as Totem Lake,	

City of Kirkland Transportation Master Plan, December 2015

	Downtown and neighborhood business areas.	
	Policy T-5.5. Require new development to mitigate site specific and system wide transportation impacts.	Action T-5.5.1: Review, streamline and codify as reasonable, components of transportation-related development review. Action T-5.5.2: Participate in the maintenance and improvements of the BKR model.
	Policy T-5.6. Create a system of streets and trails that form an interconnected network.	Action T-5.6.1: Develop a plan for connections between street ends and complete those connections.
Goal T-6 As the transportation system is planned, designed, built, maintained and operated, provide mobility for all using reasonably assured revenue sources while minimizing environmental impacts.	Policy T-6.1. Balance overall public capital expenditures and revenues for transportation.	Action T-6.1.1: Revise the Impact Fee policy to support the goals of the Transportation Master Plan.
	Policy T-6.2. Place highest priority for funding on maintenance and operation of existing infrastructure rather than on construction of new facilities. Identify and perform maintenance to maximize the useful lifetime of the transportation network at optimum lifecycle cost.	Action T-6.2.1: Identify and sustain reasonable maintenance funding levels for a complete set of transportation assets. Action T-6.2.2: Develop and maintain inventories of assets that require maintenance such as pavement markings, traffic signals, sidewalks, etc. Action T-6.2.3: Develop lifecycle costs for capital and maintenance projects.
	Policy T-6.3. Support modes that are energy efficient and that improve system performance.	Action T-6.3.1: Work with regional groups such as PSRC and King County Climate Change Collaborative to identify trends in vehicle innovation and seek opportunities to implement them in Kirkland. (See Partnership Policy T-7.4)
	Policy T-6.4. Minimize the environmental impacts of transportation facilities, especially the contribution of transportation to air and water pollution. Comply with Federal and State air and water quality requirements.	Action T-6.4.1: Coordinate transportation improvements and programs with goals from the Environment Chapter of the Comprehensive Plan to meet the City's greenhouse gas targets.

City of Kirkland Transportation Master Plan December 2015

		Action T-6.4.2: Report on reductions in vehicle miles of travel. (See Policy T-8.4)
	Policy T-6.5. Safeguard the transportation system against disaster.	Action T-6.5.1: Develop and keep current strategies for preventing and recovering from disasters that impact the Transportation System.
	Policy T-6.6. Create an equitable system that provides mobility for all users.	Action T-6.6.1: Periodically review existing procedures and if needed, adopt new procedures to ensure accessibility to the transportation system.
	Policy T-6.7. Implement transportation programs and projects in ways that prevent or minimize impacts to low-income, minority and special needs populations.	Action T-6.7.1: Ensure inclusion of vulnerable populations and ensure that impacts to these populations are not disproportionate by periodically reviewing existing procedures and when needed, adopting new procedures.
	Policy T-6.8. Actively pursue grant funding and innovative funding sources	Action T-6.8.1: Ensure that all applicable grant opportunities are reviewed and competitive grant applications are submitted by periodically reviewing grant application procedures.
Goal T-7 Coordinate with a broad range of groups; public and private, to help meet Kirkland’s transportation Goals.	Policy T-7.1. Play a major role in development of Sound Transit facilities in Kirkland.	Action T-7.1.1: Advocate for increases in meaningful Sound Transit services in Kirkland, with a connection to Totem Lake as a first priority. Action T-7.2.1: Actively pursue agreements with transit providers to deliver a network of high quality transit service that supports Kirkland’s land use and transportation plans.
	Policy T-7.2. Establish commitments from transit providers to provide high quality transit service in exchange for land use and transportation commitments that support transit. Partner with King County Metro to meet mutual interests.	Action T-7.2.1: Actively pursue agreements with transit providers to deliver a network of high quality transit service that supports Kirkland’s land use and transportation plans.

City of Kirkland Transportation Master Plan, December 2015

	<p>Policy T-7.3. Work with Washington State Department of Transportation and the Washington State Legislature to achieve mutually beneficial decisions on freeway interchanges and other facilities.</p>	<p>Action T-7.3.1: Foster a strong working relationship with WSDOT leadership.</p> <p>Action T-7.3.2: Advance Kirkland’s transportation interests with actions on legislative agendas.</p> <p>Action T-7.3.3: Fund initial studies in order to make it easier to secure funding for construction projects.</p> <p>Action T-7.3.4: Periodically review and update, when needed, functional classifications.</p>
	<p>Policy T-7.4. Participate in and provide leadership for regional transportation decision making.</p>	<p>Action T-7.4.1: Develop a clear plan for being a part of groups to allow for the efficient representation and support of Kirkland’s transportation interests.</p>
	<p>Policy T-7.5. Work closely with the Lake Washington School District to encourage more children to walk and bike to school.</p>	<p>Action T-7.5.1: Schedule regular reviews of school walk routes with School District personnel.</p> <p>Action T-7.5.2: Advance Kirkland’s transportation goals by maintaining relationships with schools and the school district.</p>
	<p>Policy T-7.6. Coordinate multi-modal transportation systems with neighboring jurisdictions.</p>	
	<p>Policy T-7.7. Partner with the private sector and other “new” partners.</p>	
<p>Goal T-8 Measure and report on progress toward achieving goals and actions.</p>	<p>Policy T-8.1. Use a multi-modal plan based concurrency method to monitor the rate at which land use development and the transportation system are constructed.</p>	<p>Action T-8.1.1: Develop and implement a multi-modal concurrency system.</p>
	<p>Policy T-8.2. Establish acceptable level of service for all modes.</p>	<p>Action T-8.2.1: Report on Level of service annually.</p>
	<p>Policy T-8.3. Adopt a Mode split goal for the Totem Lake Urban Center.</p>	

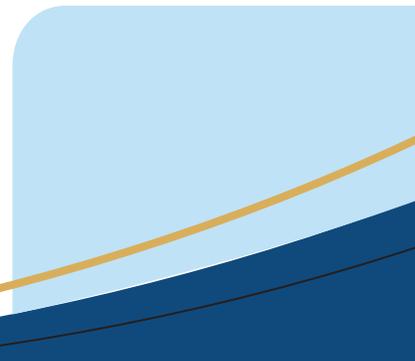
City of Kirkland Transportation Master Plan December 2015

	<p>Policy T-8.4. Ensure implementation of the Goals and Policies in the Transportation Element and monitor progress toward those goals.</p>	<p>Action T-8.4.1: Prepare and maintain a succinct short term Action Plan, including a timeline that describes actions necessary to fulfill the goals and policies of this element.</p> <p>Action T-8.4.2: Deliver annual transportation report cards.</p>
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TRANSPORTATION MASTER PLAN