

Transportation Element (new)

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 are 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 Transportation Master Plan (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 the transportation 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 not currently 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.

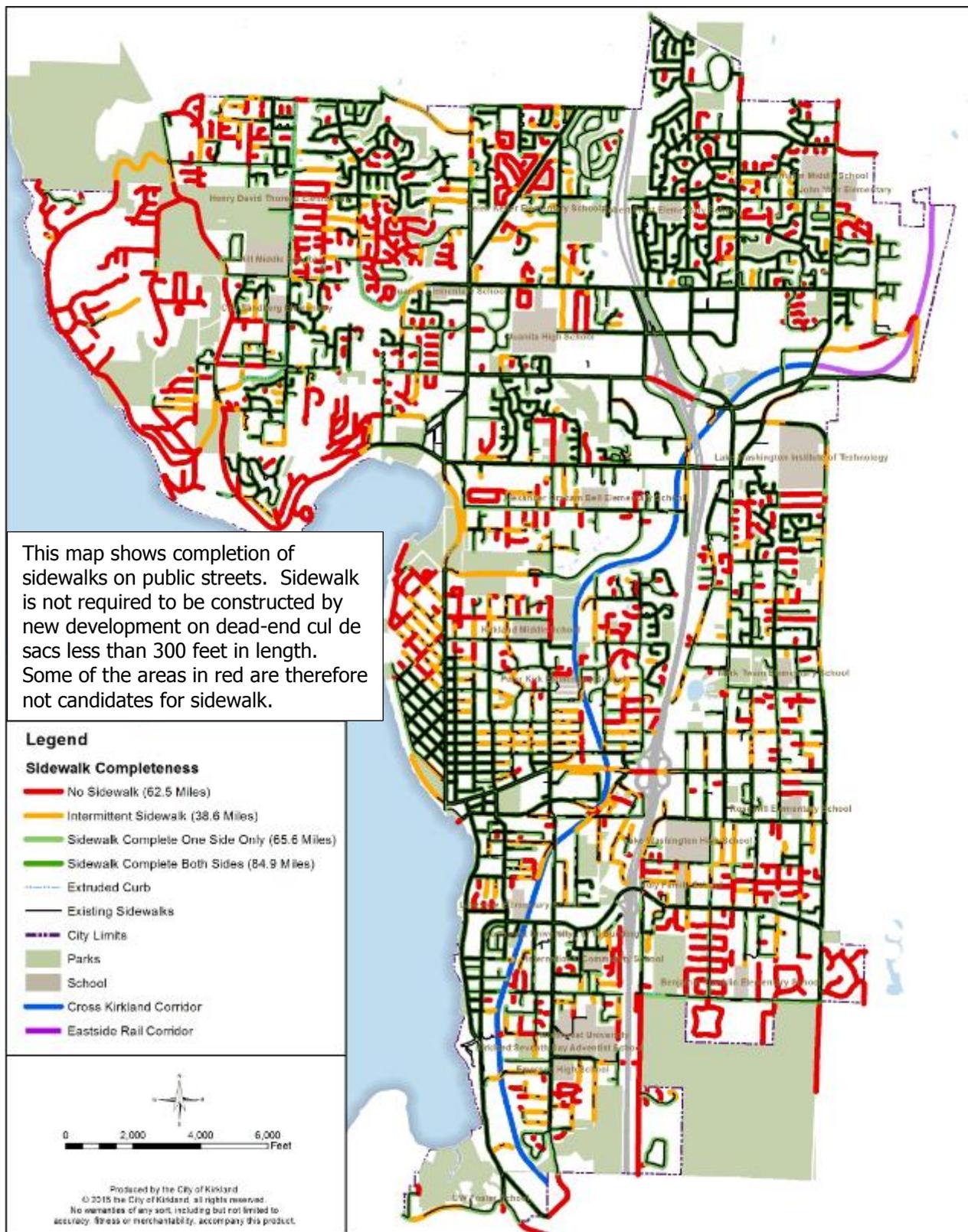
Existing Conditions

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

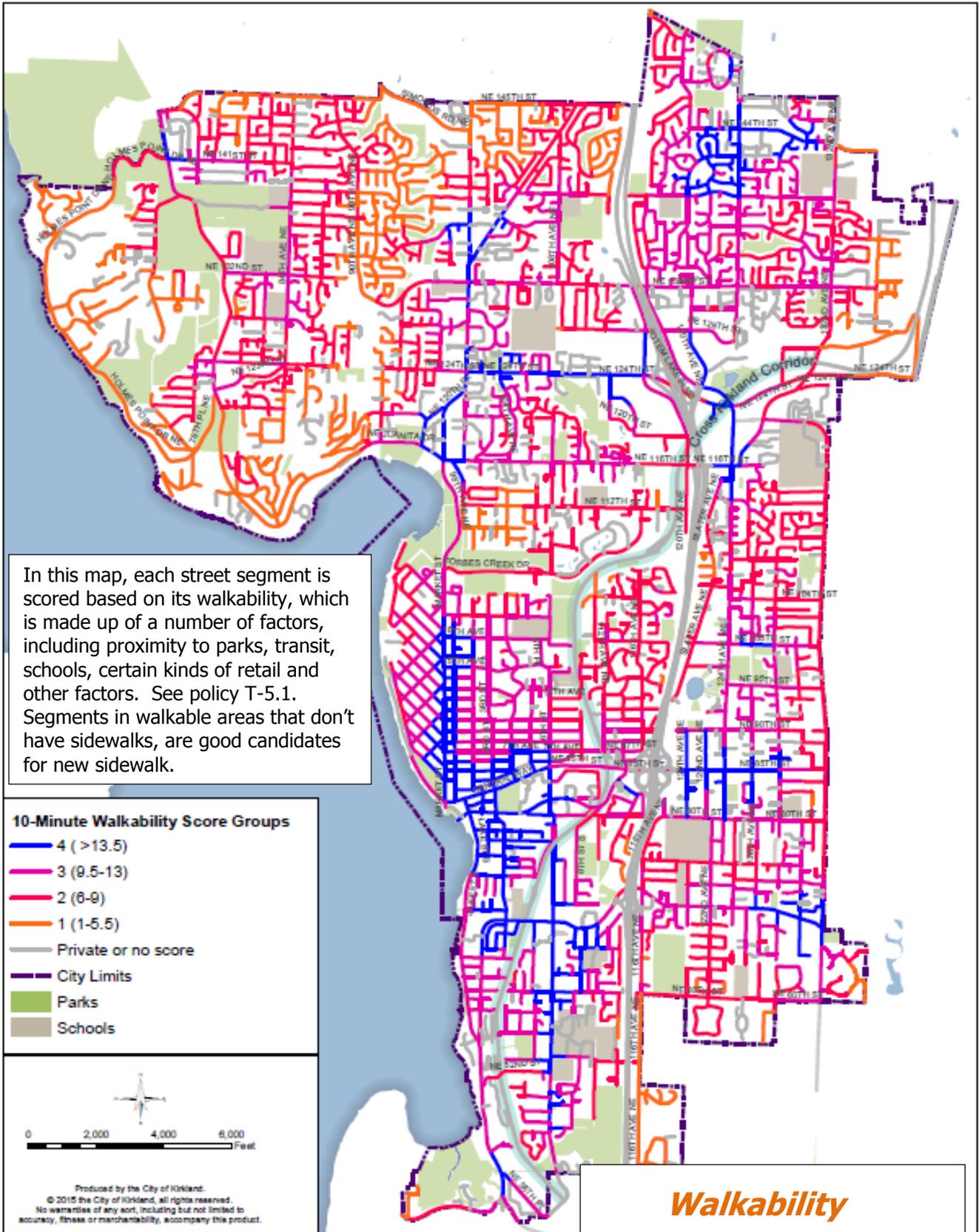
- Figure T- 1. Sidewalks Completion: Where sidewalks are completed on streets
- Figure T- 2. Uncontrolled Crosswalks: Crosswalks and improvements
- Figure T- 3. Walkability: Walkability by street segment
- Figure T- 4. Trails and pedestrian easements
- Figure T- 5. Existing on street bike lanes
- Figure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

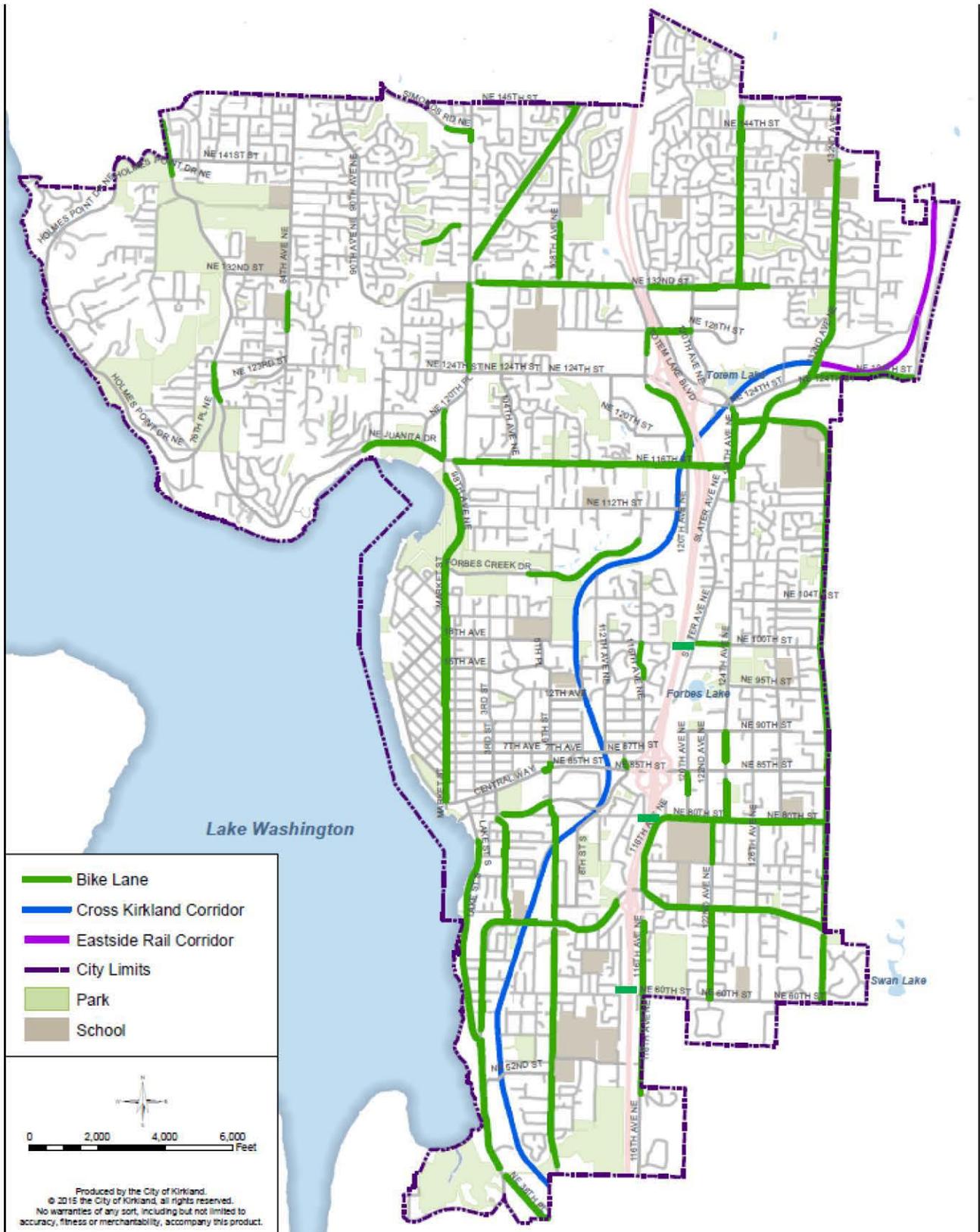
I-405 and associated ramp facilities at NE 70 Street, NE 85th Street, 116th Street, NE 124th Street and NE 128th Street are owned by the State of Washington. Express Toll lanes operate on I-405.

There are no air, water or rail transportation facilities in Kirkland. Privately operated tour boats operate from a facility in downtown Kirkland.



Sidewalk Completion





Existing on Street Bike Lanes



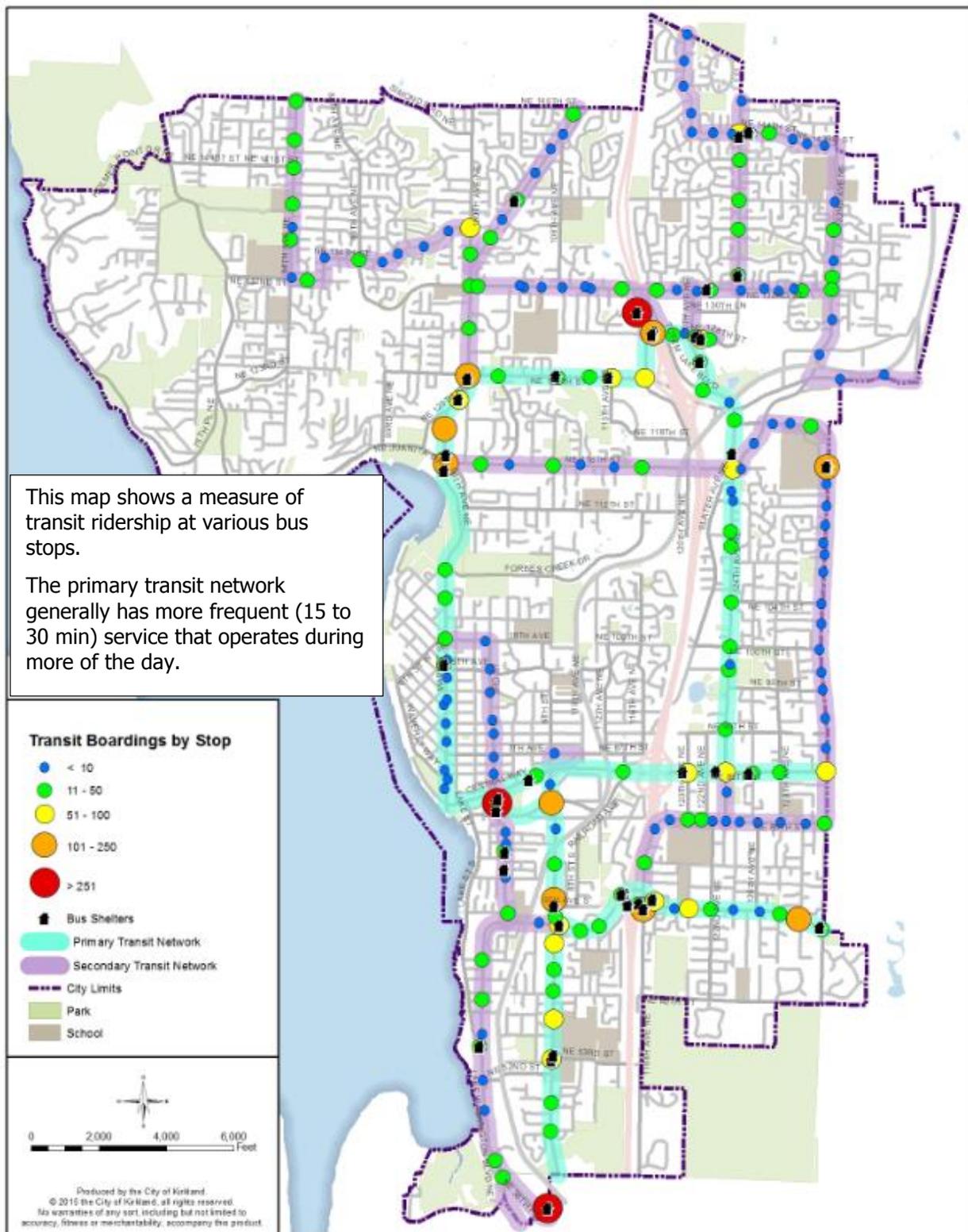
King County Metro and Sound Transit operate bus service of various types that connects Kirkland to other areas as shown in this map.

Source: King County Metro

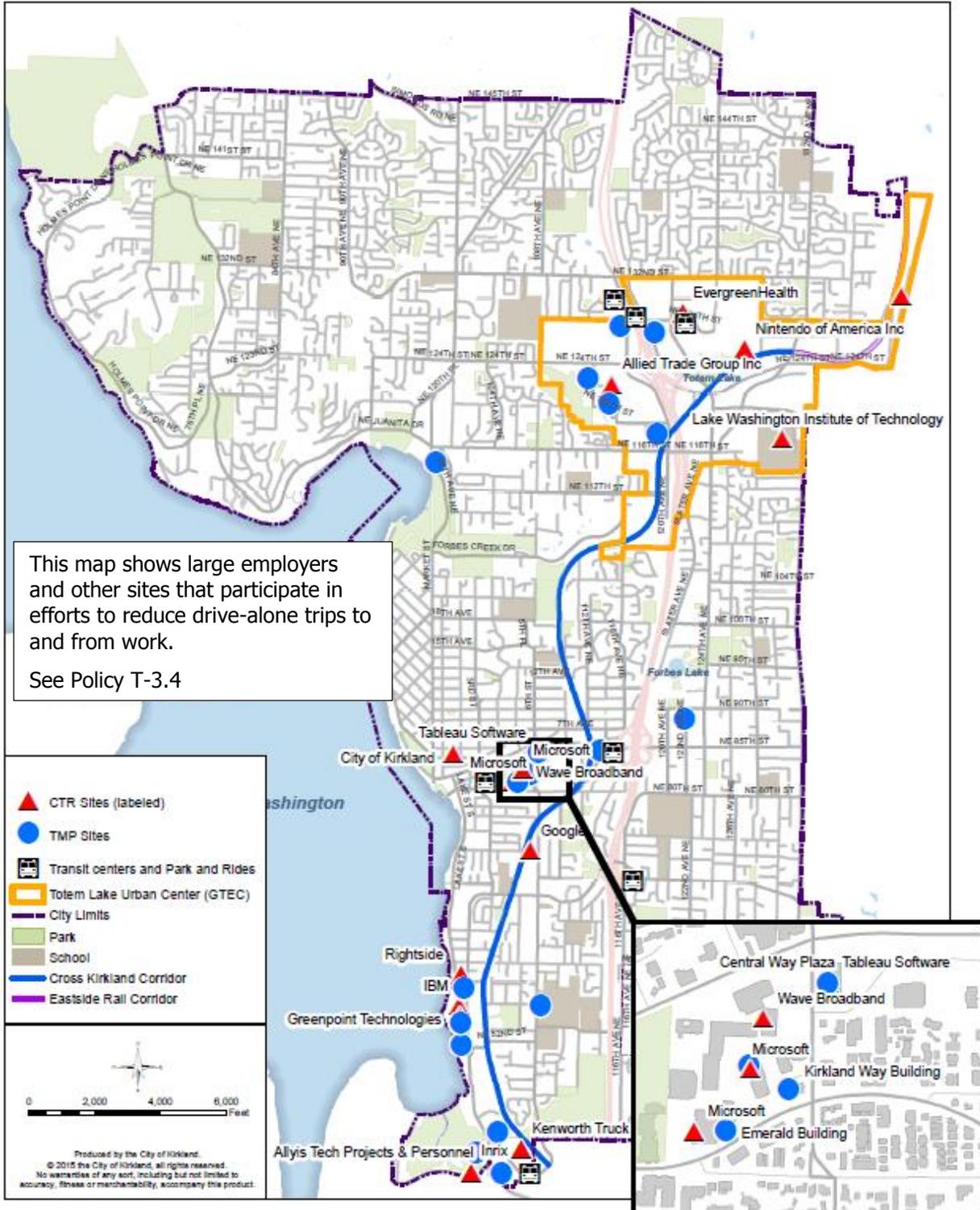
- Bus Routes and Facilities**
- 255 frequent all-day route (every 15 minutes or less until 6pm Mon–Fri)
 - 238 all-day route
 - 131, 132 all-day routes that combine for frequent service
 - 265 peak-only route
 - RapidRide line and stop
 - Dial-A-Ride route and area
 - Metro Transit (King County)
 - Sound Transit (regional express routes)
 - Community Transit (Snohomish County)
 - transit center
 - transit center and park & ride
 - park & ride lot with more than 250 spaces
 - park & ride lot with less than 250 spaces
 - freeway station
 - major transfer point
 - Store Name ORCA: vending machine | retailer

Transit Routes in the Kirkland Vicinity

Transportation Element (new)

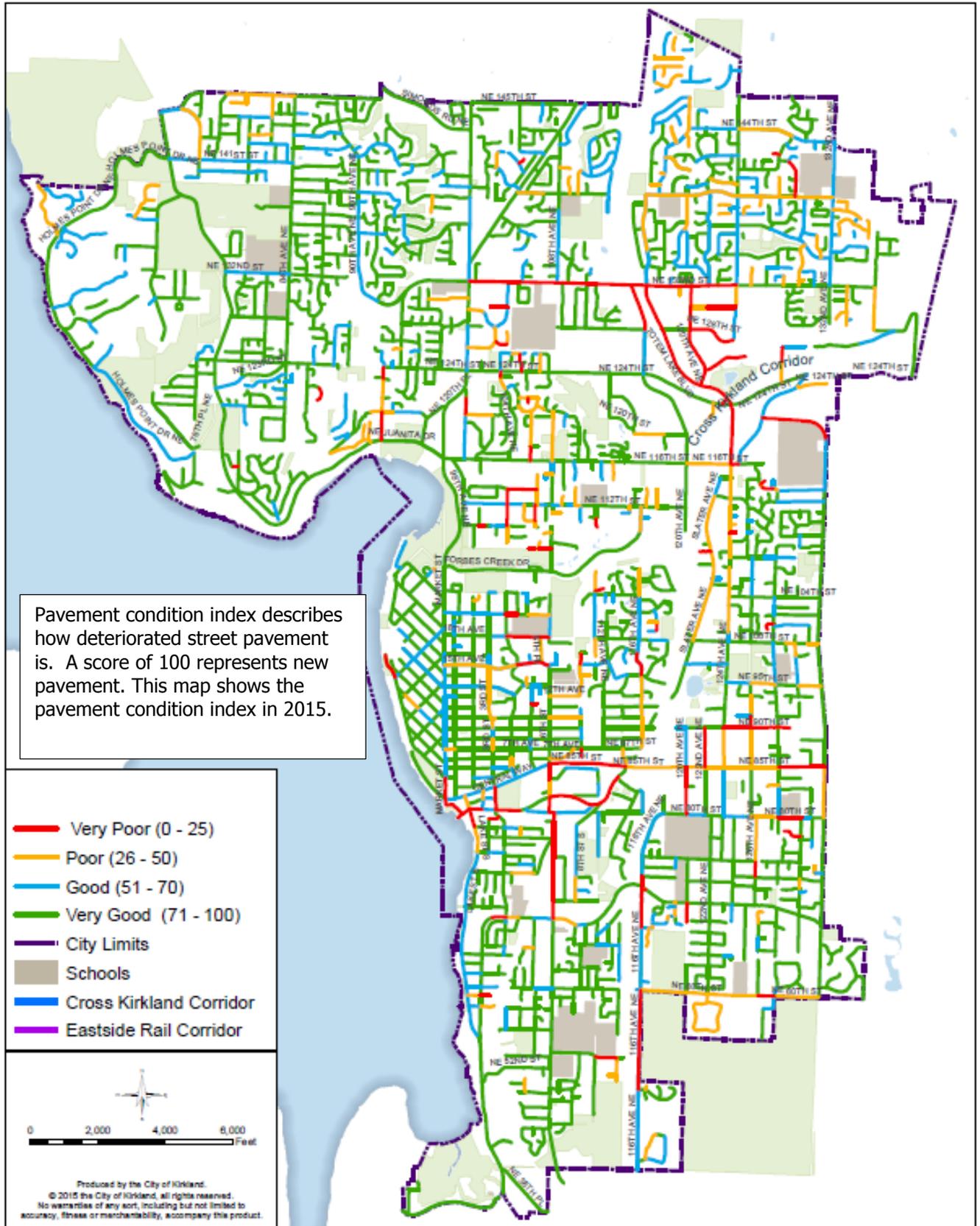


Volume of Riders and Location of Shelters at Transit Stops

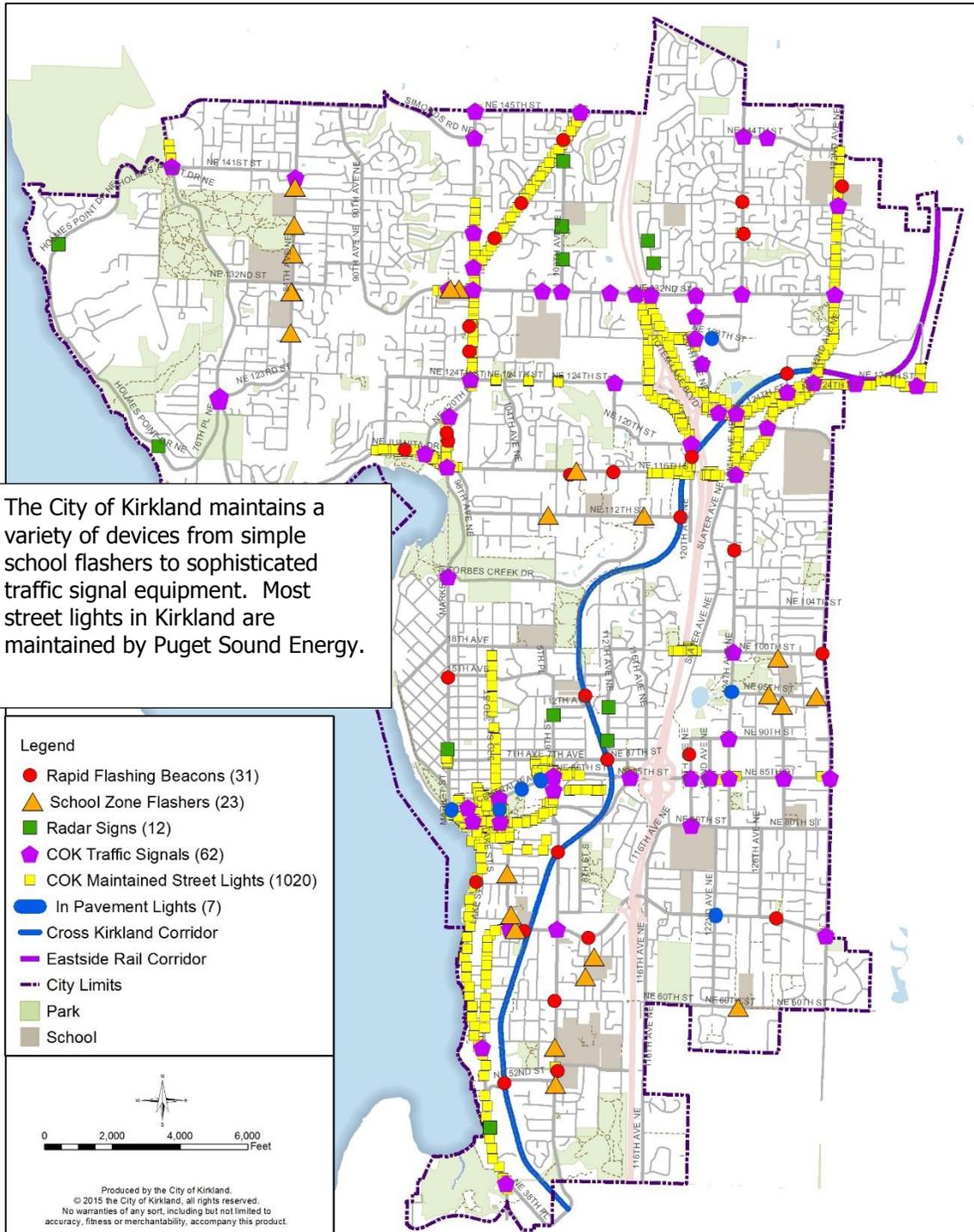


Location of Transportation Management Program and Commute Trip Reduction Sites

Transportation Element (new)

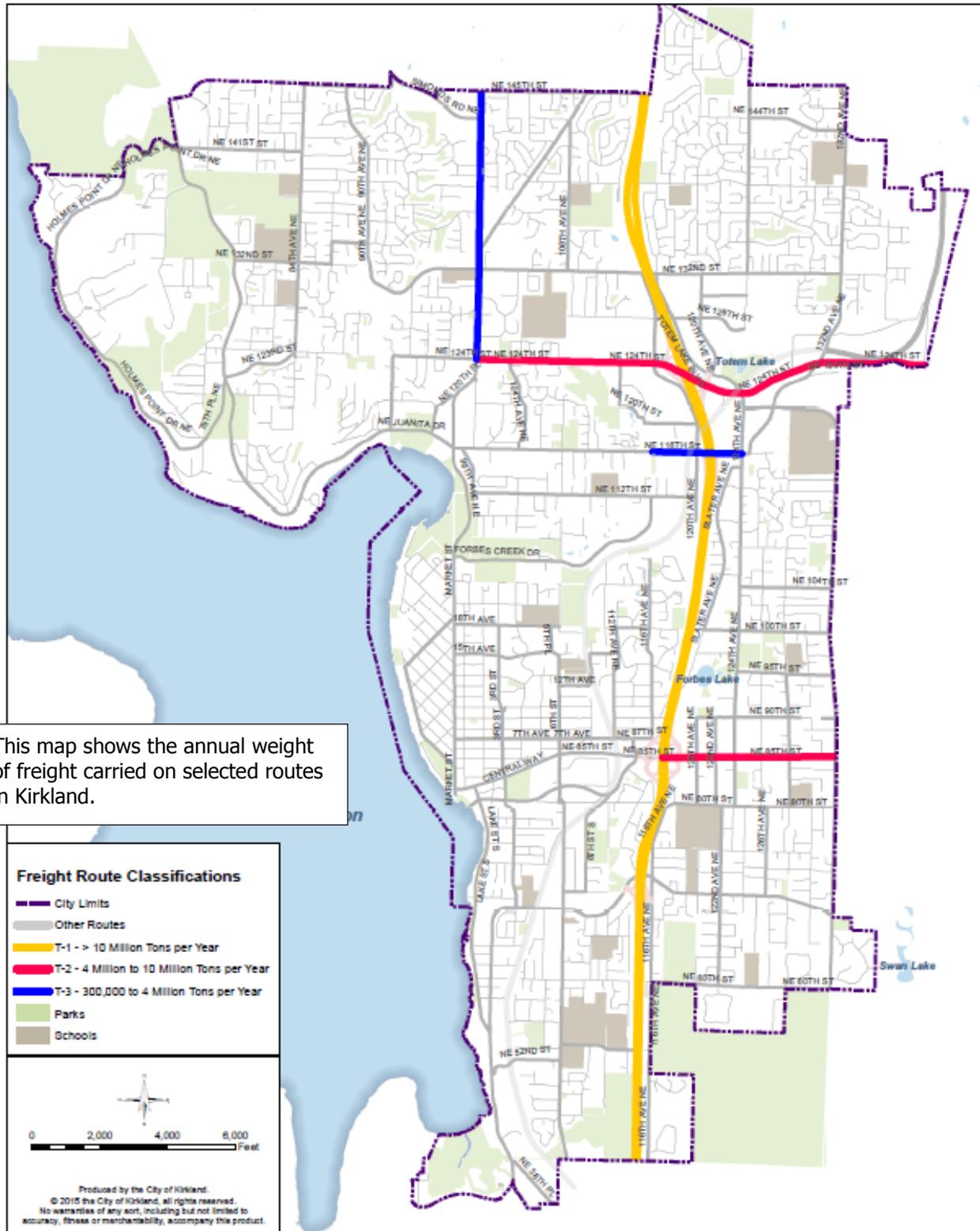


Pavement Condition Index



***Traffic Signals and Other Devices
Maintained by the City of Kirkland***

Transportation Element (new)

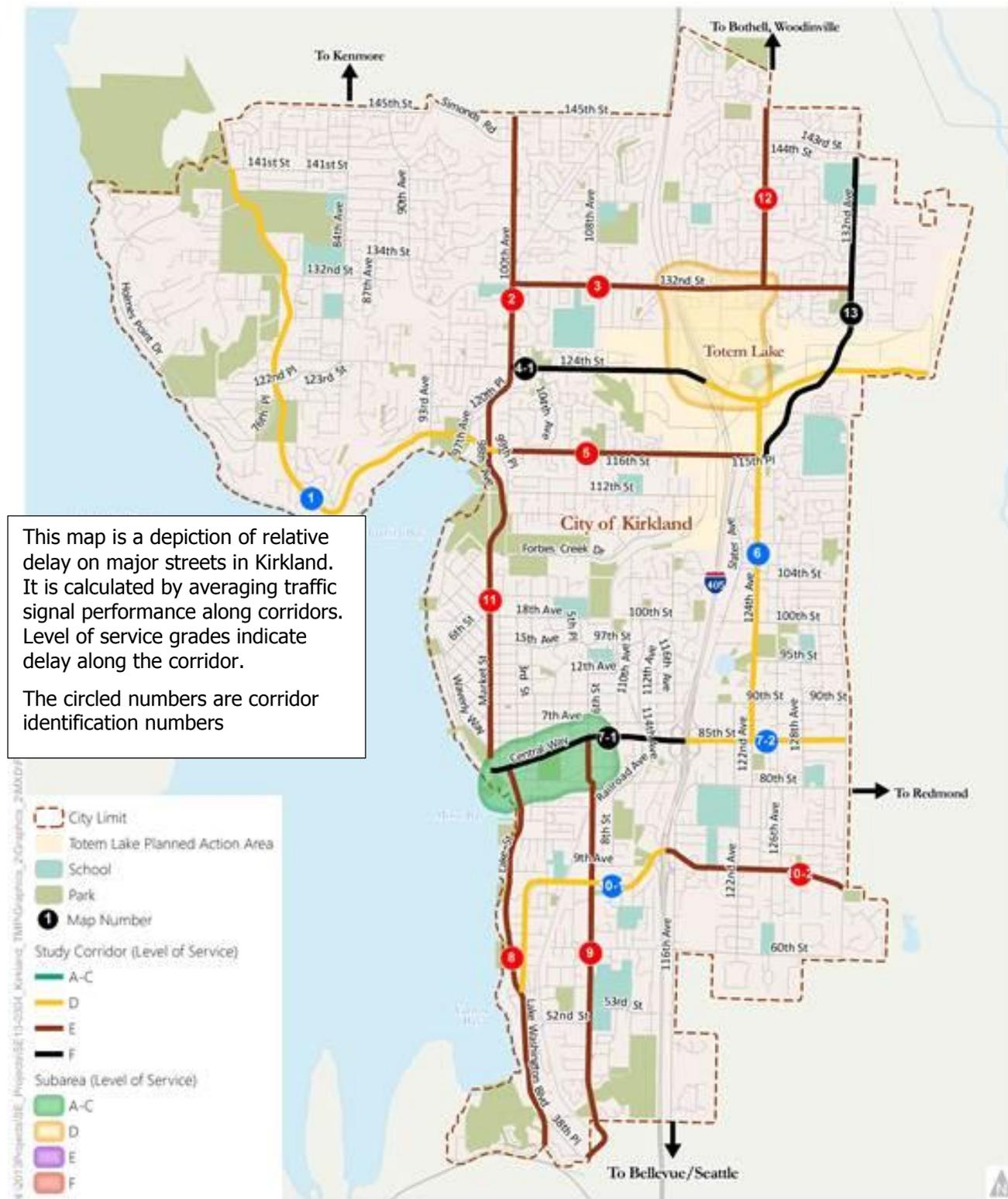


Freight Volume on Selected Routes

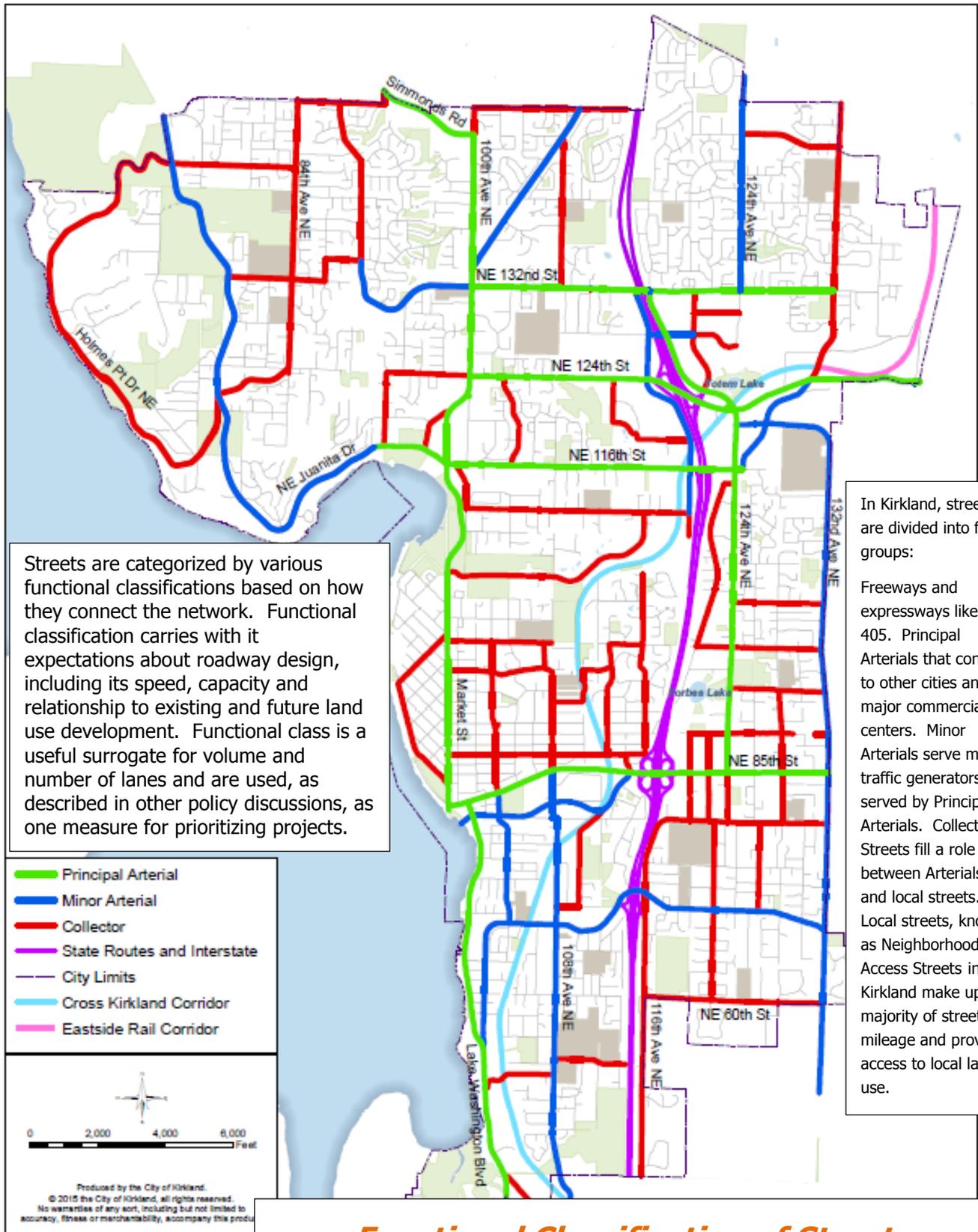


Parking Locations in Downtown Kirkland

Transportation Element (new)



Existing Traffic Congestion



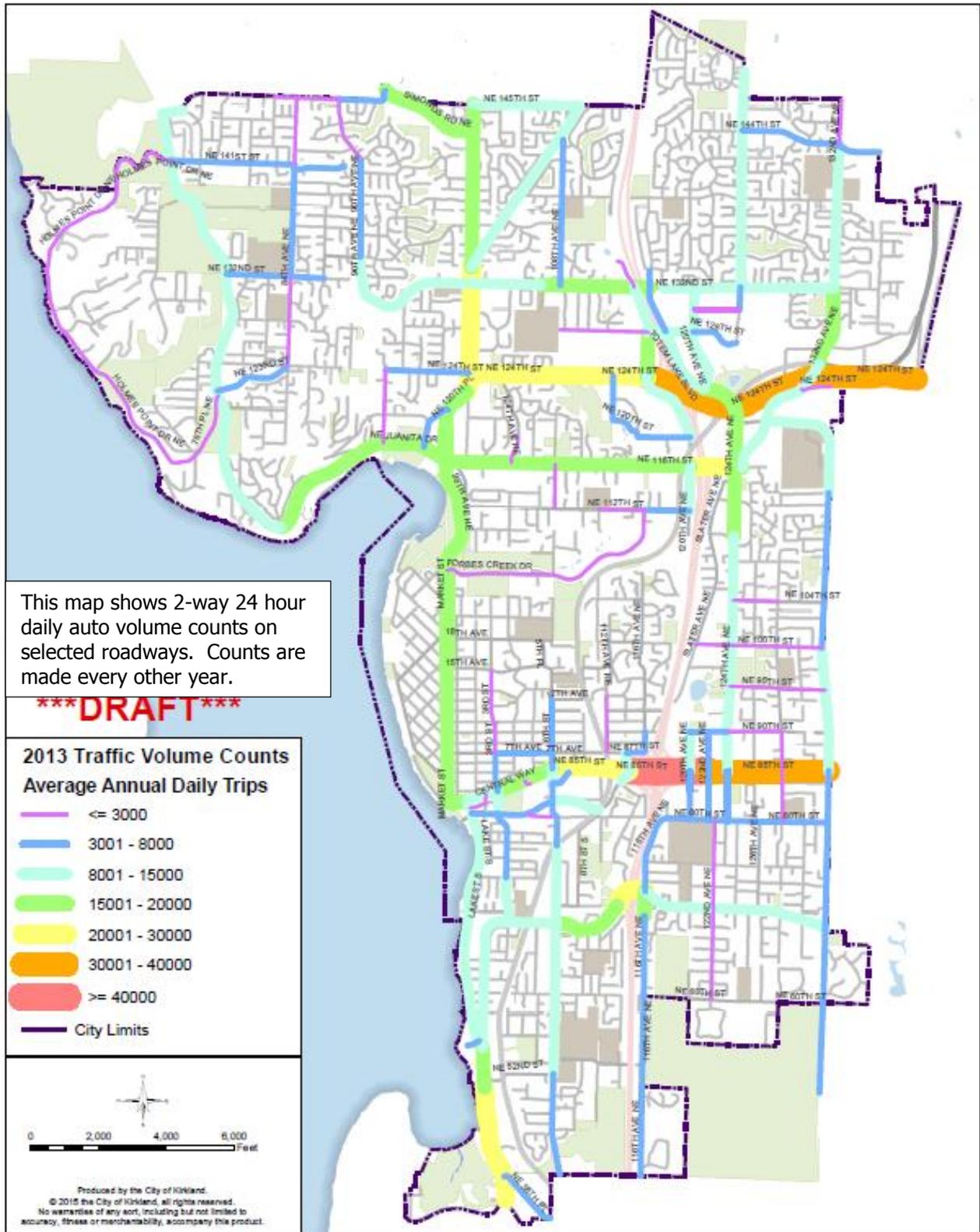
Streets are categorized by various functional classifications based on how they connect the network. Functional classification carries with it expectations about roadway design, including its speed, capacity and relationship to existing and future land use development. Functional class is a useful surrogate for volume and number of lanes and are used, as described in other policy discussions, as one measure for prioritizing projects.

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.

Functional Classification of Streets

Transportation Element (new)



Volume of Auto Traffic on Selected Streets

Summary of goals

The goals that guide the Transportation Element support the Comprehensive Plan vision and 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.

Section 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 Manufacturers 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 new and reporting back 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 transportation element.

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

Section 2. WALKING

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. 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.

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)

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.

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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)

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.

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 the 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.

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.

Transportation Element (new)

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

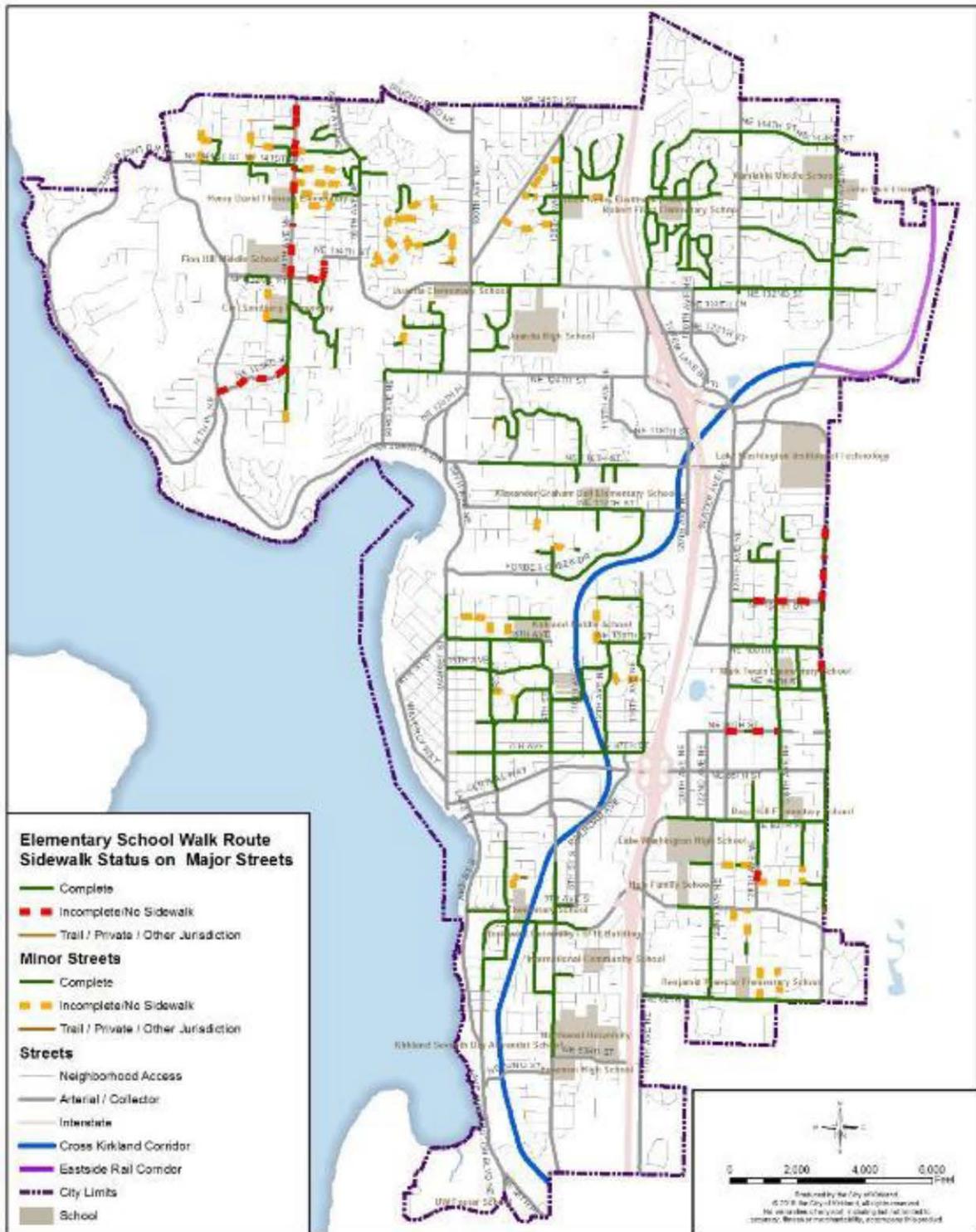


Policy T-1.6 Make it safe and easy for children to walk to school and other destinations.

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 sidewalks 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.



School Walk Routes

Transportation Element (new)

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:

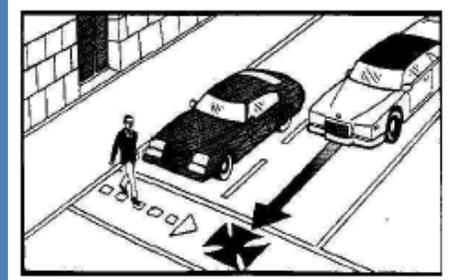
- **Improve safety**— within the context of a vision zero program, consider crash history and indicators of crash risk such as vehicle speed.
- **Link to Land Use**—prioritize crossings on routes with sidewalks that expand and enhance walkability or that otherwise help achieve Kirkland’s land use goals. 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/likelihood 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.

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

3 factors that most influence crosswalk safety:

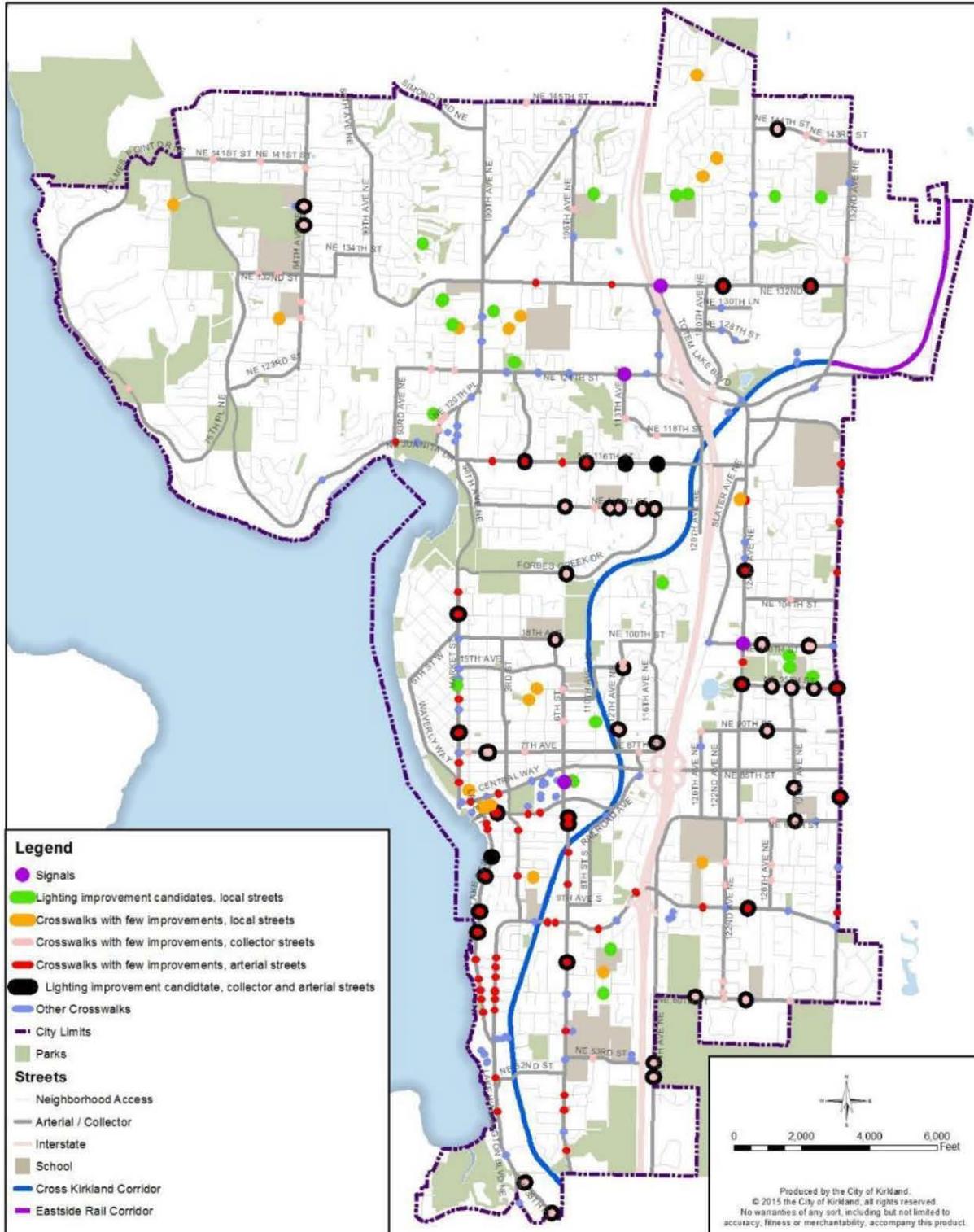
1. **Number of lanes.** Multi-lane streets can leave pedestrians vulnerable to the “double threat” crash where one vehicle stops, the pedestrian begins to cross and the other vehicle, not seeing the pedestrian proceeds through the crosswalk.



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.

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



Possible Crosswalk Treatment Candidates
Potential Crosswalk Treatment Candidates

Section 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 should be considered at stairways and steep grades to help cyclists get up and down elevation changes.

The graphic below shows The League of American Bicyclists’ definition of attributes that make a bicycle friendly community.

This illustration shows a spectrum of bicycle facilities. Those on the right are more comfortable for more users. In this illustration Greenways are called Local Street Bikeways.

The diagram illustrates a spectrum of bicycle facilities from 'Less Comfortable' on the left to 'More Comfortable' on the right. A dashed arrow points from left to right, with a yellow arrowhead on the left and a green arrowhead on the right. Below the arrow, the text 'All Ages & Abilities Facilities' is centered. Six photographs of different bicycle facilities are shown, each with a vertical black line above it. From left to right, the facilities are: Shared Use Lane, Bicycle Lane, Buffered Bike Lane, Local Street Bikeway, Separated Bike Lane, and Off-Street Pathway. The Local Street Bikeway is highlighted with a green background, indicating it is an 'All Ages & Abilities Facility'.

Source: City of Vancouver, B.C.

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)

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 below 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.

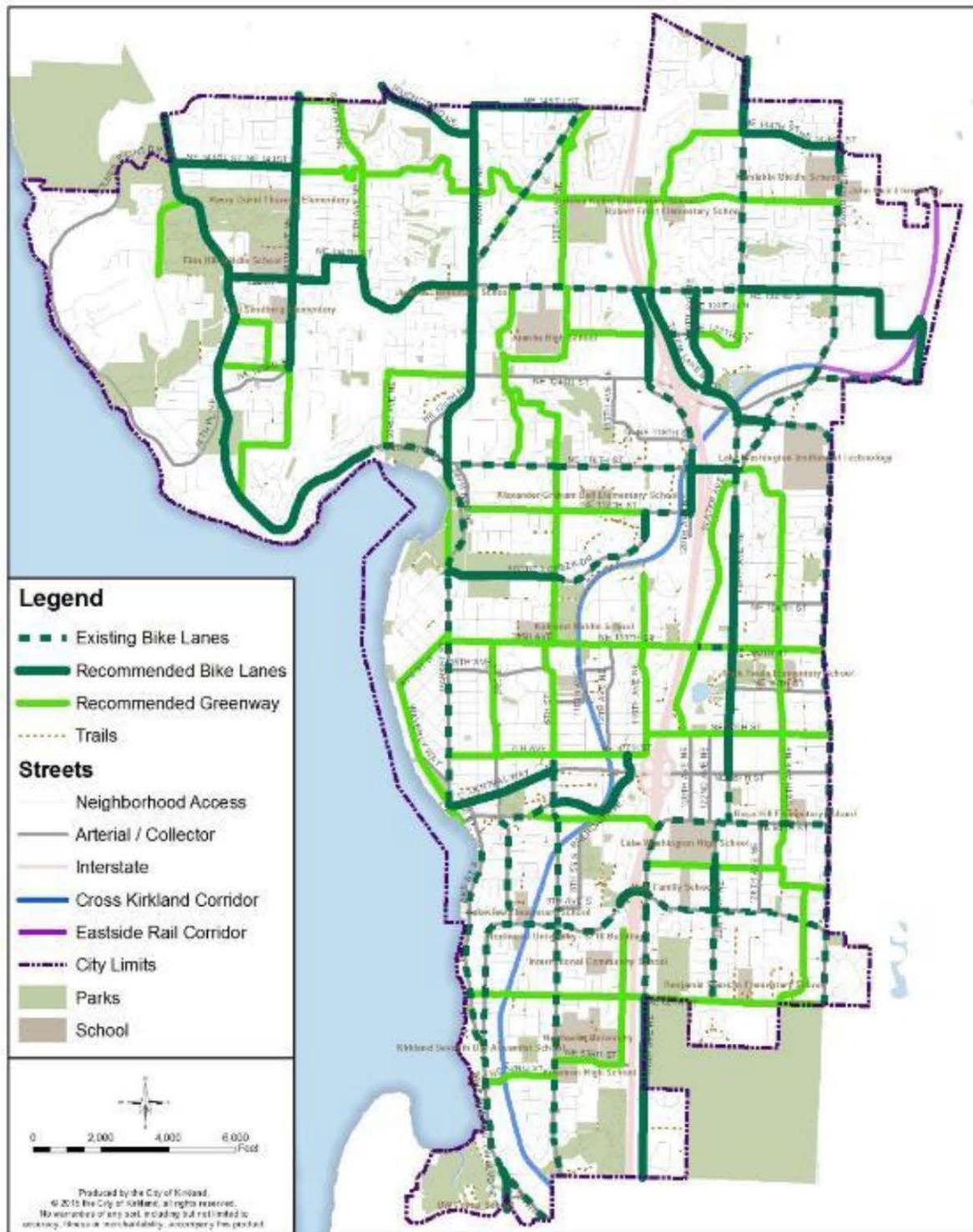
High quality, separated on-street bicycle facilities (formerly known as cycle tracks) should be part of Kirkland's bicycling network. This concept is especially important along high volume/high speed arterials where bicyclists are threatened by automobile traffic and from door openings of parked vehicles. 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.
- **Cost/likeness 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.

Transportation Element (new)



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.



Greenways can have special facilities for people who walk.

Transportation Element (new)

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.

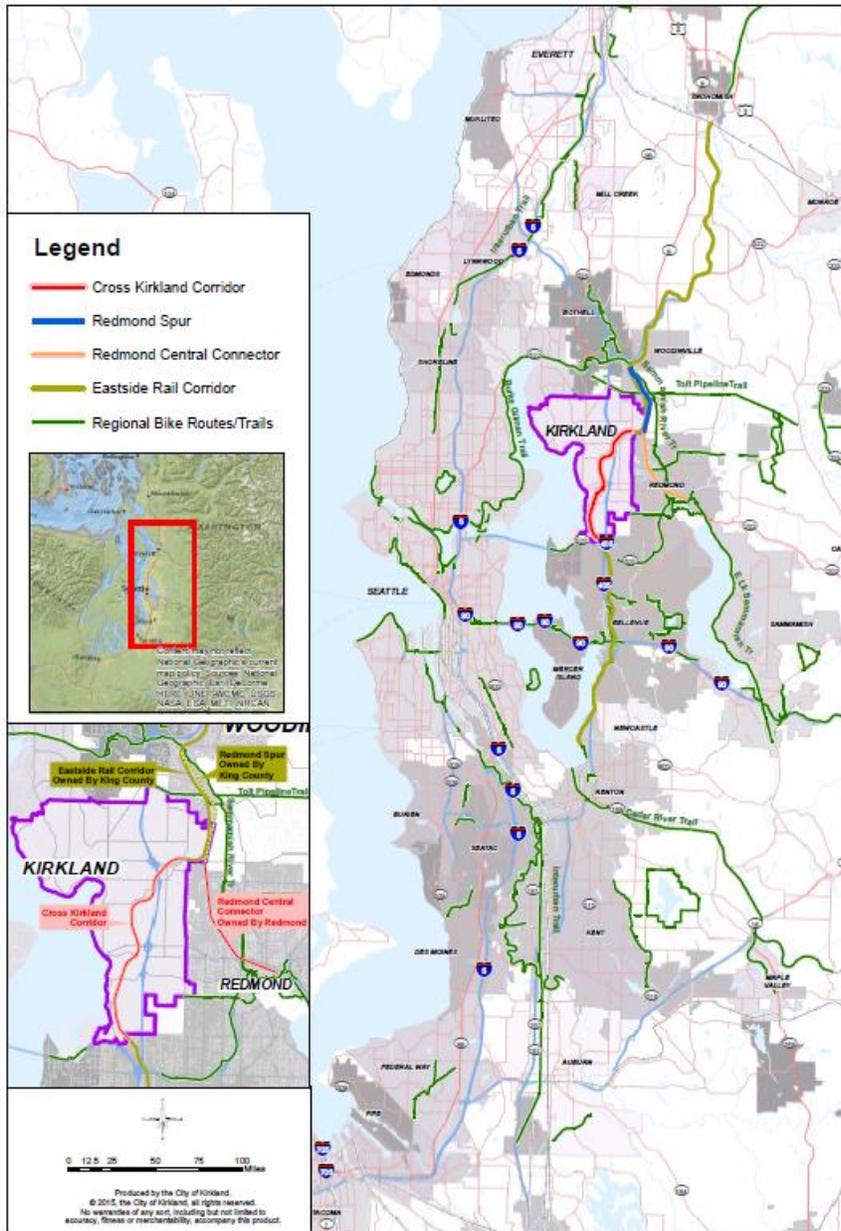
Policy T-2.5 Make it easy to navigate the bicycle network.

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.

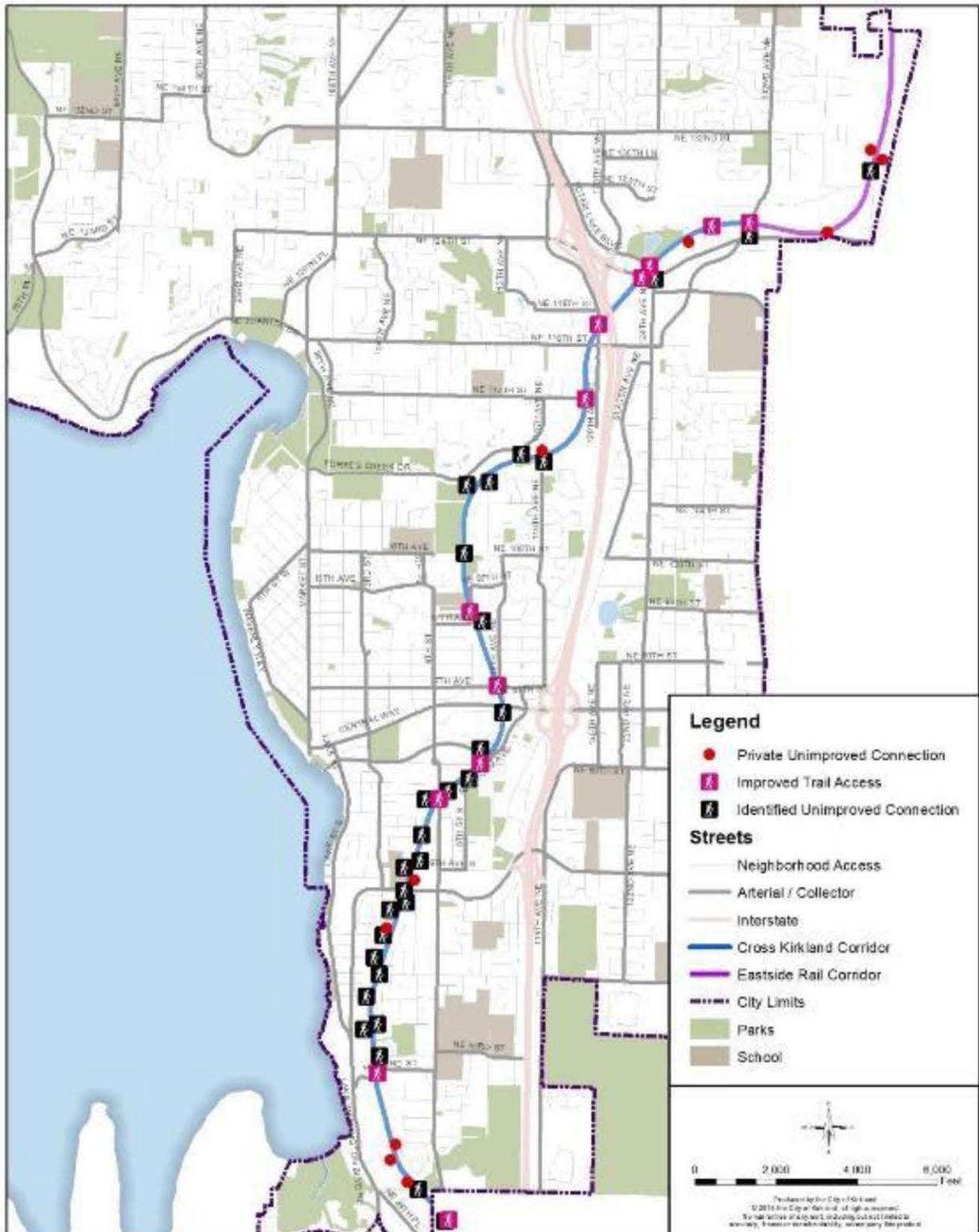
Policy T-2.6 Make the Cross Kirkland Corridor an integral part of the bicycle network and connect it to the region.

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.

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



Transportation Element (new)



Cross Kirkland Corridor & Connections

Section 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, 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 transportation element 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.

Transportation Element (new)



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.

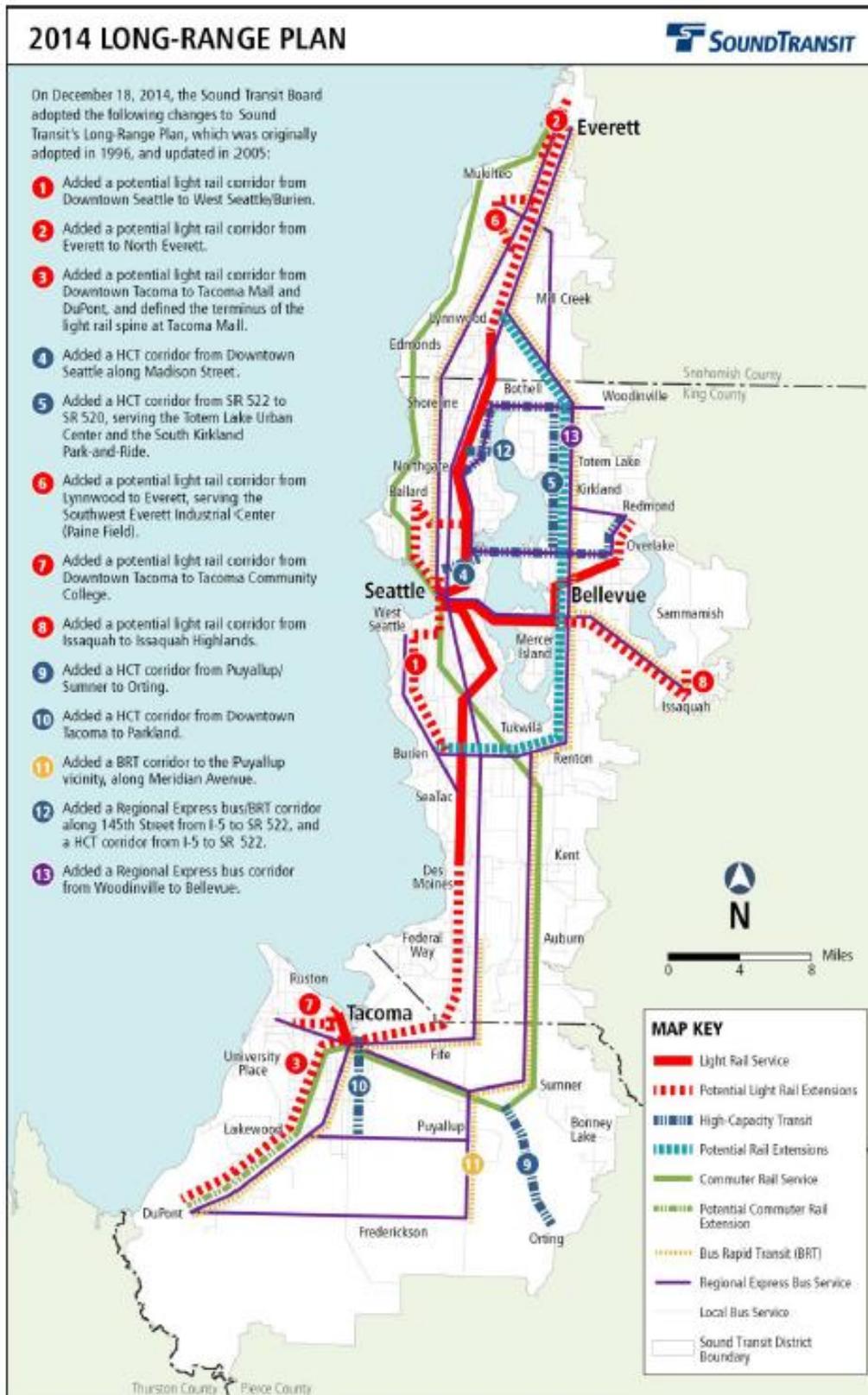
The successful aspects of the development of the South Kirkland Park and Ride into a Transit Oriented Development should be explored at the Kingsgate and Houghton Park and Rides and at the remaining space at the South Kirkland Park and Ride. The transit system should be operated so that excess parking 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.

Kirkland is responsible for monitoring and encouraging the efforts of Washington State's Commute Trip Reduction Program and its affected employers located in the city.

Transportation Element (new)

Sound Transit Long Range Plan



The figure at left shows Sound Transit's long range plan. Projects from the Plan 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 Long Range Plan 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 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.

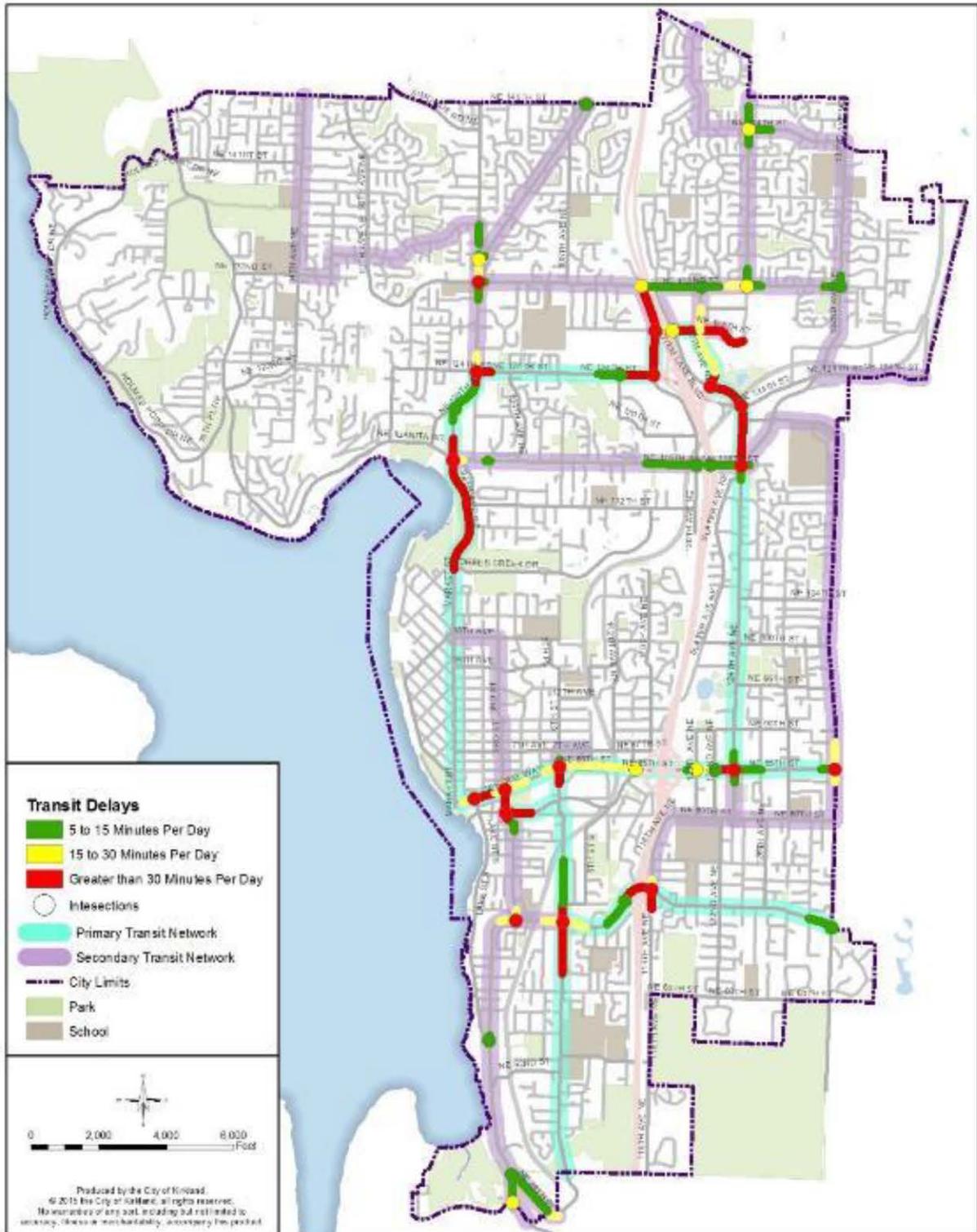
Improvements should be prioritized by their ability to decrease rider hours spent delayed in traffic, and effects on other street traffic.

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**.

Transportation Element (new)



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.

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.

Policy T-3.4 Support Transportation Demand Management (TDM) 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

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

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

Transportation Element (new)

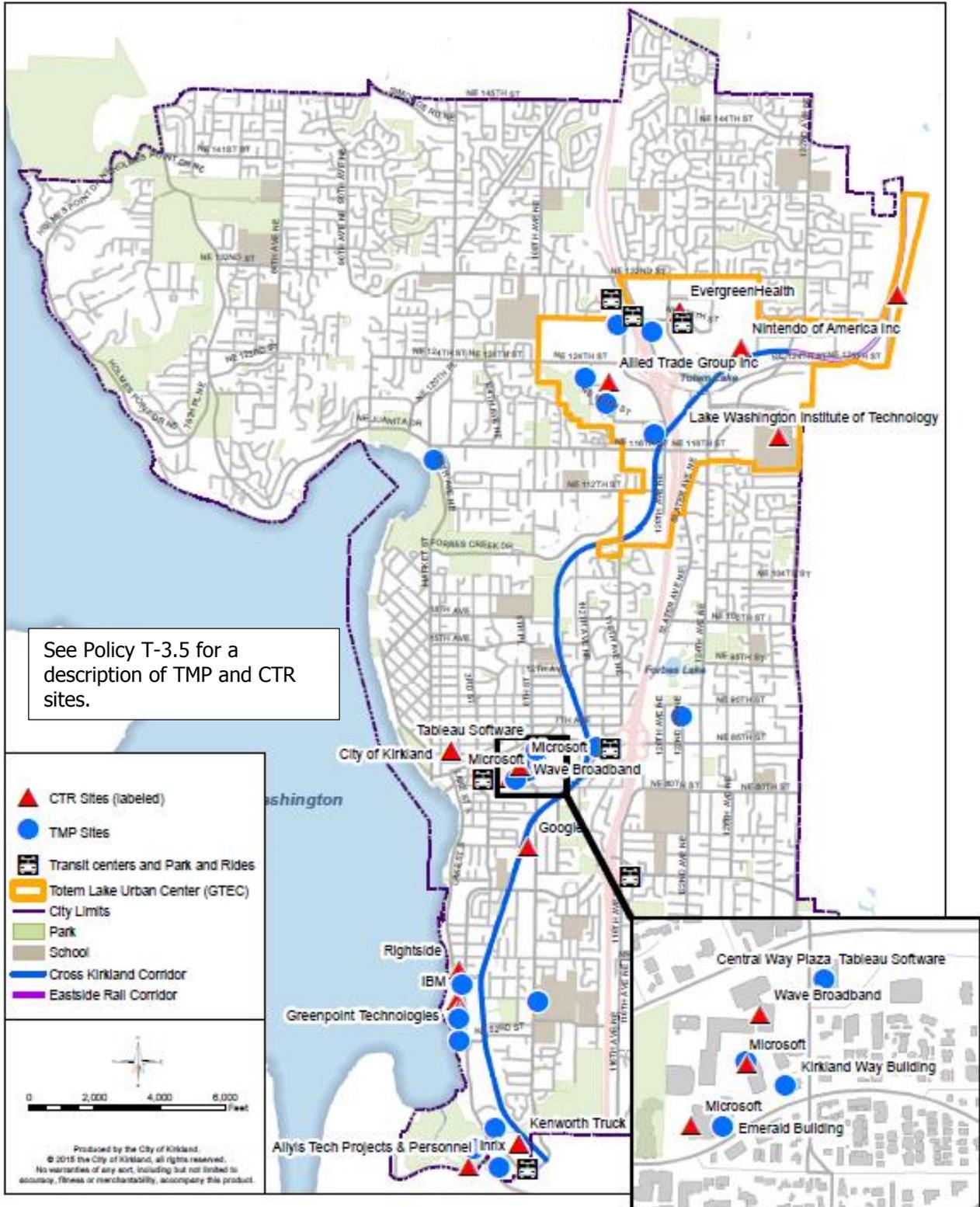
There is room for innovation in order to significantly improve ridesharing, and innovations should be made, whether it be new ways of helping people find ridesharing partners, allowing new kinds of taxi-like services or other measures. Given the relatively small numbers of vanpools serving Kirkland employers,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

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 high 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.

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

If the vision of the Transportation Element 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, are 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.



***Commute Trip Reduction and
Transportation Management Plan Sites***

Transportation Element (new)

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

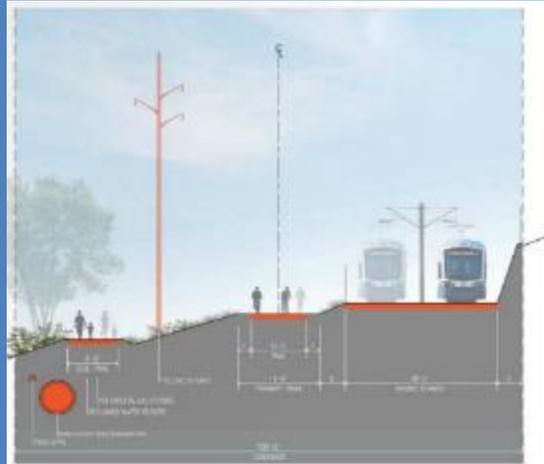
The vision for the Cross Kirkland Corridor includes quiet, low or no emission transit. This could be regional level light rail or more local service that connects to regional service, for example to Bellevue. New types of transit should be considered where they offer advantages to more standard modes. 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.

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.

Section 5. MOTOR VEHICLES

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.

This transportation element 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 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 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

Transportation Element (new)

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.

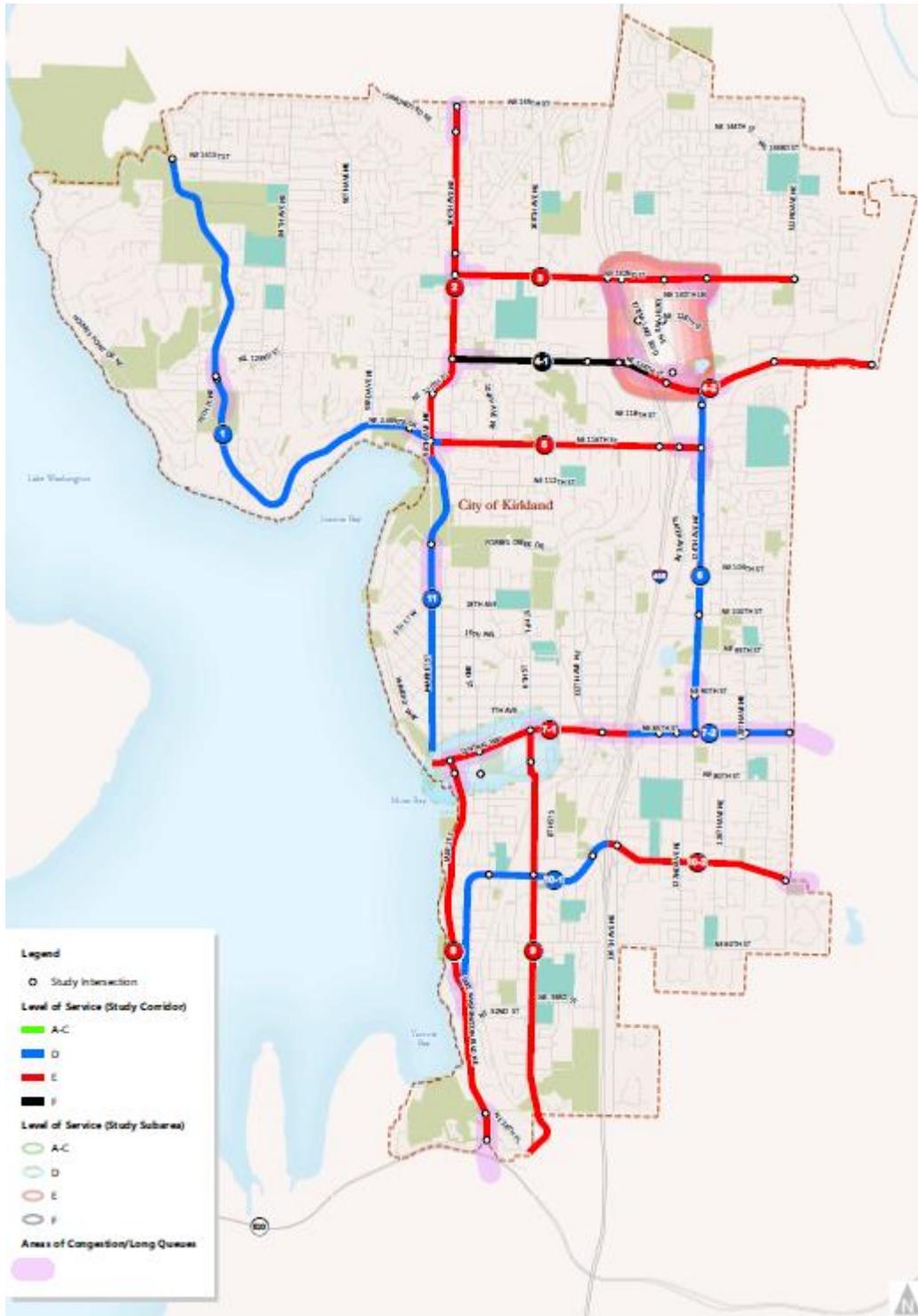
Some areas, such as NE 132nd Street, may have substantial reductions in congestion from modest intersection improvements that are in keeping with the surrounding land use. Priorities for street improvements should include the following:

- 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.

The figure on the following page shows an estimate of roadway performance with 2035 land use.



Future Roadway Performance

Transportation Element (new)

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

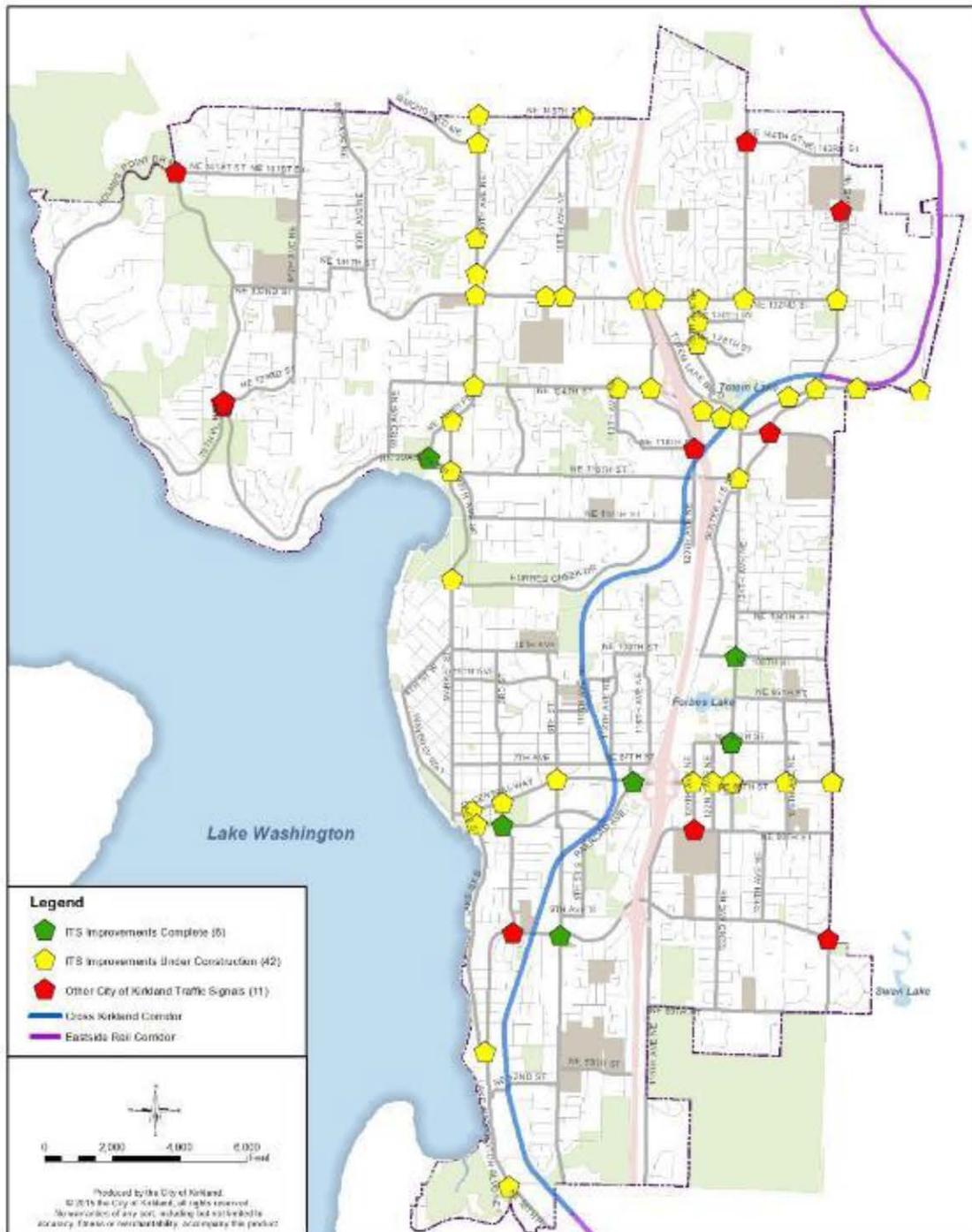
With less emphasis on capacity projects, there is more need for elements like **Intelligent Transportation Systems** (ITS) to get the most from existing capacity. ITS makes signal operations easier so that the benefits to drivers can be realized. The City has made sizable investments in ITS, including 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.



***Intelligent Traffic
System Development***

Transportation Element (new)**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.

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 occupancy rates 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.

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.***

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

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.



Section 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 chapter 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.

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)

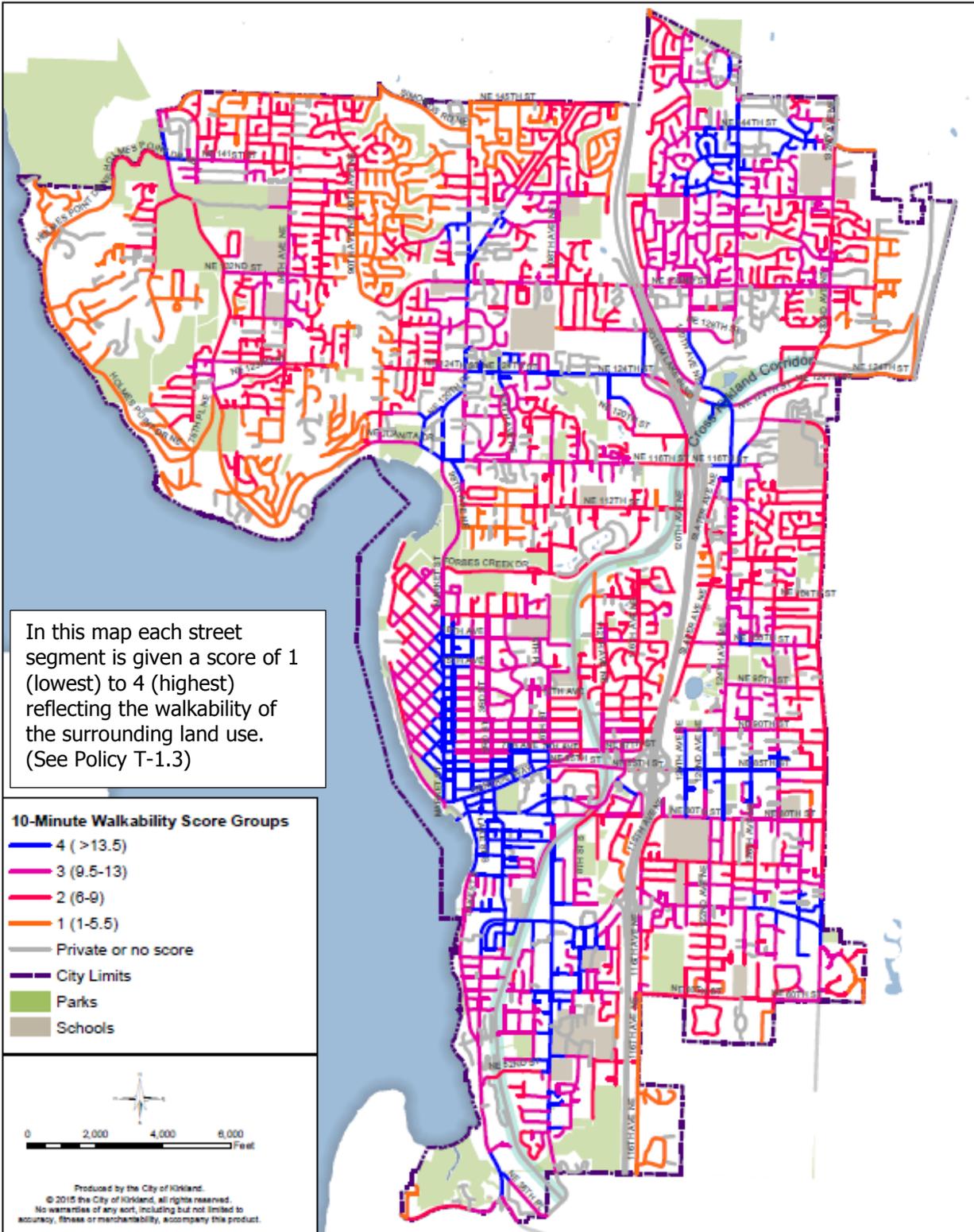
Based on the vision for the Comprehensive Plan, street improvements that add vehicle capacity should be designed to facilitate walking, biking and transit as well.

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 element

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.

Transportation Element (new)



Walkability

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.

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 sections 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.

Transportation Element (new)

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 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 traffic impact 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.

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.

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.

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 tolling. 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.

Section 7. BE SUSTAINABLE

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 transportation element 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.

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 life of the 20 year plan. The unfunded list should also be focused on the goals of the transportation element 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 as a vital link for north-south transportation.

Many types of funding are used to fund the transportation system

Capital project funding	
<i>Source</i>	<i>Annual Amount (million)</i>
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 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.

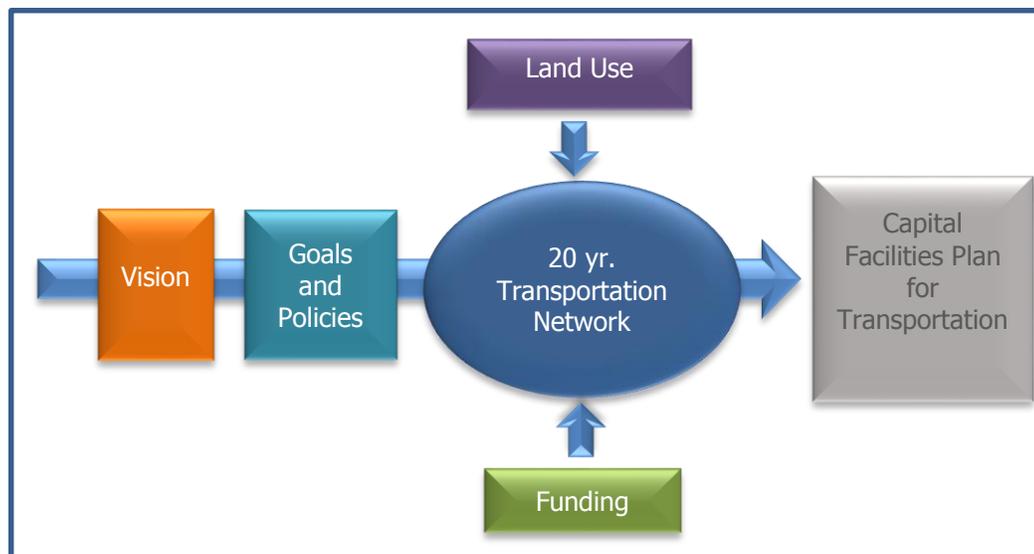
Because the 20 year Transportation Project List will be updated regularly, it should be viewed as a document that gives planning direction and that reflects the policy direction in the Transportation Element, rather than spelling out the specifics of each project to be completed between now and 2035.

Transportation Element (new)

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 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 were established, the 20 year project list was 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 chapter, establish project categories within each main area of the transportation element (Safety, Maintenance, Walk, Bike, Transit, and Auto) (See Table 2 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 transportation element 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.



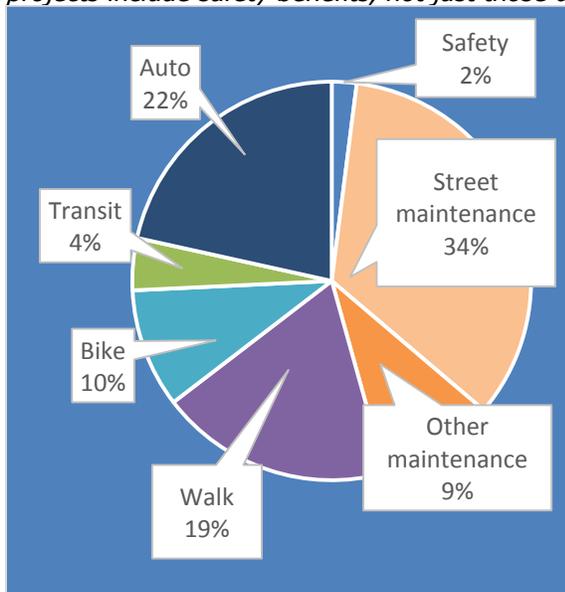
The illustration (above) shows how vision, goals and policies, funding and land use influence the 20 yr. Transportation network. The network is the source of projects for the 6 yr. funded CIP and unfunded projects are also part of the list.

It is expected that the 20 year Transportation Project List will serve as 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 the Transportation Element. 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.



Transportation Element (new)

20 year project Table part a

MODE	CATEGORY	BASIS FOR 20YR FUNDING	20-YR FUNDING (million)	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST	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 \$.75m each.	Reduce crash rates for motor vehicles, mitigate impacts of motor vehicles on neighborhood streets.
Maintenance	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.	\$	Previous policy decision.
	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.	\$	Place high priority on maintenance, Use ITS.
	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, increase safety, improve facilities, and build networks for bikes.
	Markings	Estimate of need.	\$12.0	Annual inspection.	Funding level should be adequate; reevaluate in the future.	\$	Place high priority on maintenance, Remove barriers to walking, improve safety of walking, integrate transit with ped/bike networks.
	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.	\$	

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.# Other categories of 10 minute walkability, other street classifications.#	#	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#		Complete sidewalk on other streets.#	Has not been estimated.#		
	Arterials and Collectors#	Missing sidewalks on Principal arterials.#	\$...3.0#	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#	
		New crosswalks, poor lighting, fewer improvements, at signals.#	\$...9.5#					
		Improving lighting at candidate locations on all streets, improvements on arterials, new crosswalks, improvements at signals.#						
		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 corridor is 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, improve 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. #

Transportation Element (new)

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 rider ship 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 construction and design	Many other projects are on the current unfunded CIP list		Make strategic investments in intersection and street capacity, Work with WSDOT on interchange improvements

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.

Transportation Element (new)

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 Total 2015-2020	Unfunded in CIP 2021-	
				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	\$ 1,268,500						\$ 1,268,500	\$ -	
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		\$ 900,000					\$ 900,000		
ST 9999	Regional Inter-Agency Coordination	No - not capacity	No - not capacity	\$ 82,000	\$ 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 NM5*	Yes	\$ 70,000				\$ 50,000	\$ 50,000	\$ 170,000		
NM 0012 001	NE 116th Street Crosswalk Upgrade	Yes NM5	Yes			\$ 200,000	\$ 230,000			\$ 430,000		
NM 0012 002	NE 124th Street Crosswalk Upgrade	Yes NM5	Yes		\$ 80,000					\$ 80,000		
NM 0012 003	132nd Avenue NE Crosswalk Upgrade	Yes NM5	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		
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		\$ 500,000	\$ 864,200	\$ 869,000	\$ 450,000	\$ 400,000	\$ 3,083,200		
NM 0087 001	North Kirkland/JFK 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		
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/114th 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 0089	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						\$ 850,000	\$ 3,000,000	
TR 0117	Citywide Traffic Management Safety Improvements	No - safety	No - safety			\$ 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	\$ 250,000	\$ 750,000	
TR 0117 003	Neighborhood Traffic Control	No - not capacity	No - safety	\$ 50,000		\$ 50,000			\$ 50,000	\$ 150,000	\$ 375,000	
TR 0118	General Parking Lot Improvements	No - not capacity	No - not capacity	\$ 500,000		\$ 100,000				\$ 600,000		
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	\$ 1,350,000		
TR 0122	Totem Lake Intersection Improvements	Yes depending on scope*	Yes		\$ 6,000,000					\$ 6,000,000		
										FUNDED TOTAL	\$ 101,664,100	
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 NM5*	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	
* Depending on project scope; see Rate Study and Transportation Master Plan												
										20 YEAR SUBTOTALS	\$ 171,230,500	\$ 272,894,600
										20 YEAR TOTAL	\$ 171,230,500	\$ 272,894,600

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.

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 transportation element, 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.

Transportation Element (new)

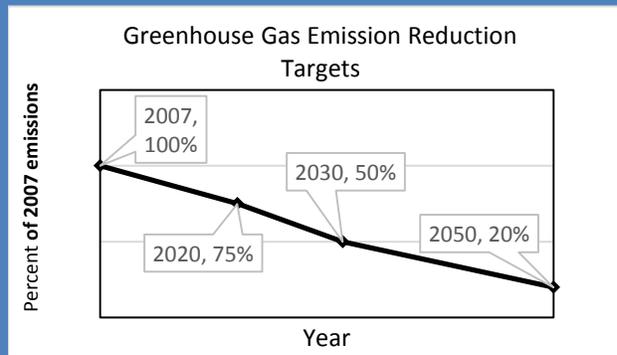
Climate Change

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 can be significant from warming temperatures: rising seas, decreasing snowpack, and increased flooding.

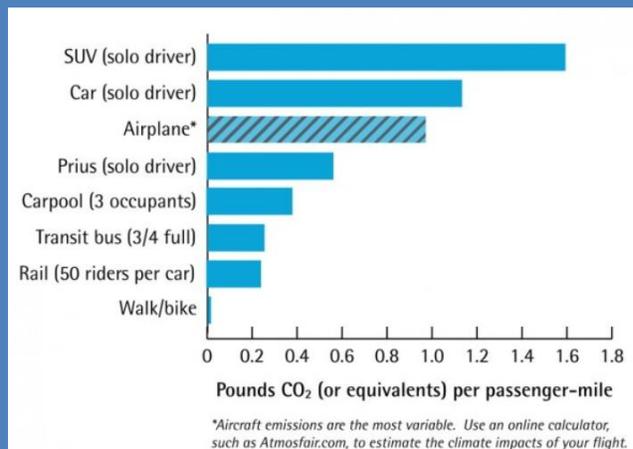
An overwhelming scientific consensus maintains that climate change is due primarily to the human use of fossil fuels, which releases carbon dioxide and other greenhouse gases into the air and trap heat within the atmosphere.

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 Chapter 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.

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.

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)

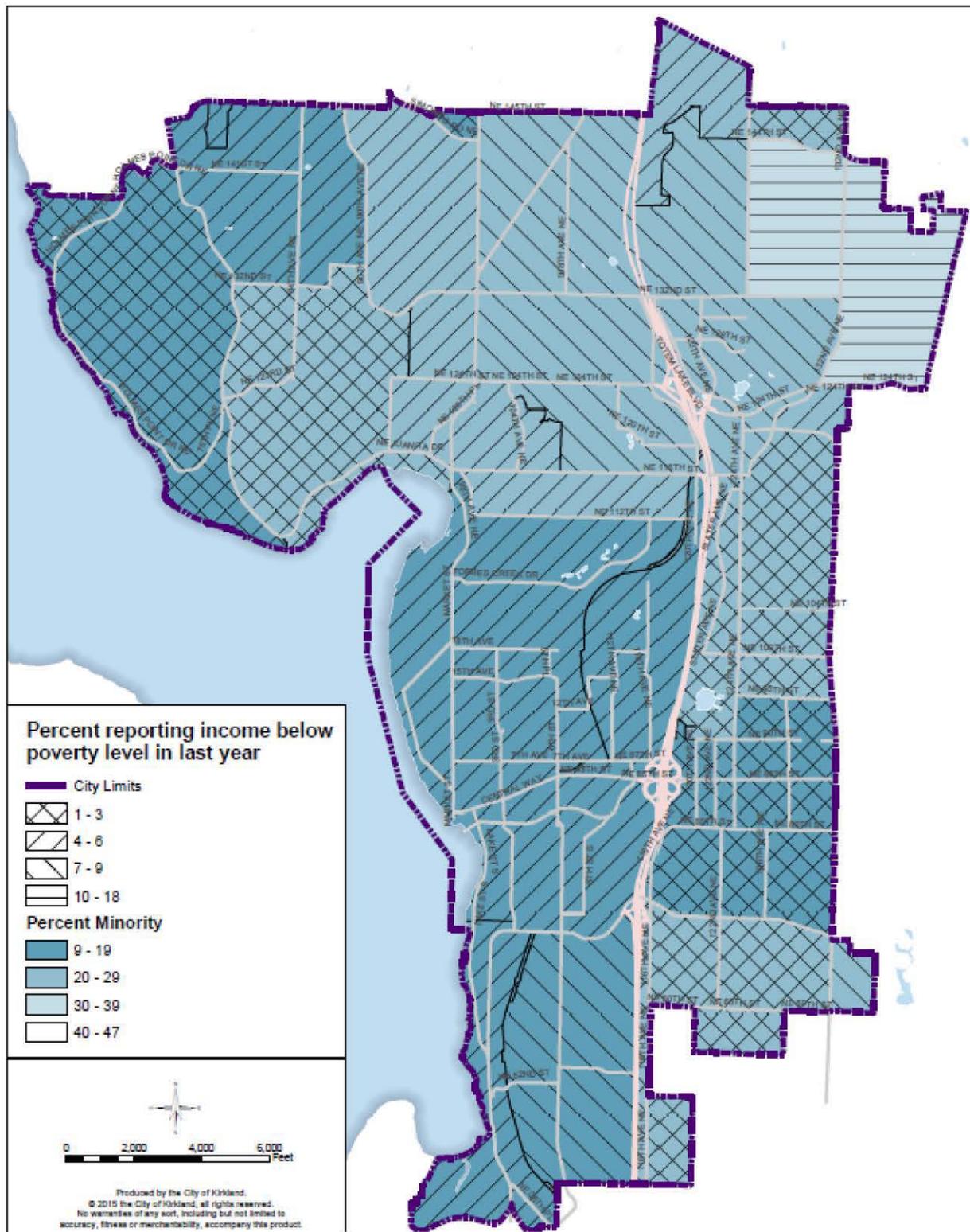
Policy T-6.7 Implement transportation programs and projects in ways that prevent or minimize impacts to low-income, minority and special needs populations.

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.

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 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.

Transportation Element (new)



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

Section 8. BE AN ACTIVE PARTNER

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 for which Kirkland must plan. 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 section are closely associated with the policies in Section 4, Public Transportation.

Transportation Element (new)

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 transportation element 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.

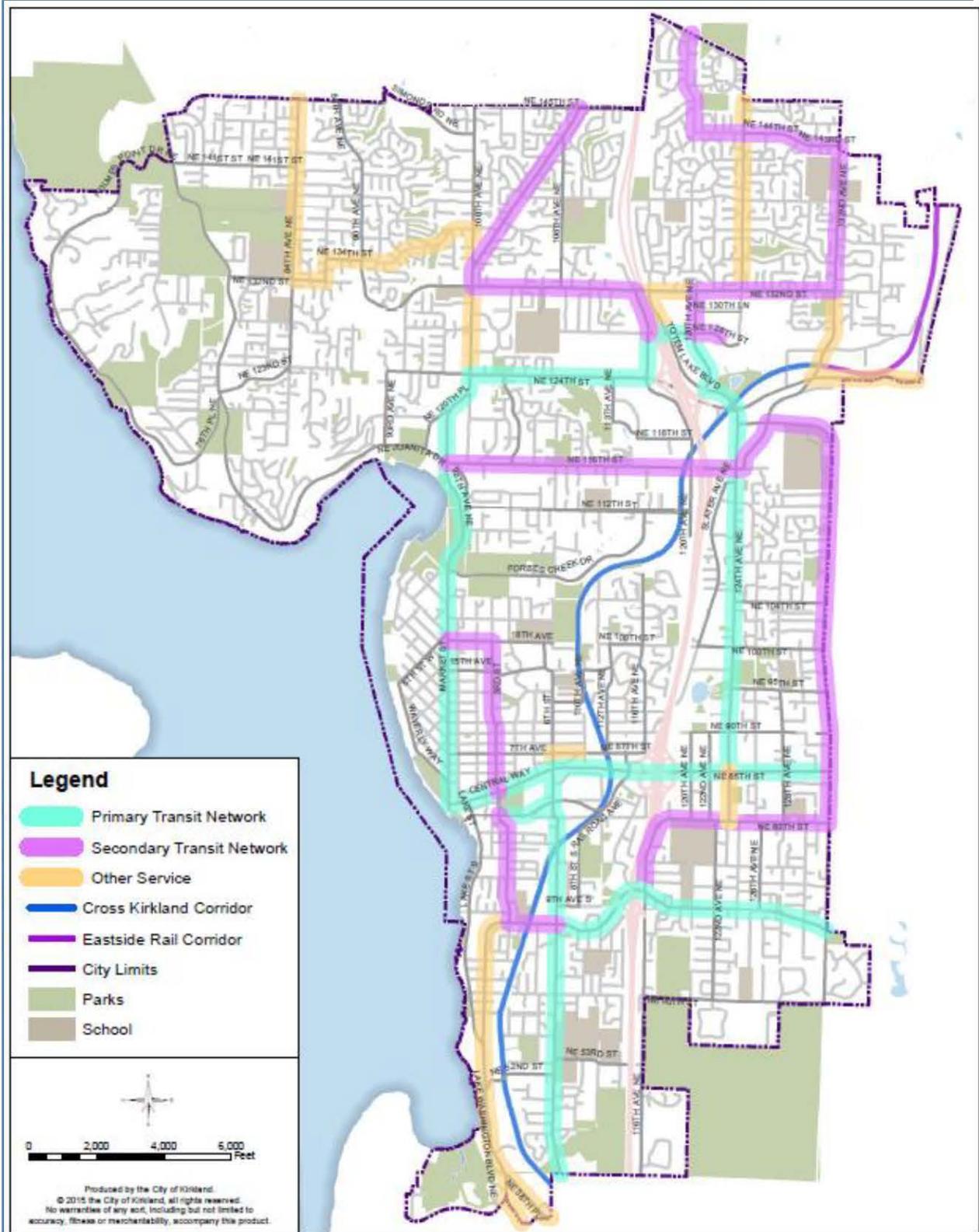
Policy T-7.2 Establish commitments from transit providers to provide high quality transit service in exchange for land use and transportation commitments that support transit. Partner with King County Metro to meet mutual interests.

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 transportation element, 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.



Transit Network

Transportation Element (new)

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 chapter, 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. The City of Kirkland recognizes that the WSDOT may only make improvements in Kirkland that are consistent with the State Multimodal Transportation Plan.

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.

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.

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.

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.

Section 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: 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. An example is provided on the next page.

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?

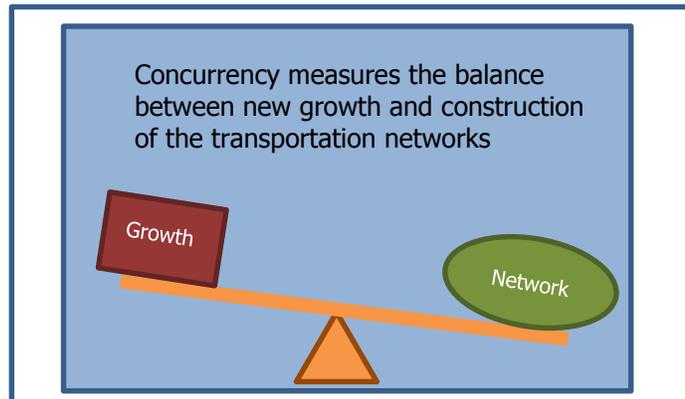
Concurrency measures the number of trips that are added from new growth and compares that to the fraction of the transportation network that is completed. New growth "uses" trips and new projects "supply" trips in the form of capacity. Particular projects supply capacity in proportion to their cost as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

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.

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.



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.

Transportation Element (new)

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 directly measure an aspect 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 Element. 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.

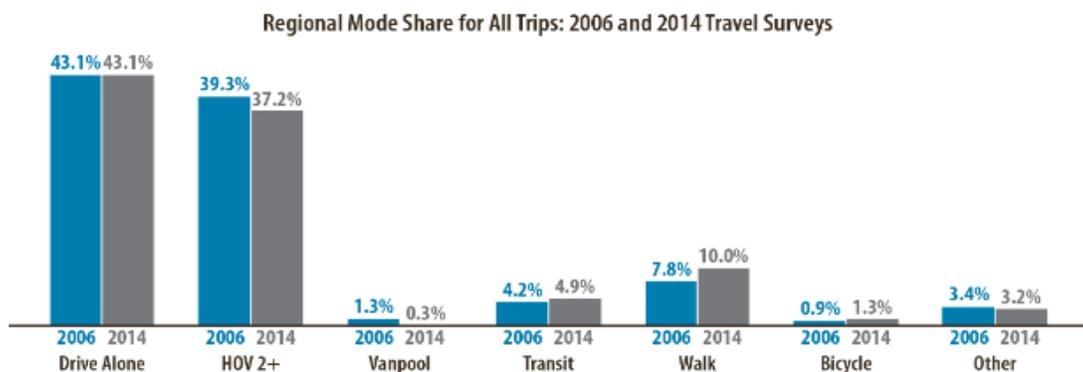
Item	% complete	% of target/ value
Maintain	25%	100%/on schedule
School Walk	20%	80%/behind schedule
Greenway	27%	108%/on schedule
Auto	28%	112%/Ahead of schedule

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

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.

³ Excludes two bridges over I-405

⁴ Placeholder improvements pending completion of transit plan

⁵ Improvements beyond work currently funded

Transportation Element (new)**Totem Lake Existing Mode Split (2010)** Peak Hour, Work Trip Types

Mode	Fraction of Trips
Drive Alone	81%
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 derived 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 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. People have more choices in terms of both the travel mode as well as how far they must travel to reach various destinations.

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)