

# IX. TRANSPORTATION



CHARTING A FUTURE COURSE

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## ◆ RELATIONSHIP TO THE FRAMEWORK GOALS ◆

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The **Transportation Element** highlights the following Framework Goals:

- FG-1 Maintain and enhance Kirkland's unique character.
- FG-2 Support a strong sense of community.
- FG-3 Maintain vibrant and stable residential neighborhoods and mixed-use development, with housing for diverse incomes, ages, and lifestyles.
- FG-4 Promote a strong and diverse economy.
- FG-5 Protect and preserve environmentally sensitive areas and reduce greenhouse gas emissions to ensure a healthy environment.
- FG-6 Identify, protect and preserve the City's historic resources, and enhance the identity of those areas and neighborhoods in which they exist.
- FG-7 Encourage a sustainable community.
- FG-8 Maintain and enhance Kirkland's strong physical, visual, and perceptual linkages to Lake Washington.
- ✓ **FG-9 Provide safety and accessibility for those who use alternative modes of transportation within and between neighborhoods, public spaces, and business districts and to regional facilities.**
- ✓ **FG-10 Create a transportation system which allows the mobility of people and goods by providing a variety of transportation options.**
- FG-11 Maintain existing park facilities, while seeking opportunities to expand and enhance the current range and quality of facilities.
- FG-12 Ensure public safety.
- ✓ **FG-13 Maintain existing adopted levels of service for important public facilities.**
- ✓ **FG-14 Plan for a fair share of regional growth, consistent with State and regional goals to minimize low-density sprawl and direct growth to urban areas.**
- ✓ **FG-15 Solve regional problems that affect Kirkland through regional coordination and partnerships.**
- FG-16 Promote active citizen involvement and outreach education in development decisions and planning for Kirkland's future.
- FG-17 Establish development regulations that are fair and predictable.

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## A. INTRODUCTION

### *PROBLEM STATEMENT*

By the year 2020, the congested portions of the Puget Sound region's freeway and arterial network are forecast to be far more extensive than they are today and the delays experienced by users will be much longer. Kirkland's transportation system is not isolated, but is integrally connected with a system of federal, State, and County transportation systems and the systems of adjacent jurisdictions. Kirkland experiences peak-hour congestion primarily in its highly commercial areas (Totem Lake, NE 85th Street, and Downtown).

There are many causes of increased congestion including I-405 and SR 520, neither of which is able to handle the volume to which it is subjected. This has resulted in significant congestion on Kirkland streets and is a condition which Kirkland by itself does not control. Annual vehicle miles traveled in the Puget Sound region continue to increase at a rate approximately equal to the rate of the population growth. Access into, through, and out of Kirkland is physically limited because of several significant features such as the lake on the west, Bridle Trails State Park and SR 520 on the south, and I-405 through the middle running north and south. For environmental and financial reasons, and reasons related to maintenance of community character, road building has not kept pace with demand.

Realistic transportation alternatives to driving alone are available for most people. The transit system is largely outside of Kirkland's control; it is defined by King County (Metro) and Sound Transit. Local routes have increased in number and in frequency of service over the past five years. Kirkland's nonmotorized network is also improving though not yet complete.

In the past, roads have been developed predominantly with vehicles in mind; however, the role of roads in influencing community character has become clear over the years. All new major construction may include sidewalks, planter strips and bicycle lanes, consistent with the Nonmotorized Transportation Plan.

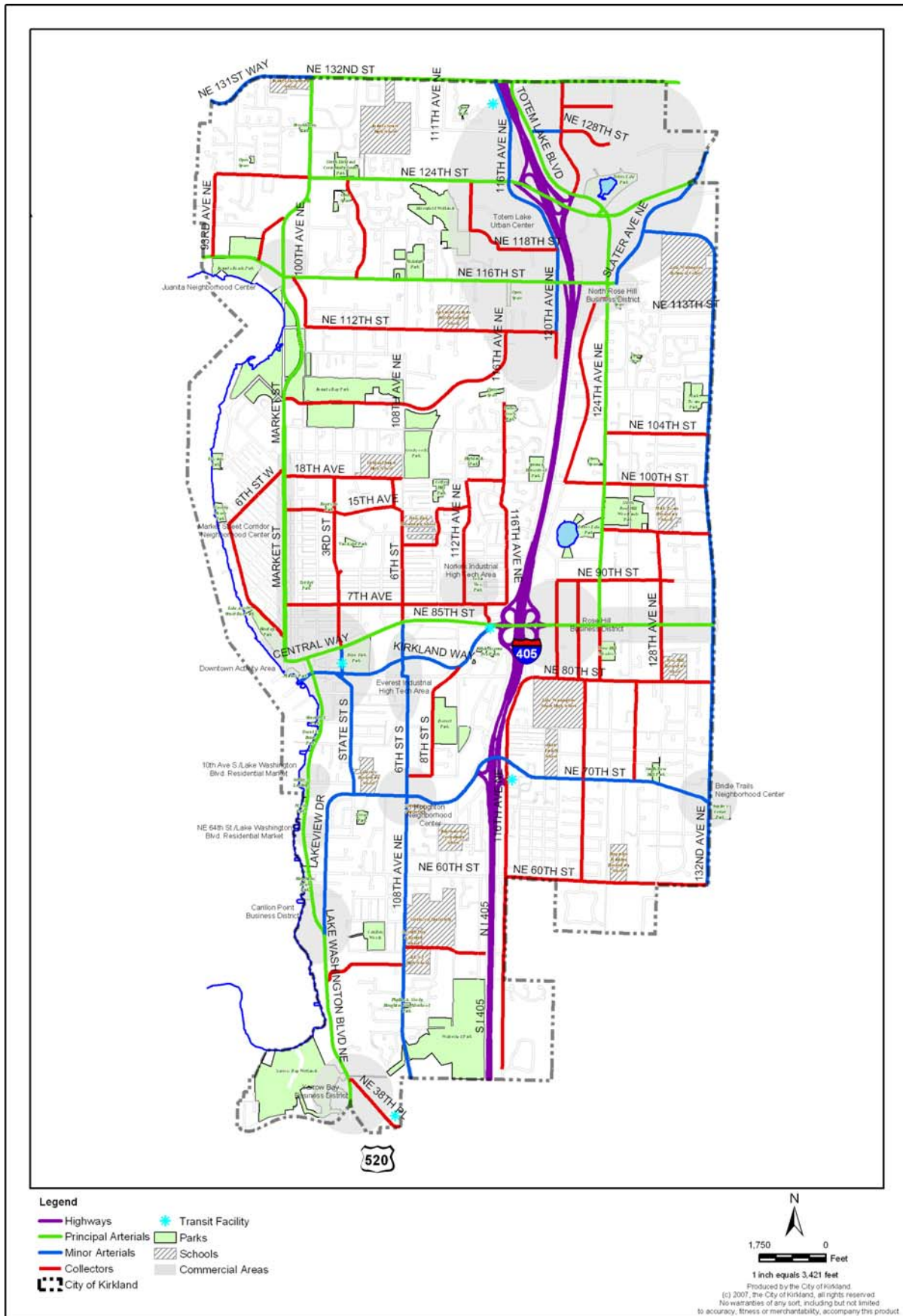
Kirkland's neighborhoods have been reluctant to accept major roads or road improvements. Finding the balance between accommodating increased traffic demand and preserving community character will not be easy, and there will be potentially adverse impacts on all segments of the community. Our challenge is to provide a transportation system which will both enhance surrounding neighborhoods and provide effective mobility for people, goods, and services through multiple modes.

Lack of transportation choices also affects the health of our community. Obesity has become an epidemic over the past two decades, increasing the risk of many diseases and health conditions, including heart disease and diabetes. One of the factors contributing to obesity is lack of physical activity. A major source of air pollution in Kirkland is motor vehicle use. By providing safe and convenient bicycle and pedestrian systems that connect to all areas of the City, to neighboring communities, and to regional facilities, we can promote physical activity and improve air quality.

### *EXISTING CONDITIONS*

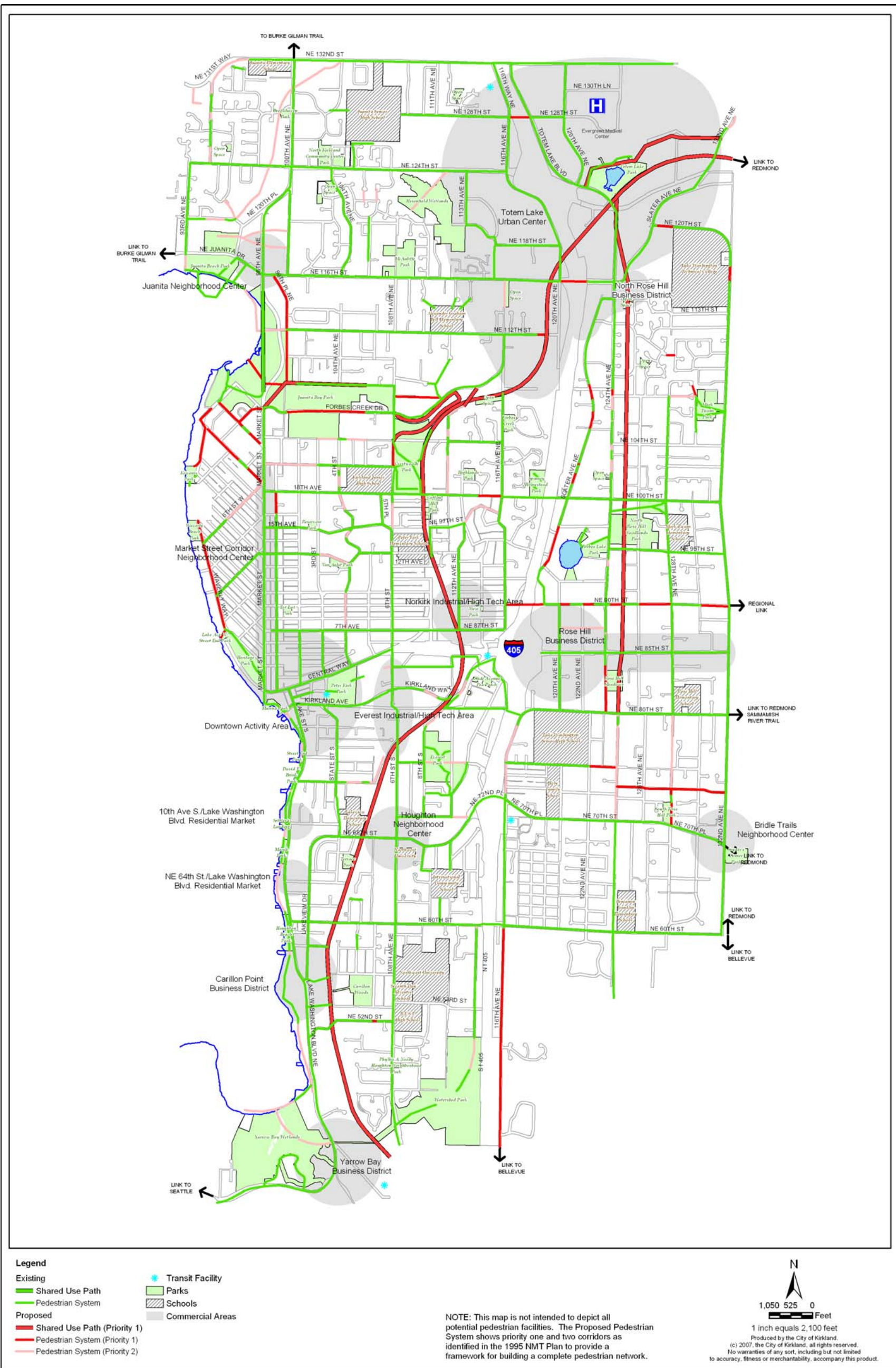
The City of Kirkland has established a system of street classification based on intended street function. The purpose of these classifications is to allow appropriate design and maintenance standards to be applied as well as for State and federal funding purposes. Figure T-1 displays the existing street system (except for local access streets) overlain with the street functional classifications. There are four functional classes: principal arterial, minor arterial, collector, and local access. There are 146 miles of streets in Kirkland, the majority of which (74 percent) are local access.

Principal arterials connect Kirkland with other regional locations such as Bellevue and Redmond. Minor arterials provide connections between principal arterials and serve as key circulation routes within Kirkland. Collectors distribute traffic from arterials to local streets. Local access streets give access to individual properties and connect to collectors.

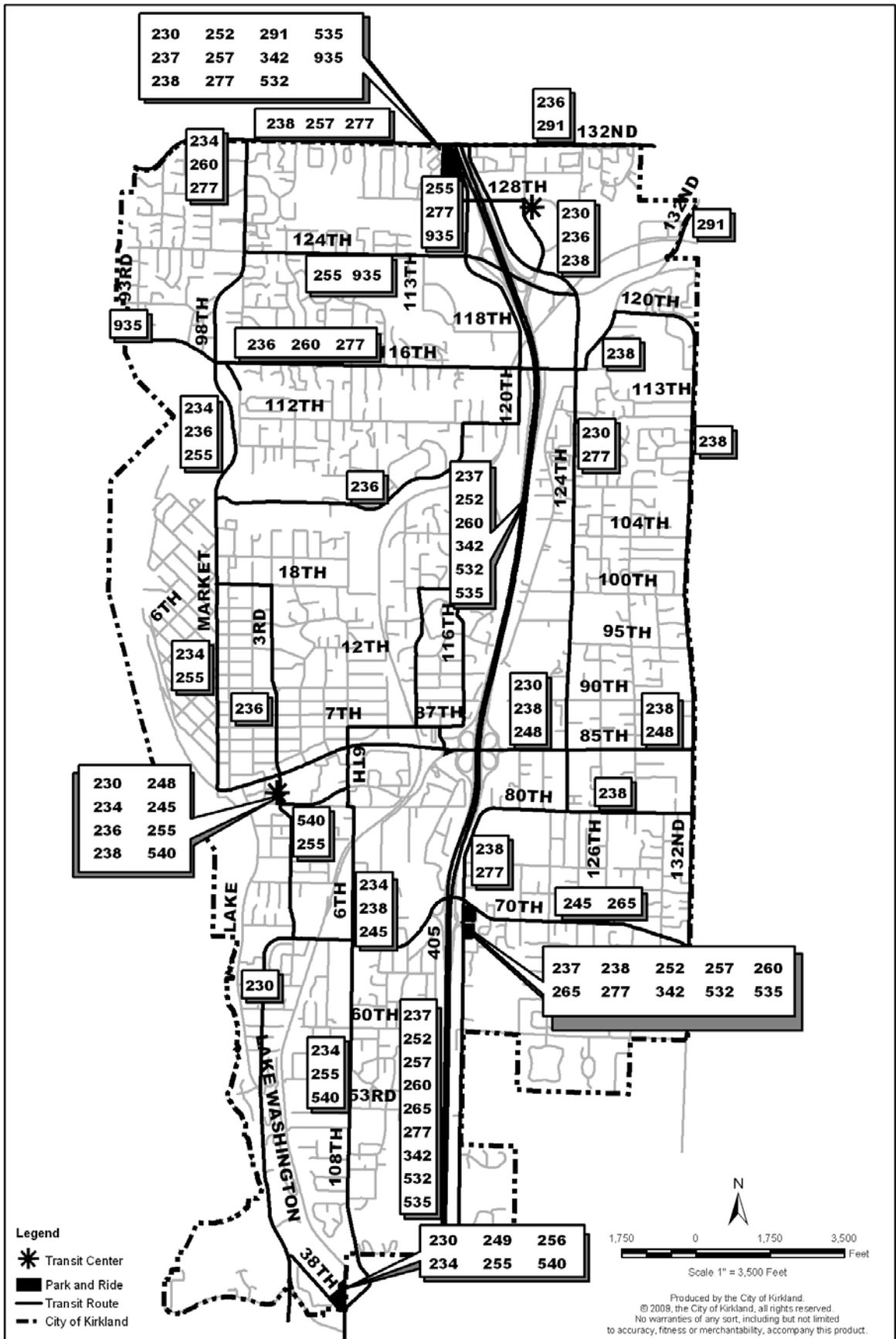


**Figure T-1: Street Classifications and State Routes**





**Figure T-3: Pedestrian Corridor System - Existing and Proposed**



**Figure T-4: Transit Service**

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Kirkland has a total of 41 miles of bicycle facilities within the street network. Figure T-2 displays existing shared use path and bike lane facilities. The former vehicle bridge in Juanita Bay Park is the only shared use path facility (route for the exclusive use of non-motorized transportation) in Kirkland. There are approximately 24.2 miles of bike lane facilities, which are striped lanes alongside vehicle lanes on a street. The remaining 16.8 miles are composed of 16.4 miles of shared roadway facilities, which are designated bicycle routes without signs or striping on residential streets, and 0.4 miles of nonmotorized paths for bicycles, pedestrians and other users.

Existing sidewalks are mapped in Figure T-3. The City has an inventory of the condition of sidewalks and a comprehensive sidewalk repair program.

Transit service in Kirkland is provided by Metro and Sound Transit. Figure T-4 and Table T-1 display the routes serving Kirkland. Time between buses on the

same route during rush hour spans between 15 and 30 minutes, depending on the route. Non-rush hour frequency is generally about 30 minutes between buses, depending on the route. The Kirkland Transit Center is in the Downtown on 3rd Street by the library. There are eight park and ride lots within the City limits. Of the three largest park and rides, the Houghton facility has the most remaining capacity.

The Burlington Northern Railroad (BNR) runs north-south through Kirkland. It serves the industrial areas of the City and is used by a dinner train. The right-of-way is 100 feet in width in most areas. There are nine at-grade crossings, and five over/underpasses in the City. The BNR right-of-way provides an important opportunity as a direct access through Kirkland for transit and/or a nonmotorized multi-use trail. In the future, when the BNR right-of-way is developed for transit and/or nonmotorized uses, the City should work to provide access points along the right-of-way.

**Table T-1: Transit Routes in Kirkland**

<b>All Day Service</b>	
230	Kingsgate – Kirkland – Bellevue – Overlake – Redmond
234	Kenmore – Juanita – Kirkland – S. Kirkland – Bellevue
236	Woodinville – Totem Lake – Juanita – Kirkland
238	Bothell – Finn Hill – Kingsgate – Rose Hill – Kirkland
245	Kirkland – Overlake – Bellevue – Factoria
248	Kirkland – Rose Hill – Redmond
255	Kingsgate – Kirkland – Seattle
540	Kirkland – UW Seattle (Sound Transit)
935	Northshore – Bastyr – Kingsgate
<b>Kirkland @ S. Kirkland Park and Ride Only</b>	
249	Bellevue – S. Kirkland – Overlake
256	Overlake – S. Kirkland – Seattle

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**Table T-1: Transit Routes in Kirkland (Continued)**

<b>Peak Commuter Routes</b>	
252	Evergreen – Kingsgate – Houghton – Seattle
257	Brickyard – Kingsgate – Houghton – Seattle
260	Kenmore – Juanita – Houghton – Seattle
265	Redmond – Houghton – Seattle
277	Juanita – Kingsgate – Houghton – UW Seattle
291	Kingsgate – Redmond
<b>Peak Metro Routes that Serve I-405 Freeway Stations</b>	
237	Woodinville – Kingsgate – Houghton – Bellevue
342	Shoreline – Bothell – Brickyard – Houghton – Bellevue
<b>Sound Transit I-405 Service</b>	
532	Bellevue – Houghton – Kingsgate – Canyon Park – Lynnwood
535	Bellevue – Houghton – Kingsgate – Bothell – Canyon Park – Everett Station

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## *EXISTING AND FUTURE TRAVEL DEMAND*

Travel within Kirkland is currently dominated by vehicles, and single-occupant vehicles in particular. Single-occupant vehicles now carry 76 percent of work trips. Of the 24 percent of work trips involving other than single-occupant vehicles, transit carries 5.5 percent and the rest are in carpools or vanpools (source: 2000 Census). The existing pattern of travel reflects a dependence on individual vehicles for most mobility needs.

Due to projected population increases and resulting mobility needs, both vehicle miles and hours of travel will increase on City arterials. This will result in increased congestion throughout the City's transportation network particularly during the peak hours. The City's forecasts show that overall level of service will become worse in the future when compared to 2003 conditions. Improvements targeted at congested intersections and continued increases in nonmotorized uses and transit service will help to mitigate congestion somewhat. In general, however, the signalized intersections within the City will continue to remain congested in the future.

## *RELATIONSHIP TO OTHER ELEMENTS*

The Transportation Element is an integral part of the Comprehensive Plan. The Element provides for the mobility of people, goods, and services in a way that supports the goals and policies of other elements. The Transportation Element provides for the transportation system necessary to support the land use (commercial and residential) pattern described in the Land Use and Housing Elements. Specific transportation goals and policies work to maintain and preserve the community's character and natural features presented in the Community Character and Natural Environment Elements while providing for mobility. The Transportation Element strives to support important aspects of the Economic Development Element by enabling goods, services, customers, and employees access to Kirkland businesses. Finally, transportation policies in this Element provide the foundation for the transportation projects identified in the Six-Year Capital Facilities Plan in the Capital Facilities Element.

## **B. THE TRANSPORTATION CONCEPT**

The Transportation Element seeks to develop and maintain a balanced multimodal transportation system that supports the City's land use plan and integrates with the regional transportation system.

While striving to accomplish this fundamental concept, the Element addresses the transportation problems we face: peak-hour congestion, balancing increased traffic with maintaining neighborhood character, and the limited transportation mode alternatives available.

The goals and policies which follow describe the connection between transportation and land use, establish means to increase travel options, provide for mobility within the system, describe desirable characteristics of transportation facility design, discuss the financial aspects of a transportation system and, finally, encourage coordination with other jurisdictions.

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## C. TRANSPORTATION GOALS AND POLICIES

**Goal T-1:** Establish a transportation system that supports Kirkland's land use plan.

**Goal T-2:** Develop a system of pedestrian and bicycle routes that forms an interconnected network between local and regional destinations.

**Goal T-3:** Work to establish and promote a transit and ridesharing system that provides viable alternatives to the single-occupant vehicle.

**Goal T-4:** Establish and maintain a roadway network which will efficiently and safely provide for vehicular circulation.

**Goal T-5:** Establish level of service standards that encourage development of a multimodal transportation system.

**Goal T-6:** Design transportation facilities that reflect neighborhood character.

**Goal T-7:** Balance overall public capital expenditures and revenues for transportation.

**Goal T-8:** Actively work to identify, review, and resolve interjurisdictional transportation concerns affecting Kirkland.

### *LINKING TRANSPORTATION AND LAND USE*

Streets serve to both connect and separate neighborhoods and activity centers in Kirkland. Through this system of links and barriers, the street system exerts a powerful influence on land use patterns in the City. Although much of the City of Kirkland's street network is already developed, future development will bring changes. Integrating land use and transportation requires ensuring that the transportation facilities which are built serve existing and future commercial, industrial, and residential land uses, and support the land use goals of the City.

**Goal T-1:** *Establish a transportation system that supports Kirkland's land use plan.*

**Policy T-1.1:** *Establish a transportation system that provides access by a variety of modes of travel to neighborhoods, the Downtown, Totem Lake, other commercial and industrial areas, and major institutions.*



*Downtown Kirkland*

As the Vision Statement and Framework Goal 9 describes, a high priority for Kirkland residents is providing convenient access to all areas of Kirkland. This access can be provided by transit, cars, bicycles, or walking. It also must accommodate freight traffic to serve our commercial and industrial areas. The intent of this policy is to stress that Kirkland residents need to be able to access places not only by car, but also by other means with safe and reliable connections.

**Policy T-1.2:** *Mitigate adverse impacts of transportation systems and facilities on neighborhoods.*

Transportation systems and facilities can have adverse impacts on neighborhoods such as:

- ◆ Safety problems due to speeding vehicles and increasing traffic volumes;
- ◆ Increased traffic resulting from drivers seeking alternate routes to congested arterials; and/or
- ◆ Air and noise pollution.

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A combination of the following techniques should be used to avoid these impacts or mitigate them when avoidance is not possible:

- ◆ Developing and implementing neighborhood-appropriate street design standards which are appropriate for the neighborhood;
- ◆ Creating an interconnected system of streets to distribute the traffic load and lessen the burden on any given street;
- ◆ Avoiding connections through residential neighborhoods when they will create new routes for commercial/industrial traffic or by-pass routes for I-405; and/or
- ◆ Continuing use of the Neighborhood Traffic Control Program to address safety, speed, and/or volume issues.

***Policy T-1.3: Establish a street system that promotes and maintains the integrity of neighborhoods.***

The street system is more than a circulation route; it is a major land use that exerts a strong influence on neighborhood integrity. Too often, this influence is seen as disruptive and intrusive. The street system can, however, be a strong positive force in promoting neighborhood integrity. As an example, streets can:

- ◆ Allow for local and internal circulation;
- ◆ Contribute to a sense of safety and security;
- ◆ Have urban greenery and take advantage of opportunities for scenic views;
- ◆ Provide recreational opportunities for bicyclists and pedestrians; and
- ◆ Be a place for special events and street block parties.

To promote neighborhood integrity, streets should be classified, designed, and developed in a manner that recognizes and respects the surrounding neighborhood.

***Policy T-1.4: Ensure that there is sufficient right-of-way.***

Dedication of land may be required to construct, install or extend the transportation system, such as streets, sidewalks, or bicycle lanes. Dedication may be for, among other purposes, alternative ingress and egress routes, emergency vehicle and police access, safe turning movements, through road connectivity and any other improvement needed to ensure an adequate, safe and efficient transportation system. In addition, dedication may be necessary to comply with the City's adopted street standards and/or to maintain the City's adopted level of service standards for road concurrency.

The City may also relinquish its interest in streets through a street vacation. Once a vacation is approved by the City Council, the property ownership usually reverts back to the abutting property owners. When considering street vacations, the City needs to carefully evaluate the long-term impact of the vacation on the entire transportation system, including pedestrian connections, public views and open space.

## ***INCREASING TRAVEL OPTIONS***

Kirkland's vision for transportation promotes the movement of people throughout the City and region by expanding opportunities to use transit, ridesharing, and nonmotorized facilities. Increased use of alternatives to the single-occupant vehicle can break the cycle of demand for wider streets while maintaining a high level of accessibility to all areas of the City. Alternate modes of travel reduce energy consumption, air pollution, and noise levels. By encouraging high-occupancy vehicles and other modes of travel, the City may be able to save the capital expense of road construction and maintenance and enhance the environment. For these reasons, the City should pursue all possible alternatives to the single-occupant vehicle.

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**Goal T-2:** *Develop a system of pedestrian and bicycle routes that forms an interconnected network between local and regional destinations.*

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**Policy T-2.1:** *Promote pedestrian and bicycle networks that safely access commercial areas, schools, transit routes, parks, and other destinations within Kirkland and connect to adjacent communities, regional destinations, and routes.*



*Crosswalk in Downtown*

Safety and convenient access are important considerations when prioritizing nonmotorized projects. Currently, there are places in Kirkland that are unsafe or difficult to access by foot or bicycle. Similarly, there are incomplete regional connections in our existing nonmotorized system.

**Policy T-2.2:** *Promote a comprehensive and interconnected network of pedestrian and bike routes within neighborhoods.*

Cul-de-sacs and dead-end roads are a common cause of incomplete pedestrian and bicycle networks. Direct and convenient nonmotorized connections on foot or by bicycle between cul-de-sac bulbs to nearby destinations should be a priority when planning the nonmotorized system.

Beyond these connections, however, the City must work to create an overall nonmotorized system that gives people a convenient alternative to driving and an opportunity for physical activity.

**Policy T-2.3:** *Increase the safety of the nonmotorized transportation system by removing hazards and obstructions and through proper design, construction, and maintenance, including retrofitting of existing facilities where needed.*

Safety considerations should be paramount when planning pedestrian and bicycle routes.

**Policy T-2.4:** *Design streets with features that encourage walking and bicycling.*

To promote the nonmotorized system and alternative modes to the single-occupant vehicle, streets should include pedestrian and bicycle facilities. Consistent with the City's Complete Streets policies, bicycle and pedestrian ways should be accommodated in the planning, development and construction of transportation facilities.

**Policy T-2.5:** *Maintain a detailed Nonmotorized Transportation Plan (NMTP).*

The NMTP is a functional plan that provides a detailed examination of the existing pedestrian, bicycle, and equestrian systems, criteria for prioritizing improvement, and suggested improvements. The NMTP designates specific City rights-of-way and corridors for improved pedestrian, bicycle and equestrian circulation, and sets design standards for nonmotorized facilities.

The Transportation Element lays the fundamental policy basis for the NMTP.

The current NMTP is consistent with the general policy direction of the Transportation Element. The NMTP will need to be updated regularly to incorporate new and revised standards for facilities and to reprioritize routes to be built.

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***Goal T-3: Work to establish and promote a transit and ridesharing system that provides viable alternatives to the single-occupant vehicle.***

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***Policy T-3.1: Design transit facilities (stations, centers, park and rides, shelters, etc.) that are easily accessible from other modes of transportation, accommodating those with disabilities, and appealing to pedestrians, and that may contain residential, office, institutional and/or commercial uses where appropriate.***

The location of transit facilities within the overall transportation system should be carefully considered so that they will be easily accessible by all modes.

Part of reducing reliance on the single-occupant vehicle is getting people to use transit rather than drive. Residential, office and/or commercial developments near transit facilities are helpful in achieving this reduction. When designing transit facilities, bicycle racks, ample sidewalks, and nonmotorized connections to neighborhoods should be considered.

For those that drive, parking or drop-off facilities are important considerations. Ridesharing to transit facilities should be encouraged.

The Americans with Disabilities Act requires convenient access for those with disabilities to new and remodeled facilities. Facility planning should also take into account the access needs of all ages of children, teens, adults, and seniors.

Appealing facilities that are well lit, comfortable, and clean will encourage greater use.

***Policy T-3.2: Support the development of regional high-capacity transit serving Kirkland.***

Kirkland should support regional transit planning and implementation because transit is provided by regional agencies and most transit trips are to destinations outside of Kirkland. Kirkland can support regional transit planning by actively participating in regional transit discussions, providing land use patterns which will ultimately support a system, and

adopting goals and policies which make our position known and are consistent with the needs of a successful regional system.

***Policy T-3.3: Locate the routes and stations of the future regional high-capacity transit system to support Kirkland's transportation and land use plans.***

Kirkland should provide input to the appropriate regional bodies to ensure that the locations of high-capacity transit routes and stations are consistent with our land use and transportation plans.

The Land Use Element and the Totem Lake Neighborhood Plan support creation of a transit center in Totem Lake and a compact commercial district in the northeast quadrant of the interchange with I-405 and NE 124th Street in part because it has good potential for transit service. These policies, and others, should provide the basis for transportation decisions.

***Policy T-3.4: Work cooperatively with Metro, Washington State Department of Transportation and Sound Transit to provide regional and local transit service with linkages between Kirkland neighborhoods, business districts, and other important local and regional destinations.***



*Park and Ride at NE 70th Place*

Transit service which concentrates on connections within Kirkland and to other Eastside destinations, while maintaining convenient commuter service across the lake, are high priorities. To achieve this, Kirkland should work with the transit providers in making our views known.

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***Policy T-3.5: Implement the Commute Trip Reduction (CTR) Plan to reduce single occupancy vehicle (SOV) use and vehicle miles traveled (VMT) as set forth in Kirkland's CTR Plan.***

The State of Washington Commute Trip Reduction Efficiency Law requires local jurisdictions to develop and implement a plan to reduce both single occupancy vehicle trips and reduce overall vehicle miles traveled. Kirkland's Commute Trip Reduction Plan is a collection of adopted goals and policies, facility and service improvements and strategies about how we will help make progress for reducing drive alone trips and vehicle miles traveled. These strategies will encourage multi-modal transportation in Kirkland. The Plan encourages partnership and coordination with other agencies and employers.

The CTR Plan goals set targets for reductions at affected work sites. The work site must contain 100 or more employees. At a minimum, the City of Kirkland works with CTR affected employers to establish transportation demand management programs to reduce SOV and VMT to meet CTR goals. Kirkland must work cooperatively with the State, Metro, and other local jurisdictions to promote the success of the CTR program.

As part of the CTR program, urban centers may be voluntarily designated to further reduce SOV and/or VMT beyond the basic CTR requirements through a Growth and Transportation Efficiency Center (GTEC) Plan. Totem Lake, as a State designated urban center, is recognized as a GTEC. The purpose of the GTEC is to increase access to the employment and residential centers while reducing the number of drive alone trips. Within the GTEC plan, the pool of affected employers may be expanded beyond CTR affected employers and may also include selected residential uses.

## ***MAINTAINING MOBILITY***

The Comprehensive Plan promotes a new balance among the various modes of travel through an expansion of transit, ridesharing, walking, and bicycling opportunities on or adjacent to the existing vehicular system.

The plan supports the maintenance and enhancement of vehicular capacity on the existing system and recognizes the continued importance of vehicular circulation to local mobility, but not at the expense of other modes of travel or community character. This strategy is likely to result in higher levels of roadway congestion in specific areas, but provides more travel options for those who choose to use alternative modes of travel.

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***Goal T-4: Establish and maintain a roadway network which will efficiently and safely provide for vehicular circulation.***

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***Policy T-4.1: Promote efficient use of existing rights-of-way through measures such as:***

- ***Intersection improvements;***
- ***Time-of-day parking restrictions along congested arterials;***
- ***Signal timing optimization;***
- ***Added center left-turn lanes; and***
- ***Limiting left turns along congested arterials.***

The existing vehicular circulation system in Kirkland is largely complete, and improvements to this system should focus on maximizing the use of existing vehicle lane capacity, rather than physically adding new lane capacity. Road widening solely for general purpose use is generally not preferred.

This policy supports the use of transportation system management strategies to maximize the use of existing rights-of-way. These are relatively low-cost expenditures – for intersection or signal improvements, for example – which increase the efficiency of the system.

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***Policy T-4.2: Consider improvements such as queue bypasses, time-of-day parking restrictions, transit signal priority and arterial transit lanes for transit or carpool use that will increase the people-carrying capacity of roadways.***

When faced with a limited transportation system and financial resources, it becomes critical to make the best of what we have. One way the City can increase the people-carrying capacity of existing roadways and encourage alternative modes of transportation is by improving mobility for transit or carpools.

In Kirkland and most other cities, transit currently sits in traffic with other vehicles. The benefit of riding transit, consequently, is diminished considerably. Lanes on arterial streets dedicated to transit or carpools are not commonly found as yet. Before Kirkland can build arterial transit lanes or queue bypasses, study is needed to ensure that it is physically possible and will be safe. Another important consideration is the impact of these facilities on community character. Transit mobility will serve Kirkland residents, but the City will have to balance the desire for transit mobility with negative impacts when making the decision whether or not to proceed.

***Policy T-4.3: Maintain a system of arterials, collectors, and local access streets that forms an interconnected network for vehicular circulation.***

Traffic spread over a “grid” of streets, which is designed appropriate to neighborhood and system needs, flows smoothly. Kirkland has a number of existing cul-de-sacs, which help to create quiet and private residential areas. At the same time, however, cul-de-sacs and dead ends result in uneven traffic distribution and benefit some at the expense of others. Valuable emergency response time can also be lost when connections between arterials are missing. Pedestrian and bicycle traffic is also interrupted. Future street connections should be considered when the City reviews its Citywide road network system.

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In addition, future street connections should be studied and determined with each neighborhood plan update. The neighborhood plan study should include looking at efficient and convenient road connections to schools, parks and other public facilities, and commercial centers. Adding bicycle, pedestrian and other nonmotorized connections should also be considered.

***Policy T-4.4: Minimize bypass traffic and safety impacts on neighborhood streets.***

Cut-through traffic onto neighborhood streets from nearby congested arterials or collectors does occur. The intent of this policy is to minimize the amount of cut-through traffic and the impacts of this traffic when it does occur by the use of various forms of traffic-calming techniques.

***Policy T-4.5: Maintain and improve convenient access for emergency vehicles.***

Emergency vehicles need to access sites using the shortest route possible. Providing an interconnected street network is the best way to achieve direct access.

One major barrier to direct access in Kirkland is I-405. Consideration should be given to providing for emergency vehicle access when new nonmotorized crossings of I-405 are planned.

***Policy T-4.6: Ensure adequate access to commercial and industrial sites.***

The transportation needs of commercial and industrial uses are important to Kirkland's future. For our economy to prosper, freight, employees, and customers must be able to move to and from businesses. This further supports the need to minimize congestion in the community.

***Policy T-4.7: Maintain the road system in a safe and usable form for all modes of travel where possible.***

A significant portion of the public's investment in City infrastructure resides in the pavement of City streets. The City must protect this investment through regular road maintenance. The Public Works Depart-

ment has operated a Pavement Management Program since 1990. The pavement condition of each road has been inventoried to allow for the strategic investment of maintenance funds. Besides pavement maintenance, Public Works has a regular program for pavement marking, storm drain cleaning, street sweeping, sign maintenance, and similar street maintenance.

With current funding levels and repair strategies, the overall condition of City streets is stable. If the level of funding does not stay constant or increase, the overall condition could fall off at a rate from which it would be impossible to recover without a very large investment. A higher level of funding would cause the overall condition to improve.

***Policy T-4.8: Provide for local vehicular access to arterials, while minimizing conflicts with through traffic.***

One problem along some arterials is the high number of driveways or places where vehicles can enter or leave traffic lanes. An excessive number of driveways is a safety concern for pedestrians on sidewalks. Also, traffic flow is unexpectedly interrupted when vehicles turn between intersections. However, properly located and spaced driveways can benefit traffic flow.

The intent of this policy is to permit the minimum number of curb cuts needed to adequately serve abutting uses. The end result will be minimizing conflicts with pedestrian and vehicular traffic.

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***Goal T-5: Establish level of service standards that encourage development of a multimodal transportation system.***

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***Policy T-5.1: Develop an approach for measuring level of service based on the standards described below in Policies T-5.2, T-5.3 and T-5.5.***

Developing level of service standards for a transportation system is a difficult task. After much study and discussion, the City decided that an intersection capacity technique was the best choice for Kirkland.

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Mode split (the percentage of single-occupant vehicle use and transit or other mode use) is used as the level of service standard for transit (Policy T-5.2). For vehicular level of service, the City has developed an aggregated roadway level of service measure that averages the capacity of signalized intersections within a geographic area (Policy T-5.3). Nonmotorized level of service is expressed in terms of miles of completed bicycle and pedestrian facilities and number of complete corridors and reflects the desire to create an interconnected system of bicycle and pedestrian routes (Policy T-5.5).

**Policy T-5.2:** *By the year 2022, strive to achieve a mode split of 65 percent single-occupant vehicle (SOV) and 35 percent transit/other mode.*

The mode splits described in this policy are the level of service standard for transit. They represent a long-term goal for the City to achieve through providing improved transit accessibility, transportation demand management programs, efficient nonmotorized systems, locating shops and services close to home, and other strategies to get people out of single-occupant

vehicles. The standard is expressed in terms of a desired percentage of peak-hour home to work trips by single-occupant vehicles and transit/other mode.

**Policy T-5.3:** *Utilize the peak-hour vehicular level of service standards shown in Table T-2 – a two-part standard for the transportation subareas and for individual system intersections.*

This policy establishes a peak-hour level of service (LOS) standard for vehicular traffic based on 2022 land use and road network. It is a two-part standard, based on the ratio of traffic volume to intersection capacity (V/C) for signalized system intersections. Volume to capacity ratios were determined using the planning method from *Transportation Research Circular 212*.

The two standards are as follows:

- (1) Maximum allowed subarea average V/C for signalized system intersections in each subarea may not exceed the values listed in Table T-2.
- (2) No signalized system intersection may have a V/C greater than 1.40.

**Table T-2**

**Maximum Allowed Subarea Average V/C Ratio for System Intersections and Individual Intersection LOS**

<i>Use as Maximum Allowed Average V/C after January 1st</i> ↗	2004	2005	2006	2007	2008
Forecast for Year ↗	2009	2010	2011	2012	2013
Subarea	Average V/C Ratio				
Southwest	0.89	0.89	0.89	0.90	0.90
Northwest	0.88	0.89	0.89	0.90	0.91
Northeast	0.86	0.87	0.87	0.88	0.89
East	1.04	1.04	1.04	1.05	1.05
Maximum allowed individual system intersection V/C ratio	1.40	1.40	1.40	1.40	1.40

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The LOS standards were calculated through the use of a computerized transportation model shared with Bellevue and Redmond, called the BKR model. The standards are the outcome of land use and transportation network choices which were entered into the model.

In particular, a network of capacity projects was chosen that could be funded by levels of spending that are consistent with the amount spent on transportation capacity projects in recent years. The network also consists of projects that are in keeping with the community values found elsewhere in this Comprehensive Plan. It is the intention of this plan that intersection performance will be kept as high as possible, preferably with V/C ratios under 1.30. However, forecasts show that this may not be attainable so the maximum intersection V/C ratio is set at 1.40.

Table T-2 is designed to provide standards for the maximum allowed subarea average V/C ratio for the next few years. To pass the road concurrency test, new development may not exceed the maximum allowable subarea average V/C ratio for system intersections (see Table T-3 below) six years into the future starting from the date of making a concurrency application. The first row of Table T-2 (italicized) indicates the year that a proposed development is submitted for a road concurrency test. The second row indicates the six-year horizon that a new development's traffic impacts are assessed. Each set of standards in the column below the application year and the horizon year is based on a LOS forecast for six years in the future. Forecasts are derived by linear interpolation between forecasts for 2004 and 2022 and include forecasted impacts of development that have been approved but not yet built.

Example of how to use Table T-2: A development is seeking concurrency approval during 2005. What is the set of standards for subarea average V/C that the development must not exceed? Since the project is seeking approval in 2005, the second column of numbers is used. This set of standards (southwest subarea standard of 0.89, northwest subarea standard of 0.89, etc.) corresponds to a forecast horizon year of 2010. The development's traffic impacts may not cause the level of service at the signalized system intersections to exceed these standards.

In addition, the LOS methodology requires both standards (subarea average V/C and V/C not to exceed 1.40) to be satisfied. Traffic from a new development may not cause the average V/C of system signalized intersections in a subarea to operate at an LOS lower than the average and may not cause any system signalized intersection to exceed a V/C ratio of 1.40 as shown in Table T-2.

The capacity (C) of a signalized intersection is determined by a wide variety of factors, including signal phasing, number of lanes and traffic mix. It is a measure of the maximum number of vehicles that can go through the intersection in a set period of time. The volume (V) is the sum of "critical" volumes that indicate maximum demand at the intersection. The volume to capacity ratio (V/C) is the volume divided by the capacity. For the purpose of the plan, V/C is calculated for the PM peak hour.

A V/C of less than 1.0 means that the volume at the intersection is less than the capacity. If the V/C is equal to 1.0, the intersection's volume and capacity are equal. When the V/C is greater than 1.0, volume has exceeded capacity. As the V/C increases, the congestion at the intersection increases and the level of service gets worse.

Underlying the standards is the concept that the system is not considered failing if the peak-hour is congested. Use of the peak-hour for measuring level of service is standard in the region. This "worst case" measure implies that traffic will flow better during the rest of the day. Although very high, the V/C ratios in the standard are acceptable because there is a limited amount of funding available to improve the situation, and it is not possible to build our way out of congestion even if funds were unlimited. Road widening has quality-of-life impacts that many in the community find unacceptable.

The standards are based on congestion becoming worse in the future. This reflects the proposed network and funding, and an increase in trips. The need to move to alternative modes becomes all the more clear when we can see the peak-hour vehicular level of service forecasted for the future.

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Table T-3 describes subarea average V/C ratios for 2003 traffic counts and for forecast 2004 and 2022 volumes. These numbers are provided for reference.

**Table T-3  
2003 and Forecasted Subarea Average LOS for System Intersection**

Subarea Average V/C Ratio			
Subarea	2003 Traffic Count	2003 Traffic Plus Projects Approved but Not Yet Built	2022
Southwest	0.77	0.89	0.92
Northwest	0.83	0.88	1.01
Northeast	0.76	0.86	0.99
East	0.94	1.04	1.10

Table T-4 below lists intersections that are not system intersections and are therefore not considered in the calculations.

**Table T-4  
Signalized Intersections Not System Intersections**

The following signalized intersections are not system intersections. All other signalized intersections installed prior to August 2001 are system intersections.
6th Street/4th Avenue
3rd Street/Kirkland Avenue
6th Street/Kirkland Way
98th Avenue NE/NE 120th Place
93rd Avenue NE/Juanita Drive
97th Avenue NE/Juanita Drive
NE 124th Street/120th Place NE
NE 118th Street/120th Avenue NE
NE 128th Street/116th Way NE
120th Avenue NE/NE 80th Street
NE 132nd Street/108th Avenue NE
NE 132nd Street/Juanita High School
NE 132nd Street/Juanita Elementary School
120th Avenue Pedestrian Signal at Totem Lake Mall

Figure T-5 below shows the City's four subareas used for the maximum allowed subarea average V/C ratio standard in Table T-2 for signalized system intersections.

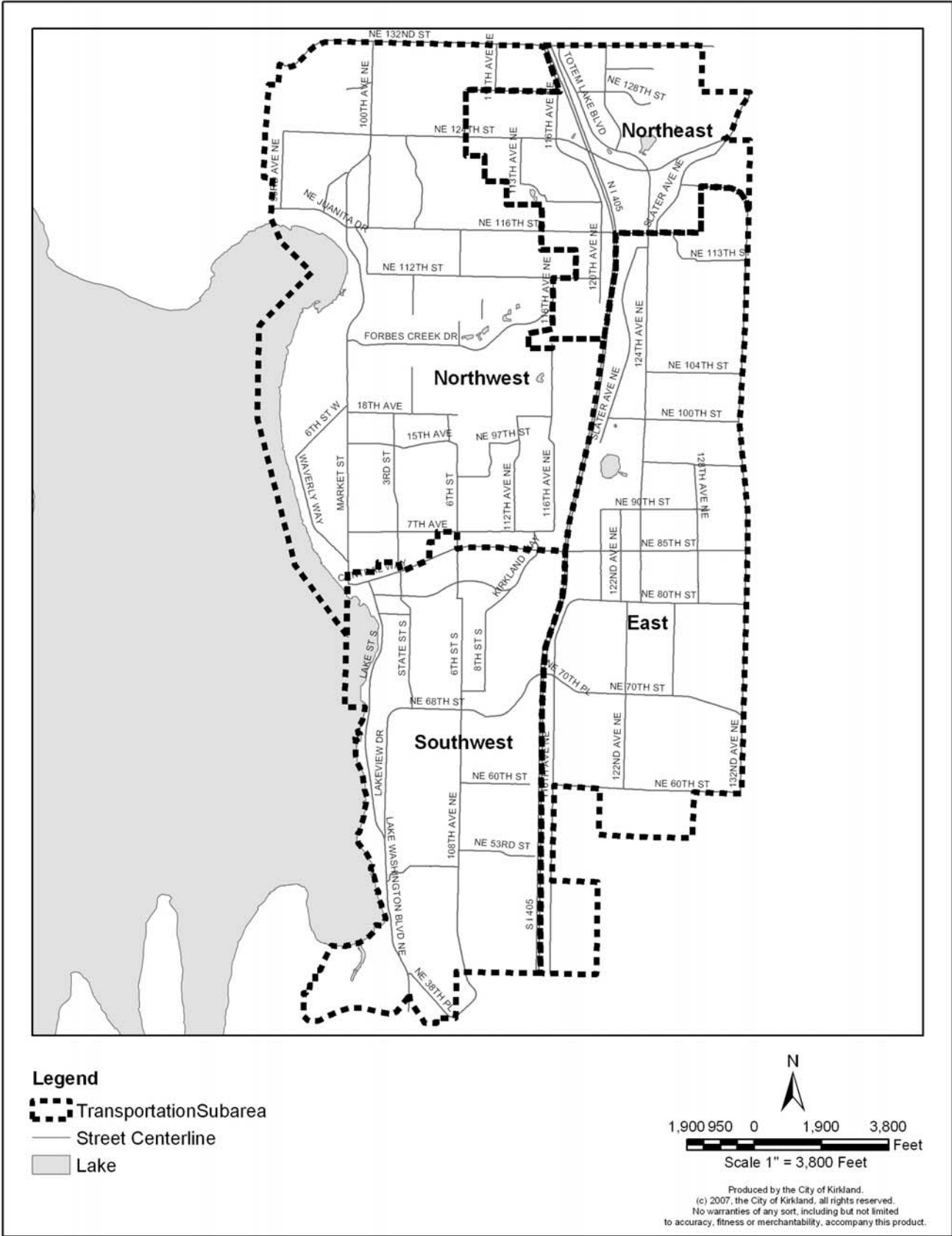


Figure T-5: Transportation Subareas

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***Policy T-5.4: Require new development to mitigate site-specific transportation impacts.***

The standards in T-5.3 relate to maintaining the long-term performance of the road network system throughout Kirkland. Besides meeting those standards, new development should mitigate its site-specific impacts to the transportation system. 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. The City will provide traffic impact guidelines to establish the basis for evaluating what needs to be mitigated and the timing and extent of the mitigation.

***Policy T-5.5: Strive to achieve a level of service standard by 2022 of 59 miles of bicycle facilities and 155 miles of pedestrian facilities, six east-west and four north-south completed pedestrian corridors, and four east-west and two north-south completed bicycle corridors as identified in the Nonmotorized Transportation Plan.***

The LOS standard for the nonmotorized system reflects the desire to create an interconnected system of pedestrian and bicycle routes. The standards for bicycle and pedestrian facilities are based on the priority routes indicated in the Nonmotorized Transportation Plan (NMTP) and the City's Transportation Program Evaluation Criteria. The City considers the following factors when determining the location of new bicycle and pedestrian facilities: completion of the interconnected system established in the NMTP, safe school routes and connections to public facilities, commercial centers and regional pedestrian and bicycle routes. The existing system has deficiencies and gaps that the proposed standards strive to complete.

Figures T-2 and T-3 show the proposed bicycle and pedestrian corridor facilities to meet Policy T-5.5.

***Policy T-5.6: Promote transportation demand management (TDM) strategies to help achieve mode split goals. TDM may include incentives, programs, or regulations to reduce the number of single-occupant vehicle trips.***

Transportation demand management seeks to modify travel behavior and encourage economical alternatives to the single-occupant vehicle. Transportation demand management strategies try to influence behavior in a way that keeps expansion of the transportation system at a minimum. The more successful TDM strategies are, the more successful the City will be at achieving the mode split goals described in Policy T-5.2.

The following are some TDM strategies: (1) working cooperatively with employers to implement programs that encourage employees not to drive alone; (2) requiring certain new developments to implement programs to reduce single-occupant vehicle use; (3) adjusting parking standards to meet existing demand and reducing them further when transportation options increase; and (4) supporting paid parking or other parking policy measures.

***Policy T-5.7: Assure that transportation improvements are concurrent with development to maintain the vehicular level of service standard for the development's subarea.***

The Growth Management Act requires that transportation improvements and programs needed to accommodate planned growth be provided concurrently as new development occurs. Concurrency requires the balancing of three primary factors: available financial resources, acceptable transportation system performance conditions (level of service), and the community's long-range vision for land use and transportation.

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# IX. TRANSPORTATION

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## *DESIGN OF TRANSPORTATION FACILITIES*

Streets, transit stops or centers, sidewalks, and other transportation facilities make up a large part of the community. The physical appearance and condition of these facilities greatly impact the “look” of Kirkland. Also, their design impacts the users’ convenience and safety and can be a factor in whether people drive, ride bicycles, or walk. The design of facilities is very important given our goal to encourage alternatives to the single-occupant vehicle.

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***Goal T-6: Design transportation facilities that reflect neighborhood character.***

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***Policy T-6.1: Pave streets and access easements to the smallest dimensions necessary to accommodate their designed function, including emergency access.***

This is accomplished through standards currently in use. Appropriate street standards also help support sustainable building practices called for elsewhere in the plan.

***Policy T-6.2: Design and construct transportation facilities to be barrier-free and easily accessible to all citizens, consistent with the Americans with Disabilities Act.***

Sidewalks and transit facilities (see related Policy T-3.1) should be available and accessible to all.

***Policy T-6.3: Strive to preserve existing significant trees and include appropriate street trees and landscaping in the right-of-way that enhance the streetscape and provide shade, but do not interfere with existing overhead utility lines or other preexisting conditions.***



*Street trees along Market Street*

Prior to any roadway design, existing conditions in the area should be thoroughly assessed. New rights-of-way should be landscaped to create attractive corridors that will complement, rather than disrupt, existing neighborhood amenities. However, public views from rights-of-way should not be blocked with landscaping; appropriate landscaping should be used for rights-of-way with public views to maintain the views as the vegetation matures. If existing significant trees are removed, they should be replaced or the loss should be otherwise mitigated. In some cases, transportation projects may be modified to preserve significant trees.

***Policy T-6.4: Use corridor, neighborhood or regional plans to study the relationship of transportation facilities and the adjacent neighborhoods in detail.***

Corridors in the City are unique and planning for them will vary. The character of each particular neighborhood should be considered to successfully integrate transportation facilities. The neighborhood plan update process is an appropriate time to identify the important characteristics of the neighborhood and the preferences of its residents to use in evaluating transportation projects. Along with the individual neighborhood characteristics and residents’ preferences, regional and State transportation plans should be considered in developing City transportation corridors.

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***Policy T-6.5: Minimize change to topography to the extent feasible when building new rights-of-way.***

The provision of streets requires large public expenditures for construction and maintenance, as well as other nonmonetary costs to the living environment. This policy is intended to minimize these costs by preserving land and the natural landscape to the maximum extent possible.

***Policy T-6.6: Identify, evaluate, and minimize or mitigate the negative environmental impacts of transportation facilities and services whenever feasible.***

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 wetland and stream encroachment, vegetation removal, air quality deterioration, noise pollution, and landform changes.

## ***FINANCE***

The Comprehensive Plan's funding strategy gives high priority to maintenance of the existing circulation system in a safe and serviceable condition. The strategy for the remaining transportation resources largely devotes them to creating a better balance among travel modes. These new systems include pedestrian, bicycle, transit, and ridesharing facilities and services. This support of new systems results in a funding trade-off, financing the creation of a new, more balanced, circulation environment that gets more use by pedestrians and transit users, instead of financing road improvements that could potentially make it easier to travel by single-occupant vehicle.

Through mitigation some of the forecasted congestion could be reduced (though not eliminated) by substantially increasing the amount of transportation funding and using the revenues to increase system capacity (particularly road capacity). However, it has been assumed in the Comprehensive Plan that available financial resources will continue to be substantially

limited. In addition, the region's jurisdictions have already reached a consensus not to base their transportation future (nor funding for it) on a vastly expanded road system or the dispersed patterns of development that these systems support. This consensus is supported by State and federal policies and funding guidelines. Kirkland's plan and funding strategy are consistent with these larger systems and financial commitments.

The Growth Management Act requires local jurisdictions, including Kirkland, to identify and fund transportation improvements that are sufficient to sustain the level of service standard that has been selected and approved by that jurisdiction. The program of improvements must be funded by revenues that Kirkland agrees to commit toward their construction over the next six-year period. Revenues may include sources such as transportation mitigation fees, State and federal grants, and others.

Section D of this chapter contains a list and map of transportation projects that have been identified for the 20-year planning period. The Capital Facilities Element includes the six-year program of improvements with identified funding sources. Each year the six-year program will be reassessed with regard to funding commitments, project feasibility, and relationship to the implementation of the Comprehensive Plan.

In addition to local projects managed and financed primarily by Kirkland, a number of regional projects are expected to be implemented during the planning period. These projects include improvements to I-405 and its interchanges as well as a regional high-capacity transit system. For this Comprehensive Plan, the high-capacity transit system is assumed to be funded and constructed within the planning period consistent with transportation plans for the adjoining cities of Bellevue and Redmond. The Kirkland Comprehensive Plan can be amended to reflect any future changes in the regional system.

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# IX. TRANSPORTATION

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***Goal T-7: Balance overall public capital expenditures and revenues for transportation.***

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***Policy T-7.1: Actively seek financial resources to pursue construction and maintenance of transportation facilities.***

The City pursues funds authorized by federal transportation funding legislation and various State sources. The City also uses revenue sources such as road impact fees and the Second One-Quarter Percent Real Estate Excise Tax.

***Policy T-7.2: Recognize financial constraints when planning transportation facilities.***

Transportation funding is limited and unpredictable. Proposals for transportation facilities must be realistic and reflect this condition.

***Policy T-7.3: Provide transportation investments in transit and nonmotorized improvements, and support federal and State efforts for high-occupancy vehicle improvements that provide alternatives to single-occupant vehicles.***

In order to meet goals for creating a multimodal transportation system, investments must be made in the effective modes which have historically been overlooked.

## COORDINATION

Kirkland's transportation system is not isolated but is integrally connected with a system of federal, State, and County transportation systems and the systems of adjacent jurisdictions. Consequently, transportation planning requires careful interjurisdictional coordination.

The Growth Management Act requires close coordination among local, regional, and State plans and programs. This requirement assumes that each jurisdiction is part of a larger whole and that the actions of one affect and are affected by the actions of other jurisdictions, particularly in the area of transportation planning.

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***Goal T-8: Actively work to identify, review, and resolve interjurisdictional transportation concerns affecting Kirkland.***

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***Policy T-8.1: Participate in regional transportation planning.***

The City of Kirkland is represented on a variety of regional transportation planning programs along with other municipalities, King County, Washington State Department of Transportation and Sound Transit.

***Policy T-8.2: Participate in the planning, design, funding, and development of a regional high-capacity transit system as a travel option for regional passenger travel.***

A regional system will greatly influence Kirkland's pattern of development, character, and mobility. For this reason it is important for the City to be actively involved in the decisions which will shape the system. We need to ensure that it will be developed in a way that is consistent with our land use and transportation plans.

***Policy T-8.3: Coordinate City transportation plans with the transportation and land use plans of neighboring jurisdictions, special districts and State and regional transportation agencies, as appropriate, to identify opportunities to maximize benefits while minimizing financial expense.***

Kirkland is already actively coordinating with Bellevue and Redmond through the use of a shared computerized transportation model. Regional transportation planning programs are other useful forums for coordinating plans. In addition, the City should look for new opportunities for interlocal and regional coordination.

***Policy T-8.4: Investigate interlocal agreements which will require development within neighboring jurisdictions to pay transportation impact fees to Kirkland and require development within Kirkland to mitigate significant impacts on the transportation systems of neighboring jurisdictions.***

Traffic, and its impacts, is not affected by City limits. Development close to City boundaries will generate

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# IX. TRANSPORTATION

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traffic which may impact intersections or streets in adjoining cities. Interlocal agreements are legally binding documents spelling out how two adjoining cities will handle mitigation of impacts in these cases.

***Policy T-8.5: Cooperate with adjacent jurisdictions to develop a regional network of facilities for nonmotorized transportation.***

Bicyclists and pedestrians, like vehicular traffic, have needs which cross City boundaries. The best regional nonmotorized system is one which is carefully coordinated to provide the most convenient and safe routes to major destinations.

***Policy T-8.6: Strive to meet federal and State air quality standards.***

Kirkland is part of the central Puget Sound region which is a federally designated non-attainment area. In order to comply with the Washington State Clean Air Conformity Act, the federal Clean Air Act, and to be consistent with the Growth Management Act and Metropolitan Transportation Plan, the City must commit to strategies to reduce pollutants. As described previously in this Element, the City is committed to creating a balanced multimodal transportation system. The emphasis on increasing travel options and reducing single-occupant vehicle use is the City's primary strategy for complying with air quality legislation. The City will also coordinate with the Puget Sound Air Pollution Control Agency as needed to address air quality issues.

Traffic Improvements (which includes transit projects). Projects are grouped under these broad categories for ease of reference.

Table CF-9 provides the following information for each transportation project listed:

- ◆ Cost;
- ◆ CIP project number (if funded in CIP);
- ◆ Source; and
- ◆ Supporting goal.

Table T-5 contains a narrative description and more information about each project. Figure T-6 is a map of the projects.

Figures T-2 and T-3 are the Potential Pedestrian System and Potential Bicycle System, respectively. The potential projects shown on these maps are also shown in Figure T-6 and listed in Table CF-9, located in the Capital Facilities Element. Figures T-2 and T-3 show both the existing and proposed system and, therefore, display the total potential nonmotorized transportation system.

Figure T-7 is a map of the existing signalized intersections. Proposed signals and signal improvements are mapped in Figure T-6 and listed in Table CF-9, located in the Capital Facilities Element.

## D. TRANSPORTATION FACILITY PLAN

Tables CF-8 and CF-9, located in the Capital Facilities Plan, and Table T-5 and Figures T-2, T-3, T-6 and T-7 in this Element are interrelated. Together they comprise the overall transportation system and network for the City. Table CF-8 is a list of funded six-year transportation projects along with a financing plan and Table CF-9 is a list of all 2022 transportation projects. Table CF-9 is divided into three sections: (1) Nonmotorized; (2) Street Improvements; and (3)

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# IX. TRANSPORTATION

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Table T-5  
Project Descriptions for the 2022 Transportation Project List

## Nonmotorized Improvements

<b>NM20-1</b>	Sidewalk
<b>Location:</b>	NE 100th Street from 116th Avenue NE to approximately 114th Avenue NE
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drainage along the north side. Funded CIP project NM 0034; scheduled for completion in 2010.
<b>NM20-2</b>	Nonmotorized Facilities
<b>Location:</b>	116th Avenue NE (south section) (NE 60th Street to south City limits)
<b>Description:</b>	Widen road to provide a paved five-foot bicycle lane north and southbound. Install pedestrian/equestrian trail along the east side of road. This trail will be separated from the roadway where possible. Funded CIP project NM 0001; scheduled completion is beyond 2013.
<b>NM20-3</b>	Sidewalk
<b>Location:</b>	13th Avenue, Van Aalst Park to 3rd Street
<b>Description:</b>	Install sidewalk and planter strip along the south side of 13th Avenue. Funded CIP project NM 0054, scheduled for completion in 2010.
<b>NM20-4</b>	Pedestrian/Bicycle Facility
<b>Location:</b>	18th Avenue at Crestwoods Park/NE 100th Street, from 6th Street to 111th Avenue NE across BNR right-of-way
<b>Description:</b>	Installation of paved path and overpass along the described corridor. Unfunded CIP project NM 0031.
<b>NM20-5</b>	Sidewalk
<b>Location:</b>	93rd Avenue NE from Juanita Drive to NE 124th Street
<b>Description:</b>	Installation of curb, gutter, sidewalk and planter strip along the east side. Unfunded CIP project NM 0032.
<b>NM20-6</b>	Sidewalk
<b>Location:</b>	NE 52nd Street between approximately Lake Washington Boulevard and 108th Avenue NE
<b>Description:</b>	Install curb, gutter and sidewalk along the north side of the street. Improve storm drainage along project alignment. Unfunded CIP project NM 0007.
<b>NM20-7</b>	Nonmotorized Facilities
<b>Location:</b>	Burlington Northern Santa Fe Railroad right-of-way, between south and north City limits
<b>Description:</b>	10- to 12-foot-wide two-way bike/pedestrian multi-purpose asphalt trail. Unfunded CIP project NM 0024.

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**Table T-5**  
**Project Descriptions for the 2022 Transportation Project List (Continued)**

<b>NM20-8</b>	Sidewalk
<b>Location:</b>	122nd Avenue NE, between NE 70th Street and NE 80th Street
<b>Description:</b>	Install curb, gutter and sidewalk along the east side between NE 70th Street and NE 75th Street, and along the west side between NE 75th Street and NE 80th Street. Funded CIP project NM 0055; scheduled to be completed in 2012.
<b>NM20-9</b>	Sidewalk
<b>Location:</b>	116th Avenue NE from NE 94th Street to NE 100th Street
<b>Description:</b>	Install curb, gutter, sidewalk and storm drain along east side. Funded CIP project NM 0044, scheduled for completion in 2009.
<b>NM20-10</b>	Bike Lane
<b>Location:</b>	NE 100th Street, Slater Avenue NE to 132nd Avenue NE
<b>Description:</b>	Provide markings, minor widening and other improvements to create a bicycle connection from the 100th Street overpass to 132nd Avenue NE. Unfunded CIP project NM 0036.
<b>NM20-11</b>	Sidewalk
<b>Location:</b>	NE 95th Street from 112th Avenue NE to 116th Avenue NE
<b>Description:</b>	Install curb, gutter, sidewalk and storm drain along north side. Unfunded CIP project NM 0045.
<b>NM20-12</b>	Sidewalk
<b>Location:</b>	18th Avenue West from Market Street to Rose Point Lane
<b>Description:</b>	Install curb, gutter, sidewalk and storm drain along roadway. Unfunded CIP project NM 0046.
<b>NM20-13</b>	Sidewalk
<b>Location:</b>	116th Avenue NE from NE 70th Street to NE 75th Street
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drainage along east side of roadway. Unfunded CIP project NM 0047.
<b>NM20-14</b>	Sidewalk
<b>Location:</b>	130th Avenue NE, NE 95th Street to NE 100th Street
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drainage along west side of roadway. Unfunded CIP project NM 0037.

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# IX. TRANSPORTATION

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**Table T-5**  
**Project Descriptions for the 2022 Transportation Project List (Continued)**

<b>NM20-15</b>	Pedestrian/Bicycle Bridge
<b>Location:</b>	NE 90th Street, 116th Avenue NE to Slater Avenue; across I-405
<b>Description:</b>	Pedestrian/bicycle bridge approximately 10 feet wide, with approaches on each end. Unfunded CIP project NM 0030.
<b>NM20-16A</b>	Sidewalk
<b>Location:</b>	NE 90th Street, 124th Avenue NE to 128th Avenue NE (Phase I)
<b>Description:</b>	Installation of curb, gutter and sidewalk along the north side. Unfunded CIP project NM 0056.
<b>NM20-16B</b>	Sidewalk
<b>Location:</b>	NE 90th Street, 120th Avenue NE to 124th Avenue NE, and 128th Avenue NE to 132nd Avenue NE (Phase II)
<b>Description:</b>	Installation of curb, gutter and sidewalk along the north side. Unfunded CIP project NM 0026.
<b>NM20-17</b>	Pathway/Sidewalk
<b>Location:</b>	NE 60th Street from 116th Avenue NE to 132nd Avenue NE
<b>Description:</b>	Half-street improvements along the north side to include pathway/sidewalk, curb and gutter (where appropriate), storm drainage/conveyance (natural and/or piped) and minor widening; accommodations for equestrians will be reviewed during the design. Unfunded CIP project NM 0048.
<b>NM20-18</b>	Pedestrian Facility
<b>Location:</b>	Forbes Creek Drive from Crestwoods Park to Juanita Bay Park
<b>Description:</b>	Installation of curb, gutter and sidewalk along the north side of Forbes Creek Drive from approximately 108th Avenue NE to approximately Market Street. Unfunded CIP project NM 0041.
<b>NM20-19</b>	Pedestrian/Bicycle Facility
<b>Location:</b>	NE 126th Street/Totem Lake Way from 120th Avenue NE to 132nd Place NE
<b>Description:</b>	Installation of paved multi-purpose path and storm drainage along corridor. Unfunded CIP project NM 0043.
<b>NM20-20</b>	Crosswalk Upgrades
<b>Location:</b>	Various locations throughout City
<b>Description:</b>	Pedestrian crossing improvements. Projects are combined and funded every two years under CIP project NM 0012.

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# IX. TRANSPORTATION

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**Table T-5**  
**Project Descriptions for the 2022 Transportation Project List (Continued)**

<b>NM20-21</b>	Annual Pedestrian Improvements
<b>Location:</b>	Various locations throughout City
<b>Description:</b>	Continue to prioritize and install pedestrian improvements to meet the adopted level of service.
<b>NM20-22</b>	Annual Bicycle Improvements
<b>Location:</b>	Various locations throughout the City
<b>Description:</b>	Continue to prioritize and install bicycle improvements to meet the adopted level of service.
<b>NM20-23</b>	Sidewalk
<b>Location:</b>	112th Avenue NE from NE 87th Street to NE 90th Street
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drain along west side of roadway. Funded CIP project NM 0049, scheduled for completion in 2009.
<b>NM20-24</b>	Sidewalk
<b>Location:</b>	NE 80th Street from 126th Avenue NE to 130th Avenue NE
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drain along south side of roadway. Unfunded CIP project NM 0050.
<b>NM20-25</b>	Sidewalk
<b>Location:</b>	NE 85th Street from I-405 to 132nd Avenue NE and along 124th Avenue NE from NE 80th Street to NE 90th Street
<b>Description:</b>	Install sidewalk, planter strip, storm drainage and other improvements to enhance Sound Transit bus route 540 ridership. Funded CIP project NM 0051, scheduled for completion in 2008.
<b>NM20-26</b>	Sidewalk
<b>Location:</b>	NE 73rd Street from 124th Avenue NE to 130th Avenue NE
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drain along north side of roadway. Funded CIP project NM 0052, scheduled for completion in 2008.
<b>NM20-27</b>	Sidewalk
<b>Location:</b>	NE 112th Street from 117th Place NE to the Burlington Northern Santa Fe Railroad crossing
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drain along north side of roadway. Unfunded CIP project NM 0053.

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# IX. TRANSPORTATION

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**Table T-5  
Project Descriptions for the 2022 Transportation Project List (Continued)**

<b>NM20-28</b>	Annual Sidewalk Maintenance Program
<b>Location:</b>	Citywide
<b>Description:</b>	Repair and replacement of existing sidewalks to provide safe pedestrian travel ways and to maintain the value of the sidewalk infrastructure. Funded CIP project NM 0057.
<b>NM20-29</b>	Nonmotorized/Emergency Access Connection
<b>Location:</b>	111th Avenue from Burlington Northern Santa Fe Railroad north to Forbes Creek Drive
<b>Description:</b>	Install paved nonmotorized facility with retractable bollards and/or emergency vehicle actuated gate(s) to prevent through traffic. Identified in the Highlands Neighborhood Plan; unfunded CIP project NM 0058.
<b>NM20-30</b>	Sidewalk
<b>Location:</b>	6th Street from 1st Avenue South to Kirkland Way
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drain along east side of roadway. Funded CIP project NM 0059; scheduled for completion in 2010.
<b>NM20-31</b>	Sidewalk
<b>Location:</b>	100th Avenue NE/99th Place NE from NE 112th Street to NE 116th Street
<b>Description:</b>	Installation of curb, gutter, sidewalk and storm drain along east side of roadway. Funded CIP project NM 0060; scheduled for completion in 2009.
<b>NM20-32</b>	Pedestrian Enhancements
<b>Location:</b>	Park Lane from Lake Street to Peter Kirk Park
<b>Description:</b>	Repair and replacement of aged and broken sidewalks, curb, gutter and storm system along this heavily used downtown pedestrian corridor. Existing trees will be reviewed with the objective of improving the overall tree canopy; low impact development standards will be incorporated into the project. Funded CIP project NM 0064; scheduled for completion in 2010.
<b>NM20-33</b>	Pedestrian Enhancements
<b>Location:</b>	Central Way at Lake Street, Main Street, and 4th Street
<b>Description:</b>	Based on the results of the ongoing Central Way pilot program that is monitoring the overall traffic impact of temporary parking along the south curb lane of Central Way, this project will formalize crossings with such treatments as “bulb-outs,” storm drainage, lighting and permanent parking configurations. Funded CIP project NM 0065; scheduled for completion in 2010.

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# IX. TRANSPORTATION

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Table T-5  
Project Descriptions for the 2022 Transportation Project List (Continued)

## Street Improvements

<b>ST20-1</b>	New Street
<b>Location:</b>	118th Avenue NE, NE 116th Street to NE 118th Street
<b>Description:</b>	Extend two-lane roadway, including sidewalk facilities, storm drainage and landscaping. Unfunded CIP project ST 0060.
<b>ST20-2</b>	New Street
<b>Location:</b>	119th Avenue NE, NE 128th Street to NE 130th Street
<b>Description:</b>	Extend two-lane roadway, including sidewalk facilities, storm drainage and landscaping. Unfunded CIP project ST 0061.
<b>ST20-3</b>	Street Widening
<b>Location:</b>	120th Avenue NE, NE 128th Street to NE 132nd Street
<b>Description:</b>	Reconstruct from the existing three-lane section to five lanes with sidewalks. Funded CIP project ST 0063, scheduled to begin design in 2008.
<b>ST20-4</b>	Street Widening
<b>Location:</b>	124th Avenue NE, NE 116th Street to NE 124th Street
<b>Description:</b>	Widen to five lanes, from existing three lanes with sidewalks. Funded CIP project ST 0059; design began in 2007.
<b>ST20-5</b>	Street Widening
<b>Location:</b>	124th Avenue NE, NE 85th Street to NE 116th Street
<b>Description:</b>	Widen to three lanes, construct bicycle lanes, curb and gutter, sidewalk, storm drainage and landscaping. Unfunded CIP project ST 0064.
<b>ST20-6</b>	Street Widening
<b>Location:</b>	132nd Avenue NE/NE 120th Street
<b>Description:</b>	Widen to three lanes with bike lanes, sidewalks, curb and gutter, landscaping and storm drainage improvements. Unfunded CIP project ST 0056.
<b>ST20-7</b>	Bridge Replacement
<b>Location:</b>	98th Avenue NE at Forbes Creek
<b>Description:</b>	Reconstruct bridge across Forbes Creek from Market Street into Juanita area in order to meet current seismic requirements. Unfunded CIP project ST 0055.

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# IX. TRANSPORTATION

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Table T-5  
Project Descriptions for the 2022 Transportation Project List (Continued)

<b>ST20-8</b>	New Street
<b>Location:</b>	120th Avenue NE from NE 116th Street to Burlington Northern Santa Fe Railroad crossing
<b>Description:</b>	Construct 2/3 lanes as needed with pedestrian/bicycle facilities. Unfunded CIP project ST 0073.
<b>ST20-9</b>	New Street
<b>Location:</b>	NE 120th Street (east section), from Slater Avenue NE to 124th Avenue NE
<b>Description:</b>	Construct 2/3 lanes as needed with pedestrian/bicycle facilities. Funded CIP project ST 0057, scheduled to begin design in 2006.
<b>ST20-10</b>	Street Improvements
<b>Location:</b>	120th Avenue NE, from Totem Lake Boulevard to NE 128th Street and Totem Lake Plaza
<b>Description:</b>	Install various traffic calming measures, on-street parking, pedestrian and landscape improvements concurrent with Totem Lake Mall redevelopment. Unfunded CIP ST 0070.
<b>ST20-11</b>	New Street
<b>Location:</b>	NE 130th Street, Totem Lake Boulevard to 120th Avenue NE
<b>Description:</b>	Extend two-lane roadway including nonmotorized facilities, storm drainage and landscaping. Unfunded CIP project ST 0062.
<b>ST20-12</b>	Street Widening
<b>Location:</b>	NE 132nd Street, from 100th Avenue NE to 132nd Avenue NE
<b>Description:</b>	The existing road is currently two through lanes with left turn lanes at certain intersections and variable width bike lanes. Beginning in 2007, various configurations were modeled and a number of key improvements were identified. Partially funded CIP project ST 0058; project planning was funded in 2007.
<b>ST20-13</b>	New Street
<b>Location:</b>	NE 120th Street (west section) from 124th Avenue NE to Burlington Northern Santa Fe Railroad crossing
<b>Description:</b>	Construct 2/3 lanes as needed with pedestrian/bicycle facilities. Unfunded CIP project ST 0072.
<b>ST20-14</b>	Annual Street Preservation Program
<b>Location:</b>	Various sites throughout the City based on Pavement Management Program
<b>Description:</b>	Patch and overlay existing streets to provide safe travel ways and maintain the value of the street infrastructure. Funded CIP project ST 0006.

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# IX. TRANSPORTATION

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Table T-5  
Project Descriptions for the 2022 Transportation Project List (Continued)

## Intersection Improvements

**TR20-1** Traffic Signal

**Location:** Kirkland Avenue and Third Street

**Description:** Construct a new signal at this intersection, including controlled pedestrian crosswalks. Funded CIP project TR 0004; anticipated construction 2008.

**TR20-2** Intersection Improvements

**Location:** Kirkland Way Underpass at Burlington Northern Santa Fe Railroad crossing

**Description:** New railroad undercrossing along Kirkland Way, installation of sidewalks and bike lanes in immediate vicinity, improve clearance between roadway surface and overpass, and improve sight distance. Unfunded CIP project TR 0067.

**TR20-3** Traffic Signal

**Location:** 6th Street/Kirkland Way

**Description:** Construct a new signal at this intersection. The project will include controlled pedestrian crosswalks. Unfunded CIP project TR 0065.

**TR20-4** Intersection Improvements

**Location:** NE 68th Street/108th Avenue NE

**Description:** Install westbound to northbound right-turn lane and other improvements identified as a part of Sound Transit's Route 540 improvements. Funded CIP project TR 0085, completion in 2009.

**TR20-5** HOV Queue Bypass

**Location:** NE 124th Street and I-405, east to southbound

**Description:** Construct an additional lane and signal improvements to allow connection from NE 124th Street to the HOV lane on the southbound freeway access ramp. Unfunded CIP project TR 0057.

**TR20-6** Intersection Improvements

**Location:** NE 85th Street/120th Avenue NE

**Description:** Project will add one northbound right-turn lane and one new westbound and one new eastbound travel lane on NE 85th Street. Funded CIP project TR 0088; scheduled to begin in 2013.

**TR20-7** Intersection Improvements

**Location:** NE 85th Street/132nd Avenue NE

**Description:** Project will add one new westbound and one new eastbound travel lane on NE 85th Street. Unfunded CIP project TR 0089.

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# IX. TRANSPORTATION

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**Table T-5**  
**Project Descriptions for the 2022 Transportation Project List (Continued)**

<b>TR20-8</b>	HOV Queue Bypass
<b>Location:</b>	NE 85th Street and I-405, east to southbound
<b>Description:</b>	Construct an additional lane and signal improvements to allow connection from NE 85th Street to the HOV lane on the southbound freeway access ramp. Unfunded CIP project TR 0056.
<b>TR20-9</b>	HOV Queue Bypass
<b>Location:</b>	Lake Washington Boulevard at Northup Way
<b>Description:</b>	Add southbound Lake Washington Boulevard queue bypass lane from Cochran Springs to westbound SR 520. Unfunded CIP project TR 0068.
<b>TR20-10</b>	Queue Bypass and HOV Facilities
<b>Location:</b>	Various as identified
<b>Description:</b>	Intersection improvements or HOV lanes that are not included in other projects as follows: <ol style="list-style-type: none"><li>1. NE 116th Street/I-405 queue bypass eastbound to southbound (unfunded CIP project TR 0072)</li><li>2. NE 85th Street/I-405 queue bypass westbound to northbound (unfunded CIP project TR 0074)</li><li>3. NE 70th Street/I-405 queue bypass eastbound to southbound (unfunded CIP project TR 0073)</li><li>4. NE 124th Street/I-405 westbound to northbound (unfunded CIP project TR 0075)</li></ol>
<b>TR20-11</b>	Intersection Improvements
<b>Location:</b>	Various as identified
<b>Description:</b>	New signals or signal improvements that are not included in other projects are as follows: <ol style="list-style-type: none"><li>1. Kirkland Avenue/Lake Street South</li><li>2. Lake Street South/2nd Avenue South</li><li>3. Market Street/Central Way</li><li>4. Market Street/7th Avenue NE</li><li>5. Market Street/15th Avenue NE</li><li>6. NE 53rd Street/108th Avenue NE</li><li>7. NE 60th Street/116th Avenue NE</li><li>8. NE 60th Street/132nd Avenue NE</li><li>9. NE 64th Street/Lake Washington Boulevard</li><li>10. NE 70th Street/120th Avenue NE or 122nd Avenue NE</li><li>11. NE 80th Street/132nd Avenue NE</li><li>12. NE 112th Street/124th Avenue NE</li><li>13. NE 116th Street/118th Avenue NE</li><li>14. NE 116th Street/124th Avenue NE (northbound dual left turn)</li><li>15. NE 126th Street/132nd Place NE</li></ol>

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# IX. TRANSPORTATION

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**Table T-5**  
**Project Descriptions for the 2022 Transportation Project List (Continued)**

16. NE 128th Street/Totem Lake Boulevard
17. NE 100th Street/132nd Avenue NE
18. NE 132nd Street/Totem Lake Boulevard
19. Market Street/Forbes Creek Drive
20. NE 112th Street/120th Avenue NE
21. Totem Lake Boulevard/120th Avenue NE

**TR20-12** Intersection Improvements

**Location:** NE 70th Street/132nd Avenue NE

**Description:** Install westbound and northbound right-turn lanes. Funded CIP project TR 0086, project to begin in 2013.

**TR20-13** Intersection Improvements

**Location:** Lake Washington Boulevard at NE 38th Place

**Description:** Add one northbound travel lane on Lake Washington Boulevard through this intersection. Unfunded CIP project TR 0090.

**TR20-14** Traffic Signal

**Location:** 124th Avenue NE at NE 124th Street

**Description:** Install traffic signal improvements and new railroad crossing on the north leg of this intersection. Funded CIP project TR 0091; project is anticipated to start in 2012.

**TR20-15** Intersection Improvements

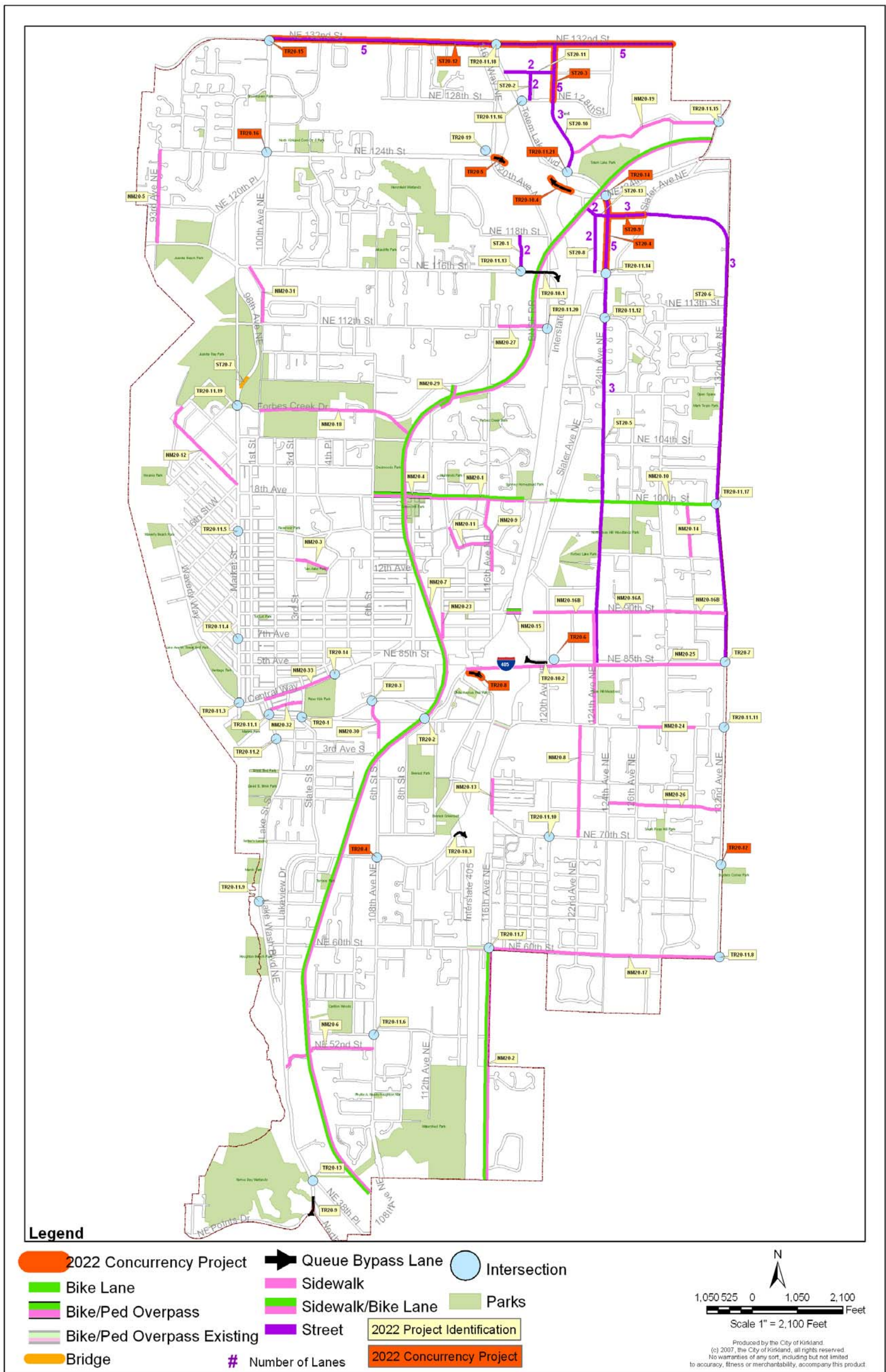
**Location:** 100th Avenue NE/NE 132nd Street

**Description:** Construct a northbound receiving lane on the north leg of the intersection and conversion of existing northbound right-turn lane to a through/right-turn configuration. Construct a second southbound left-turn lane. Funded CIP project TR 0083, completion in 2011.

**TR20-16** Intersection Improvements

**Location:** 100th Avenue NE/NE 124th Street

**Description:** Construct a northbound receiving lane on the north leg of the intersection and conversion of existing northbound right-turn lane to a through/right-turn configuration. Unfunded CIP project TR 0084.



**Figure T-6: Transportation Project List**

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# IX. TRANSPORTATION

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## E. STATE TRANSPORTATION PLANS AND POLICIES

State law requires that certain information about State facilities be provided in local comprehensive plans. The information does not represent a standard that must be met, but rather a disclosure of the status of State facilities now and in the future. Much of the required information is contained in Tables T-6 and T-7. Also, Figure T-1 shows State facilities in Kirkland. There are two State facilities in Kirkland, SR 908 and I-405. SR 908 runs from just west of I-405 to 132nd Avenue along NE 85th Street, a distance of 0.99 miles. It is an urban principal arterial and is not designated as a Highway of Statewide Significance. From the southern border to the northern border of Kirkland, I-405 is 5.07 miles in length and is an Urban Interstate as well as a Highway of Statewide Significance.

For Highways of Statewide Significance, Washington State Department of Transportation (WSDOT) uses an Annual Average Daily Traffic to one-hour capacity ratio (AADT/C) to determine the severity of congestion over a 24-hour period. AADT/C is the ratio of traffic volume to the physical capacity of the roadway. This is also known as the Average Congestion Ratio or ACR. Index values under this system range from one (little to no congestion) to 24 (theoretically, congestion over the entire 24-hour day). This congestion indicator enables the comparison of each highway's daily volume of traffic to a one-hour capacity. WSDOT has set the current LOS standard for I-405 in Kirkland at ACR 10.

The Washington State Transportation Commission adopted this congestion index measure (ACR) and established thresholds to identify "congested" highways at the index values of 10 for urban highways and six for rural highways. When compared to traditional peak hour measures, these thresholds approximate LOS D operation in urban areas and LOS C operation in rural areas. Highways which exceed these are identified as deficient. SR 908 is a Highway of Regional Significance. Adoption of LOS standards for highways of regional significance (HRS) followed a year-

long process involving WSDOT and the region's cities and counties. WSDOT has set the level of service standard for SR 908 at E-mitigated.

Since 2003, a corridor study for the entire I-405 corridor has been underway. A programmatic EIS has been completed, with further analysis of the alternates occurring in 2004. The exact nature and timing of improvements to I-405 is contingent upon funding.

# IX. TRANSPORTATION

Table T-6: State Routes

State Route		PM Peak Hour Two-Way Traffic Volumes					WSDOT ACR-LOS		
		Roadway Capacity 2005/2022	Existing 2006 PM Peak Hour	Forecasted 2022 Traffic Volumes	Existing AADT	2022 AADT	Adopted LOS Standard	Existing 2005 V/C LOS	Future 2022 V/C LOS
<b>I-405</b>									
From	To								
NE 39th St.	NE 70th St.	15,000/19,000	14,260	19,423	199,870	271,635	10	13	14
NE 70th St.	NE 85th St.	15,000/19,000	13,550	18,975	189,680	265,366	10	13	14
NE 85th St.	NE 116th St.	15,000/19,000	13,820	18,944	192,660	264,940	10	13	14
NE 116th St.	NE 124th St.	15,000/19,000	10,136	15,705	141,749	219,641	10	9	12
NE 124th St.	NE 132nd St.	15,000/19,000	8,550	12,218	119,579	170,865	10	8	9
<b>SR 908 (NE 85th St.)</b>									
SB-405 Ramp	NB-405 Ramp	4,172	3,926	4,596	–	–	E-mitigated	0.94	1.10
NB-405 Ramp	120th Ave. NE	4,172	3,660	4,764	–	–	E-mitigated	0.88	1.14
120th Ave. NE	122nd Ave. NE	4,000	3,186	4,081	–	–	E-mitigated	0.80	1.02
122nd Ave. NE	124th Ave. NE	4,000	3,379	3,904	–	–	E-mitigated	0.84	0.98
124th Ave. NE	126th Ave. NE	4,000	3,241	3,728	–	–	E-mitigated	0.81	0.93
126th Ave. NE	128th Ave. NE	4,000	3,285	4,275	–	–	E-mitigated	0.82	1.07
128th Ave. NE	132nd Ave. NE	4,000	2,558	3,624	–	–	E-mitigated	0.64	0.91

# IX. TRANSPORTATION

**Table T-7: Signalized State Route Intersections**

Signalized State Route Intersections	PM Peak Hour Traffic Volumes		PM Peak Hour LOS			Planned Improvement Projects
	Existing 2007	Future 2022	Existing 2007	Future 2022	Corresponding Letter Grade LOS for 2022	
<b>I-405</b>						
116th Ave. NE/NB Ramp	2,295	3,017	0.92	1.35	F	None
NE 72nd Place/SB Ramp	2,195	2,880	0.89	1.22	F	HOV queue bypass
NE 116th St./NB Ramp	2,914	3,471	0.78	0.90	E	None
NE 124th St./NB Ramp	3,711	4,552	0.52	0.60	B	HOV queue bypass
NE 124th St./SB Ramp	4,396	4,878	0.68	0.74	C	HOV queue bypass
Totem Lake Blvd./120th Ave. NE	3,294	3,181	0.80	0.89	D	None
<b>SR 908</b>						
NE 85th St./114th Ave. NE	4,071	6,090	0.97	1.16	F	Signal interconnect, add SB left-turn lane
NE 85th St./120th Ave. NE	4,004	5,245	0.83	1.04	F	Signal interconnect, add NB left-turn lane
NE 85th St./122nd Ave. NE	3,490	4,159	0.78	0.90	E	Signal interconnect
NE 85th St./124th Ave. NE	4,550	5,176	0.88	1.01	F	Signal interconnect, add EB left-turn lane
NE 85th St./132nd Ave. NE	3,472	4,996	0.81	1.13	F	Signal interconnect, add NB left-turn lane, SB right-turn lane, WB right-turn lane, add WB and EB through lanes