CITY OF KENT

Transportation Element

June 2008

KENT
WASHINGTON

New TE #	TMP #	Title	Put in the Text
9.1	Figure 2- 5.	Population Growth 2006 to 2030	x
9.2	Figure 2- 6.	Employment Growth areas 2006 to 2030	x
9.3	Figure 5-1	Street Functional Classification	
9.4	Figure 5-3	Traffic Growth on Key Arterials	x
9.5	Figure 5-4	Existing Daily Traffic Volumes	x
9.6	Figure 5-5	Corridors for LOS Analysis	
9.7	Figure 5-6	Existing Corridor LOS	
9.8	Figure 5-7	Future Traffic Growth in Kent	x
9.9	Figure 5-8	Preferred Network Costs	
9.10	Figure 5-9	Preferred Street Network	
9.11	Figure 5-10	Baseline (2030) corridor LOS	
9.12	Figure 5-11	Preferred Network (2030) Corridor LOS	
9.13	Figure 5-12	Truck Routes	
9.14	Figure 5-13	Prioritized Street Projects	
9.15	Figure 6-5	Pedestrian Priority Index	
9.16	Figure 6-6	Pedestrian System Map – highest and high priorities	
9.17	6-9	Existing Bicycle System	
9.18	6-10	Bicycle Facility Definitions	x
9.19	6-11	Bicycle System Map	
9.20	7-1	Transit Routes Serving Kent	
9.21	7-3	Peak Period Only Transit Service	
9.22	7-5	Mid-Term Local Transit Service Recommendation	
9.23	7-6	Long-Term Transit Service Recommendations	
9.24	8-1	Active and Voluntary CTR Worksites in Kent	
Large map	11x 17		

CHAPTER NINE

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TRANSPORTATION ELEMENT

INTRODUCTION

The Transportation Element works in concert with the Transportation Master Plan to provide direction for the planning of motorized and non-motorized facilities within Kent, identify level of service standards, and identify future improvement needs and a multi-year financing plan based on those needs. The Transportation Element outlines goals and policies for the planning, maintenance and construction of modal facilities, connectivity and mobility between modes within the City and regionally, and the protection of the environment.

GMA REQUIREMENTS

The Transportation Element is one of seven mandatory elements of the Comprehensive Plan required by the Growth Management Act (GMA). The purpose of the Transportation Element is to establish goals and policies that will guide the development of the transportation system in the City of Kent.

Washington's 1990 Growth Management Act requires rapidly growing communities to prepare a transportation plan directly tied to the City's land use and financial planning. The Transportation Element addresses all of the following items that a Transportation Element must include in order to be GMA compliant.

- Use land use assumptions to estimate travel, including impacts to state-owned facilities;
- Inventory the existing transportation system in order to identify existing capital facilities and travel levels as a basis for future planning;
- Identify level of service (LOS) standards for all arterials, transit routes, and state-owned facilities as a gauge for evaluating system performance;
- Specify actions and requirements for bringing into compliance locally owned transportation facilities or services that are below an established level of service standard;

- Determine existing deficiencies of the system;
- Identify future improvement needs from at least ten years of traffic forecasts based on the adopted land use plan;
- Include a multi-year financing plan based on the identified needs;
- Address intergovernmental coordination;
- Include transportation demand management strategies, and
- Include pedestrian and bicycle component

THE TRANSPORTATION SYSTEM

Transportation affects the quality of life and our economic vitality. The transportation system is the backbone of our economy and a key component to our economic competitiveness. Everyone who lives, works or commutes through Kent depends on the transportation network. Developing and maintaining a comprehensive transportation system that supports automobile, transit, bicycle, and pedestrian travel is the City's responsibility. The City must ensure that the transportation network functions not only for personal mobility, but also for freight and delivery service circulation and access and for emergency vehicles.

The Transportation Element provides guidance on how the transportation system should develop and function in the long-term future in the context of other elements of the City's comprehensive plan, especially the land use plan. This chapter provides:

- A background and description of the existing system
- A vision for Kent's future transportation system
- Policies that include standards and criteria as guidelines to advise project and programmatic decision-making
- Maps that indicate the location and names of all current and proposed streets, bikeways and special walkways
- Descriptions of proposed new and /or upgraded facilities
- A funding and implementation plan that prioritize projects and identifies funding resources

STATE, REGIONAL AND COUNTY PLANNING REQUIREMENTS

The City of Kent conducts its transportation planning efforts within the context of regional, state, and county regulations and planning documents.

GMA Requirements

The Growth Management Act (RCW 36.70A.070 and subsequent amendments) includes specific requirements for the Transportation Element. However, flexibility is written into the GMA so that jurisdictions can tailor their transportation elements to their own visions, goals and needs, as long as they demonstrate consistency with the regional transportation plan, Destination 2030.PSRC – Vision 2020 and Destination 2030

The Puget Sound Regional Council (PSRC) sets policy for King, Pierce, Kitsap, and Snohomish counties through its long-range planning documents, *Vision 2020*, and its regional transportation plan, *Destination 2030*. Both documents encourage future growth to be concentrated in urban centers. Both plans seek to provide a multi-modal transportation system that serves all travel modes, actively encouraging the use of alternatives to the automobile. Another important policy theme is a focus on maximizing the efficiency of the transportation system through transportation demand management (TDM) and transportation system management (TSM) strategies, as well as completing critical links in the network. Kent's transportation plan must be consistent with and supportive of PSRC's regional planning efforts.

Countywide Planning Policies

Under the GMA, counties must adopt Countywide Planning Policies to guide development in both incorporated and unincorporated areas of their jurisdictions. The policies support both county and regional goals to provide a variety of mobility options and establish level of service standards that emphasize the movement of people, and not just automobiles. King County's Countywide Planning Policies are also important because they provide direction for planning and development of Kent's potential annexation areas. In line with these policies, the City of Kent works closely with King County to ensure an adequate transportation infrastructure is provided in the annexation areas.

Relationship to the City's Transportation Master Plan

The Transportation Master Plan provides both policy and technical direction for the City's transportation system through the year 2030. The TMP has several objectives, specifically to:

- Understand Transportation System Needs
- Understand the Community's Preferences

- Establish Policies
- Guide GMA Requirements for LOS and Concurrency
- Identify Projects for the CIP and TIP

UNDERSTANDING TRANSPORTATION SYSTEM NEEDS

In developing the TMP, the City has completed a system-wide, multi-modal needs assessment that identifies which aspects of Kent's transportation system work well and which ones need improvement. As part of this process potential solutions and investment priorities were identified. The end result is that the City has a more thorough understanding of system deficiencies and a better grasp of the best way to address these deficiencies and grow the system in a sustainable manner.

UNDERSTANDING THE COMMUNITY'S PREFERENCES

Several open houses and community and neighborhood meetings were held to solicit feedback from the public on transportation issues. Additionally, a citywide telephone survey was conducted in Spring 20061, which concluded that investment in City streets is the number one spending priority when surplus tax funds are available. An important component of the TMP was the public outreach.

The City formed a community task force to provide guidance in specialized areas of transportation. The task force members were tremendously valuable in shaping the plan and advising on behalf of their constituents. The task force was comprised of staff from the Kent School District, local businesses, and Kent residents with different areas of expertise, ranging from neighborhood needs to senior needs to non-motorized travel. The Kent Area Chamber of Commerce was represented, along with developers, and freight industry representatives.

DEVELOPING POLICIES

The City creates policies to state preferences for preserving the existing system and developing the future transportation system. Policies can be qualitative in nature, but often they are quantitative and prescribe a specific standard.

The City often works in collaboration with other governmental or non-governmental organizations. Policies are also important for communicating the City's values and needs to neighboring jurisdictions and regional and state agencies. The policies enable the City to more easily influence change that is in keeping with its needs and preferences.

Survey of Kent residents, conducted by Nelso Nygaard, March 2006.

MEETING GMA REQUIREMENTS FOR LOS AND CONCURRENCY

The 1990 Growth Management Act (GMA) has concurrency provisions. Concurrency requires that local governments permit development only if adequate public facilities are, or can be guaranteed to be, available within six years to support new development. The GMA requires local jurisdictions to set level of service (LOS) standards and identify facility and service needs based on them. This ensures that future development will not cause the transportation system's performance to fall below the adopted LOS standard by taking one or a combination of the following actions: limiting development, requiring appropriate mitigation, or changing the adopted standard.

CAPITAL FACILITIES PLAN AND TRANSPORTATION IMPROVEMENT PROGRAM

The TMP identifies both long-term and short-term improvement projects. The City uses the Transportation Improvement Program (TIP) and Capital Improvement Plan (CIP) to develop the financial plan for capital improvements in Kent. These two documents enable the City to fulfill the GMA requirement of having a multi-year financing plan based on the identified transportation needs.

The TIP is a six-year transportation financing plan, adopted annually by the City Council. It is used to implement the list of transportation improvement projects identified in the TMP analysis of existing and future traffic conditions. It is reviewed annually by the City Council and modified as project priorities and funding circumstances change.

The Capital Improvement Plan is also a 6-year financing plan that is annually adopted in a separate process. It includes non-transportation projects in addition to the transportation related projects also found in the TIP.

THE PLANNING PROCESS

The transportation planning process was coordinated with and will be implemented through the City's Capital Improvement Plan for transportation projects. The plan was completed over several years, as follows:

- Fall 2005/Winter 2006 – Education and Public Engagement (interviews with key stakeholders, focus groups, task force created, community telephone survey) and Alternative Development
- Spring/Summer 2006 – Testing of ideas and Alternatives
- Fall 2006/Winter 2007 – Draft Elements
- Spring/Summer 2007 – Council review of plan components
- Fall 2007 – Public review and Plan finalization

- Spring 2008 – Environmental Review and Public Hearing
- Summer 2008 – Adopted by the City Council

REGIONAL COORDINATION

The transportation plan addresses transportation facilities and services that are within the City or otherwise within our control. But Kent is part of a larger transportation system – the regional system that connects the City to others in the area and beyond that to other states. Kent's facilities are part of regional network of roads, streets, transit routes and other infrastructure and services.

Kent's transportation system carries regional pass-through traffic in addition to local circulation and access to homes and businesses. The transportation system connects Kent to other destinations in the region. The City of Kent does have a voice in the decisions that affect this regional system and is involved in transportation policy-making through a variety of settings – standing committees, task forces and as representation on major regional bodies such as King County Metro, the PSRC, etc. City transportation policies establish preferences that the City advocates in these regional settings.

At the same time, Kent's transportation system is influenced by what happens beyond its City limits. Growth in neighboring communities, infrastructure maintenance by regional agencies, the lack of funding for road maintenance as well as capacity expansion, and competing demands for transit services all affect mobility in Kent. The Transportation Plan calls for effective inter-jurisdictional actions to address cross-border issues and to mitigate the impact of new development.

Washington State Department of Transportation

The Washington State Department of Transportation (WSDOT) owns several major routes connecting Kent to the region: SR 167, SR 18, SR 99, SR 181, SR 515, SR 509 and SR 516. The City works with the state to study these corridors and implement roadway improvements. WSDOT also serves an important role as administrator of federal and state transportation funds. All in all, WSDOT is an important partner, helping Kent improve its transportation system.

King County

The City works with King County to coordinate roads within the City's potential annexation areas. King County Parks also coordinates the regional trail system through Kent. King County Metro (KC Metro), a division of the King County Department of Transportation, provides local bus services for the Kent area. In addition, KC Metro operates Dial-A-Ride (DART 914/916 and 918) on a variable routing service. The 914/916 shopper shuttle is

funded through an agreement with the City and is operated by the non-profit provider Hopelink. The Kent Transit Center serves as a hub and transfer station for local transit service provided by KC Metro and Sound Transit regional express service. Planned transit service for the City of Kent is described later in this chapter and in the TMP in Chapter 7 - Transit System. The City has also developed an employee Commute Trip Reduction (CTR) program. Details of the CTR program are summarized later in the chapter and in Chapter 8 of the TMP– Managing Demand.

Sound Transit

Sound Transit is a regional provider offering a variety of regional transit services for King, Snohomish, and Pierce counties. In Kent, Sound Transit provides commuter rail and express bus service. The transit chapter provides more detail on current Sound Transit services, remaining needs for regional transit service, and the role Kent plays in coordinating with the agency.

Adjacent Cities

The City recognizes the importance of coordinated and strong inter-jurisdictional action because transportation impacts do not stop at local boundaries. The City works closely with neighboring cities to address transportation issues. These neighbors adopt goals and policies that directly impact the Kent community. In developing this plan, analysis was undertaken to ensure that all transportation system improvements are compatible with neighboring jurisdictions.

CITY OF AUBURN

The City of Auburn shares Kent's southern border and several regional transportation corridors including S 277th Street, SR 167, and the West Valley Highway. A recent reconstruction project was finished improving a half-mile-long section of S 277th Street.

The City of Auburn was also a partner in the SR 167 corridor improvement study. A significant component of this study was to find ways to accommodate regional freight traffic, much of which is generated from the high concentration of warehouses in Auburn and Kent. No clear answers emerged to reduce traffic in the general purpose (GP) lanes. WSDOT selected SR 167 as a test corridor for its first high occupancy toll (HOT) lanes project area. As such, Kent residents will have access to the high occupancy vehicle (HOV) lane by paying a toll if they have fewer than 2 people in the vehicle.

CITY OF RENTON

Kent and Renton are joining together in a Transit Now Service Partnership agreement with King County Metro Transit to provide new 30 minute mid-day transit service on the Route

153 which travels between the Kent Transit Center and the Renton Transit Center along East Valley Highway.

CITIES OF TUKWILA, DES MOINES, SEATAC, FEDERAL WAY, AND COVINGTON

The City partners with its other neighbors in many respects, including street system planning, transit planning, and regional trail planning. The city worked closely with the cities of SeaTac, Tukwila, Renton, and King County on the Trans Valley Study, which looked at congestion relief and east/west mobility options in the area north of 212th Street. Kent is working with the cities of Federal Way, Des Moines, SeaTac and Tukwila; WSDOT; and KC Metro in the development of Pacific Highway South (SR 99) in several phases and the development of Bus Rapid Transit service. Strong partnerships with neighboring cities will continue to be an important factor in successful transportation planning in the valley.

LAND USE, POPULATION AND EMPLOYMENT GROWTH

As one of the established cities in the Puget Sound region, Kent has grown from an agricultural community into a major industrial center for warehouse, customer service and distribution companies. Located between Seattle and Tacoma along the Interstate 5 (I-5) corridor, Kent has the sixth largest concentration of jobs and residents in the region, according to the Puget Sound Regional Council (PSRC). This chapter summarizes key demographics and identifies trends that impact the transportation system.

BACKGROUND TRENDS

Over the past three decades, both population and employment have grown at a rapid pace, providing more balance between residential living and commercial activity. This trend has also changed commuting patterns and increased the traffic loads on the local and arterial street network. The residential developments east of downtown Kent have put a substantial burden on the arterial roadway system as residents connect to regional highways (SR 167 and I-5). The Comprehensive Plan's Land Use policies encourage development patterns of mixed use activity centers and high residential densities downtown. This supports a shift in travel modes from single occupant vehicles to transit and non-motorized travel.

Kent's location in the middle of a large rapidly growing urbanized region results in two sources of growth: the increasing size and density of the City itself, and ongoing regional growth and development. The Transportation Master Plan (TMP) reflects an analysis of past

and future travel growth trends related to autos, and non-motorized and transit modes, modes that support the residents and businesses that live and work in Kent.

GEOGRAPHY

Although access to regional transportation systems and other major destinations is good, the geography does affect the perception of accessibility within the City of Kent.

Kent is centrally located between the metropolitan areas and ports of Seattle and Tacoma. The area's regional airport, Sea-Tac International, is less than 2 miles away from Kent's northwest city limits. Several communities surround Kent --- Des Moines and Federal Way to the west, Covington to the east, Auburn to the south and Renton to the north Kent is characterized by a valley floor running north to south in the middle of the City, which rises steeply to hills both east and west of the valley floor ("East Hill" and "West Hill"). The Green River flows through the western and southern portions of Kent. The valley is characterized by flat terrain and includes some wetland areas near the Green River.

One of the City's main assets is its access to a number of transportation systems. Three regional freeways run through Kent from north-to-south: Interstate 5 (I-5), State Route 167 (SR 167), SR 181 (W Valley Highway). Five State Routes (SR) are located in or on the borders of Kent: SR 99 runs north-to-south along the City's western border, just west of I-5; SR 516 runs east-to-west through the southern portion of Kent; SR 515 runs north-to-south through the middle of the City; and SR 18 passes just southeast of the City limits.

Two rail lines run north-south through the heart of the downtown and industrial areas on the valley floor. The rail lines support both freight and Sound Transit (*Sounder*) commuter trains and Amtrak passenger rail service. Sound Transit and KC Metro provide bus service to the City and partner with Kent on a free community circulator shuttle which was pioneered by Kent in 1995. Many city streets have sidewalks and bicycle routes, but both bicycle routes and sidewalks have missing linkages in places. The regional Interurban Trail runs parallel to the railroad tracks and the popular Green River Trail follows the river through Kent.

LAND USES

Kent covers approximately 29 square miles and is comprised of multiple land uses. The City has grown by a series of annexations, neighborhoods that were built under various King County standards of the 1960s, 1970s, and 1980s. These development patterns and Kent's suburban, industrial history present challenges as the City becomes more urbanized and the transportation system needs to be upgraded to meet standards required of new developments.

DOWNTOWN KENT – A REGIONAL GROWTH CENTER

Downtown Kent designated as an Urban Center, is located towards the south and center of the valley floor. The downtown area has mixed-use development and high density housing around the downtown core, and surrounding areas. Downtown Kent has seen major investment in recent years, spurred in part by the introduction of Sounder Commuter Rail service at the Kent Transit Center. Downtown Kent is now one of the busiest stops on the Sounder line and extensive commercial development around the Kent Transit Center reflects the importance of transit in building a vital downtown. Kent residents interviewed during this plan have stressed repeatedly the desire for more frequent service on the Sounder commuter rail line to support their transportation needs and to achieve the vision for the downtown area.

POPULATION

Population density and its distribution are used to prioritize transportation services and projects. With a population of more than 85,000 in 2006, Kent is projected to grow to approximately 94,000 by 2030. Total 2030 population is expected to approach 126,000 when Kent's surrounding annexation areas are included. Most of Kent's residents are concentrated in the east and west portions of the City. The areas north of Meeker Street and along Kent-Kangley Road have the most dense populations. The potential Kent annexation area (to the northeast of Kent) is also notably dense, particularly near the city limits.

EMPLOYMENT/BUSINESS COMMUNITY

Kent has a thriving business community, ranging from small businesses to large company headquarters, from tea shops to warehousing and freight operations. The downtown area is home to a variety of smaller and service businesses, such as restaurants, banks and retail shops. Many large distributors and manufacturing companies are located beyond the downtown core, primarily in the north valley area. In the area around I-5 and Military Road, West Hill businesses include light industry, freeway-oriented retail, and restaurants, among other categories.

Major employers in the City of Kent include the Boeing Company, Kent School District, the City of Kent, and REI. Although the majority of the City of Kent's current employment is in manufacturing, the highest levels of future growth are expected in the service and retail sectors according to the City land use and employment forecasts.

Larger companies report that they located in Kent because of its central location relative to the regional transportation systems, such as the ports of Seattle and Tacoma, and major freeways, such as I-5 and I-405. This central location is one of the prime reasons that Kent has

the largest concentration of distribution centers in the region, with more than 1,360 truck trips originating from Kent each day.[2]

Commuters – the Journey to Work

The 2000 US Census reported the mean travel time to work for Kent resident workers was 29 minutes, slightly higher than the state average. According to the 2000 Census, about 73 percent of those working in Kent drive alone, 15 percent carpool, and 12 percent carpool with more than two people. Kent's commute trip mode split (percentage of residents who drive alone, take transit, bike, and walk) is comparable to the State of Washington and neighboring cities, like Auburn and Federal Way. The City of Kent had a slightly higher percentage of residents who carpool and take transit than the state average, but fewer people who walk to work. This may be due in part to disconnected pattern of sidewalks and bicycle facilities.

Over 70 percent of Kent commuters travel outside of Kent each day, challenging the road network and all transportation modes to meet the peak demand. About a fourth commute to Seattle with the rest dispersed throughout the south Sound and the Eastside. Most commuters use their own vehicles, but 34 percent used the bus, and 9 percent used the Sounder commuter trains.

FREIGHT AND TRANSPORTATION

The safe and efficient movement of freight is of premier importance to the City of Kent. The majority of jobs in the City are tied to the movement of freight in some manner, and this dependence on the smooth flow of goods is expected to increase in the future as Pacific Rim nations become more technologically developed and international trade booms. In addition, more than ever, firms rely on just-in-time inventories of parts and supplies, not to mention perishable goods.

The Washington State Department of Transportation (the WSDOT) estimates that over $160 million in goods are moved to and from the Ports of Seattle and Tacoma daily, making Washington the most trade-dependent state in the nation. Kent's location in the Green River Valley is midway between the Ports of Seattle and Tacoma. The City serves as a distribution point for both seaports as well as air cargo moving through Seattle-Tacoma International Airport. Kent's 40 million square feet of warehouse/industrial space makes it the second largest freight transportation center on the west coast, second only to the Los Angeles/Long Beach freight corridor. The City partners with regional agencies and the State to build and

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[2] The Washington Transportation Plan, Freight Systems presentation by Barbara Ivanov, 2005.

maintain freight routes through the Green River Valley and to the ports to promote international trade and maintain manufacturing and distribution jobs.

Truck and rail freight movement often come to conflict points within the City of Kent. Since both systems are of vital importance to international commerce, the City has identified railroad grade-separation projects as high priority to improve the safety for rail, truck, and vehicle traffic.

WHAT DOES THE FUTURE HOLD FOR KENT?

The future promises growth in population and employment for the City. A glimpse of the future follows, to understand the traffic expected from the future land use in Kent and the region.

2030 Population and Employment Growth

Kent has developed rapidly over the last 15 years. The area population has more than doubled from around 40,000 in 1990 to over 85,000 in 2006 through both household growth and the expansion of the city limits. If the City's potential annexation areas are included, the population in 2006 was closer to 109,000. Employment has also grown to over 57,000 jobs[3] in Kent in 2006. **Table 9.1** shows the forecast growth in households, population and employment between 2005 and 2030.

[3] The employment forecasts were provided by the PSRC. The 57,000 jobs (City plus annexation area) is lower than recent City estimates of between 67,000 and 71,000 jobs.

Table 9.1. Kent Travel Model Growth Forecast (2006-2030)

Location			Growth	
	2006	2030	2006 to 2030	
Kent and Annexation Area				
Households	43,100	49,900	6,800	16%
Population*	109,000	126,000	17,000	16%
Employment	57,300	82,300	24,100	44%

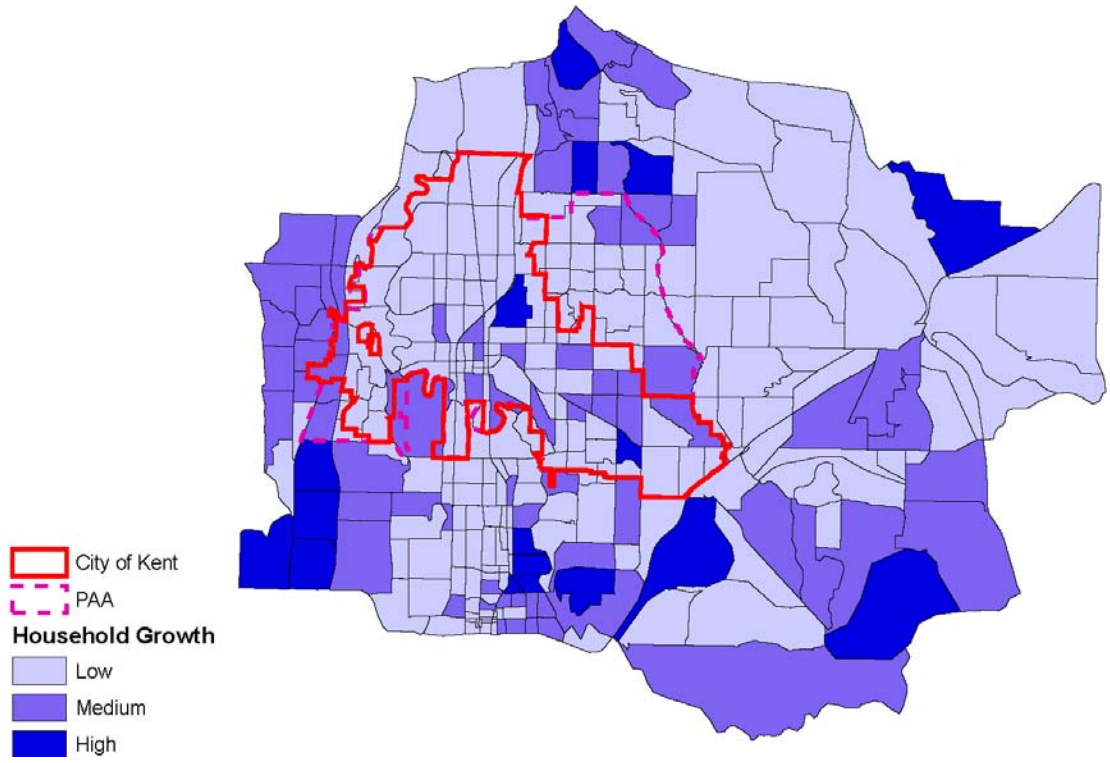
Source: City of Kent Travel Demand Model (2006); PSRC Data

* Population assumes 2.53 persons per household (2000 US Census)

POPULATION GROWTH

By 2030, the population within the City and surrounding annexation areas is expected to increase by another 16 percent, to over 126,000 residents. However, populations in the communities surrounding Kent are expected to increase at even higher rates as shown in **Figure 9.1**.

Figure 9.1. Population Growth 2006 to 2030



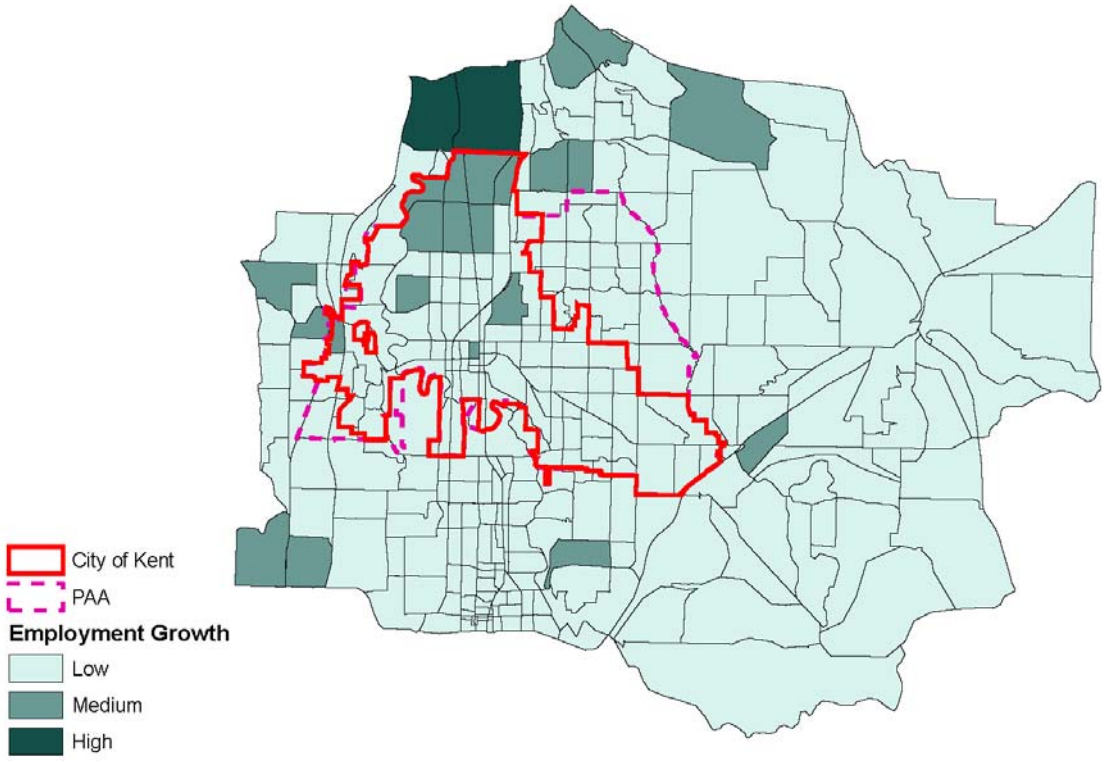
EMPLOYMENT GROWTH

Employment in Kent and the potential annexation area is forecast to increase by around 44 percent reaching over 82,000 jobs by 2030. As shown in **Figure 9.2**, about a quarter of the south end's employment growth will occur within the Kent urban growth boundaries.

Impacts of Growth on Transportation Needs

Growth in population and employment within Kent will continue to create needs for travel by all modes. The diverse travel patterns of Kent residents and employees will tax both the local and regional transportation system. The growth in new residents and jobs outside of Kent is also likely to result in more traffic passing through the City's roadway system.

Figure 9.2. Employment Growth Areas 2006 to 2030



PUBLIC OUTREACH

The City Council wanted to include all the residents and businesses who are impacted by the City's transportation system in the planning process. The City's public outreach program for the Transportation Plan was designed to accomplish this goal. The public involvement program offered several avenues for public input, including direct discussion at the project task force and community meetings, open house comment cards, reader-reply cards in the second newsletter, web site comment opportunities, a transportation hotline, and a TMP e-mail address. As a result of these opportunities, the TMP planners received additional evidence to support the recommendations of the plan. In some cases, issues that might otherwise have remained hidden were identified as a result of these opportunities.

STREET SYSTEM

The street system provides the primary means for all modes of transportation throughout the Kent area. The City is served by an extensive street network that includes freeways, arterials, residential, and local streets. Streets are used by different types of users – commuters, freight and delivery trucks, firefighters, police and EMS providers, public and school buses, seniors, students, children, moms and dads. Some users are in vehicles, while others walk or ride bicycles. Streets play different roles within the network. Some are used to access freeways for regional connections such as SR 167 or SR 18, while others provide access to local neighborhoods.

This section describes the street system and the analysis, as follows:

- Examines the infrastructure of the street network, the role of each street in that network and the inter-relationship with adjacent State highways and regional arterials.
- Evaluates how well the existing street network operates and the traffic conditions forecast for the future street network.
- Identifies the preferred street network and the improvement projects for that network.

STREET SYSTEM INVENTORY

Streets represent the most visible and influential infrastructure in the City – their size, appearance and operational characteristics shape everything around them.

The street system in Kent is a network of roads that carry both regional and local traffic. The City's street network represents the principal infrastructure for all modes of travel---vehicle, public transit, walking or biking.

Good street networks are not developed solely in response to traffic demand. Streets should function as well for public transit, pedestrians and bicycles as they do for personal motor vehicles and commercial trucks.

The City's street network is the backbone of the transportation system. Street types range from local streets, which are designed to provide access to neighborhoods, to freeways that primarily serve through traffic. The street system is described in the following section, starting with the State highways, followed by city streets.

State Highways

State highways are those roads owned by the state and managed by the WSDOT. These highways include the regional freeway system together with major roads that connect communities. To serve through traffic at higher speeds and meet mobility and safety goals, access to these roadways is often restricted. The freeways are designed to accommodate high volumes of traffic moving at high speeds under free-flowing conditions. More than 12 miles of freeways within Kent, such as I- 5 and SR 167, connect Kent to the region and serve longer-distance travel from areas outside the City.

The State highways that are within or adjacent to Kent fall under two categories, depending on their role in the regional network: highways of statewide significance (HSS) or highways of regional significance (Non-HSS).

HIGHWAYS OF STATEWIDE SIGNIFICANCE (HSS)

The following Highways of Statewide Significance (HSS) roads are located within or adjacent to the City of Kent:

Interstate 5: As the principal north-south freeway in the region, I-5 contains eight general purpose lanes and two high occupant vehicle (HOV) lanes in the Kent area. The City of Kent is directly served by four interchanges, which are located at S 272nd Street, the Kent-Des Moines Road (SR 516), S 200th Street, and S 188th Street/Orillia Road.

State Route 167: SR 167 contains four general purpose travel lanes and two HOV lanes in Kent. Interchanges are located at S 277th Street, Willis Street (SR-516), 84th Avenue S, S 212th Street, and S 180th Street.

State Route 18: SR 18 is not inside the city limits, but is immediately adjacent to the eastern border of the City. SR 18 is a major freight corridor between I-5 and I-90 and serves as another gateway into the City. Interchanges with the greatest impact to Kent are located at the Kent-Kangley Road/SE 256th Street and SE 232nd Street.

State Route 99: SR 99 (aka Pacific Highway) runs north-south from S 272nd Street north to the Kent-Des Moines Road.

HIGHWAYS OF REGIONAL SIGNIFICANCE (NON-HSS)

The following Non-HSS are located within or adjacent to the City of Kent:

State Route 181: SR 181 (aka Washington Avenue N, 68th Avenue S, and W Valley Highway) runs north-south along the valley floor from SR-516 to S 180th Street/SW 43rd Street;

State Route 516: SR 516 (aka Kent-Des Moines Road, Willis Street, Central Avenue, Canyon Drive, SE 256th Street, and Kent-Kangley Road) runs east from Pacific Highway S east to the city limits, near 156th Avenue SE; and,

State Route 515: SR 515 (aka Benson Highway, 104th Avenue SE, and 108th Avenue SE) runs north-south from SE 256th Street to the north city limits, near SE 226th Street.

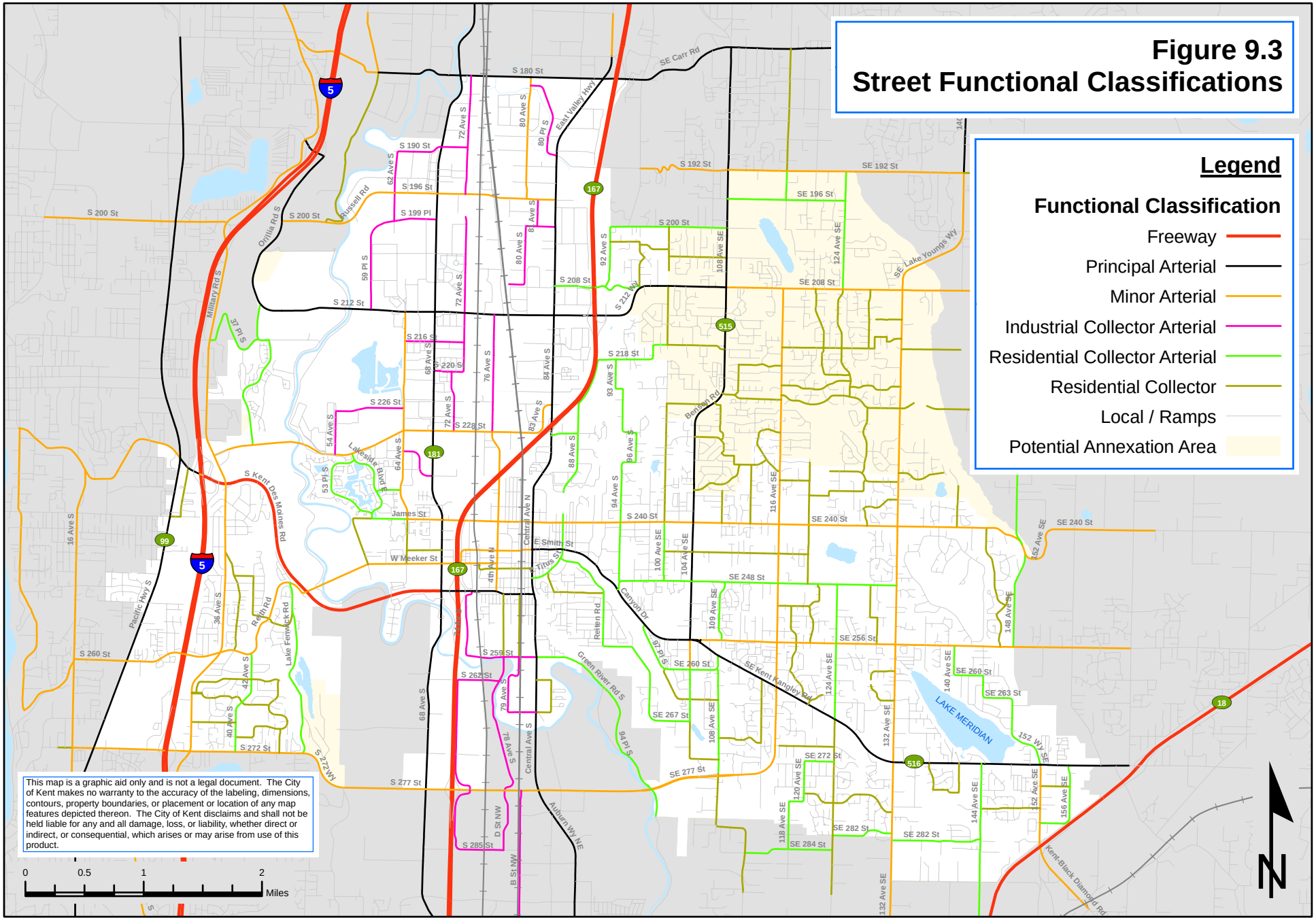
City Streets

Each street in Kent is but one element in the street network. The network operates as a system, handling a wide variety of modal users. Thus, it is important to define the role that any particular road or street should play in serving the flow of traffic through the skeletal street network, and making sure that there are enough of the right kinds of streets in the right places.

The City considers each street and intersection in terms of its role in the overall network. Streets serve many functions, streets can:

- Connect Kent to other parts of the Puget Sound Region;
- Connect local districts and neighborhoods within Kent; or
- Provide internal circulation within local districts and neighborhoods.

The functional classification determines the design and ultimate cross section of the roadway. Classification is important to the City because it helps ensure that the needed capacity will be available and that street improvements will be consistent with the assigned function. In addition, from a planning perspective, acknowledgment and proper designation of functional classifications preserves the right of way for future transportation corridors, whether for car, HOV, transit, bike, or pedestrian. Functional classification also defines the character of service that a road is intended to provide. Specific standards for streets and roadways are shown in **Table 9.2** and are detailed in City of *Kent's Construction Standards - Section 6: Standards for Streets and Roadways.* The current street classification assigned to City streets is shown on the map in **Figure 9.3**.



April 18, 2008

Table 9.2. Street Design Criteria

	Design Capacity (vehicles/day)	Design Speed (mph)	Typical Curb-to-Curb Width (ft)	Typical Number of Lanes
Principal Arterial	50,000	50	80	6 lanes /1 turn lane
Minor Arterial	30,000	45	58	4 lanes/1 turn lane
Collector Arterials				
Industrial	15,000	35	44	2 lanes/1 turn lane
Residential	5,000	35	36	2 lanes/1 turn lane or 2-way left turn lane
Residential Collectors	3,500	30	36	2 lanes/2 parking lane

* All classified streets in the City also provide for sidewalks. Bicycle facilities are designated according to the Bicycle System Plan. Source: City of Kent

Table 9.3 shows a breakdown of the City's street mileage by classification. There are more miles of local streets than any other category, as local streets are present in all neighborhoods; local streets represent 66 percent of the streets. Principal arterials represent only 7 percent of the roadway miles, but carry most of the daily traffic volume. The current street classification ratios fall close to FHWA guidelines.

Table 9.3. Existing Street Functional Classification Breakdown

	City of Kent		Potential Annexation Area		FHWA Recommendation
	Centerline Miles of Roadway	Percentage of Road Network	Centerline Miles of Roadway	Percentage of Road Network	Mileage Percentage of Total
Principal Arterial	26	7%	4	5%	5%-10%
Minor Arterial	33	9%	6	8%	10%-15%
Collector Arterial					5%-10%
Industrial	13	4%	0	0%	
Residential	28	7%	3	4%	
Residential Collectors	28	7%	13	15%	
Local Access Streets/Unclassified	246	66%	57	68%	65%-80%
Total (excludes freeways)	374	100%	83	100%	

Note: Approximately 12 centerline miles of freeways are also located within the City limits of Kent.
Source: City of Kent

PRINCIPAL ARTERIAL

Principal arterials are designed to provide relatively unimpeded traffic flow between major activity centers within the City, and provide access to the State highway system. Generally they are four travel lanes, some with a center turn lane. Access from adjacent private property to the arterials is limited or controlled. Turn restrictions, median channelization, elimination of on-street parking, or prohibition of direct driveway access are used to control access. Sidewalks are provided to allow safe pedestrian movements. Intersections generally cross at minor arterial streets, or with grade separated interchanges to State/Interstate highways.

MINOR ARTERIAL

Minor arterials provide connections to and from principal arterials and State highways, and access to major land-use activity centers. The traffic-carrying capacity of these streets is accomplished by means of the same types of access restrictions and design criteria as the principal arterial roadways; but balance increased levels of direct property access, with lower geometric design and capacity requirements. Sidewalks and bicycle facilities are common features. Access to the minor arterial system will generally be from collector arterial roadways at signalized at-grade intersections.

Collector Arterial

Collector arterials connect to and from higher classified streets in an orderly and well planned manner, and as a secondary function, provide access to land use activity centers. These streets provide high levels of traffic carrying capacity; but serve as the "bridge" from high capacity roadways to local access roadways and abutting land uses. Sidewalks and bicycle facilities are common features.

There are three sub-categories of the collector arterial classification – based upon the type of the adjacent land use. These sub-categories and their functions are:

Industrial Collector Arterial: These streets provide traffic distribution and collection from abutting industrial and commercial land uses to higher classified roadways. Access to Industrial collector arterials is typically not restricted, although access and on-street parking may be limited for safety reasons and/or proximity to a major signalized intersection. These roadways include specifications that allow truck traffic to safely traverse these roads.

Residential Collector Arterial: These streets provide traffic distribution and collection from the local street system to higher classified arterials. Driveway access and on-street parking will typically be prohibited.

Residential Collector: These streets provide traffic distribution and collection at a neighborhood level – from the local street system to the arterial classified roadways. The

design of these roadways balances the traffic carrying capacity with property access and discourages the utilization of these roadways by non-locally generated ("cut-through") traffic. Driveway access and on-street parking typically is prohibited. The design of collectors emphasizes accommodating pedestrian and non-motorized traffic in the design of these roadways.

Local Access Streets (unclassified)

Other roadways in the City provide direct access to abutting land uses (businesses, parks et al) from residential collector streets, safely and efficiently. The design parameters of these roadways minimize vehicle operating speeds and non-locally generated (cut-through) traffic. Typically, on-street parking is allowed except at those locations necessary for public safety, a high emphasis is placed on safely accommodating pedestrian and non-motorized traffic in the design of these roadways.

TRAFFIC SIGNALS AND SIGNS

Another critical piece of the street infrastructure is the traffic signals and signs that control traffic, including railroad crossings. Traffic signals, signs, and pavement markings are used to direct drivers, pedestrians, and bicyclists, thereby increasing the effective use of the roadway by moving traffic more efficiently and safely. The City uses the Manual of Uniform Traffic Control Devices (MUTCD) except as modified by the guidance and practices of WSDOT, or by City standards as guidance for design, construction, and placement of signs in the right of way.

FREIGHT – TRUCK AND RAIL

The confluence of important geographical elements makes Kent an important freight distribution center in the Puget Sound area. The efficient movement of freight, through and within the City is critical to Kent's economic health. Both rail and truck freight, originating largely in the Ports of Tacoma and Seattle, pass through Kent regularly. Trucking is a frequently used, versatile, and often the most efficient means of movement. Whether as a beginning or interim step in distribution, or as a final delivery to a retail outlet or end user, trucks will continue to be the way most goods and products are moved in Kent and the region.

Trucks are subject to most of the same traffic constraints as other vehicles. With vehicle miles of travel increasing and congestion worsening during the peak travel hours, travel times have increased encouraging truckers to look for alternate routes to their destinations.

The City tries to balance the needs of trucks to travel to and from intermodal facilities, industrial parks and other destinations with the needs of residents for quiet livable streets.

Truck routes, weight load limits, better access to the regional network and improving general congestion are all ways to improve travel times for freight vehicles.

Railroad Crossings

When roads and rails intersect, trains have the priority. Kent is severely impacted by at-grade railroad crossings on many east-west arterials. In the downtown center, James Street, Smith Street, Meeker Street, Gowe Street, Titus Street, and SR-516 (Willis Street) cross the tracks at-grade and create significant conflicts between the railroad and the movement of people, either in vehicles or on foot, as well as the movement of freight via trucks. These conflicts are anticipated to increase in the future as both systems forecast significant growth.

The Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UPRR) run parallel rail lines in the north-south direction through Kent. The City has nine streets that cross railroads at-grade with approximately 65 trains passing through the City each day. These junctions cause delay and create potentially hazardous situations for motorists and non-motorized travelers. The City regularly works with the railroads to take appropriate measures of safety, such as installing signal interties and constructing grade separations. The 2007-2012 Transportation Improvement Plan (TIP) includes constructing grade separations at both BNSF and UPRR railroad crossing at S 212th Street, S 228th Street and Willis Street (SR 516).

SAFETY

The City places a high priority on providing a safe transportation system for travelers of all modes and promotes road safety for the ongoing management of the street network and emergency services. Continual efforts are made to construct and retrofit streets in a manner that improves safety and decreases the likelihood of collisions and makes the street safer for pedestrians, transit, and bicyclists. Constructing streets for ease of use by pedestrians can increase overall safety by altering the behavior of drivers who anticipate pedestrian activity. Non-motorized safety issues are discussed later. Safety issues related to emergency response, collisions and railroad crossings follow.

Emergency Response (EMS)

Providing residents with quick responses in emergency situations is a high priority for the City. An adequate street network helps to ensure that multiple alternate routes are available for emergency vehicles. Fire response vehicles are equipped with devices that control traffic signals enabling emergency vehicles to secure safe and rapid passage through signalized corridors. In addition, the City has mutual-aid agreements with nearby emergency response operators to ensure adequate coverage in case of road closures or other obstacles that would otherwise prevent timely emergency response.

Collisions

The City collects and monitors collision data to identify roadway hazards, and seeks to correct hazardous locations by implementing appropriate safety measures. Many of these collisions occur at or near intersections. Intersections where the highest number of collisions occurred (9 or more) between January 1, 2002 and December 31, 2004 were examined. Collision rates weight the number of collisions by the number of vehicles that enter the intersection in units of collisions per million entering vehicles. The intersection with highest number of collisions was 104th Avenue SE (SR 515) at SE 256th Street (SR 516). During the given time period, there were 71 collisions with a collision rate of 1.29. The majority of the collisions were rear ends, common under congested conditions. Other intersections with a large number of collisions are located in the downtown area and along State highways.

HOW WELL DOES THE STREET NETWORK OPERATE?

Both residents and businesses use the road network every day to go to work or school and carry on with their lives. The City must balance the needs of vehicles with the needs of pedestrians and cyclists. When traffic flows smoothly, trips can be predictable and efficient. However, when the roads are congested traveling becomes more difficult, delays increase, and frustration rises. Congestion is the term generally used to describe the traffic conditions in a corridor. An uncongested corridor would have high speeds and short delays at intersections, while a congested corridor would have low speeds and long delays.

There are three key questions to consider when evaluating the street system:

- How well does the existing street system work?
- How well will it work in 2030, when population and employment have both increased?
- What improvements can we make that will help the network operate better in 2030?

To answer these questions, the performance of the street network was evaluated for two situations: the existing system in 2006 and the future system in 2030. To measure the performance of the existing street system, the City reviewed existing traffic volumes and the amount of resulting congestion. To assess how the street network will work in the future, the City developed a model for the street system in 2030. Models are a tool used to forecast travel demand for local, regional and countywide trips. The regional planning organization, the PSRC, has developed a regional model for the Puget Sound Region. How that model was customized for the City of Kent, is explained in the Future Traffic Conditions section later in this chapter.

Existing Traffic Conditions

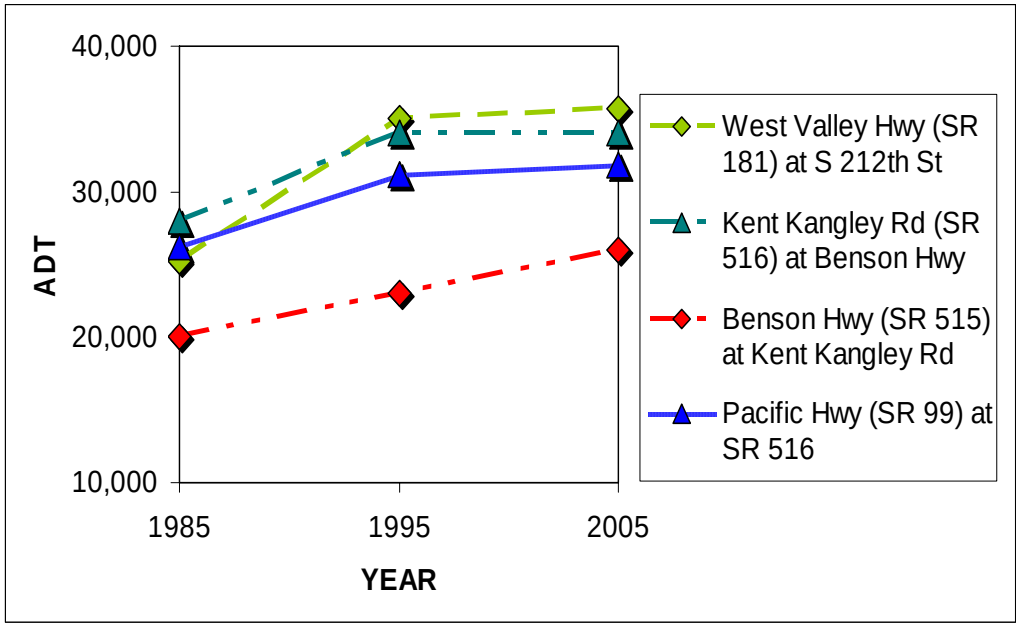
Traffic conditions are measured by reviewing the traffic volumes and the congestion, measured as the delay (the waiting time) at intersections. Measuring changes in traffic volumes helps identify capacity needs. Two measurements are needed for the analysis: average daily traffic totals (ADT) and the PM peak hour traffic volumes.

Traffic volume counts were obtained from the City of Kent and WSDOT. The counts provided intersection turning volumes for the PM peak period and hourly traffic flows along major routes throughout the day.

TRAFFIC VOLUMES

Growth both within the City and the region have caused traffic volumes on city streets to increase during the past 20 years. **Figure 9.4** shows the historical growth of traffic on several key streets.

Figure 9.4 Traffic Growth on Key Arterials



The average daily traffic grew steadily in the 1980s and 1990s, but leveled off during the 2000s. However, peak hour volumes have continued to grow. A major contributor to the high traffic volumes on the arterials is traffic passing through Kent. This pass-through traffic originating in surrounding jurisdictions uses the City's arterial streets to access the regional highways, such as I-5, SR 18 and SR 167. The City continues to work with WSDOT to improve the State highway system, in order to shift traffic away from the City street network.

AVERAGE WEEKDAY VOLUMES

Figure 9.5 shows the average weekday traffic volumes for 2006. The heaviest volumes are on the principal arterials and State highways. The volumes on principal arterials ranged from 17,000 to 39,000 vehicles a day. The highest average daily traffic (ADT) volumes were found on the following principal arterials:

- S 180th Street (19,900 - 38,600 ADT)
- S 208th Street (34,500 ADT)
- S 212th Street (34,500 ADT)
- Canyon Drive (32,200 ADT)

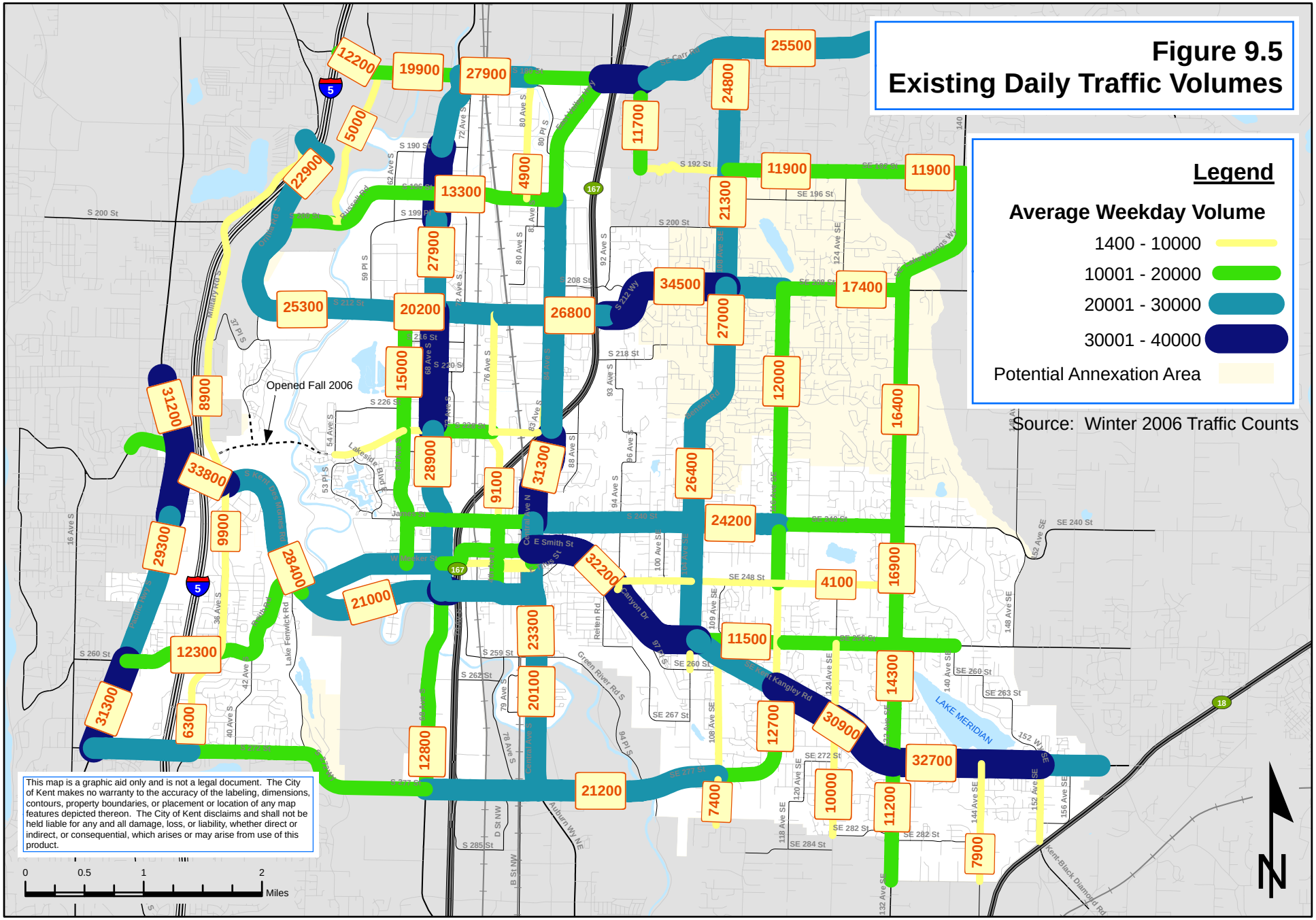
Minor arterials showed daily volumes ranging from 6,800 to 32,700 ADT. The minor arterials with the highest average daily traffic were:

- SE 256th Street (32,700 ADT)
- E Smith Street (32,200 ADT)
- S 240th Street (James Street) (28,700 ADT)

The industrial collectors typically have daily volumes in the 4,900 to 13,400 to ADT range.

PM PEAK HOUR VOLUMES

The City uses traffic volumes during the PM peak hour (typically 4:30 to 5:30 pm) to determine how well the street network works, at those times when it serves the greatest number of vehicles. The PM peak hour represents the highest volume that typically occurs on a city street during the week. The peak hour can vary from location-to-location, with peaks occurring earlier around school zones, and later along commuter routes. Traffic volumes were analyzed at 71 intersections around the city. The PM peak hour volumes range from approximately 8 to 10 percent of the daily volumes shown in Figure 9.5.



April 18, 2008

LEVEL OF SERVICE FOR CITY STREETS

Transportation planners and engineers use the term "level of service" (LOS) to measure the operational performance of a transportation facility. For streets and intersections, this measure considers the perception by motorists and passengers in terms of speed, travel time, freedom to maneuver, traffic interruptions and delays, comfort and convenience. Levels of service are given letter designations, from A to F, with LOS A representing the best operating conditions (free flow, little delay) and LOS F the worst (congestion, long delays). Generally, LOS A and B are good, LOS C and D are moderate, and LOS E and F represent congested conditions.

The City of Kent used roadway corridors to evaluate the level of service. The methodology calculates the LOS operation for key corridor intersections (in seconds of delay) and then develops a corridor-wide average based upon a weighting of the corridor intersection volumes. This method provides a "corridor-wide" result, allowing some intersections to operate at a congested LOS as long as the overall corridor operation is maintained.

For intersections with a signal, the LOS is calculated as the average delay of all the approaches to the intersection and is weighted by the total PM peak hour volume entering the intersection. For unsignalized intersections, the worst individual movement or approach determines the delay for the intersection and is weighted by the volume of the same movement or approach. **Table 9.4** defines the LOS operation based on the seconds of delay for signalized and unsignalized intersections.

Table 9.4 Level of Service Definitions

LOS	Signalized Delay per Vehicle (sec/veh)	Unsignalized Delay per Vehicle (sec/veh)
A	0-1	0-10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	>80	>50

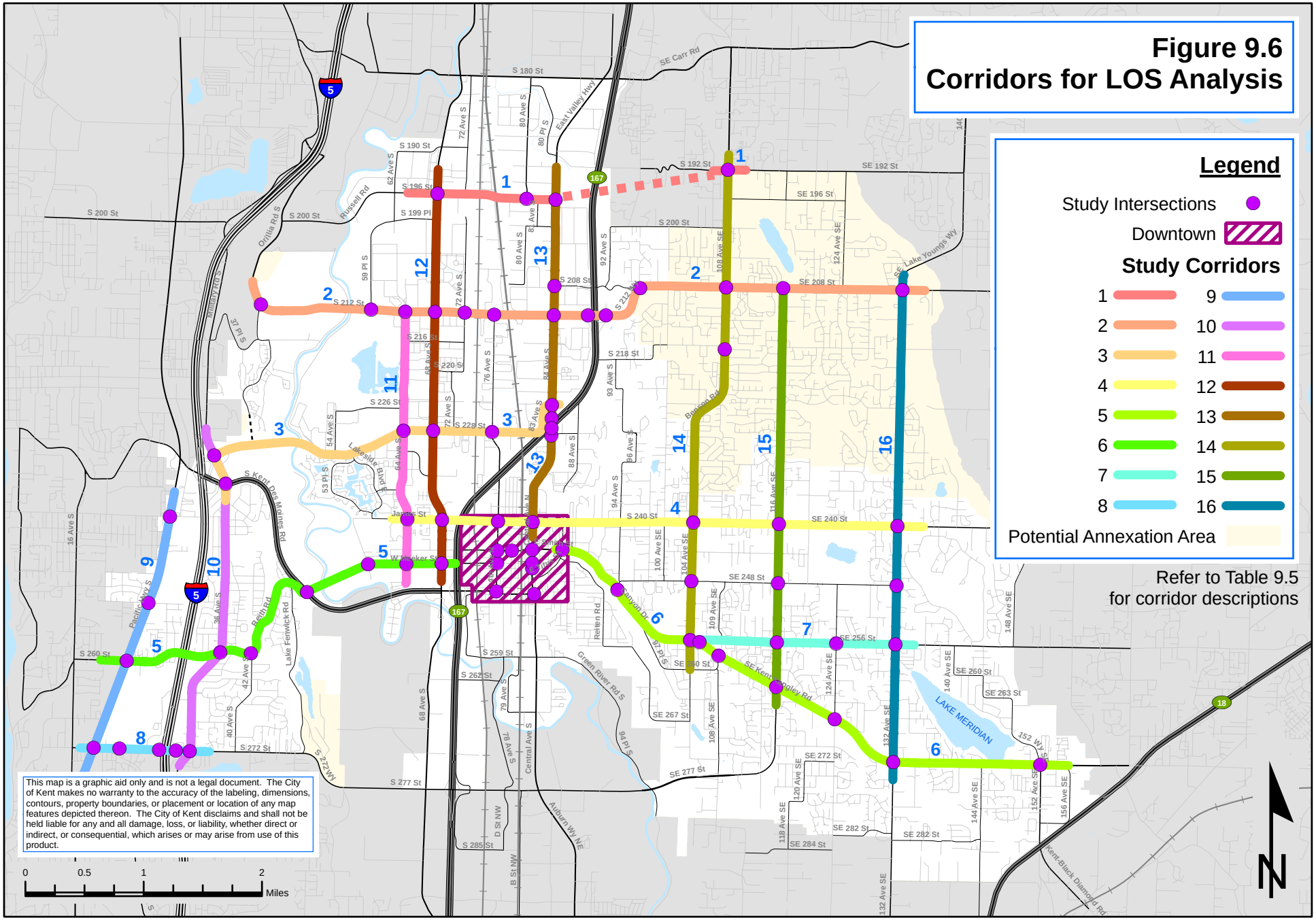
Source: Highway Capacity Manual (HCM 2000, Transportation Research Board)

Level of Service Corridors

For the LOS analysis, the City chose 16 corridors including the downtown street system, which was represented as a zone. The corridors represent the primary north-south and east-west travel routes within the City. Non-Kent corridors, such as I-5 and SR167 were not included in the evaluation. Downtown Kent is treated as a zone rather than a corridor, since traffic flows along multiple streets within the downtown grid. The corridors and their limits are listed in Table 9.5 and illustrated in Figure 9.6.

Table 9.5 Corridors for LOS Analysis

ID	Corridor/Area	From	To
1	S 196th St/SE 192nd St Corridor	W Valley Highway	SR 515 (Benson)
2	S 212th St/S 208th St	42nd Ave S	132nd Ave SE
3	S 224th St/S 228th St	SR 516/Military Road	S 228th St/ 84th Ave S
4	James St/SE 240th St	64th Ave S	132nd Ave SE
5	S 260th St/ Reith Road/ W Meeker St	SR 99	Washington Ave
6	Smith St/ Canyon Drive/ 256th St / Kent-Kangley Rd	Jason Ave	152nd Way SE
7	S 256th St	SR 515	132nd Ave SE
8	S 272nd St	SR 99	Military Road
9	Pacific Highway S	S 240th St	S 272nd St
10	Military Road	231st St	S 272nd St
11	64th Ave S	S 212th St	Meeker St
12	Washington Ave/ 68th Ave S/ W Valley Hwy	S 196th St	Meeker St
13	Central Ave/ 84th Ave S	S 196th St	James St
14	SR 515/Benson Ave	SE 192nd St	SE 256th St
15	116th Ave SE	SE 208th St	Kent-Kangley Road
16	132nd Ave SE	SE 208th St	Kent-Kangley Road
17	Downtown Area	4th Ave N to E Titus St	James St to W Willis St



April 18, 2008

Level of Service Standard

The City has set the level of service (LOS) standard to require that most corridors operate at LOS E or better during the PM peak hour. [1] Corridors that operate below this adopted standard are considered deficient.

Two locations are allowed to operate at LOS F: Pacific Highway south (SR 99) and downtown Kent. Pacific Highway has an LOS F standard since it is largely outside of the City's control and is designated as a Highway of Statewide Significance (HSS). The City recently improved SR 99 and any further widening is unlikely. The operation of SR 99 is highly dependent upon travel conditions along I-5 and the effects of the SR 509 project under design by the WSDOT. Note that WSDOT has set an LOS D standard for SR 99. The City will work with WSDOT to determine whether this is a realistic standard for the SR 99 corridor.

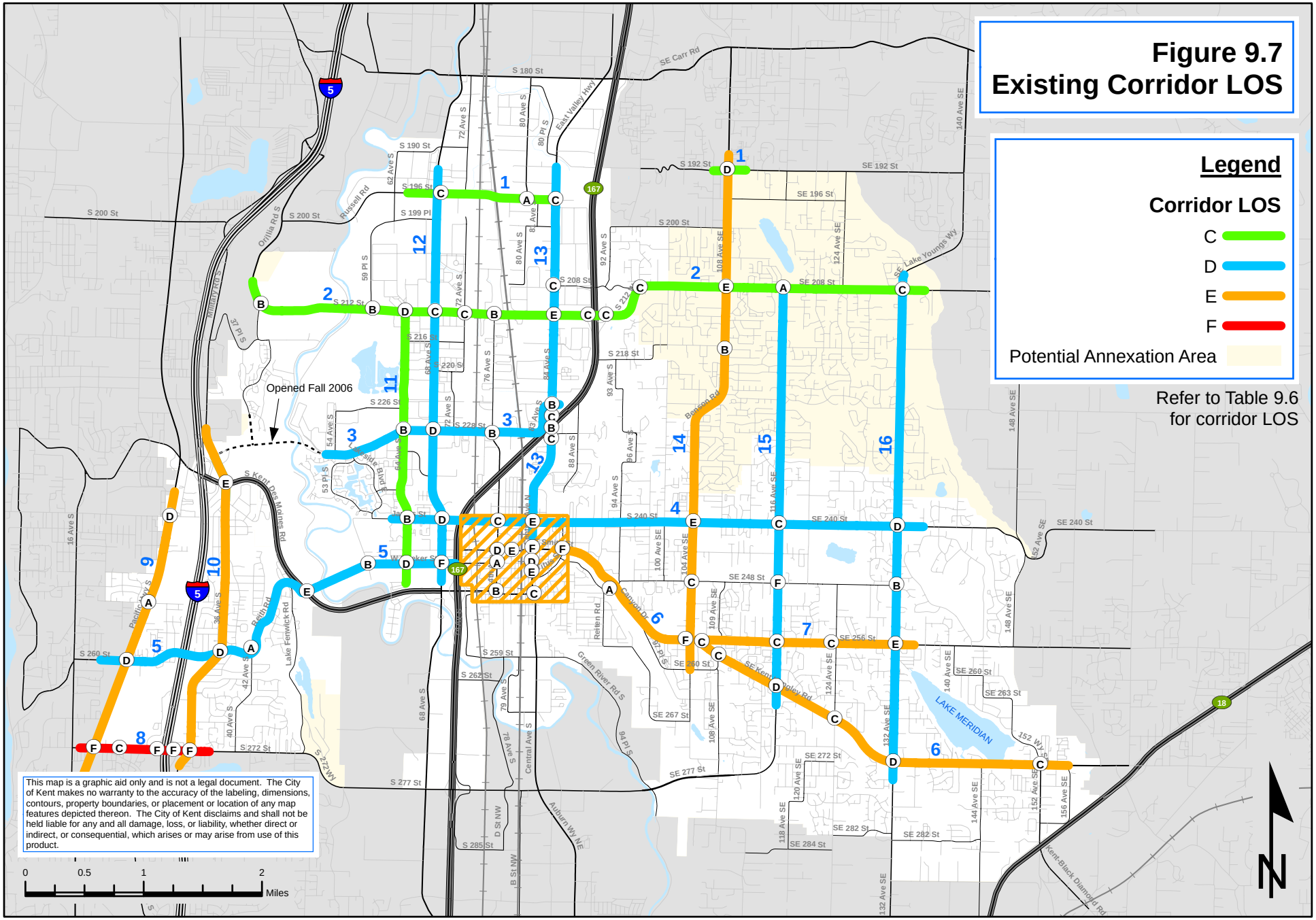
Downtown Kent is also designated with an LOS F standard. The City considers the downtown street system to be largely complete and few street capacity increases are available. The City also recognizes that traffic conditions in downtown Kent are heavily influenced by conditions on the State highways, SR 167 and SR 18 and railroad activities. City policies prioritize non-auto modes such as transit, pedestrian, and bicycle for travel within downtown Kent.

LOS for Existing Conditions

For the analysis of the City's roadway system during the PM peak hour Synchro 6.14 software was used to calculate the intersection level of service. This software considers the traffic volumes, signal timing and phasing, presence of pedestrians and transit and topographic features to estimate the LOS operation of the intersections. The evening commute traffic conditions were analyzed at each corridor intersection to calculate the existing PM peak hour LOS conditions. The weighted average LOS for each corridor in the analysis was calculated using the LOS results of each intersection.

Figure 9.7 shows the 2006 LOS in Kent. **Table 9.6** identifies Kent's LOS standards, as well as the 2006 corridor LOS. Within the City, corridor signals generally operate between LOS C and LOS F, with most corridors impacted by at least one LOS E or LOS F signal. One corridor, S 272nd Street, currently operates at LOS F during the PM peak hour. Pacific Highway S, Military Road, the Benson Highway, SE 256th Street, Kent-Kangley Road and the roads in the Downtown Zone all operate at LOS E for the PM peak hour existing conditions.

[1] *The City's PM peak hour typically occurs between 4:30 and 5:30 pm.*



April 18, 2008

Table 9.6 Existing Corridor LOS

ID	Corridor/Area	From	To	LOS Standard	LOS 2006
1	S 196th St/SE 192nd St Corridor	W Valley Highway	SR 515 (Benson)	E	D
2	S 212th St/S 208th St	42nd Ave S	132nd Ave SE	E	C
3	S 224th St/S 228th St	SR 516/Military Road	S 228th St/ 84th Ave S	E	D
4	James St/SE 240th St	64th Ave S	132nd Ave SE	E	D
5	S 260th St/ Reith Road/ W Meeker St	SR 99	Washington Ave	E	D
6	Smith St/ Canyon Drive/ 256th St / Kent-Kangley Rd	Jason Ave	152nd Way SE	E	E
7	S 256th St	SR 515	132nd Ave SE	E	E
8	S 272nd St	SR 99	Military Road	E	F
9	Pacific Highway S	S 240th St	S 272nd St	F*	E
10	Military Road	231st St	S 272nd St	E	E
11	64th Ave S	S 212th St	Meeker St	E	C
12	Washington Ave/ 68th Ave S/ W Valley Hwy	S 196th St	Meeker St	E	D
13	Central Ave/ 84th Ave S	S 196th St	James St	E	D
14	SR 515/Benson Ave	SE 192nd St	SE 256th St	E	E
15	116th Ave SE	SE 208th St	Kent-Kangley Road	E	D
16	132nd Ave SE	SE 208th St	Kent-Kangley Road	E	D
17	Downtown Area	4th Ave N to E Titus St	James St to W Willis St	F	E

* The WSDOT LOS Standard = LOS D

State and Regional Facility Level of Service

The GMA also requires that cities take a look at the performance of the State-owned highways near them. The City of Kent is surrounded by state highways and freeways that are used by residents to travel throughout the Puget Sound region. Both the State and the regional planning organization, the PSRC, have set LOS standards for the roadways.

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARDS FOR HSS

WSDOT sets the LOS standards for facilities listed as Highways of Statewide Significance (HSS). WSDOT has used a congestion index to report the severity of traffic congestion over a 24-hour period. Index values range from 1 (little to no congestion) to 24 (theoretically congestion over the entire 24 hours in a day). The methodology computes the congestion index by dividing average annual daily traffic (AADT) by the roadway's two-way, hourly capacity (C). This AADT/C ratio has been organized into a number of thresholds that relate to conventional LOS measurements for peak hour traffic periods. WSDOT has set LOS D (an index = 10) as the standard for urban areas and LOS C (index = 6) for rural areas.

There are three HSS facilities that travel through the Kent's city limits: SR 99, I-5 and SR167. All of these facilities are defined as being within an urban area. The existing 2005 congestion index was calculated using 2005 traffic volumes from WSDOT *Annual Traffic Report* and the estimated capacity of the traffic lanes based on the *Highway Capacity Manual.* **Table 9.7** shows the LOS operation following WSDOT's congestion index methodology based on the 2005 traffic data. For 2005, two of the three corridors exceed the congestion index/LOS D standard.

Table 9.7 Existing LOS for Kent Area Highways of Statewide Significance

Facility Name	Average Annual Daily Traffic	Lanes	Assumed Capacity pc / h / ln	Hourly Capacity	Congestion Index	Meets Standard
SR 99 south of SR 516	29,000	4	1,400	5,600	5.2	Yes
I-5 north of SR 516	204,000	8	2,250	18,000	11.3	No
SR 167 at SR 515	119,000	4+ HOV	2,250	11,250	10.6	No

Source: 2005 Trafffic Data (WSDOT)

PUGET SOUND REGIONAL COUNCIL STANDARDS FOR NON-HSS

The Puget Sound Regional Council (PSRC) in its long range planning document, *Destination 2030*, adopted LOS standards for Highways of Regional Significance (non-HSS) facilities. A three tier system defines the LOS standards, which varies depending on the location of the facility. All standards are based on the PM peak hour.

Tier 1 facilities are located in highly developed urban areas and have a "LOS E/mitigated" standard. The E/mitigated standard allows Tier 1 projects to operate at below LOS E, but they must provide mitigation that may address congestion such as transit facilities, HOV lanes, pedestrian and bicycle facilities and other travel options. Tier 2 facilities are those in "outer urban areas". Tier 3 facilities are considered rural. Within Kent, SR 516, the W Valley Highway (SR 181) and Benson Road (SR 515) are classified as Tier 1 non-HSS facilities by PSRC and have a LOS E/mitigated standard. There are no facilities within Kent classified as Tier 2 or Tier 3.

FUTURE TRAFFIC CONDITIONS

Since the Transportation Master Plan will be used by the City for transportation planning for the next 20 years, the City needs to assess the traffic conditions the City will have in 2030 and identify projects that will improve these conditions. Over the next two decades, population and employment are expected to continue to grow, not only in Kent, but in adjacent cities and throughout the Puget Sound region. The population and employment growth forecasts are used to estimate future traffic levels expected on City streets. In turn, future traffic levels are used to calculate future traffic operations. A description of the traffic forecast methodology used to develop Kent's travel model follows.

TRAVEL FORECAST METHODOLOGY

The model includes a Baseline 2030 street network and its traffic operations (the conditions expected if no additional improvements are made) and a 2030 Preferred street network and its traffic conditions that include street improvements.

The travel model uses geographic areas for the estimates and analysis. For Kent, the travel forecasting model study area consists of 310 transportation analysis zones (TAZs) as the basic geographic unit for estimating travel demand. The TAZs were laid out using digital information, including 2000 Census TIGER files and aerial photos. Approximately one-third of the TAZs are located within the City of Kent, with the remaining TAZs representing potential annexation areas and surrounding jurisdictions. The model includes travel data for the entire Puget Sound Region in order to accurately analyze the impact of regional traffic on the City.

For the model, the City also updated roadway and intersection characteristics. Initially, the model's trip purposes, trip generation rates and trip distribution parameters were based on those of the Puget Sound Regional Council (PSRC) surveys and parameters used in other travel models in the region. These were adjusted as part of the validation process. The final model validation procedure calibrated the 2006 base year model to the PM peak hour traffic counts, which had been collected as part of the transportation planning effort.

The 2030 transportation network assumed two alternative levels of development, a baseline and a preferred network, to allow a comparison of future transportation system performance. To predict the future traffic conditions the existing land uses were replaced with the proposed future land uses and the resulting traffic levels were analyzed on the assumed future street network. The City supplied the 2030 land use estimates and identified the expected growth in households and the employment for each TAZ. To capture the impacts of traffic growth from areas outside the Kent Urban Growth Area (UGA), the model used the PSRC household and employment forecasts.

The Kent travel model was run with these land use and transportation inputs to generate estimates of 2030 travel demand on the future transportation network.

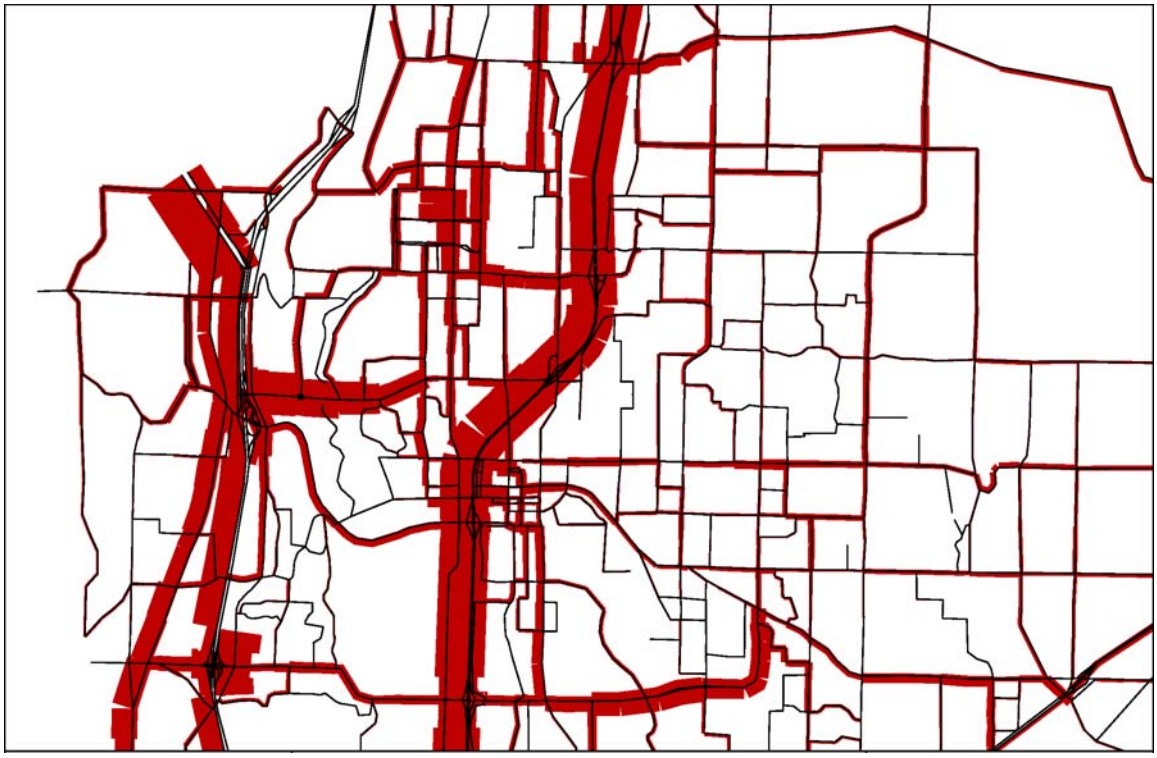
POPULATION AND EMPLOYMENT GROWTH

During the last 15 years, Kent's population has more than doubled from both household growth and the expansion of the City limits. Over the next 20 years, the model forecasts that population within the City and surrounding Urban Growth Area (UGA) is expected to increase by another 16 percent, to more than 141,000 residents. Employment is forecast to increase by around 42 percent between 2006 and 2030.

TRAFFIC VOLUME GROWTH

Kent's location in the middle of a large and rapidly growing urbanized region creates two sources of growth: increasing size and density of the City itself, and ongoing regional growth and development. The travel demand model uses future land use forecasts within the study area combined with regional travel along State highways to estimate future traffic growth. The existing 2006 and 2030 traffic models were compared. **Figure 9.8** depicts the relative magnitude of growth for traffic throughout the Kent study area. Much of this growth is expected to occur on State and regional highways and the major arterial routes within the City. The expected widening of SR 167 will expand capacity and travel. Other major facilities will have more modest growth due to constrained conditions, as shown in **Table 9.8.**

Figure 9.8 Future Traffic Growth in Kent



Source: Mirai City of Kent Model.

Note: Width of line indicates greater volumes.

Table 9.8 Traffic Growth Expected on State and Local Facilities by 2030

Location	Growth Percent 2006 to 2030	Annual Growth Rate 2006 to 2030	Comments
State Roads			
I-5	36%	1.3%	Assumes I-5 widening
SR 99	105%	3.0%	Assumes completion of HOV lanes
SR 167	84%	2.6%	Assumes additional GP lane and completion of HOV system
SR 516 (West of Downtown)	23%	.9%	No widening assumed
SR 516 (Kent-Kangley Road)	9%	0.4%	No widening assumed
SR 181 (West Valley Highway)	39%	1.4%	No widening assumed
SR 515 (Benson Highway)	7%	0.3%	No widening assumed
Arterials			
S 212th St	88%	2.7%	No widening assumed
E Valley Highway (Central Ave)	36%	1.3%	No widening assumed
SE 256th St	22%	0.8%	No widening assumed
Military Road S	181%	4.4%	No widening assumed
E James Street (SE 240th St)	24%	0.9%	No widening assumed
132 Avenue SE	20%	0.8%	No widening assumed

THE FUTURE STREET NETWORK

In order to address the growing traffic volumes and congestion levels on City streets, two future roadway improvement scenarios were examined: a Baseline and a Preferred street network. While the Baseline represents a minimum level of roadway improvements, the Preferred scenario represents a level of roadway improvements necessary to bring the street system into compliance with the City's level of service standards.

Baseline Network

The 2030 Baseline scenario represents the conditions in the street network with the projects committed to date. The Baseline network consists primarily of the existing city street system, funded projects programmed in the City's Transportation Improvement Program (TIP) and

the State's Highway Program. The projects in **Table 9.9** are assumed to be in place by 2030 as part of the City's baseline traffic model and street system. Most of these projects are at least partially funded and have a reasonable likelihood of being implemented during the next 20 years. This set of projects provides a frame of reference for examining the performance of the City street system in 2030.

Table 9.9 Future Baseline Projects

TIP#	Project	Description
Regional Projects		
	SR 167 – I-405 to SR 18	Add one travel lane in each direction
	I-5 – SR 509 Extension to S 277th Street	Add travel lanes for merging traffic to/from SR 509 Extension
	SR 509 Extension – SR 518 to I-5	Construct new freeway extension from SeaTac Airport to I-5
	I-405 – I-5 to Bellevue	Add travel lanes (funded by WSDOT gas tax projects)
City of Kent Projects		
7*	S 228th Street Corridor-Phase I – Military Road S to 64th Avenue S	This new 5-lane minor arterial is included in the future baseline, because the existing traffic volumes were collected prior to its 2007 completion.
2	S 277th Street Corridor Extension – Widen 116th AveSE from Kent-Kangley Road (SR 516) to SE 256th Street	Widen 116th Ave SE to provide a 5-lane roadway between Kent-Kangley Road and SE 256th Street.
8	72nd Ave S Extension – S 200th St to S 196th Street	Extend 72nd Ave S to provide a parallel corridor to the West Valley Highway
27	SR 181/West Valley Highway/ Washington Avenue Widening – Meeker St north to approximately the 218th block.	The widening project would expand the existing five lane roadway to seven lanes.

* This project was under construction during the collection of existing data and is not in the current TIP.

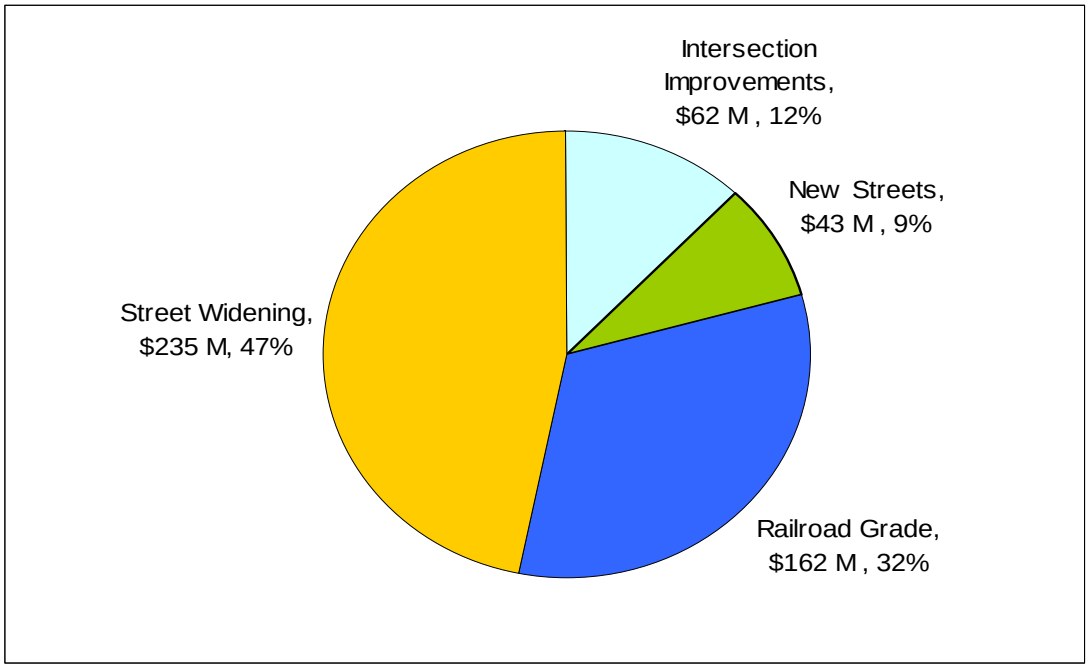
PREFERRED NETWORK

The Preferred network consists of the projects in the Baseline scenario and additional projects targeted to improve traffic operations. Several of these projects have already been identified in the Kent's Transportation Improvement Program (TIP).

The Preferred network includes intersection improvements, new streets, street widening and railroad grade separation projects. Intersection improvements vary from simple changes such as changing the lane assignment at Smith Street/Central Avenue, to more complex projects such as revising the I-5/S 272nd Street freeway ramp interchange. Street widening projects would improve the amount of capacity on the arterial system and allow development of bicycle lanes and sidewalks. Railroad grade separation would alleviate the delays caused by railroad crossings on the street network.

The Preferred street network calls for at total of $599 million (2007 dollars) of transportation improvements. Of this total approximately, $97 million is for street projects located within the City's potential annexation area, and is not the City's current responsibility. Therefore, the current City share of the street projects equals $502 million. The City's share is inclusive of all local revenue sources (e.g. local taxes, special assessments, developer payments, et al). The City's share of project cost (by project type) is depicted in Figure 9.9. The Preferred network includes $235 million (City's share) in widened and improved streets. Intersection

Figure 9.9 Preferred Network Costs



improvements, such as adding turn lanes or modifying a signal, comprise $62 million (City's share). New streets, such as connecting S 224th Street from 84th Avenue to Benson Road, would improve east-west links within the City. Approximately $43 million (City's share) in new streets is included in the Preferred network. Approximately $162 million of railroad grade separation projects are also included in the Preferred network plan.

The travel demand model was also used to help identify locations that require modification in the future. For example, comparing the 2030 traffic conditions with the Baseline network, it became clear that there needs to be more capacity for vehicles traveling east-west between the Kent Valley and East Hill.

In response, the Preferred street network includes these projects to improve east-west mobility:

- Widening S 212th Street (SE 208th Street)
- Constructing a new road between 84th Avenue S and 104th Avenue SE along S 224th Street/S 218th Street
- Constructing a new road between 84th Avenue SE to 108th Ave SE along the SE 192nd Street Corridor.

These improvements will spread traffic over the City more evenly by allowing more route options, which in turn, will ease some of the traffic in the downtown area. These new routes will also be designed to accommodate growing pedestrian and bicycle demand for east-west travel. They can also handle existing and future transit services as they become available. The Preferred network improvements are displayed in **Table 9.10** and depicted in **Figure 9.10.**

Table 9.10 Preferred Network Projects

	TMP Project #	Capital Project (location and description)	Cost ($) (City Share)
Intersection Improvements	I-1	SE 192nd St/SR515-Benson - Add southbound right turn pocket.	540,000 (0)
	I-2	S 196th St/80th Ave S - Change intersection phasing and lane approaches.	250,000
	I-3	S 196th St/84th Ave S - Add eastbound right turn pocket and southbound dual left turn lanes.	1,190,000
	I-4	SE 208th St/SR 515-Benson - Add dual southbound left storage lane and modify signal phasing.	690,000 (0)
	I-5	S 212th St/72nd Ave S - Add southbound dual left turn lanes.	330,000
	I-6	S 212th St/84th Ave S - Extend eastbound left turn lane and add northbound and southbound dual	1,710,000

	TMP Project #	Capital Project (location and description)	Cost ($) (City Share)
		left turn lanes.	
	I-7	S 212th St/SR 167 Southbound Ramp - Add southbound left turn lane.	400,000
	I-8	S 212th St/SR 167 Northbound Ramp - Modify signal timing by making northbound right turn free.	220,000
	I-9	S 240th St/SR 99 - Change signal phasing.	420,000
	I-10	4th Ave N/Cloudy St - Provide northbound and southbound exclusive left turn lanes. Install traffic signal.	2,160,000
	I-11	SE 240th St/SR 515 - Add dual northbound and southbound left turn lanes. Add northbound and southbound right turn pockets.	1,650,000
	I-12	Smith St/Lincoln Ave (Smart Growth Initiative) - Add eastbound left turn pocket.	1,990,500
	I-13	W Meeker St and W Smith St - Interconnect Interurban Trail crossing signals.	342,000
	I-14	Smith St/Central Ave - Revise southbound and northbound turn lane assignment.	20,000
	I-15	Meeker St/Washington Ave - Modify signal phasing. Add eastbound and westbound right turn pockets.	780,000
	I-16	S 260th St/SR 99 - Add westbound dual left turn lane. Add eastbound and westbound right turn pockets	1,180,000
	I-17	Military Rd S/Reith Rd - Widen intersection to provide turn lanes on all approaches.	1,945,000
	I-18	SE 256th St/SR515-Benson - Add northbound right turn lane and change signal phasing.	550,000
	I-19	Kent-Kangley Rd/108th Ave SE - Add eastbound and westbound dual left turn lanes. Add eastbound right turn pocket. Change northbound right turn phasing.	1,410,000
	I-20	SE 256th Street and 132nd Ave SE - Extend northbound left, southbound left, and westbound left turn pockets. Construct new eastbound and southbound right turn lanes.	302,000
	I-21	I-5/S 272nd St Interchange Reconstruction-Phase I - Provide transit and HOV Direct Access between S 272nd St and I-5.	42,330,000
	I-22	S 272nd St/Military Rd - Add a southbound through lane at intersection. Add northbound dual left turn lanes.	1,540,000
	I-23	Kent-Kangley Rd/132nd Ave SE - Add northbound and southbound dual left turn lanes.	1,360,000
		Total Cost (City Share of Cost)	$ 63,309,500 $ (62,079,500)
New Streets	N-1	SE 192nd St (84th Ave SE to 108th Ave SE) - Create new roadway connection with 4-5 lanes and bicycle lanes.	45,200,000 (14,329,000)
New Streets	N-2	72nd Ave S (S 200th St to S 196th St) - Extend roadway to connect to S 196th St.	1,015,000
New Streets	N-3	S 224th St (84th Ave S to 104th Ave SE (Benson Rd-SR 515)) - Extend roadway to connect to E Valley Hwy and widen existing road to 3-5 lanes.	36,000,000 (24,983,000)
New Streets	N-4	S 228th St Corridor-Phase I (Military Rd S to 64th Ave S) - Construct new roadway with 5 lanes.	Completed

	TMP Project #	Capital Project (location and description)	Cost ($) (City Share)
	N-5	108th Ave SE (SE Kent-Kangley Rd (SR 516) to SE 256th St) - Extend roadway connection to SE 256th St.	2,500,000
		Total Cost (City Share of Cost)	$ 84,715,000 $ (42,827,000)
Street Widening	W-1	80th Ave S Widening (S 196th St to S 188th St) - Widen to 5 lanes.	1,323,000
	W-2	S 212th St (SR 167 to 108th Ave SE) - Widen to 5-6 lanes.	10,100,000 (6,046,000)
	W-3	SR 181/West Valley Hwy/Washington Ave Widening (Meeker St north to 218th block) - Widen to 7 lanes.	16,150,000
	W-4	84th Ave S (SR 167 to S 212th St) - Widen to 7 lanes.	5,106,000
	W-5	116th Ave SE (SE 208th St to SE 256th St) - Widen to 5 lanes with bike lanes.	46,430,000 (17,730,000)
	W-6	132nd Ave SE (SE 200th St to SE 236th St) - Widen to 5 lanes with bike lanes.	20,990,000 (0)
	W-7	S 228th St Corridor-Phase I (Military Rd S from SR 516 to Bolger Road) - Widen to 5 lanes.	Completed
	W-8	James St (Union Pacific Railroad to 4th Ave N) - Provide eastbound and westbound exclusive left turn lanes.	1,800,000
	W-9	132nd Ave SE-Phase III (SE 248th St to SE 236th St) - Widen to 5 lanes with bike lanes.	11,950,000
	W-10	Military Rd S (S 272nd St to S 240th St) - Widen to provide a center turn lane, bike lanes and sidewalks.	13,630,000
	W-11	W Meeker St-Phase II (Lake Fenwick Road to east side of the Green River) - Widen to 5 lanes including a new bridge.	70,000,000
	W-12	W Meeker St Phase I (64th Ave S to Green River Bridge) - Widen to 5 lanes.	5,960,000
	W-13	SE 248th St (116th Ave SE to 132nd Ave SE) - Construct a 3 lane roadway.	5,640,000
	W-14	SE 256th St-Phase II (SR 516 (Kent-Kangley Rd) to 116th Ave SE) - Construct a 5 lane roadway with bike lanes.	5,100,000
	W-15	SE 256th St-Phase III (132nd Ave SE to 148th Ave SE) - Widen to 5 lanes with bike lanes.	16,980,000
	W-16	S 277th St Corridor (116th Ave SE from Kent-Kangley Rd (SR 516) to SE 256th St) - Widen to 5 lanes with bike lanes.	7,500,000
	W-17	132nd Ave SE-Phase II (Kent-Kangley Rd (SR 516) to SE 248th St) - Widen to 5 lanes with bike lanes.	23,200,000
	W-18	S 272nd St-Phase II (Pacific Hwy S to Military Rd S) - Add 2 HOV lanes and a center left-turn lane.	13,916,000
	W-19	132nd Ave SE-Phase I (SE 288th St to Kent-Kangley Rd (SR 516)) - Widen to 5 lanes with bike lanes.	13,120,000

	TMP Project #	Capital Project (location and description)	Cost ($) (City Share)
		Total Cost (City Share of Cost)	$ 288,895,000 $ (235,151,000)
Railroad Grade	R-1	S 212th St/Union Pacific Railroad - Grade Separation.	33,000,000
	R-2	S 212th St/Burlington Northern Santa Fe Railroad - Grade Separation.	33,000,000
	R-3	S 228th St / Union Pacific Railroad - Grade Separation.	24,200,000
	R-4	S 228th St / Burlington Northern Santa Fe Railroad - Grade separation.	23,000,000
	R-5	Willis St (SR 516)/Union Pacific Railroad - Grade Separation.	26,500,000
	R-6	Willis St (SR 516)/Burlington Northern Santa Fe Railroad - Grade Separation.	22,600,000
Total Cost			$ 162,300,000
Grand Total Cost (City Share of Cost)			$ 599,219,500 $ (502,357,500)

FUTURE LEVEL OF SERVICE

The future PM peak hour levels of service for the 2030 Baseline and 2030 Preferred network are displayed in **Table 9.11. Figure 9.11** displays the results for the 2030 Baseline and **Figure 9.12** shows the LOS for the 2030 Preferred network.

Under the Baseline scenarios traffic operations are expected to degrade throughout the City. About half of the corridors will operate at LOS F with the remainder operating at LOS E. The City defines satisfactory LOS as maintaining an LOS E or better along designated corridors. The SR 99 Corridor and downtown Kent are allowed to operate at LOS F.

Corridors that operate at LOS F typically have heavy congestion and are impacted by poorly operating intersections. The following section describes the corridors that would operate at LOS F under the Baseline conditions along with the improvements needed to meet the acceptable LOS operations.

Corridor 5 (Smith Street/ Canyon Drive/ 256th Street/Kent-Kangley Road) This heavily congested corridor is forecast to operate worse in 2030 with four of the nine intersections operating at LOS F. The intersections within the corridor that operate at LOS F during the PM peak hour are: SE 256th Street/Jason Avenue, SE 256th Street/SR 515 (Benson), Kent-Kangley Road/116th Avenue SE and Kent-Kangley Road/132nd Avenue SE. The preferred network's intersection improvements at 108th Avenue SE and 132nd Avenue SE will allow

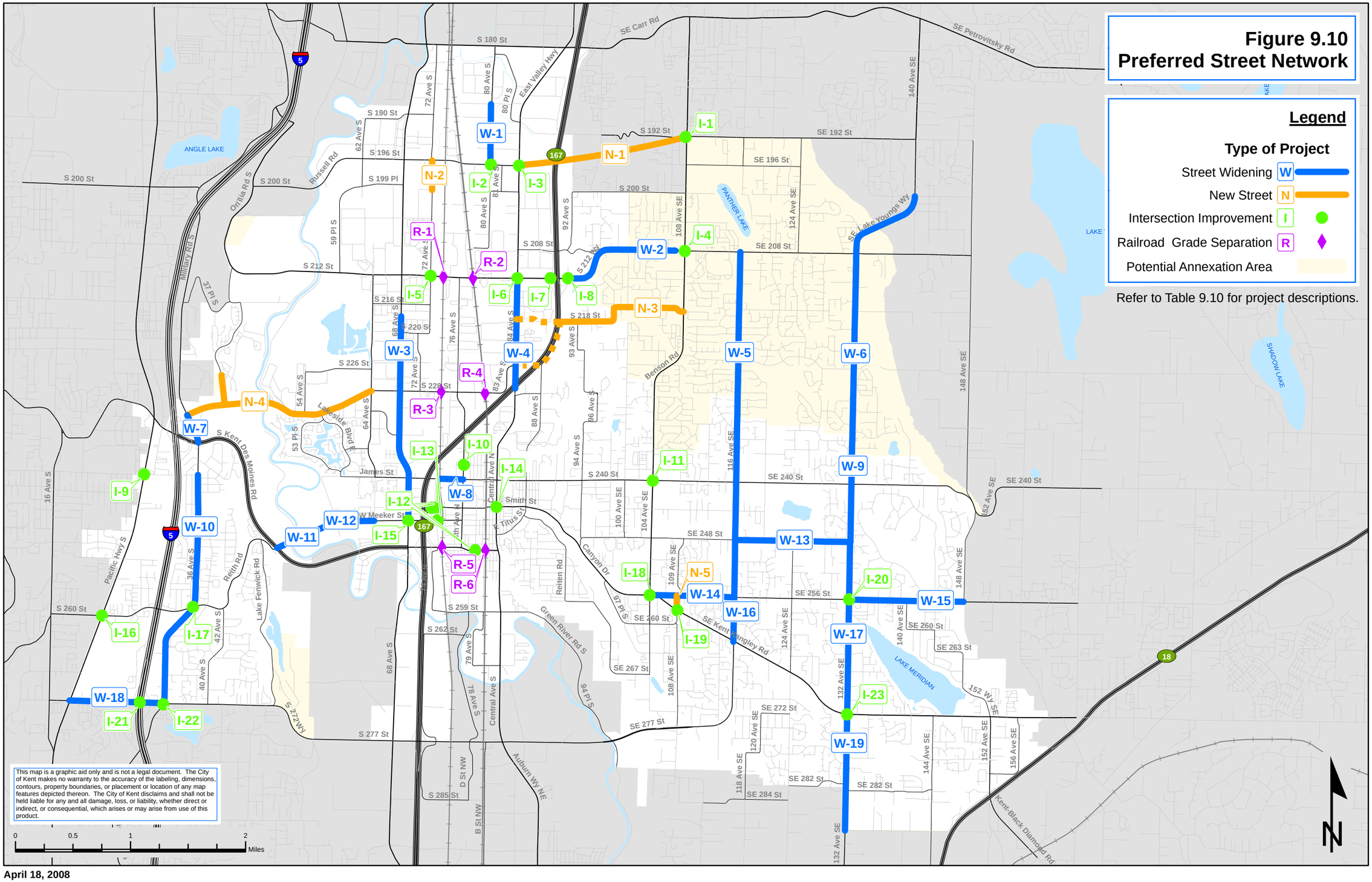
Figure 9.10
Preferred Street Network

Legend

Type of Project

- Street Widening W
- New Street N
- Intersection Improvement I
- Railroad Grade Separation R
- Potential Annexation Area

Refer to Table 9.10 for project descriptions.



April 18, 2008

the corridor to meet the LOS E threshold. The corridor will also serve transit and will also have bike lanes.

Corridor 6 (S 260th Street/ Reith Road/W Meeker Street) – By 2030, four of the seven intersections along this corridor are likely to operate at LOS F. Heavy congestion along Meeker Street between Washington Avenue S and 64th Avenue S contribute to the poor performance of this corridor. The preferred network would widen Meeker Street to five lanes between Lake Fenwick Road and 64th Avenue S and add turn pockets and signal phasing changes at the Washington Avenue S intersection, resulting in a corridor improvement to LOS D. The corridor will also serve transit and will have bike lanes.

Corridor 8 (S 272nd Street) – S 272nd Street currently operates at LOS F. The City and State have planned improvements that would widen the roadway and modify the freeway access ramps. The proposed improvements would allow S 272nd Street to meet the LOS E threshold. The corridor will have bike lanes when completed.

Corridor 9 (Pacific Highway S) This corridor is classified by the State as a Highway of Statewide Significance, and the traffic impacts are primarily related to traffic traveling through the City of Kent. This corridor is forecast to operate at LOS F under future conditions. The City has assumed that this corridor is built-out to its maximum configuration and has set a LOS F threshold. While general traffic conditions will worsen, this corridor has existing HOV lanes that can serve a future bus rapid transit (BRT) system. Therefore, the LOS will be substantially better for transit and carpool users. The corridor also accommodates bicycles.

Corridor 10 (Military Road) - Between 231st Street and S 272nd Street, Military Road is a two-lane road, lacking turn lanes at intersections and driveways. The lack of adequate capacity at the intersections of Military Road/S 272nd Street and Military Road/SR-516 results in corridor congestion during peak commuter periods. The preferred alternative would widen the roadway to three lanes. New turn lanes at Military Road/Reith Road and an additional southbound lane at Military Road/S 272nd Street would bring the corridor up to LOS D. This corridor serves transit and will have bike lanes.

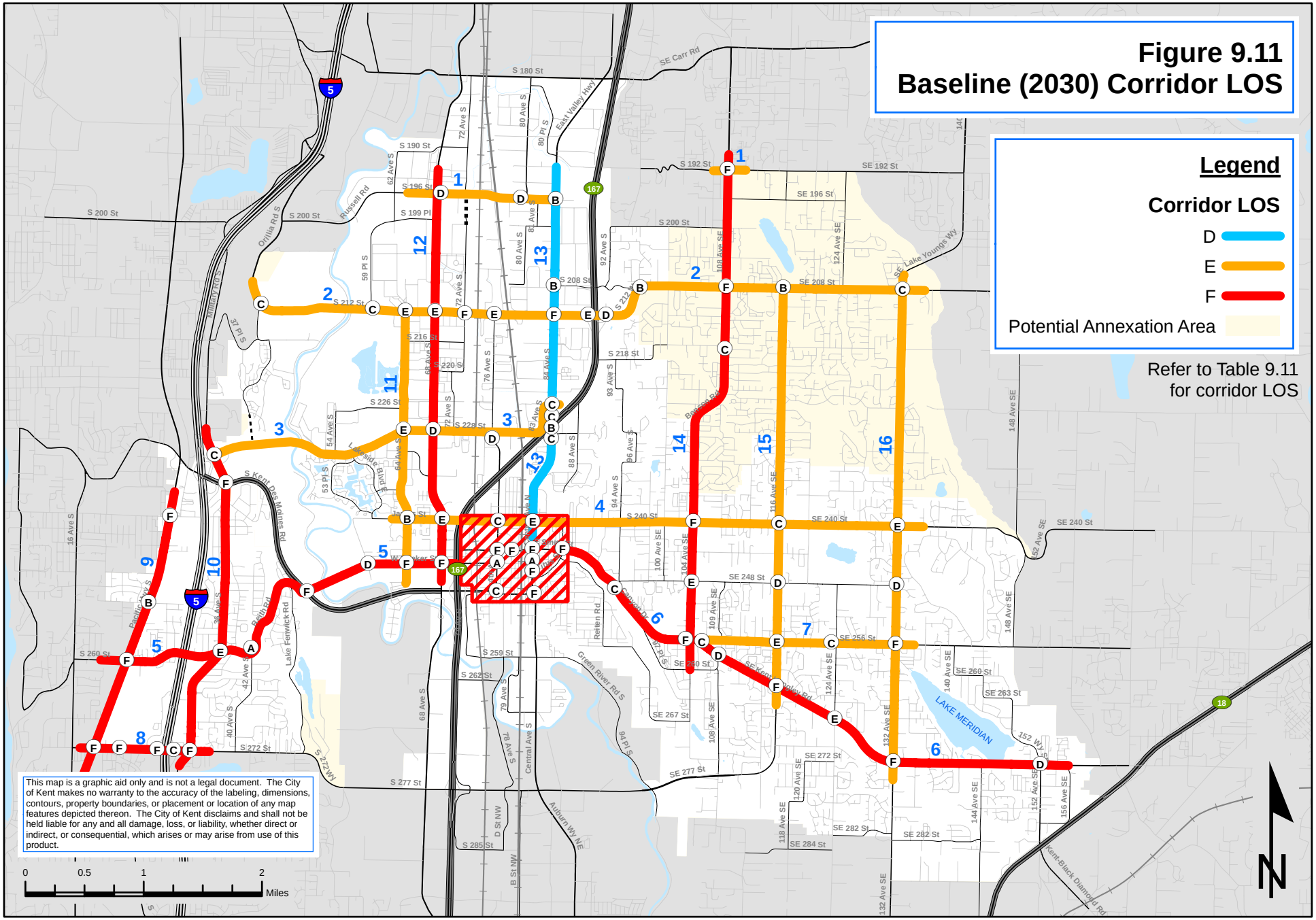
Table 9.11 Future Corridor LOS

ID	Corridor/Area	From	To	LOS Baseline	LOS Preferred Network
1	S 196th St/SE 192nd St Corridor	W Valley Highway	SR 515 (Benson)	E	D
2	S 212th St/S 208th St	42nd Ave S	132nd Ave SE	E	D
3	S 224th St/S 228th St	SR 516/Military Road	S 228th St/ 84th Ave S	E	E
4	James St/SE 240th St	64th Ave S	132nd Ave SE	E	E
5	S 260th St/ Reith Road/ W Meeker St	SR 99	Washington Ave	F	D
6	Smith St/ Canyon Drive/ 256th St / Kent-Kangley Rd	Jason Ave	152nd Way SE	F	E
7	S 256th St	SR 515	132nd Ave SE	E	D
8	S 272nd St	SR 99	Military Road	F	E
9	Pacific Highway S	S 240th St	S 272nd St	F	F
10	Military Road	231st St	S 272nd St	F	D
11	64th Ave S	S 212th St	Meeker St	E	D
12	Washington Ave/ 68th Ave S/ W Valley Hwy	S 196th St	Meeker St	F	E
13	Central Ave/ 84th Ave S	S 196th St	James St	D	D
14	SR 515/Benson Ave	SE 192nd St	SE 256th St	F	E
15	116th Ave SE	SE 208th St	Kent-Kangley Road	E	D
16	132nd Ave SE	SE 208th St	Kent-Kangley Road	E	D
17	Downtown Area	4th Ave N to E Titus St		F	F

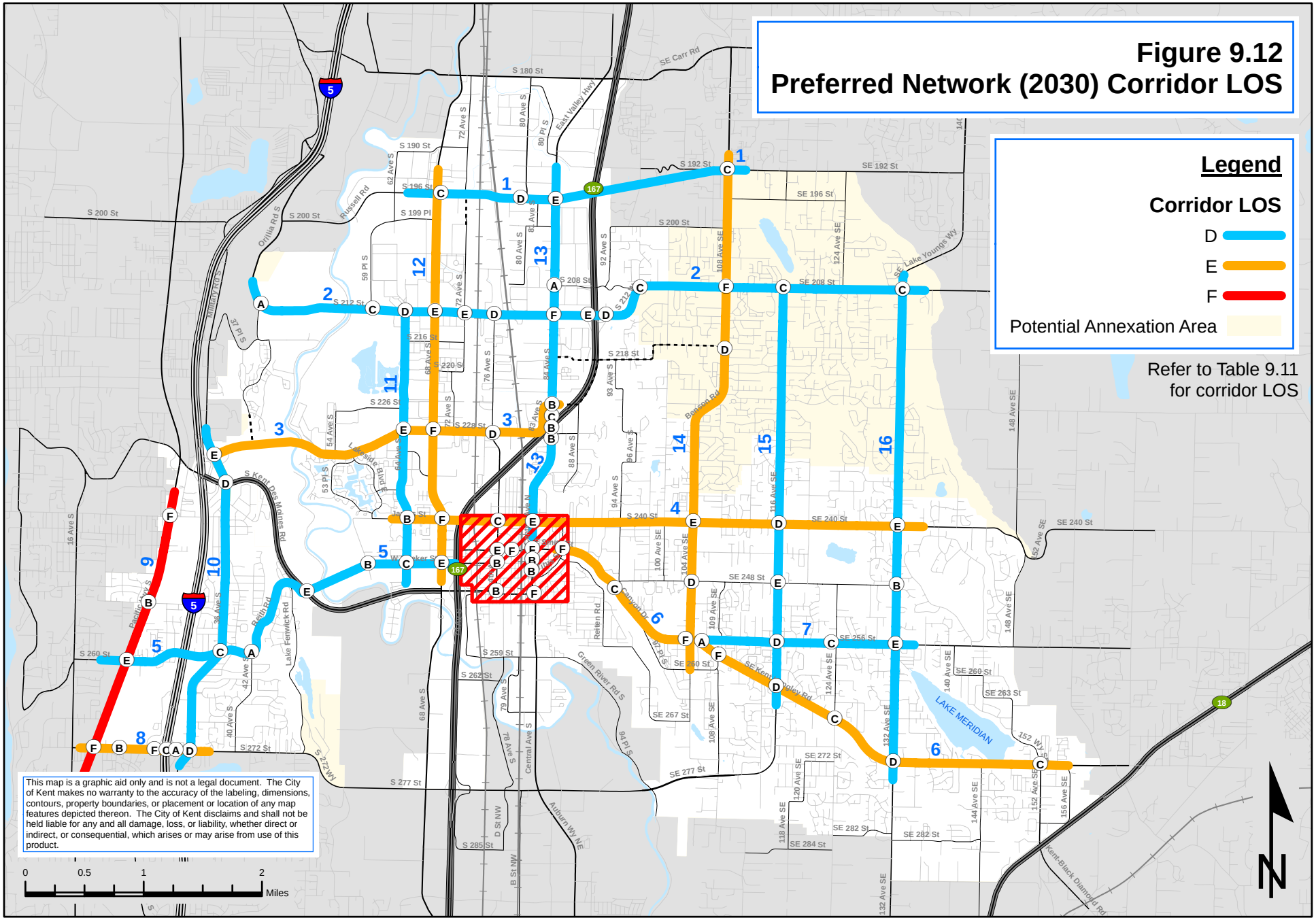
Corridor 12 (Washington Ave/ 68th Ave S/ W Valley Hwy) – This stretch of West Valley Highway is a primary north-south route through Kent and an important truck route. The corridor also serves high transit volumes. The section between James Street and the Meeker Street intersection is forecast to have high delays during the 2030 PM peak hour. The preferred network would widen Washington Avenue to seven lanes from Meeker Street to approximately the 218th Street block to provide additional vehicle capacity along this corridor. With the preferred network improvements, the corridor would operate at LOS E during the 2030 PM peak hour.

Corridor 14 (SR 515/Benson Ave) – This is the primary north-south route to Kent's East Hill and serves as a major transit corridor. With four to five lanes in its current configuration, this roadway has been widened to its practical limits. Improvements at major intersections (S 192nd Street, S 208th Street, S 256th Street) along the corridor and widening of parallel routes on 116th Avenue SE and 132nd Avenue SE would bring this corridor to the City's LOS E threshold.

Corridor 17 (Downtown Kent) - Downtown Kent is treated as a zone that extends from 4th Ave N to E Titus Street (east-west) and from James Street to W Willis Street (north-south). The downtown area accommodates all modes – cars, bus transit, commuter trains, pedestrians and bicyclist. Downtown operates as a hub of the transportation system with major roadways radiating out from its core, resulting in congested conditions. The preferred network includes a few targeted intersection modifications downtown, but no major street widening. This approach matches the City's desire not to impact business or degrade pedestrian mobility. The City will allow LOS F operation within the Downtown zone and encourage public transportation to provide growth in person-carrying capacity.



April 18, 2008



April 18, 2008

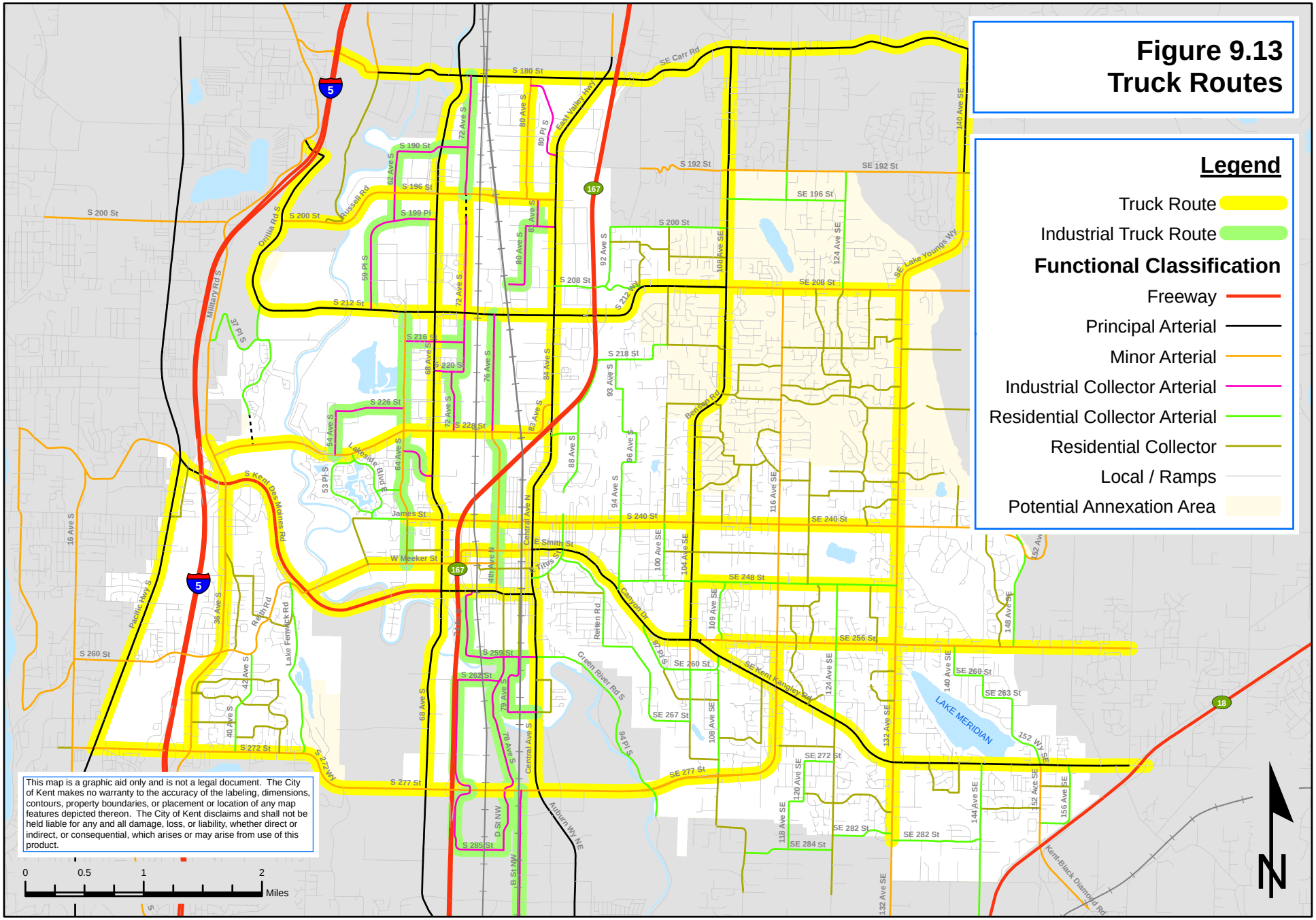
TRUCK ROUTES

Kent has substantial industrial and commercial development throughout the City. The City is committed to supporting local industry, business, and residential needs and recognizes that the ability to ship and receive freight is essential to the success of many businesses. The City will continue to collaborate with local businesses to improve freight access, while maintaining the roadway infrastructure, whenever possible.

As noted earlier in Chapter 2, Kent is one of the region and west coast's largest distribution centers. More than 1,400 trucks enter or leave Kent each day. The forecasts by the state show that Kent will continue as a center for warehousing and distribution within the region. The City will accommodate trucks by providing truck routes that encourage distribution businesses to locate in Kent.

The City expects that the majority of regional truck trips would take place on the State highways. However, recognizing that trucks need to travel on city streets to access the State highways and also need to travel into and within the City, Kent has designated a network of north-south and east-west corridors as truck routes. **Figure 9.13** shows the designated truck routes. These truck routes will incorporate special design considerations such as wider turning radii and stronger pavements.

The City has also designated a set of industrial truck routes for several north-south roads parallel to and adjacent to SR 167. These routes are located within the areas zoned as manufacturing and industrial sites and provide local truck travel options.



April 18, 2008

PRIORITIZATION OF STREET PROJECTS

The street projects contained in the 2030 Preferred Network vary in size, scope, and benefits. Since all of these projects cannot be built immediately, the City prioritized the project to select which projects to do first, and which can be done at a later date.

Prioritization Criteria

The TMP Task Force was asked to develop a set of criteria to help the City prioritize the projects. The criteria were based on the community values identified at a workshop that updated the City's transportation policies. Several criteria were selected to rank the street projects. These criteria, covering the important issues of project cost, performance, values, as well as tangential benefits to the transportation system and community, are as follows:

- Mobility: The ease with which one can move about the city and the region, including traffic mobility, regional mobility, freight movements, and preservation (improvements) of the roads
- Safety: Traffic safety improvements at high accident locations (HAL); improvements that reduce travel times for EMS vehicles
- Multimodal: Street improvements that support other modes including, transit mobility, pedestrian mobility, bicycle mobility and connectedness/ accessibility (completing missing links)
- Environment: Environmental preservation (protecting open spaces) and neighborhood street protection
- Implementation: Cost effectiveness (per $1000 investment); funding commitment; project readiness (is it ready to go forward)

Measurements of the criteria include improvements in LOS; the degree to which the project supports transit operation on primary transit corridors; improvements that benefit pedestrians based on composite accessibility index; improvements provided for bicycle facilities; and the degree to which the project completes missing links or improves access.

The results of the streets rating process are summarized in **Table 9.12** and depicted in **Figure 9.14.** The projects are grouped into quartiles based upon the overall project ratings. Each project has different rankings by criteria. Few projects rank the same across all criteria. The highest rated projects contain the highest number of good criteria rankings. The rating for each criterion was multiplied by the criterion weight to produce a project "score". For example, a project that achieved a rating for a criterion with a weight of 30 would create a score of 2 x 30 = 60 points. The TMP provides additional details on the rankings.

Table 9.14 Street Project Evaluation Results

	Rating	TMP Project #	08-13 TIP Reference	Capital Project	City's Share of Project Cost		PRIORITY RANKINGS				
							Mobility	Safety	Multimodal	Environment	Implementation
1ST QUARTILE	245	W-3	28	SR 181/West Valley Hwy/Washington Ave - Widening (Meeker St north to 218th block) - Widen to 7 lanes.	$ 16,150,000						
	230	W-16	1	S 277th St Corridor (116th Ave SE from Kent-Kangley Rd (SR 516) to SE 256th St) - Widen to 5 lanes with bike lanes.	7,500,000						
	230	W-4	6	84th Ave S (SR 167 to S 212th St) - Widen to 7 lanes.	5,106,000						
	230	R-4	7	S 228th Street / Burlington Northern Santa Fe Railroad - Grade separation.	23,000,000						
	220	I-21	17	I-5 / S 272nd Street Interchange Reconstruction - Phase I - Provide transit and HOV Direct Access between S 272nd Street and I-5.	42,330,000						
	220	I-9	116	S 240th Street/SR99 - Change signal phasing	420,000						
	220	I-8	111	S 212th Street/SR 167 Northbound Ramp -Modify signal timing by making northbound right turn free.	220,000						
	220	I-14	104	Smith Street/Central Avenue - Revise southbound and northbound turn lane assignment.	20,000						
	215	I-18	106	SE 256th St/SR515-Benson - Add northbound right turn lane and change signal phasing.	550,000						
	205	W-8	4	James St (Union Pacific Railroad to 4th Ave N) - Provide eastbound and westbound exclusive left turn lanes.	1,800,000						
	205	I-5	108	S 212th Street/72nd Avenue S -Add southbound dual left turn lanes	330,000						
	205	I-10	5	4th Avenue N/Cloudy St - Provide northbound and southbound exclusive left turn lanes. Install traffic signal.	2,160,000						

	Rating	TMP Project #	08-13 TIP Reference	Capital Project	City's Share of Project Cost	PRIORITY RANKINGS				
						Mobility	Safety	Multimodal	Environment	Implementation
2ND QUARTILE	200	I-23	112	Kent-Kangley Rd/132nd Ave SE -Add northbound and southbound dual left turn lanes.	$ 1,360,000					
	200	W-18	27	S 272nd St-Phase II (Pacific Hwy S to Military Rd S) - Add 2 HOV lanes and a center left-turn lane.	13,916,000					
	200	N-5	29	108th Ave SE (SE Kent-Kangley Rd (SR 516) to SE 256th St) - Extend roadway connection to SE 256th St.	2,500,000					
	195	W-19	32	132nd Ave SE - Phase I (SE 288th St to Kent-Kangley Rd (SR 516)) - Widen to 5 lanes with bike lanes.	13,120,000					
	195	I-20	10	SE 256th Street and 132nd Ave SE - Extend northbound left, southbound left, and westbound left turn pockets. Construct new eastbound and southbound right turn lanes.	302,000					
	185	I-11	107	SE 240th Street & SR 515 -Add dual northbound and southbound left turn lanes. Add northbound and southbound right turn pockets.	1,650,000					
	180	W-9	34	132nd Ave SE-Phase III (SE 248th St to SE 236th St) - Widen to 5 lanes with bike lanes.	11,950,000					
	180	N-2	13	72nd Ave S (S 200th St to S 196th St) - Extend roadway to connect to S 196th St.	1,015,000					
	180	N-3	16	S 224th St (84th Ave S to 104th Ave SE (Benson Rd-SR515) - Extend roadway to conect to E Valley Hwy and widen existing road to 3-5 lanes	24,983,000					
	165	R-6	22	Willis Street (SR 516)/Burlington Northern Santa Fe Railroad - Grade Separation.	22,600,000					
	165	R-5	21	Willis St (SR 516)/Union Pacific Railroad - Grade Separation.	26,500,000					
	165	R-2	24	S 212th St/Burlington Northern Santa Fe Railroad - Grade Separation.	33,000,000					
	165	R-1	23	S 212th St/Union Pacific Railroad - Grade Separation.	33,000,000					

	Rating	TMP Project #	08-13 TIP Reference	Capital Project	City's Share of Project Cost	PRIORITY RANKINGS				
						Mobility	Safety	Multimodal	Environment	Implementation
3RD QUARTILE	160	W-13	12	SE 248th St (116th Ave SE to 132nd Ave SE) - Construct a 3 lane roadway.	$ 5,640,000					
	160	I-12	11	Smith St/Lincoln Ave (Smart Growth Initiative) - Add eastbound left turn pocket.	1,990,500					
	160	W-14	15	SE 256th St-Phase II (SR 516 (Kent-Kangley Rd) to 116th Ave SE) - Construct a 5 lane roadway with bike lanes.	5,100,000					
	150	I-16	117	S 260th St/SR 99 - Add westbound dual left turn lane. Add eastbound and westbound right turn pockets.	1,180,000					
	150	W-17	33	132nd Ave SE-Phase II (Kent-Kangley Rd (SR 516) to SE 248th St) - Widen to 5 lanes with bike lanes.	23,200,000					
	145	W-10	26	Military Rd S (S 272nd St to S 240th St) - Widen to provide a center turn lane, bike lanes and sidewalks.	13,630,000					
	140	W-2	102	S 212th Street (SR 167 to 108th Avenue SE) -Widen to 5-6 lanes	6,046,000					
	140	W-15	35	SE 256th St-Phase III (132nd Ave SE to 148th Ave SE) - Widen to 5 lanes with bike lanes.	16,980,000					
	140	R-3	25	S 228th St / Union Pacific Railroad - Grade Separation.	24,200,000					
	135	I-15	103	Meeker St/Washington Ave - Modify signal phasing. Add eastbound and westbound right turn pockets.	780,000					
	120	I-7	110	S 212th Street & SR167 Southbound Ramp - Add soutbound left turn lane	400,000					
4TH QUARTILE	115	I-17	18	Military Rd S/Reith Rd - Widen intersection to provide turn lanes on all approaches.	$ 1,945,000					
	110	I-6	105	S 212th Street/84th Avenue S - extend eastbound left turn lane and northbound and southbound dual left turn lanes.	1,710,000					

						PRIORITY RANKINGS				
Rating	TMP Project #	08-13 TIP Reference	Capital Project	City's Share of Project Cost		Mobility	Safety	Multimodal	Environment	Implementation
100	W-5	100	116th Ave SE (SE 208th St to SE 256th St) - Widen to 5 lanes with bike lanes.	17,730,000						
100	N-1	37	SE 192nd Street (84th Avenue SE to 108th Avenue SE) -Create new roadway connection with 4-5 lanes and bicycle lanes	14,329,000						
95	I-22	115	S 272nd St/Military Rd -Add a southbound through lane at intersection. Add northbound dual left turn lanes.	1,540,000						
95	I-2	113	S 196th Street/80th Avenue S - Change intersection phasing and lane approaches.	250,000						
95	I-19	109	Kent-Kangley Rd/108th Avenue SE -Add eastbound and westbound dual left turn lanes. Add eastbound right turn pocket. Change northbound right turn phasing.	1,410,000						
95	I-13	8	W Meeker St and W Smith St - Interconnect Interurban Trail crossing signals.	342,000						
90	W-12	30	W Meeker St Phase I (64th Ave S to Green River Bridge) - Widen to 5 lanes.	5,960,000						
50	I-3	114	S 196th Street/84th Avenue S -Add eastbound right turn pocket and southbound dual left turn lanes	1,190,000						
45	W-11	31	W Meeker St-Phase II (Lake Fenwick Road to east side of the Green River) - Widen to 5 lanes including a new bridge.	70,000,000						
25	W-1	19	80th Ave S Widening (S 196th St to S 188th St) - Widen to 5 lanes.	1,323,000						
			Total	$ 502,357,500						

Figure 9.14
Prioritized Street Projects

Legend

Project Priority Quartile

- Top 25%
- 50 - 75%
- 25 - 49%
- Lower 25%
- Project NOT Prioritized Outside of City
- Potential Annexation Area

0 0.5 1 2 Miles

N

April 18, 2008

NON-MOTORIZED FACILITIES

Walking and cycling are integral components of the City's multimodal transportation system. Walking, considered the preferred mode for short trips, is the most affordable and accessible of all transportation modes. It is also clean, easy on the City's infrastructure, healthy for the individual, and integral to community livability. In the last several decades, Kent has annexed many neighborhoods where streets were not built with sidewalks or the sidewalks are in need of repair. In addition, bicycles, scooters and inline skating provide teenagers, adults and even older residents a choice of movement.

The City is committed to providing the benefits of walking and cycling to all residents by supporting pedestrian and bicycle travel as a safe, efficient, desirable, and accessible mode throughout the City's neighborhoods. A key part of the City's multimodal transportation plan is an interconnected system for those who walk or use a bicycle. A Non-Motorized Transportation Study was conducted to inventory and identify critical gaps in the City's pedestrian and bicycle systems and provide comprehensive recommendations for future facilities,

The pedestrian and bicycle inventory was integrated into the City's Geographic Information System (GIS). The GIS data were used to conduct spatial analyses[1] to identify priority pedestrian and bicycle improvements, while considering accessibility to public transit, schools, parks, civic centers and other critical factors. The recommendations for non-motorized improvements were coordinated with the other modal elements and financial planning efforts in the Transportation Master Plan.

AMERICANS WITH DISABILITIES ACT (ADA)

The Non-Motorized Transportation Study addressed the guidelines and regulatory requirements of the Federal Americans with Disabilities Act (ADA). Of the five titles or parts to the ADA, Title II is of most concern to the City of Kent. Title II requires a public entity to evaluate its services, programs, policies, and practices to determine whether they are in compliance with the nondiscrimination requirements of the ADA. The ADA requires that a Transition Plan be prepared, to describe any structural or physical changes required to make programs accessible to all and to outline how they will be made.

[1] GIS technology provides a powerful way to see things in context. Spatially explicit models study relationships between population, land use, and the environment. Mapping can also be very useful in assessing the validity of survey data.

INVENTORY OF PEDESTRIAN FACILITIES

Commensurate with the ADA requirements for inventory and self-evaluation, the City targeted a significant portion of the overall Non-motorized Transportation Study to complete a walking inventory of the major street-side pedestrian system within the Kent urban area. The pedestrian plan was developed to address the needs identified during the assessment of the existing system. Community priorities helped the City sort the projects into short term and long term projects.

In early 2005, the City inventoried the pedestrian facilities along Kent's major streets. The GPS data collection was focused on arterial and collector streets, while local (residential) streets were inventoried using the most current aerial photographs and the City's GIS database. The resulting inventory, is a map and database of existing and missing sidewalks and curb ramps. The inventory database, formatted specifically for GIS analysis, was added to the City's other GIS-based mapping themes for analysis and evaluation. More than 450 miles of existing and missing sidewalks and 1,950 street corners (curb ramps) were inventoried and assessed as part of Kent's required self-evaluation. Additional information for the non-motorized system and detail on their condition are included in the TMP.

Sidewalks

The sidewalk analysis collected information on several characteristics, including the surface conditions, the width, heaving and cracking issues, obstacles blocking portion of the sidewalks, driveway crossings, and missing sidewalks. In general, and over the past 10 to 20 years, the City has been ensuring that sidewalks are constructed on both sides of new streets. As a result, newer subdivisions have few missing sidewalks. A greater number of streets with missing sidewalks are located within older neighborhoods. Approximately 53 percent of Kent's streets have sidewalks on at least one side. Local street sidewalks constitute about 40 percent of the total sidewalk mileage within the Kent urban area. For non-local street sidewalks, most of the existing sidewalks are located along principal arterials, minor arterials and residential collector streets. Only about 18 percent of the sidewalks have some form of a buffer that separates sidewalks from the street and curb section.

Curb Ramps

Of the more than 1,950 street corners inventoried along existing sidewalk corridors, only about 8 percent are missing curb ramps. All other corners have some type of curb ramp to assist the mobility-impaired pedestrian when crossing the street. Characteristics of the existing curb ramps collected include the ramp type, width and top landing.

A number of the existing curb ramps are essentially ADA non-compliant. ADA non-compliance can generally mean that: (a) the ramp width is too narrow; (b) the top landing is either missing or too narrow; or, (c) the ramp slope is too steep. Many of the non-compliant ramps were built before the ADA was passed.

PEDESTRIAN NEEDS ASSESSMENT

As there are many more pedestrian needs than dollars available, the City prioritizes pedestrian improvements. The prioritization method considers the relative cost of a needed improvement and its location. The City seeks to select projects within areas of Kent that require higher levels of pedestrian accessibility. To identify these area, a pedestrian priority index (PPI) was developed based on separate index measures for physical characteristics, called "attributes", and for destinations and activities accessed by walking, called "accessibility" characteristics. The TMP provides a detailed explanation of the analysis summarized in the following section.

Attribute Index

The City prioritized the pedestrian improvements by assigning each sidewalk segment and curb ramp in the GIS database an attribute index value. The attribute index enables the City to consistently measure and quantify problematic sidewalks and curb ramps that may pose as obstacles to the mobility-impaired. Sidewalks were scored in seven categories with a maximum possible score of 35. There were values for sidewalks, missing sidewalks, curb ramps and missing curb ramps with a maximum of 5 points each.

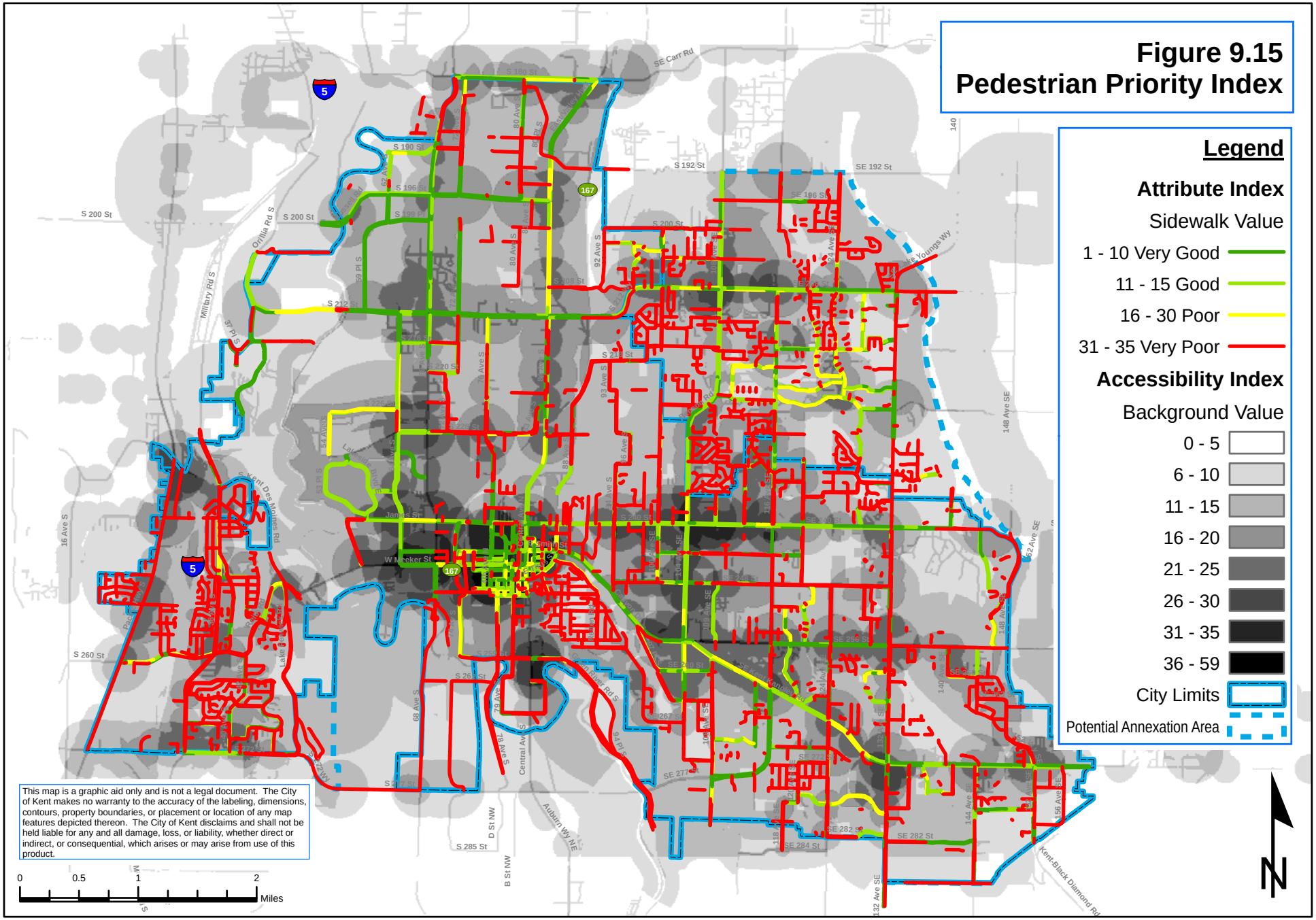
Each existing sidewalk and curb ramp identified for each pedestrian attribute was given a condition rating, ranging from very poor to good or excellent. The current pedestrian system attributes in the poorest condition (or missing) were scored highest in the Attribute Index as the segments in greatest need for improvement.

Accessibility Index

The accessibility index identified the proximity of pedestrian facilities to various important trip generators and other transportation facilities. Accessibility indices were established by measuring and scoring the proximity of existing and missing sidewalk segments. Sidewalks were scored in 11 categories from 1 to 5, with a maximum score of 55. Categories included schools, parks, transit signals, bus stops, lower income residences, etc. See the TMP for more detail and example graphics for the accessibility index. The accessibility measures were ranked by the TMP Task Force. To reflect the Task Force's priorities, a slightly higher emphasis was placed on accessibility improvements near schools or along walk-to-school routes, and those near transit facilities.

PEDESTRIAN PRIORITY INDEX (PPI) COMPOSITE SCORE

Using the attribute and accessibility indices, a composite pedestrian priority index (PPI) was developed. The map in **Figure 9.15** shows areas that are in darker shading reflecting higher need for pedestrian accessibility. The map also shows streets with missing sidewalks (automatically mapped and graded as "very poor") and existing sidewalks in poor condition. Those poor or missing sidewalks within the darkest shaded areas are ranked the highest in priority for future improvements. The composite PPI was applied to all sidewalk segments and curb ramp locations, including missing sidewalk segments and missing curb ramps. Potential sidewalk or curb ramp improvements with the highest composite PPI score have the highest priority for future project completion. The City used these values and scoring system as the basic input when prioritizing the pedestrian system improvements.



April 18, 2008

PEDESTRIAN FACILITY RECOMMENDATIONS

Four priority levels were assigned to all pedestrian improvements identified through the PPI analysis: highest, high, medium, and low. As funding for pedestrian improvements is scarce, only the projects scoring in the top three categories are potentially fundable within the next 20 year planning period. The pedestrian plan is a map and list of projects that identify sidewalk and curb ramp improvements and their costs.

For the TMP, projects are categorized in two major priority groups:

- Highest / High - projects that can likely be funded within the next 20 years (generally based on traditional funding sources and levels), and
- Medium - projects will be constructed as additional funding becomes available

Three types of projects are recommended in the Pedestrian Plan: New Sidewalks; Sidewalk Repairs; and New Curbs and Ramps

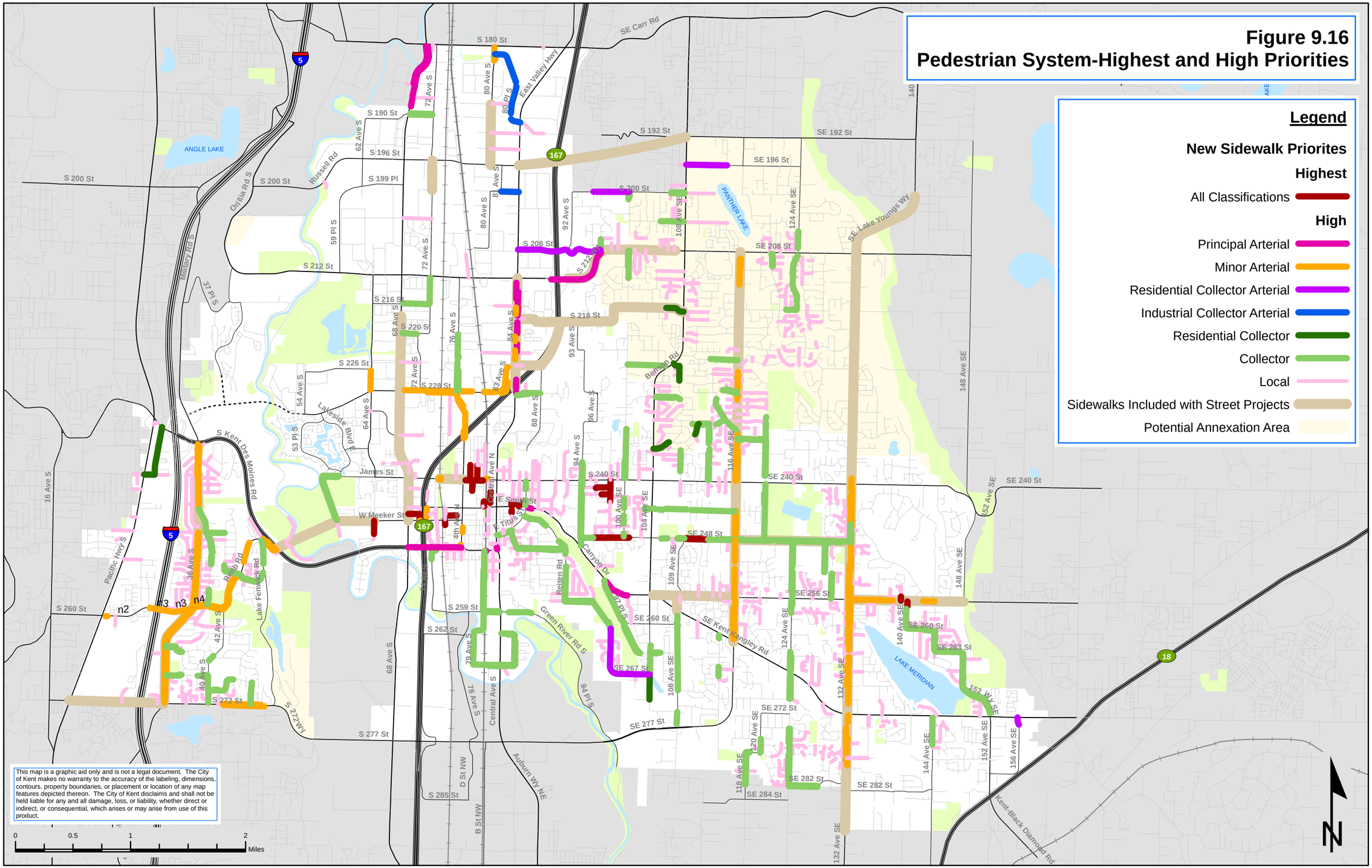
New Sidewalks

Installing new sidewalks along critical street corridors help remove barriers to pedestrians of all types. Those streets that currently do not have sidewalks on one or both sides of the street have been identified for the installation of new sidewalks. These projects, totaling more than 100 miles in new sidewalk construction, provide important system connections to major pedestrian trip generators and safety enhancements for pedestrians traveling along busy city arterial streets. Medium priority projects are located more on the periphery within the urban area and are mapped in the TMP.

Figure 9.16 maps and illustrates the high/highest priorities. These figures show a sizeable increase in new sidewalks that will be constructed as part of the street plan development, which are not itemized in terms of stand-alone pedestrian system needs. Major street projects that add critical sidewalk connections and help complete the pedestrian system include: *Military Road; W Meeker Street; SE 256th Street; 116th Avenue SE; 132nd Avenue SE.*

Other new sidewalks would be built in areas around schools and parks, and near civic and commercial centers. Many of the new sidewalk needs are found along Local streets within neighborhoods, as is the case for the Highest and High priority projects. The Highest/High priority pedestrian system improvements include the completion of sidewalks along Principal and Minor Arterial streets, including portions of: *Military Road; Reith Road; Kent-Des Moines Road; E Smith Road; SE 248th Street; Canyon Drive.*

Figure 9.16
Pedestrian System-Highest and High Priorities



April 18, 2008

Sidewalk Repairs

Reconstructing existing sidewalks with significant structural problems can greatly improve pedestrian safety and access, particularly for the young, elderly and mobility-impaired pedestrians. Existing sidewalks were identified for reconstruction if they are currently rated with either (a) significant-extreme heaving and cracking, (b) substandard width (less than four feet in width), or (c) below average or very poor surface condition. Slightly more than 25 miles of existing sidewalks are in need of repair within the Kent urban area. A map of the existing sidewalks that should be reconstructed due to poor conditions is provided in the TMP. Many of the sidewalks on streets in the downtown area are in need of repair. Other critical corridors in need of sidewalk repairs include portions of *Reiten Road, Kent Kangley Road, 104th Avenue SE, 84th Avenue S and SE 208th Street.*

New Curb Ramps and Repairs

Installing new curb ramps in critical locations will significantly remove obstacles for the mobility-impaired pedestrian. Those street corners that currently do not have curb ramps were identified in the Plan for the installation of new curb ramps. Some of Kent's older curb ramps are in such poor condition that they are more a hindrance and barrier to pedestrians than they are helpful. Through reconstruction these curb ramps can provide the needed safety and access improvements for the mobility-impaired and others. Existing curb ramps were identified for reconstruction if they are currently rated with either (a) very poor surface condition, (b) non-compliant ramp width (less than 3 feet wide), (c) non-compliant top landing (missing or less than 3 feet wide), or (d) non-compliant ramp slope (8.4% or greater).

Individual curb ramp projects are not mapped in this chapter but are included within the City GIS database for reference in project planning. However, the cost for new curb ramps and curb ramp replacements are included in the Pedestrian Plan.

PEDESTRIAN FACILITY COST ESTIMATES

The cost to build new and improved sidewalks and curb ramps fully compliant with the ADA is estimated at about $174 million. **Table 9.13** summarizes these pedestrian improvement cost estimates by priority and improvement type. The cost of constructing new sidewalks is the largest of all improvement costs, and the greatest portion of these costs is amongst the "medium" and "low" priorities. Not all pedestrian improvements are essential for system pedestrian mobility and access.

Low priority, new sidewalk improvement needs are essentially in areas outside many or all of the accessibility measures calculated as part of the study. The "highest" ($2.0 million) and "high" ($ 33.4 million) priority pedestrian improvements are the focus of the recommended study. These improvements are located in areas where pedestrian activity is highest (near

schools and transit stops, or near dense population and employment centers) and needed accessibility improvements are greatest (along or across busy arterials or near civic buildings). The costs of the combined "Highest/High priorities, when averaged over 20 years, results in an annual cost of about $1.7 million to add or repair over 100 miles of sidewalks and curb ramps in Kent's critical corridors.

Table 9.13. Pedestrian Plan Improvement Costs

Pedestrian Improvements	Priority				
	Highest	High	Medium	Low	TOTAL
New Sidewalk	$1.3	$32.1	$67.9	$62.7	$164.0
Sidewalk Repairs		$0.2	$3.2	$0.9	$4.3
New Curb Ramps	$0.2	$0.4	$2.2		$2.8
Curb Ramp Repairs	$0.5	$0.7	$0.5	$1.2	$2.9
Total	$2.0	$33.4	$73.8	$64.8	$174.0

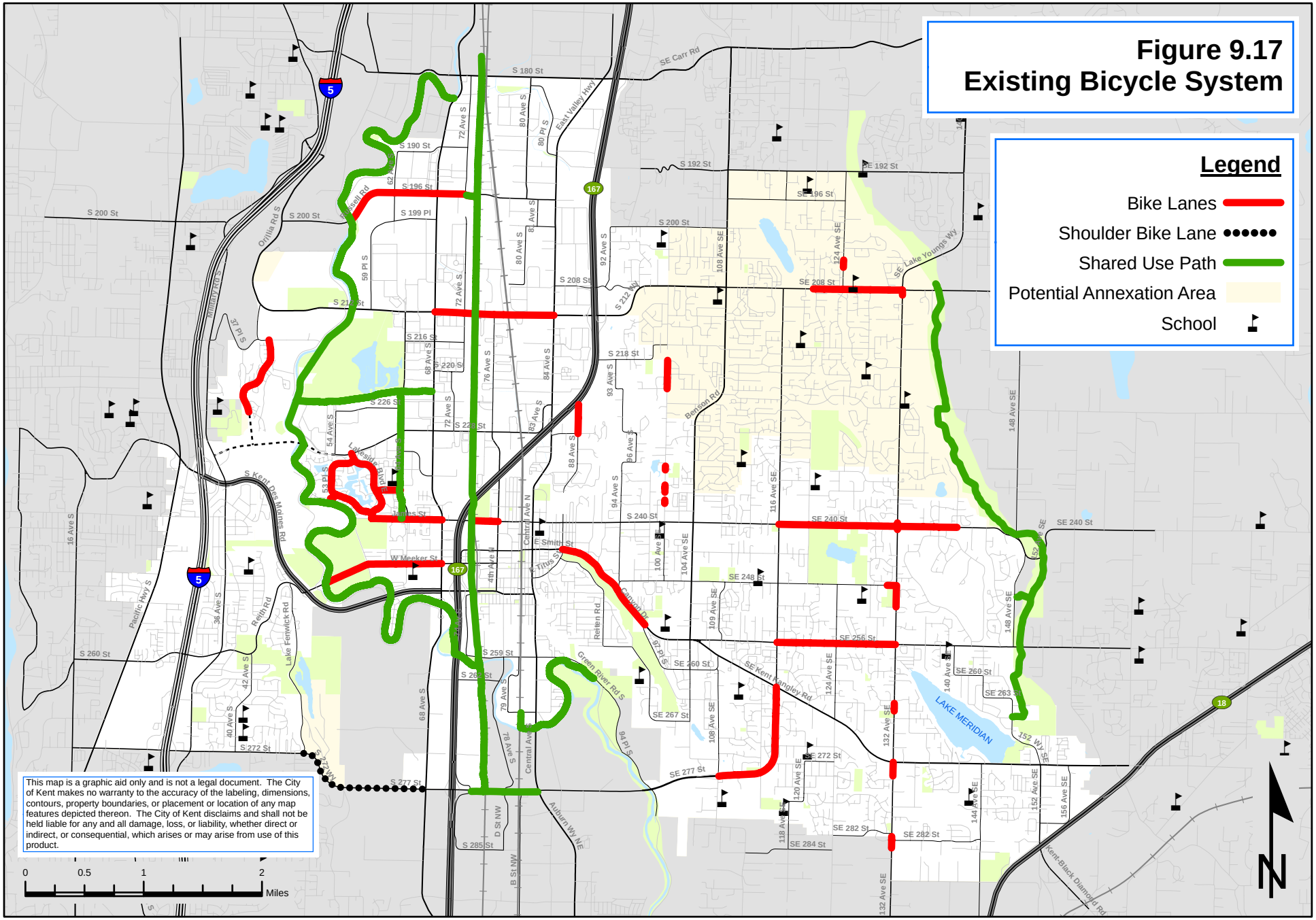
(2006 dollars, in millions)

THE BICYCLE INVENTORY

Bicycling has become more common over the past decade. A variety of bicyclists travel within Kent depending on their skills, confidence and preferences, they use the facilities differently.

The City inventoried the bicycle system including bicycle lanes, shared-use paths and shared travel lane facilities. The inventory expanded the bicycle planning database providing the City data to assess and identify bicycle corridor enhancements that will fill in gaps in the bicycle system. **Figure 9.17** illustrates the existing bicycle system in Kent.

The City of Kent urban area spans both the west and east plateaus on either side of the valley floor, home of the city center. Overcoming the steep terrain has been a major engineering and design issue, for both streets and bicycle system features. Other transportation constraints that have limited bicycle system connectivity in the Kent urban area include SR-167 and the two major railroads. Green River is both a barrier to east-west bicycle travel and also a partial asset with the development of the Green River Trail facilities. As a result of the terrain and barriers, Kent's bicycle system has many excellent features but is lacking a cohesive and connected system.



April 18, 2008

BICYCLE NEEDS ASSESSMENT

Two fundamental building blocks are needed in understanding of Kent's bicycle system: (1) a baseline definition of the various terms and language used in describing bicycle facilities, and (2) acknowledging the physical constraints which have limited Kent's bicycle system development.

Past City plans include a Bikeway or Bikeway Route network. **Figure 9.18** illustrates bikeway facilities similar to those that the City of Kent could use to complete the in future Bicycle system.

Defining Bicycle Users

A variety of bicyclists travel within the City and depending on their skills, their confidence and preferences, fall generally into one of the following categories of users. Each category based on the skills and goals of riders, favors a different bicycle facility type.

Advanced or experienced riders are generally using their bicycles as they would a motor vehicle. They are riding for convenience and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding with motor vehicle traffic; and they prefer sufficient operating space on the road way or shoulder to eliminate the need for either themselves or a passing motor vehicle to shift position.

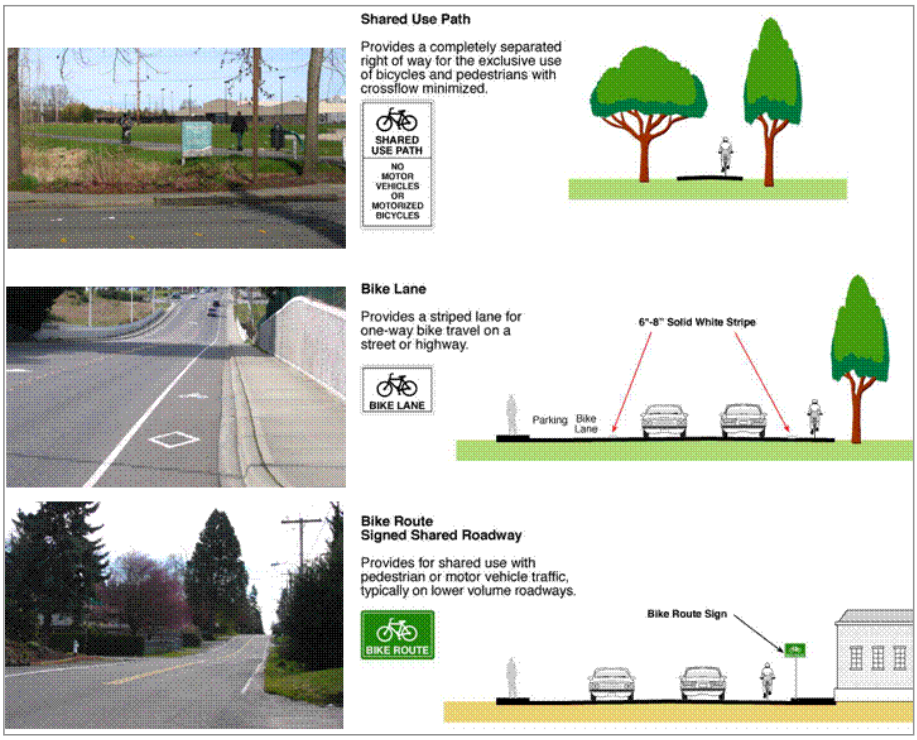
Basic or less confident adult riders may also be using their bicycles for transportation purposes, e.g., to get to the store or to visit friends, but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets.

Children, riding on their own or with their parents, may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities. Residential streets with low motor vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles can accommodate children without encouraging them to ride in the travel lane of major arterials.

EVALUATING THE NEEDS

The City worked with the TMP Task Force and the City's Bicycle Advisory Board to identify candidate corridors for bicycle lane and route enhancements. The bicycle system recommended will expand along corridors to provide better links with major areas of the City, especially between downtown and the east and west Kent neighborhoods.

Figure 9.18. Bikeway Facility Definitions



The TMP Task Force helped establish bicycle plan recommendations. The map indicates the priority bicycle projects identified to be constructed over the next 20 years in Kent. The Kent Bicycle Advisory Board also provided review and comment on the draft bicycle system map. Their suggestions were considered by the Task Force and many are reflected in the final map.

BICYCLE SYSTEM RECOMMENDATIONS

In order to create a bicycle system, the City is tasked with trying to effectively connect its east and west neighborhoods to downtown and industrial employment centers by means of overcoming extremely steep terrain and crossing the Green River, two sets of railroad tracks and SR 167. Few corridors make these connections, and in each corridor the public rights-of-way are constrained or already filled with needed sidewalk and travel lane capacity. The City has examined a number of options to help connect the bicycle system within and through the urban area. Priority was placed to close critical gaps in the existing system. The City identified opportunities to build new (as part of street projects identified in the Transportation Master Plan) or to re-stripe existing arterial streets with bicycle lanes.

NEW BIKE LANES

The arterial street improvements identified in the Transportation Master Plan will add significant mileage to the bike lane network, including major sections of: Military Road, SE 248th Street, SE 256th Street, 116th Avenue SE, and 132nd Avenue SE.

Several arterial streets have sufficient paved width for the possibility of re-striping travel lanes to accommodate on-street bike lanes. These routes provide critical linkages to major cycling activity centers, particularly in downtown, and connections to the shared-use path system. These streets include: S 260th Street/S 259th Place/Reith Road, 76th Avenue S/4th Avenue N, Meeker Street, 92nd Avenue S/SE 200th Street, 132nd Avenue SE, and S 212th Street .

Shared-Lane Routes

For the several corridors that are severely constrained in width, it is difficult to re-stripe the existing streets without removing important travel lane vehicular capacity or incurring significant costs to purchase new right-of-way to widen existing streets. The use of "sharrow" symbols, and sign-posting shared-use routes can help inform motorists and cyclists of corridors intended for significant bike use. See the TMP and the Non-motorized Transportation Study for additional information on marking and posting shared-lane routes.

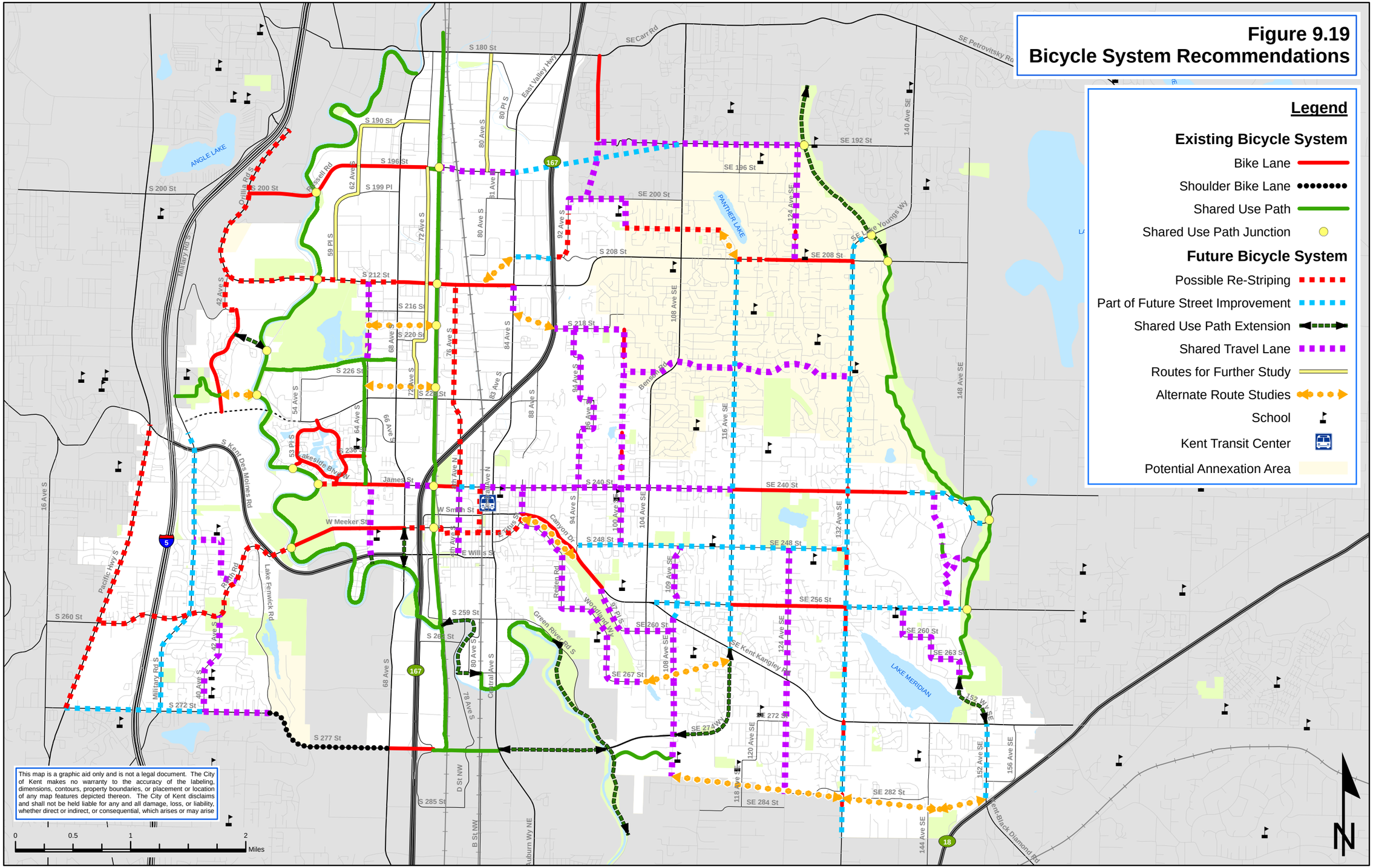
As illustrated in Figure 9.19, the proposed shared-lane routes provide critical linkages for cyclists in a number of corridors, including: Cambridge Street, 72nd Street S, 64th Avenue S, 94th Avenue S, 96th Avenue and Talbot Road, 100th Avenue SE, 108th Avenue SE, 124th Avenue SE, Reiten Road, James Street, SE 224th Street, and SE 192nd Street.

Shared-Use Path Extensions and Connections

The extension of the Green River and Soos Creek trails to the perimeter of the urban area will provide important linkages for future trail users, and provide greater regional access, especially for commuter and recreational cyclists and pedestrians. There are also a number of locations where greater access to the Green River Trail can help develop important east-west bike routes, particularly near Grandview Park and the extension of the Uplands Greenbelt to the Interurban Trail. These projects will require significant design efforts, considering the level of topographic and environmental constraints.

Shared-use paths usually intersect major city arterials at critical junctions. The city has already programmed in the current TIP, intersection traffic control enhancements at some of the Interurban Trail junctions. Similar design treatments may be warranted at other junctions in the future.

Figure 9.19
Bicycle System Recommendations



April 18, 2008

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Shared-use paths usually intersect major city arterials at critical junctions. The city has already programmed in the current TIP, intersection traffic control enhancements at some of the Interurban Trail junctions. Similar design treatments may be warranted at other junctions in the future.

Routes for Future Study

The Bicycle Plan includes various new bike lane, shared-lane and shared-use path connections within a fairly comprehensive system spanning the Kent urban area. However, due to topographical and geographical constraints and obstacles, not all corridors are optimally connected and require further study to identify the appropriate, long-range plan solutions. Routes with severe limitations, primarily overcoming steep grades, include the SE 192nd Street, SE 208th /212th Street, Canyon Drive, and South 272nd Street corridors. Within the TMP a number of connections are identified for further review.

For example, an analysis of future traffic conditions within the Kent industrial area may yield findings that suggest the possibility of re-striping some arterial streets either with on-street bike lanes or as shared-lane facilities. Balancing the needs for trucking and cycling access and mobility will be important in future re-assessments of the Bicycle Plan.

Bicycles in Downtown Kent

There are few streets in the downtown area where bicycle facility enhancements can be made without removing on-street parking (undesirable to local merchants) or travel lanes (undesirable to commuters). Yet, downtown Kent is an important non-motorized destination and inter-modal hub where bicycle lanes might be added by changing current traffic control measures and adding “sharrow” symbols. The TMP provides more detail for potential bicycle facilities on downtown streets, including Meeker Street, 1st Avenue, and 4th Avenue.

WSDOT Coordination

The City coordinates with WSDOT on projects that are on state highways within the City limits. For example, on Pacific Highway South, SR 99, along its western city limits, the City

recently completed streetscape, travel lane and high occupancy vehicle (HOV) lane improvements. . Cyclists in the community would like the HOV lane re-signed and designated to allow for bicycle use. WSDOT does not currently support policy and design criteria for bicycle use within HOV lanes. The City will continue to work with WSDOT for possible future policy revisions or clarification of bicycle access and use of HOV lanes along Pacific Highway 99.

Within the downtown Kent area, Meeker Street provides one of the most important east-west corridor connections. The City proposes to re-stripe Meeker Street east of ST 167 with two travel lanes, a center left-turn lane and bicycle lanes on each side of the street. However, the SR 167 under-crossing will remain a significant barrier to both bicycle and pedestrian travel. As WSDOT continues upgrading projects along SR 167, under-crossing improvements should include enhancements to non-motorized access, circulation and safety by the following: add pedestrian-scale lighting for improved safety (it's dark, even during daylight hours); add bicycle lanes; relocate sidewalks, behind support columns if necessary, to accommodate added bike lanes; and similar non-motorized design and safety issues as part of other SR 167 interchange and under-crossing improvements.

BICYCLE SYSTEM PLAN COSTS

Planning-level costs were estimated for stand-alone bike lane and shared lane re-striping, and the extension of the shared-use path network. The total cost of the bicycle system improvements is estimated at $2.2 million over the next 20 years. As summarized in **Table 9.14**, the total costs of bicycle system priorities results in an annualized cost of slightly more than $111,000. Note that the street projects also include 16 miles of new bicycle routes representing approximately $36 million of additional bicycle investment. The street projects also include 15 miles of new sidewalks.

Table 9.14. Priority Bicycle Improvement Costs

	Miles	Cost	Annual Cost
Bike Lane Signing and Marking	16	$405,000	$20,300
Shared-Lane Signing and Marking	27	$903,750	$45,200
New Shared-Use Path Construction	6	$924,000	$46,200
Total	49	$2,232,750	$111,700

Note: Does not include 16 miles of bicycle lanes provided on proposed street projects, valued at $36 Million.

TRANSIT SERVICE

Transit solutions are an increasingly important element of the Kent local transportation system and the regional system. Improved transit services and new capital investments are integral in meeting the City's land use goals and reducing the magnitude of capital investment needed to maintain roadway level-of-service.

Recent surges in growth have led to increased congestion on Kent roadways and have increased maintenance and capital budget requirements. Attempting to meet travel demand growth through roadway development and traffic management alone is not economically viable and could affect the City's livability.

This section describes the existing transit service and facilities, identifies community needs and observed gaps in service, and recommends service improvements that provide local circulation in the City of Kent and connect Kent residents to other regional communities. The recommendations are based on an extensive needs assessment. Capital improvements and pedestrian projects that support transit service goals are also detailed, as are transit-supportive land use policies.

INVENTORY OF EXISTING TRANSIT SERVICES

King County Metro Transit (KC Metro) and Sound Transit serve the City with fixed route transit and commuter rail service. In addition to regional bus service, KC Metro operates Dial-A-Ride (DART 914/916 and 918) variable routing service. The 914/916 shopper shuttle is funded through an agreement with the City and is operated by the non-profit provider Hopelink. Sound Transit operates both regional bus service and Sounder commuter rail to the Kent Transit Center. KC Metro's Access Transportation Services program offers demand responsive service to those residents that are eligible under the Americans with Disabilities Act (ADA). The following section describes Kent's existing transit service and facilities.

Fixed-Route Service

Existing fixed-route services operating in or through the City of Kent fall into three primary categories:

- Regional Routes – These services cross Metro subarea (Seattle or East County) and/or King County lines - connecting Kent with other regional destinations within King, Snohomish, and Pierce Counties (routes to Seattle are considered regional routes).
- South County Routes – These services provide connectivity between Kent and other South King County communities, such as Renton, Auburn, Tukwila, Des Moines, Covington, and Federal Way.

- Local Routes – These routes exclusively serve the City of Kent - connecting Kent neighborhoods to each other with downtown Kent and with major employment sites.

Table 9.15 lists the KC Metro and Sound Transit routes that operate in these three service categories (as of September 2006). **Figure 9.20** graphically displays the KC Metro bus routes serving the City of Kent overlaid onto the current distribution of population and employment for Kent. Here and throughout this chapter, density information is presented with the use of a bi-chromatic density map that illustrates combined employment and population density by planning zone (K-Zone) to illustrate the relationship between land use and transit demand. Population (or household) densities are displayed using four gradations of blue. Similarly, employment densities are shown via shades of yellow.

Table 9.15. Transit Service

Regional Services	South County Routes	Local Routes
KC Metro Bus Routes: 150, 154, 158, 159, 161, 162, 173, 174, 175, 190, 191, 192, 194, 197, 941, 952 (Boeing Shuttle- Everett) Sound Transit Express: 564, 565, 574 Sound Transit: Sounder Commuter Rail	KC Metro Bus Routes: 153, 164, 166, 168, 169, 180, 183, 247	Kent DART Shuttles 914, 916, 918

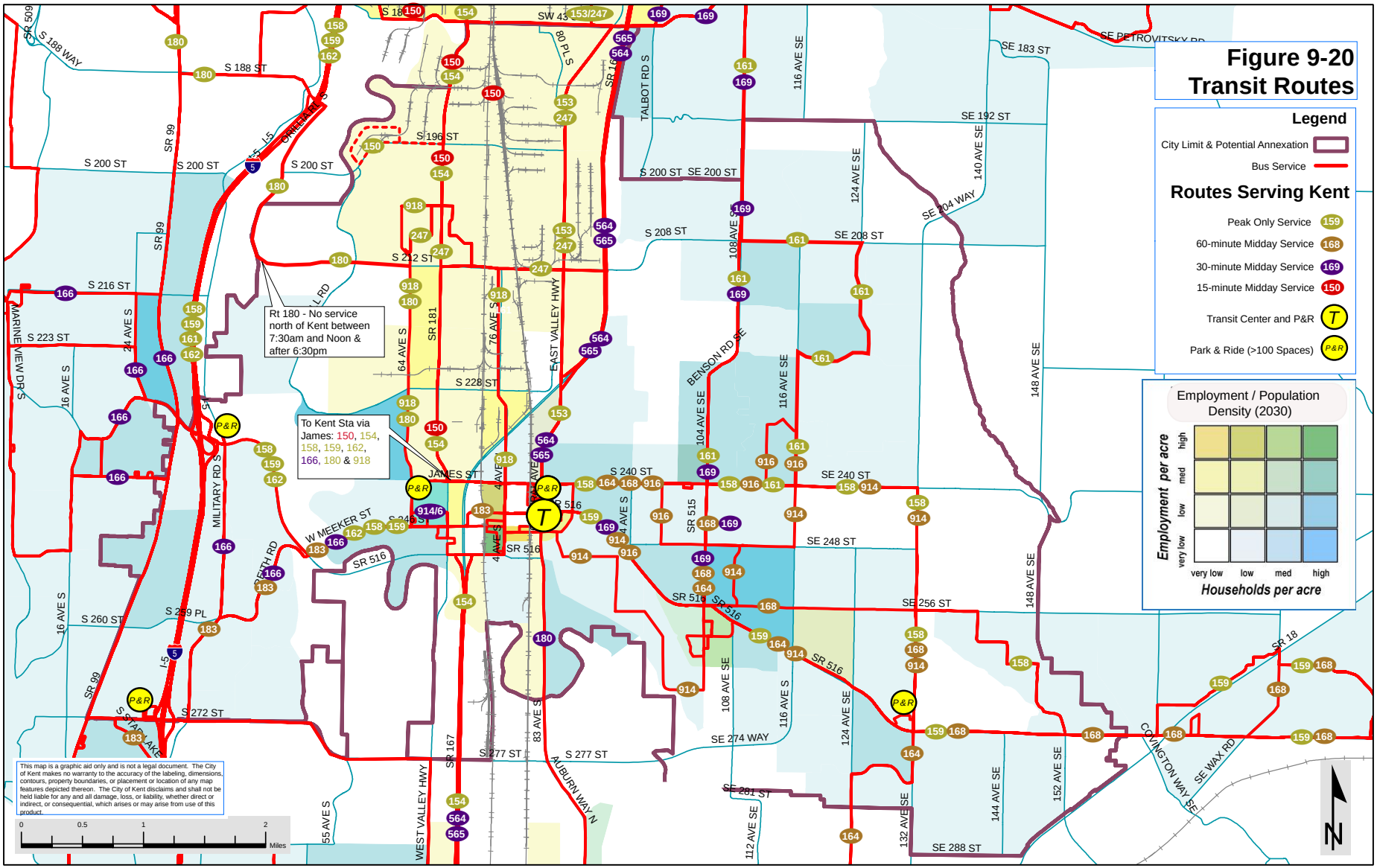
Figure 9-20
Transit Routes
Legend
City Limit & Potential Annexation
Bus Service
Routes Serving Kent
Peak Only Service 159
60-minute Midday Service 168
30-minute Midday Service 169
15-minute Midday Service 150
Transit Center and P&R
Park & Ride (>100 Spaces)
Employment / Population Density (2030)
Employment per acre
very low
low
med
high
Households per acre
Rt 180 - No service north of Kent between 7:30am and Noon & after 6:30pm
To Kent Sta via James: 150, 154, 158, 159, 162, 166, 180 & 918
This map is a graphic aid only and is not a legal document. The City of Kent makes no warranty to the accuracy of the labeling, dimensions, contours, property boundaries, or placement or location of any map features depicted thereon. The City of Kent disclaims and shall not be held liable for any and all damage, loss, or liability, whether direct or indirect, or consequential, which arises or may arise from use of this product.
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S 260 ST
S 272 ST
S 277 ST
SE 183 ST
SE 192 ST
SE 204 WAY
SE 208 ST
SE 240 ST
SE 248 ST
SE 256 ST
SE 274 WAY
SE 281 ST
SE 288 ST
SW 43
SR 509
SR 99
SR 181
SR 516
SR 515
SR 18
SR 167
I-5
TALBOT RD S
ORILLIA RD S
80 PL S
64 AVE S
76 AVE S
24 AVE S
16 AVE S
4 AVE S
83 AVE S
MARINE VIEW DR S
MILITARY RD S
WEST VALLEY HWY
EAST VALLEY HWY
BENSON RD SE
108 AVE SE
104 AVE SE
116 AVE SE
124 AVE SE
140 AVE SE
148 AVE SE
152 AVE SE
144 AVE SE
132 AVE SE
112 AVE SE
116 AVE S
55 AVE S
JAMES ST
W MEEKER ST
AUBURN WAY N
COVINGTON WAY SE
SE WAX RD
P&R
T

Table 9.16 shows the routes by the frequency of service during peak, midday, evening, night, Saturday, and Sunday periods. Service frequency greatly affects the viability of transit service. Low frequency of service often leads to long wait times for bus riders and becomes a deterrent to the use of public transportation, especially for those passengers with other travel options. This is the case east of 108th Avenue where there is no midday service more frequently than 30 minutes.

Transit Ridership Levels

The bus stop boarding levels on the KC Metro routes were not available for the downtown and commuter shuttle ridership by stop. The greatest number of boardings occurs where a high level of service is provided and moderate to high population and/or employment densities exist. High levels of boarding activity also occur at locations where convenient transfers are possible between routes and where automobile drivers can access the transit system via park and ride facilities. The highest boarding activity is at the Kent Transit Center. *Other high boarding areas include James Street, 104th/Benson Road (SR 515), 132nd Avenue SE / Kent-Kangley Road and the Kent-Des Moines Park and Ride. Routes 150, 166, 168 and 169 have the highest ridership.*

Kent Shopper Shuttles (DART 914 and 916)

The Kent Shopper Shuttles, (DART 914/916) are a free shuttle service funded jointly by KC Metro and the City of Kent, and operated by the non-profit Hopelink. The DART 914/916 offer two transportation services to Kent riders: fixed and (limited) variable routing outside of downtown. All of the scheduled DART 914/916 routes pass through the Kent Transit Center, City Hall, the Senior Center and the Regional Justice Center. These routes operate from 9:00 am until 5:00 pm on weekdays and Saturdays.

Hopelink estimates that 60 percent of the DART 914/916 rides start and end within the downtown. Hopelink also estimates that about 80 percent of the current Shopper Shuttle (914/916) ridership is comprised of seniors and people with disabilities. Despite being eligible for ACCESS, some passengers prefer the 914/916 dial-a-ride service as they do not need a reservation, and there is more flexibility in using the shuttle.

Kent Commuter Shuttle (DART 918)

The City of Kent funds a local circulation service that connects the industrial area to downtown and the Kent Transit Center. This route provides peak-only service on weekdays. Despite limited hours of operation the route has been successful, carrying over 100 passengers each day.

Table 9.16. Transit Service Levels (frequency by minutes)

Route	Destination	Weekday				Saturday			Sunday		
		Peak	Mid	Eve	Night	Day	Eve	Night	Day	Eve	Night
150	Kent-Seattle	15	15	30	30/60	15	30	30/60	30	30	30/60
153	Kent-Renton	30									
154	Auburn-Kent- Kent Boeing	2 am/pm runs									
158	Kent-East Hill- Seattle	30									
159	Kent-Timberlane-Seattle	30									
161	Kent-East Hill- Seattle	30									
162	Kent- Seattle (PM Peak)	30									
164	Kent Transit Center-Green River CC	60	60	60	60						
166	Kent-Des-Moines	30	30	60		30	60		60	60	
168	Kent-Timberlane	60	60	60	60	60	60		60	60	
169	Kent-Renton	30	30	30/60	60	30	30/60	60	30	30/60	60
173*	Federal Way-Boeing- Kent Des Moines P&R	2 am/pm runs									
174*	Federal Way- Kent Des-Moines P&R- Sea-Tac	20	30	30	30	30	30	30	30	30	30
175*	Kent Des-Moines P&R-Downtown Seattle	30									
180	Auburn-Kent-SeaTac	30	30	30	30/60	30	30	30/60	30	30/60	60
			← Service is only from Auburn to Kent during these time periods →								

Table 7-2. Transit Service Levels (cont'd)

Route	Destination	Weekday				Saturday			Sunday		
		Peak	Mid	Eve	Night	Day	Eve	Night	Day	Eve	Night
183	Kent-Federal Way	30	60			60					
190*	Star Lake-Kent Des-Moines P&R-Seattle	20/30									
191*	Redondo Heights P&R- Kent Des-Moines P&R-Seattle	30									
192*	Kent Des-Moines P&R-Seattle	30									
194*	Federal Way-Kent Des Moines P&R-Seattle	15/30	30	30		30	30		30		
197*	Twin Lakes P&R-Kent Des Moines P&R- University District	30									
247	Overlake-Kent	3 am/ pm runs									
564/565ST	Auburn-Kent-Bellevue	15/30	30	30/60							
564/565ST	Federal Way/South Hill -Overlake	30/60	60	30/60							
574*ST	Lakewood-Kent Des-Moines P&R-Sea-Tac Airport	30	30/60	60		30	60		30	60	
914	Kent Shopper Shuttle		60			60					
916	Kent Shopper Shuttle		60			60					
918	Kent Commuter Shuttle	30									
941*	First Hill-Kent Des Moines P&R	30	* These routes only serve the Kent Des Moines Park and Ride								
952	Metro Boeing Custom Bus (Auburn-Kent-Everett Boeing)	4 am/ pm runs									

Headway – time interval between buses moving in the same direction on a particular route.

ACCESS Transportation Service

KC Metro provides paratransit service within its service area through its ACCESS Transportation Service. Access service is available between the hours of 6:00 am and 10:00 pm Monday through Friday to individuals who meet ADA eligibility requirements. ACCESS service in the City of Kent exceeds the ADA ¾-of-a-mile requirement (from fixed bus service) mandated by King County. On the weekends ACCESS adheres to the ADA minimum requirements, providing service only within ¾-of-a-mile on either side of Metro fixed route bus service during the times they operate.

ACCESS Transportation Service provides about 7,350 trips per month in Kent. Just over a third of ACCESS trips within Kent are described as "work trips." Only 9 percent of ACCESS riders described "Non-Emergency Medical" as their trip purpose, which correlates with the various medical trips cited in the demand center data.

Transit Service Characteristics

Several characteristics of transit service are important to understanding how the system operates. These include the fares charged and the performance of the transit routes.

TRANSIT FARES

KC Metro and Sound Transit collect fares by zone for long-distance travel. Metro also charges a higher fare during peak travel times. Base fares range from $1.25 (Metro off-peak) to $4.00 (three-zone Sounder commuter rail). Discounts are often available for youth, seniors and residents with disabilities. KC Metro sells the one-month PugetPass for $45 (off-peak) to $72 (two-zone peak). The PugetPass is accepted as valid fare payment on KC Metro, Community Transit of Snohomish County, Pierce Transit, Everett Transit and Sound Transit service – up to the fare value purchased on the pass.

TRANSIT PERFORMANCE

KC Metro and Sound Transit use performance measurement systems to monitor bus and shuttle services. Performance measures, along with guidelines or standards, are often used to monitor the operation of individual bus routes and identify services requiring special attention.

KC Metro uses two performance categories when reviewing results against defined measures – "below minimum" and "strong." Those routes termed as "below minimum" are evaluated for modification or termination if changes cannot improve performance. Routes rated as "strong" may be considered for expansion.

Sound Transit employs Express Service Standards and other performance measures to rate individual ST Express routes and to determine when remedial actions may be needed.

Route Performance Analyses

Data from the *2005 Annual Route Performance Report – South Planning Subarea* (October 2006) show Routes 153, 154 and 167 under performing relative to other peak services. Routes 150 and 169, however, are performing well during peak, midday and at nighttime periods. Route 162 only operates during peak periods and is the best performing service during commute times.

The Sound Transit *2006 Service Improvement Plan* (SIP) reviews route-level performance using the standards defined previously along with other assessments. The SIP acknowledges the unsatisfactory performance of Route 564 on an overall basis. It highlights the role of Route 564 in providing additional peak service and capacity when combined with Route 565 and that ridership has been steadily growing. The Sound Transit 2006 service changes include the extension of Route 564 south of Auburn to the South Hill Mall in Puyallup (replacing the service currently provided by Route 585); the SIP suggests these changes should raise the unsatisfactory performance to the marginal level. In response to Route 574's low productivity, late morning service was reduced from every 30 minutes to every 60 minutes in June 2005.

TRANSIT-RELATED INFRASTRUCTURE INVENTORY

The City of Kent, State of Washington and the regional transit agencies have invested in transit-related infrastructure in and around the City of Kent.

Kent Transit Center

In June 2005, KC Metro moved the Kent Transit Center at West James Street to Sound Transit's Kent Station on Railroad Avenue North (between West James Street and West Smith Street). The new center was designed to be a multi-modal transfer station for Sound Transit's express routes in Kent as well as the Sounder Commuter Rail and Metro routes serving the City of Kent.

The City of Kent contributed funds to help increase the parking capacity to 994 spaces (surface and garage) and improve passenger amenities such as bus shelters, lighting, sidewalks, bicycle racks and lockers, as well as rider information. The new Kent Transit Center is centrally located for riders to access key destinations such as the Regional Justice Center, the Kent Library, and downtown businesses.

Stop Amenities

KC Metro is responsible for bus shelters and has specific criteria for which routes merit a shelter. The minimum number of daily passenger boardings to qualify for shelter placement

is 25 boardings. Stops meeting this first cut are further prioritized based on ridership (highest ridership zones) and ease of construction or right of way (ROW) availability. Additional shelters can be sited at stops with special needs, for example stops with large concentrations of elderly or stops close to health and social service facilities. All approved and built shelters include benches and litter receptacles, which are attached to the adjacent concrete pad or sidewalk.

Kent Park and Ride Facilities

KC Metro and Sound Transit provide transit patrons with nine park and rides in the Kent area, with varying levels of transit service and parking capacity. **Table 9.17** provides details on the park and ride capacity, utilization and the routes served.

Table 9.17. Park and Ride Lots Serving the City of Kent

Park and Ride Lot	Parking Spaces	Utilization (2005)	Routes Served
Kent Transit Center** 301 Railroad Ave N P&R Garage Surface Lot	 869 125	 36% 91%	Metro:150, 153, 154, 158, 159, 162, 164, 166, 167, 168, 169, 183, 952 DART: 914, 916, 918 Sound Transit: 564, 565 Sounder Commuter Rail
Kent/James St P&R** 902 W James St, N. Lincoln Ave/ W. James St	713	34%	Metro: 150, 154, 158, 159, 162, 166, DART: 918
Star Lake P&R 27015 26th Ave S I-5/ 272nd St	540	83%	Metro: 152, 183, 190, 192, 194, 197, 941 Sound Transit: 574
Kent-Des Moines P&R* 23405 Military Rd S I-5/ Kent-Des Moines Rd	370	96%	Metro: 158, 159, 162, 166, 173, 175, 192, 194, 197, 941, 949 Sound Transit: 574
Lake Meridian P&R 26805 132nd Ave SE/ SE 272nd St	172	27%	Metro: 158, 159, 168, DART: 914
Kent United Methodist Church SE 248th St/ 110th Ave SE	23	13%	Metro: 163, DART: 914
Kent Covenant Church 12010 SE 240th St	20	25%	Metro: 158, DART: 914 916
Valley View Christian Church 124th Ave SE/ SE 256th St	20	5%	Metro: 168, DART: 914
St. Columba's Episcopal Church 26715 Military Rd S	15	20%	Metro: 183, 192

Source: Source: PSRC 2005 P&R Data, and King County Metro.
* Lot is filled to or above 90% by 9:00 am on weekdays.
**Bike Lockers on site

CITY SUPPORT FOR TRANSIT SERVICES

The City recognizes that transit services can improve livability, enhance mobility and increase economic development. Transit is a priority in the City's goals and policies, in local plans and is included in ordinances dictating the nature of development in the City.

Goals and Policies

The TMP promotes transit supportive land uses, including higher densities and enhanced pedestrian circulation.

Commute Trip Reduction Program

Since 1991 the City of Kent has complied with the State's CTR Law by implementing a Commute Trip Reduction (CTR) program. Large employers, transit providers, and the City have partnered to encourage employees to reduce their drive-alone trips. The program supports the use of transit, ridesharing, walking, biking and telecommuting to reduce congestion; conserve energy; and improve air quality. The CTR planning process is summarized in the following section and more detail is provided in the TMP. The City completed an update of the CTR plan in the Fall of 2007. The Plan sets goals, identifies facility and service improvements and puts forth marketing strategies that support reductions in drive-alone trips and vehicle miles traveled by 2011. Consistency between the CTR Plan, the Transportation Element and Transportation Master Plan, the zoning code, design standards, concurrency regulations and other applicable City of Kent land use and transportation plans and codes is a key element of the CTR planning process.

Land Use and Parking Policies

City land use and planning policies can also serve to encourage or discourage the use of transit, dictating the impact of transit investment in vehicle trip reduction. In assessing existing service and possible service improvements, it is possible to see how the City's current land use policies impact transit use in the City. The City has implemented several strategies to encourage transit. In many areas land use patterns, street design issues and low residential densities have prohibited public transportation from having a more meaningful role in vehicle trip reduction.

Transit Efficient Land Use

The City's land use indicates several mixed-use zones; these areas typically have good proximity to transit. The City, throughout the Land Use Element of the Comprehensive Plan, emphasizes mixed-use development and its role in reducing future traffic demand. The City emphasizes mixed-use development as a priority; "Mixed-use development shall be

encouraged in designated areas within the planning area (UG-5)". Goal LU-4 in the City's Comprehensive plan details the importance of developing and funding transportation in mixed-use corridors. The City has developed several mixed-use corridors served well by transit. Two in particular are: the mixed-use zone at SE 250/Highway 515 southeast of downtown (urban center), and the mixed-use zone at SR 167/ Meeker Street directly west of the downtown (urban center). However, the majority of Kent's new owner-occupied housing units remain single-family residences.

Parking Provisions

The City of Kent has enacted progressive policies related to parking, intended to reduce minimum parking requirements as a means to encourage transit and reduce SOVs in the downtown area. The City gives the Planning Director the authority to waive or modify minimum parking requirements; to impose additional off-street parking requirements in unique circumstances; and to allow for flexibility and innovation in design. These provisions allow developers to build less parking, saving costs and increasing useable square footage, when developing in areas where good transit service allows residents or employees to travel without a private vehicle.

2005 Downtown Strategic Plan

The City's 2005 Downtown Strategic Plan recommends concentrating growth in the downtown core and to using public transportation as a means to reduce dependency on the automobile. The Plan envisions downtown Kent as a pedestrian-oriented business, shopping and residential destination, accessible by multiple transportation modes (including pedestrian, bicycle, and transit). The Downtown Plan suggests new levels of service standards for all modes, designed to facilitate a more balanced downtown transportation system. The Plan recommends improvements, such as increased commuter rail service, improved transit circulation, better pedestrian and bicycle connections, and housing development close to jobs that will help mitigate the probable adverse environmental impacts on traffic levels and service in and near downtown.

THE TRANSIT NEEDS ANALYSIS

The City used community input and technical gaps analyses to assess transit service and facilities within the City of Kent. Both of these key inputs led to a set of recommendations for future service and the supporting infrastructure that would be needed.

Community Identified Needs

During the development of the Transit Plan, there were several opportunities for the community to comment, including the stakeholder interviews, telephone survey, the task force meetings and the City's open houses. Detailed comments from the public and stakeholders are included in the TMP.

A number of community issues came up repeatedly representing gaps in the existing transit system and also matching the technical analysis completed for this plan. These common concerns addressed service and facility improvements that meet the City's land use goals and policies. Some of those needs included:

increasing frequency of service – particularly on Sounder commuter rail; extending service hours – particularly for shift workers in the industrial area; limiting need to transfer buses; decreasing travel times; adding more bus shelters; improving east-west service; improving passenger information for immigrant/low-income populations; reducing employee parking; improving pedestrian access – particularly in the areas outside of the downtown core; and enhancing safety at bus stops and park and rides;

Specific service improvements cited for the Kent Shopper Shuttle (DART 914/916)included: an expanded service area; better service to senior housing; more senior shopping service; greater promotion of the Kent Shopper Shuttle; additional bus stop at Great Wall Mall; and increased number of medical stops.

Public Transportation Household Survey

To assess Kent residents' use of and opinions about public transportation, a random public household telephone survey was conducted in the spring 2006. The survey provided a statistically valid sampling, meaning that enough people were surveyed to provide a reasonable approximation of the sentiments of the entire Kent community. The survey included several questions regarding usage, routes, frequency, location of bus stops, length of trips, and safety.

A research firm conducted the surveys over the phone with 401 randomly selected Kent households. The data were used to identify transit issues and determine effective improvements in transit service. TMP reports on these findings in detail.

TECHNICAL ANALYSIS OF TRANSIT SYSTEM NEEDS

The project team presented the TMP Task Force with a series of technical analyses illustrating existing and future constraints and opportunities with respect to the use of transit. These included:

- Community demographics impacting transit use
- Current and future land uses
- Gaps in current transit service
- Gaps in supportive capital infrastructure

Key Community Demographics

The need for public transit service can be linked to a number of demographics. These include seniors over 65 years of age, persons with disabilities, residents living below the poverty level and households without access to an automobile (either by choice or due to financial constraints). All these groups tend toward a higher than average use of transit services.

The City of Kent is home to slightly fewer seniors than the rest of Washington, has roughly the same percentage of residents with a disability and a slightly higher percent earning below the poverty level. Many seniors live in the downtown area and overall make up 7 percent of the City's population. Just over 17 percent are defined as disabled according to the 2000 US Census. (The US Census defines a disability as "a long-lasting physical, mental, or emotional condition that makes it difficult for a person to do normal activities" including driving an automobile). Almost 12 percent of the residents in Kent live below the poverty level making it difficult for them to afford to own and operate an automobile.

Current and Future Land Use

Research has shown that population and employment (land use density) are by far the two most crucial factors in determining ridership demand in a transit corridor or service area. Development patterns also cause challenges for transit service providers.

The largest concentration of jobs in the City is in the manufacturing and industrial area between the SR 167 and West Valley Highway and James Street and the northern City Limits (SW 43rd Street). Transit accessibility from these sites varies based on the proximity to major north-south transit carrying streets, such as the West Valley Highway. Business stakeholders would like to see better transit circulation within this district.

The City of Kent has several pockets of high-density residential development, including several multi-family developments in the downtown area, the Lakes at Kent, and to the southeast on Kent-Kangley Road. These areas are served via primary and secondary arterial streets, but in few cases does transit penetrate residential or commercial developments. Two serious impediments to growth in transit ridership are the heavy traffic volumes and low levels of pedestrian amenities and safety features on major transit carrying arterials.

Gaps or Missing Service in Current Transit System

Gaps in service occur because service is not frequent enough nor close enough to be used, or it doesn't go to the destination of the travelers. Neighborhoods with the density for transit or important destinations without service are identified as areas of missing service.

GAPS IN PEAK-ONLY SERVICE

Peak period transit service is shown in **Figure 9.21.** Gradations of green indicate the intensity of combined population and employment activity.

The majority of the routes operating in Kent are peak-only services oriented towards commuters, particularly those bound for Seattle. Total coverage is the greatest during the weekday peak and midday periods. Residential areas northeast of Lake Meridian and north of North Meridian Park, along with the industrial area along 84th Avenue have peak-only service. The Downtown shopper shuttles provide additional midday coverage in downtown and along Meeker Street to the west. Evening and Sunday service is limited to the major corridors with a loss of service in East Hill east of 104th Street.

MISSING SERVICE COVERAGE

Several areas in the City of Kent have moderate to high population or employment densities (see Figure 7-3), indicating a strong level of transit demand. However, there is little or no transit service available in some of the densest neighborhoods.

The Lakes at Kent development south of Russell Road/228th Street at 54th Avenue is identified as a high population density zone but is not directly served by transit. This area is characterized by a concentration of high-density multi-family units. Some moderately dense neighborhoods (east of 104th/108th Avenues, between 208th and 240th Streets) have peak-only service with many residents living more than 1/4 - mile from any transit route.

The principal east side routes operate on 240th Street and Kent Kangley Road out to 132nd Avenue. There are pockets of dense residential and commercial development at the center of, and around the perimeter of, this triangular route configuration. On the west side, between I-5 and SR 99 and north of 260th Street, an area with moderate residential densities and a several large multifamily units is not served. Route 166 provides service nearby, but runs on the other side of the interstate.

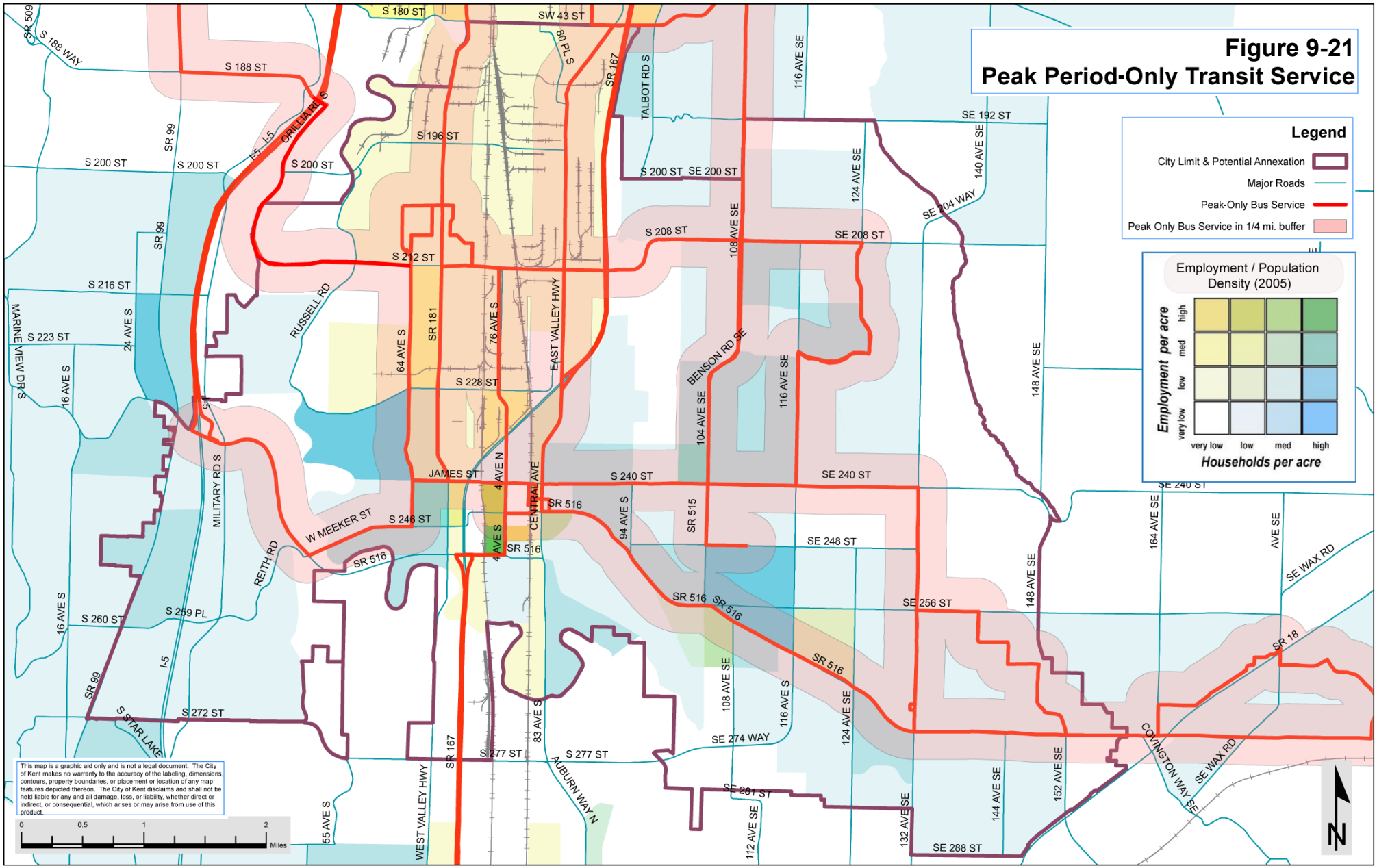
Figure 9-21
Peak Period-Only Transit Service
Legend
City Limit & Potential Annexation
Major Roads
Peak-Only Bus Service
Peak Only Bus Service in 1/4 mi. buffer
Employment / Population Density (2005)
Employment per acre
very low
low
med
high
Households per acre
S 180 ST
SW 43 ST
S 188 WAY
S 188 ST
S 196 ST
S 200 ST
SE 200 ST
SE 192 ST
SE 204 WAY
S 208 ST
SE 208 ST
S 212 ST
S 216 ST
S 223 ST
S 228 ST
JAMES ST
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S 259 PL
S 260 ST
SE 256 ST
S 272 ST
S STAR LAKE
S 277 ST
SE 274 WAY
SE 281 ST
SE 288 ST
SR 509
SR 99
SR 167
SR 181
SR 516
SR 515
SR 18
I-5
ORILLIA RD S
TALBOT RD S
116 AVE SE
124 AVE SE
140 AVE SE
148 AVE SE
108 AVE SE
104 AVE SE
116 AVE S
108 AVE SE
124 AVE SE
132 AVE SE
144 AVE SE
152 AVE SE
164 AVE SE
80 PL S
RUSSELL RD
MARINE VIEW DR S
24 AVE S
16 AVE S
64 AVE S
76 AVE S
EAST VALLEY HWY
BENSON RD SE
MILITARY RD S
REITH RD
4 AVE N
4 AVE S
CENTRAL AVE
94 AVE S
83 AVE S
WEST VALLEY HWY
AUBURN WAY N
55 AVE S
112 AVE SE
SE WAX RD
COVINGTON WAY SE
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Gaps in Transit Related Infrastructure

Transit is more convenient if there are bus shelters and good sidewalks to and from the bus stop.

BUS STOPS

Based on November 2005 boarding data, there were roughly 20 stops in Kent that exceeded 25 daily boardings but did not have a shelter. Based on the ridership criteria and/or KC Metro's 6-Year Plan or Partnerships program, Metro has seven shelter projects planned for Kent stops during 2006 and 2007. Similarly, stops with greater than 15 boardings qualify for a standalone bench. Metro is proposing benches at five Kent locations and investigating another five for future installation.

PEDESTRIAN ACCESS

All transit trips start and end as walking trips. Missing, narrow or deteriorated sidewalks are deterrents to the use of transit. Similarly, dangerous intersections or a lack of crosswalks put transit riders at risk and also cuts down on the number of residents willing to use transit when they otherwise could. The pedestrian network analysis identified missing sidewalks, poor sidewalk surfaces, narrow sidewalks and missing curb ramps. Streets with missing sidewalks within one-quarter mile of transit service were identified. . Results from this inventory and subsequent analysis identified a need for better sidewalks for many transit riders and guided the selection of projects for the Pedestrian System.

Prioritized Needs

a community Task Force guided development of the TMP. They reviewed and confirmed needs, identified priorities, and supported the final recommendations of the Study. The Task Force helped to finalize the transit needs assessment. At the June 2006 task force meeting, the Task Force discussed the gaps and missing services in transit and voted on the set of priorities, which are detailed in **Table 9.18**. These priorities served as a guide to the City of Kent as transit recommendations were selected.

Table 9.18. Task Force Priority Transit Needs

Task Force Priority Needs
Provide more local circulation service connecting residential neighborhoods to Kent Transit Center
Add new midday service on Sounder Commuter Rail
Improve pedestrian crossings on 104th/ Benson
Add more peak hour trains on Sounder Commuter Rail (more frequency)
Improve sidewalk connections to transit stops
Provide more local circulation service connecting industrial area to Kent Transit Center
Decrease transit travel time to Seattle
Rapidly developing areas around 108th-274th underserved by transit
Provide direct transit service to SeaTac
Provide better route and schedule information at stops and other locations.

PROGRAMMED IMPROVEMENTS BY TRANSIT PROVIDERS

Recent and pending service changes by King County Metro Transit and Sound Transit address a variety of problems and opportunities in the Puget Sound region. Many of these service changes impact the City of Kent and have the opportunity to address specific needs identified in this plan.

Short Term Service Improvements

The short term service improvements are those included in the six-year plans of the local and regional transit agencies.

KING COUNTY METRO

In response to service performance and/or changes in population and employment patterns, Metro restructures service every few years, under the guidance of King County's Six-Year Transit Development Plan. In 2006 Metro addressed service changes in South County services.

Due to budget constraints, a very limited number of new service hours were available for new service in all of South King County. Several of the September 2006 service changes involved the reallocation of service hours from poorly performing services to meet high priority transit needs.

SOUND TRANSIT

Sound Move, Sound Transit's master plan, calls for the Sounder Commuter Rail service to provide nine round trips each day, up from the current number of four on the South Line serving the City of Kent. In September 2007 two additional round trips were added. Preliminary 2008 –2012 planning efforts call for the implementation of the seventh, eighth and ninth round trips on Sounder's South Line.

Long-Range Transit Improvements

There are a number of long-range transit plans and unfunded initiatives that will impact how public transportation is delivered in South King County and in the City of Kent in the future. Sound Transit Phase II and King County Metro's *Transit Now* initiative could have considerable impacts on the quality of public transportation services available to Kent residents. However, the regional focus of these initiatives may put resources needed for local and South County service improvements in direct competition with expensive high capacity services that meet interregional travel needs and focus investment in a more limited number of corridors.

KING COUNTY METRO "TRANSIT NOW"

Transit Now is a five-point initiative approved by King County voters in November 2006. The initiative is intended to develop transit services that will attract 21 million more annual rides within ten years, helping the region keep pace with employment and population growth and addressing congestion. *Transit Now* funding comes from a one-tenth of one percent sales tax. The initiative's five-point strategy includes:

- Developing a "bus rapid transit" (BRT) system (RapidRide)
- Improving current services
- Providing new service in growing areas
- Developing service partnerships with major employers and cities
- Additional improvements such as expanding ride-share and improving paratransit programs.

HOW DOES "TRANSIT NOW" SERVE KENT

Transit Now improvements proposed for South King County include

- A new east-west route connecting Kent to Des Moines and Sea-Tac would provide new service that has been identified by Kent stakeholders as a critical service gap.

- Kent would receive span and frequency improvements on key north-south services to Renton, Seattle and Sea-Tac. East-west connections would improve with new frequency improvements to Maple Valley and Covington service and frequency and span improvements on Kent -Kangley/124th Avenue SE.
- The Transit Now Service Partnership requires a minimum contribution from the partner of $100,000 per year for five (5) years to add service on an existing route or routes or $200,000 per year for five (5) years to add a new route or routes. The City of Kent is currently exploring partnership opportunities for new shuttle service (proposed Route 913) to the Lakes and Riverview communities as well as for midday service on Route 153 to Renton.
- RapidRide, is scheduled to begin in February 2010. It will replace Route 174 along Pacific Highway S/International Boulevard between S 316th Street in Federal Way and S 154th Street (International Boulevard) in Tukwila. RapidRide buses will link up with Light Rail in Tukwila as well as local Metro routes destined to Tacoma, Federal Way, Des Moines, Auburn, Tukwila, and Burien.

Sound Transit 2

Sound Transit has worked extensively with the public and communities throughout the Puget Sound region to set the priorities for Sound Transit 2 (ST2), which is the next set of public transit investments to improve and increase the service that Sound Transit offers today. ST2 outlines priority projects that would increase service levels and expand the coverage of Link Light Rail, Sounder Commuter Rail and ST express bus services.

The proposed light rail extension between Sea-Tac and Tacoma along SR 99 provides benefits to Kent residents, especially for high-frequency service to Tacoma. The draft package does not include a number of Sounder and express bus projects that were previously considered. Expanded Sounder service during peak, off-peak and weekend service required extensive track improvements and significant increases in operating costs. Other projects that did not advance to the draft package include Transit Signal Priority (TSP) on SR 161 and HOV access ramps at Smith Street to improve the reliability of express bus service and new express bus service shadowing Sounder service during off-peak times.

TRANSIT RECOMMENDATIONS

This section presents a set of regional and local service improvements and capital projects to address the identified transit needs. Service recommendations are presented by route type. Bus routes in the Kent can be categorized into three route types based on the markets they serve.

Primary Transit Network (PTN) service provides frequent service (typically 15 minute or better) over a long service span, in a market where there is high demand for travel throughout the day. It is narrowly focused on the densest corridors in the region, because that's where potential ridership is highest. More than just bus service, the PTN is a joint commitment, by both the City of Kent and KC Metro Transit to protect the speed and reliability of transit operations in identified corridors. It is also a policy tool to help focus transit-oriented development around corridors where transit can be provided cost-effectively.

Local urban service provides all-day service but at lower frequencies (20 to 60 minute) in lower density areas. These services should provide connections from moderately dense areas to PTN services as well as local destinations.

Specialized Commute service runs at very specific high-demand times and only operates at the times of day when that demand exists.

Transit Projects

The study recommendations focus on current and expected gaps in the primary transit network and the local urban services. In some cases, recommendations enhance existing commuter service, creating all-day PTN service to address the need for reverse-commute travel and off-peak connections. Service recommendations are presented by route type and by implementation timeframe. Short-term projects are envisioned in the next 5 years, mid-term in a 6 to 15 year timeframe, and long-term in the 16 to 25 year period.

Table 7.19 presents a summary of these transit recommendations in response to the needs identified in the Transit Master Study, which provides more detail for each project. The table includes initial cost estimates. Costs for the Sound Transit 2 (ST2) projects are from the project estimates used during ST2 evaluation. Other service improvements are estimated at $80.54 per hour. This represents Metro's marginal operating cost for 2007 and is used when Metro provides additional service to a local jurisdiction.

Figure 9.22 and **Figure 9.23** highlight potential project corridors for service improvement projects in the mid- and long-term timeframes.

Table 7.19. Transit Recommendations

Project Category	Project Details	Timing*	Costs
A) Add midday express service from Kent Transit Center to downtown Seattle	A1a) Midday ST express bus per ST 2 Project S11 ("shadow" bus service between Tacoma and Seattle serving all Sounder rail stations) [Not identified in the July 06 set of 3 investment options]	MT	$1,300,000
	A1b) Metro operated Kent-Seattle Express (4 round trips/weekday)	MT	$126,000
	A2) Sounder service per ST 2 Project S24 (6 additional round trips on top of 9 peak roundtrips in place by 2008) [Not identified in the July 06 set of 3 investment options]	LT	$11.4 M O/M; $163.5 to $188.0 M Capital
B) Regional Primary Transit Network	B1) Renton: Increase frequency of Route 169	LT	$1,100,000
	B2) Auburn: Increase frequency of Route 180	LT	$1,100,000
	B3) Bellevue: Add 15-minute frequency for reverse-commute times on 564/565	LT	$190,000
	B4) SeaTac: Increase frequency of Rte 180 to 15-min	LT	$750,000
C) Local Primary Transit Network	C1) Canyon/104th/108th: Increase frequency of Route 169 (part of regional PTN project) or create short line with turn around at 208th St. (Transit Now improvement identified for Route 169)	MT	$750,000
	C2) James/240th St from Kent TC to north and south 116th Ave. Two routes combing on east/west segment for 30-minute frequency of service	MT	$480,000
	C3) James/240th St from Kent TC to north and south 116th Ave. Two routes combining on east/west segment for 15-minute frequency of service	LT	$ 390,000 (+ project C2)
	C4) Increase frequency of Route 166 to 15-minute M-Sa, 30-minute Sundays	LT	$840,000
	C5) Replace Route 918 with two weekday all-day services - east and west industrial areas. 30-minutes all-day with limited 60-minute night service	MT	$1,100,000
D) Local Service Improvements	D1) Add 30-minute all day service on 132nd Ave, connecting with other services at Kent Kangley Road (Transit Now improvement identified for Route 164)	MT	$430,000
	D2) Increase frequency of Rte 164 to 30 min and add Sa service	MT	$480,000
E) Bus Shelters	E1) Construct shelters at 15 stops. identified for possible stops in 2008 along with 7 not identified, yet exceeding standards.	ST	$770,000 @ $35,000 ea (05$)
F) East Kent Interceptor P&R	F1) Expand capacity in/near Lake Meridian P&R by 200 spaces	LT	$1 M plus land acquisition for surface lot expansion, $4 M for structured parking
G) Sidewalk improvements	Identification of potential projects pending review of non-motorized and roadway improvements	ST	

* Note: ST refers to Short Term (0-5 year timeframe), MT to Medium Term (6-15 years) and LT to Long Term (16-25 years)

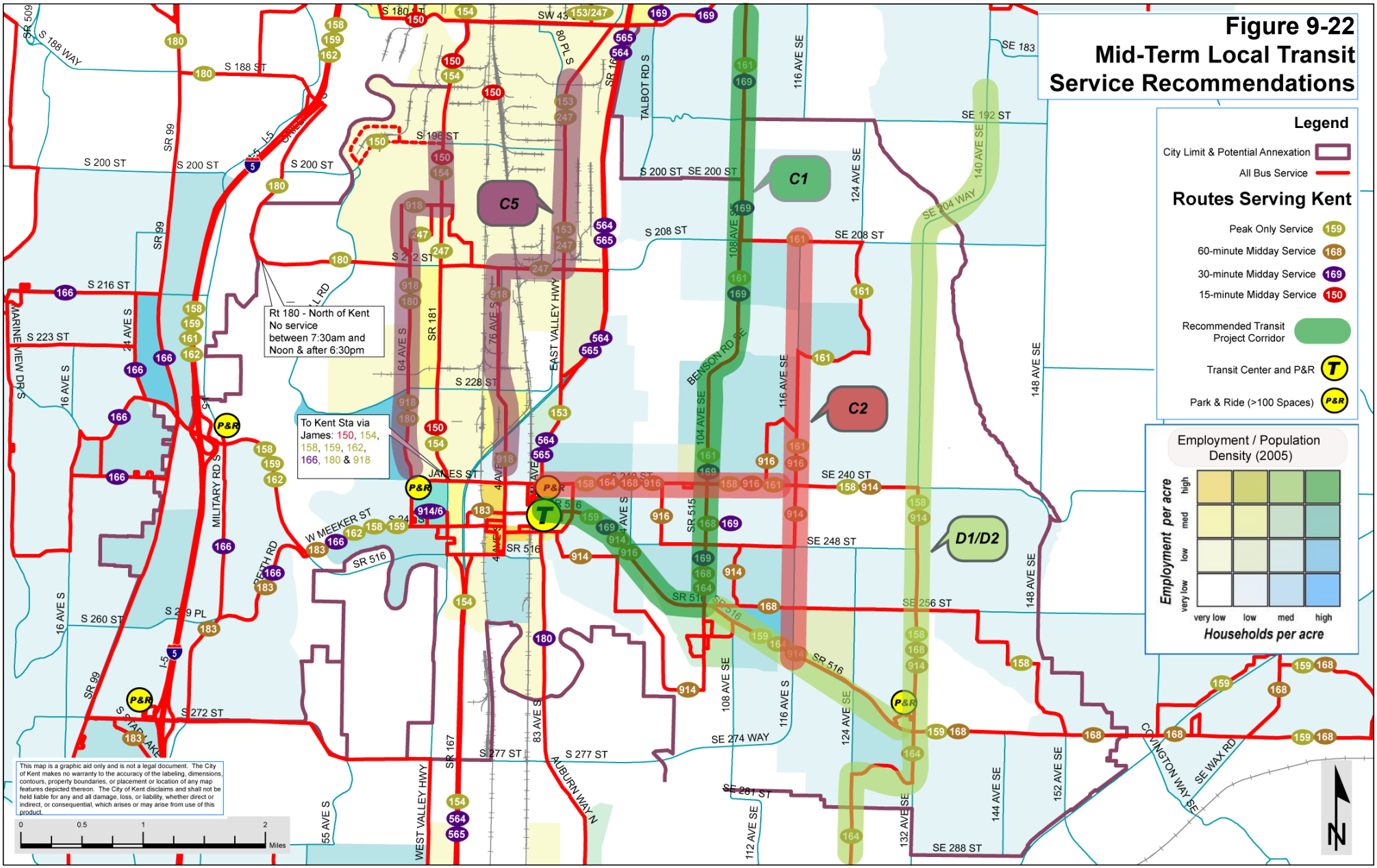
Figure 9-22
Mid-Term Local Transit
Service Recommendations
Legend
City Limit & Potential Annexation
All Bus Service
Routes Serving Kent
Peak Only Service 159
60-minute Midday Service 168
30-minute Midday Service 169
15-minute Midday Service 150
Recommended Transit Project Corridor
Transit Center and P&R
Park & Ride (>100 Spaces)
C1
C2
C5
D1/D2
Rt 180 - North of Kent
No service
between 7:30am and
Noon & after 6:30pm
To Kent Sta via
James: 150, 154,
158, 159, 162,
166, 180 & 918
Employment / Population
Density (2005)
Employment per acre
very low
low
med
high
Households per acre
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SE 256 ST
S 260 ST
S 269 PL
S 272 ST
SE 274 WAY
S 277 ST
SE 281 ST
SE 288 ST
SE 183
SW 43
S 180 ST
S 188 ST
S 188 WAY
S 196 ST
W MEEKER ST
JAMES ST
SR 99
SR 509
SR 516
SR 515
SR 181
SR 167
I-5
MARINE VIEW DR S
MILITARY RD S
WEST VALLEY HWY
EAST VALLEY HWY
AUBURN WAY N
COVINGTON WAY SE
SE 140 AVE SE
SE 204 WAY
SE WAX RD
TALBOT RD S
BENSON RD SE
80 PL S
16 AVE S
24 AVE S
64 AVE S
76 AVE S
83 AVE S
55 AVE S
4 AVE S
104 AVE SE
108 AVE SE
112 AVE SE
116 AVE SE
116 AVE S
124 AVE SE
132 AVE SE
144 AVE SE
148 AVE SE
152 AVE SE
P&R
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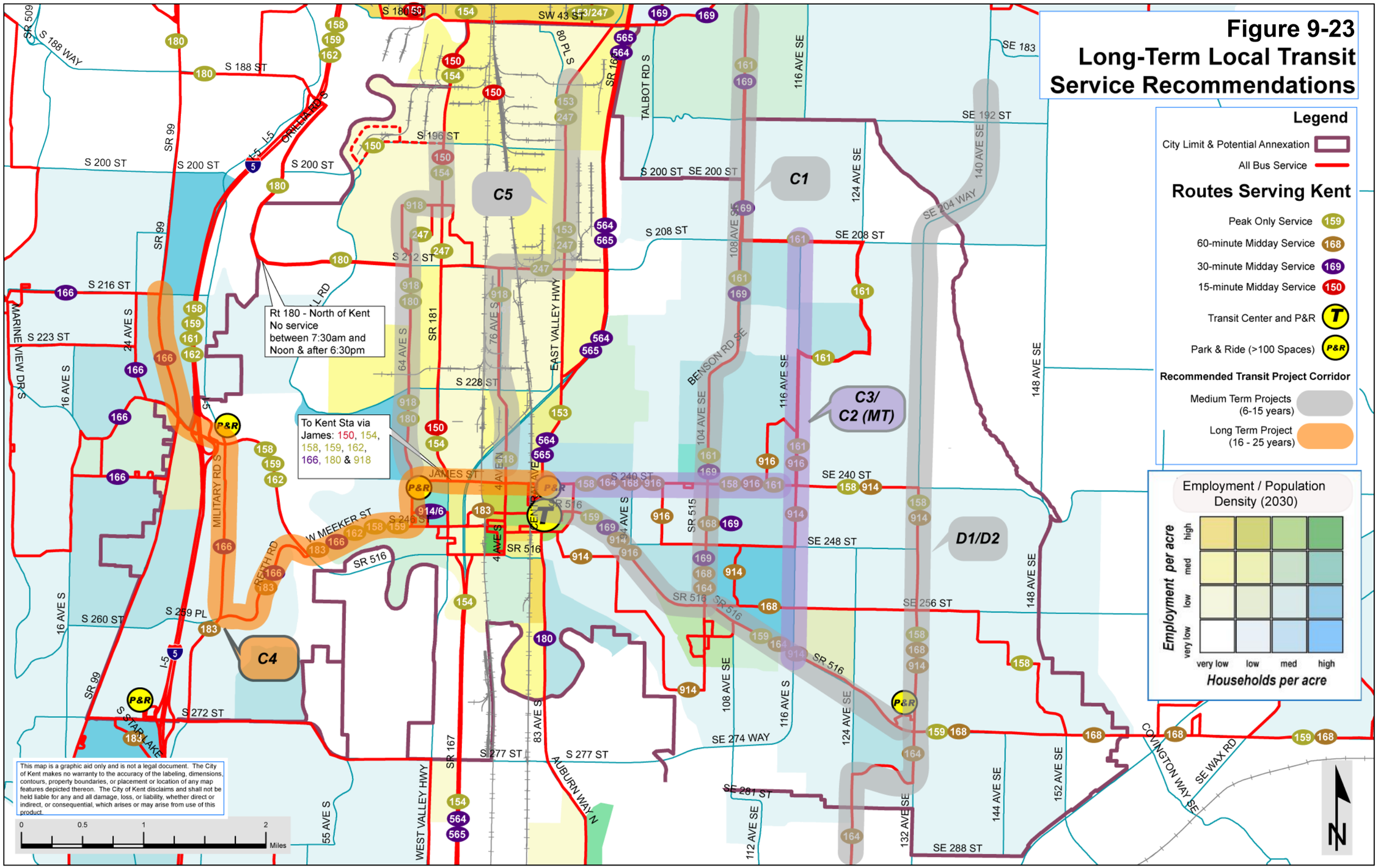
N

Figure 9-23
Long-Term Local Transit Service Recommendations



MANAGING DEMAND

Using the existing network of streets more efficiently is a fiscally sound way to improve traffic conditions and safety. Transportation Demand Management (TDM) policies and strategies are designed to reduce automobile travel and shift some trips to non-peak periods (before or after commute hours). Transportation system management (TSM) manages the flow of traffic by adding in turn lanes, Business Access and Transit (BAT) lanes, or coordinating signals.

TRANSPORTATION DEMAND MANAGEMENT

Managing demand makes the best use of the transportation system through various strategies that maximize unused capacity. TDM emphasizes personal access rather than vehicular mobility. TDM strives to treat roadway, transit and sidewalk capacity as valuable, limited assets to be carefully managed.

TDM strategies include: encouraging ride sharing (car- and van-pooling); providing alternative mode subsidies (e.g. transit passes); providing telecommuting, flex schedules, and compressed work weeks; and enforcing parking fees/restrictions.
TDM strategies go beyond increasing vehicle occupancy and can range from simple marketing programs to complex land uses. City land use policies reduce dependence on private automobile travel by focusing growth in specific locations and changing land use development patterns. Land use densities, mixed-use activity, urban design, transit station areas and other concentrated points of activity support frequent transit service and pedestrian facilities for centers and along major travel corridors.

Kent is a major industrial center with multiple worksites that operate outside of the typical peak transit hours. Vanpool and vanshare programs alone are not flexible enough to meet the scheduling needs of employees. In addition, ample free parking contributes to the high SOV rate at many worksites. The City's TDM program is focused to maximize alternative mode options for all travelers.

COMMUTE TRIP REDUCTION PROGRAM

In 1991, the Washington State legislature passed the Commute Trip Reduction (CTR) Law (RCW 70.94.521) to reduce traffic congestion, increase air quality, and decrease fuel consumption. Currently, the City's CTR program serves 35 worksites providing support to over 15,000 employees and other interested firms.

As the State of Washington's population has grown, the need for programs such as CTR has significantly increased. The CTR program encourages companies to work with their employees to reduce the drive-alone and vehicle miles traveled (VMT) rates. Since the start

of the CTR program the overall State single occupancy vehicle (SOV) rate has remained constant even though the volume of commuters has increased - commuters are choosing alternative modes of transportation.

THE COMMUTE TRIP REDUCTION LAW

The Washington State CTR Law is unlike many of the required trip reduction programs established in other states through federal air pollution regulations. Washington's CTR program relies on a partnership between the public and private sectors to make progress towards meeting goals. The CTR program is based on cooperation and collaboration rather than a punitive approach administered based on regulation and enforcement.

The State's CTR law requires counties of 150,000 or more residents to enact local CTR ordinances. King, Kitsap, Pierce, and Snohomish Counties are all part of the Puget Sound Regional Council which contains the majority of the CTR sites in the State. The Law requires that employers with more than 100 full time employees commuting to work between the hours of 6 am and 9 am participate in the CTR program. In order to be considered an affected employee the employee must commute at least two days a week for a minimum of twelve continuous months.

The program is not limited to employers affected by the law; the program includes any local business that has an approved CTR plan which seeks to promote commute alternatives such as ridesharing, tele-working, and flexible work schedules.

Changes to the CTR Law in 2006

In 2006, the Washington State Legislature passed the Commute Trip Reduction Efficiency Act in 2006 (RCW 70.94.521). The goal of the CTR Efficiency Act is to improve the efficiency of the overall transportation system by focusing on the most congested areas of the state and increasing the planning coordination between local, regional, and state organizations.

Kent's local CTR plan provides the City's goals and policies for CTR, identifies facility and service improvements, and adopts marketing strategies to reduce drive alone trips and vehicle miles traveled over the next four years. The City plan focuses on worksites that require more attention.

The new law requires Regional Transportation Planning Organizations (RTPOs) to coordinate the development of local CTR Plans, create a regional CTR Plan, and to measure regional progress. Regional and local CTR plans are then scheduled to be reviewed by the CTR board, which will allocate funding. The modified CTR Program is scheduled to begin in September of 2008.

Currently 35 CTR worksites, 28 active and 7 voluntary, participate in the program. The City's CTR program is the fourth largest program in King County following Seattle, Bellevue, and

Redmond. Worksites range from 64 to more than 4000 employees with a mean size around 300 employees. CTR worksites are listed in **Figure 9.24**.

As shown in **Table 9.20** participating sites include public entities such as King County Regional Justice Center and the Kent School District, and private firms including Boeing, Starbucks, Alaska Airlines, Oberto Sausage and REI.

Table 9.20. Top Employers in Kent

Company	Employees	Type of Business
The Boeing Company	4,342	Space research
Kent School District	3,165	School district
City Of Kent	780	City government
King County Regional Justice Center	701	Courthouse-detention facility
R.E.I.	689	Outdoor equipment
Sysco Food Services of Seattle Inc	596	Food service distributor
Mikron Industries	595	Manufactures vinyl extrusions
Oberto Sausage Company	553	Specific meat sales/manufacturer
Alaska Distributors	500	Beverage distribution
Patient Accounting Service Center	439	Process medical accounts

Source: City of Kent CTR Report, 2007

In 2007, the majority of CTR employees reported that their employees commute from within Kent or the neighboring jurisdictions of Seattle, Tacoma, Renton, Puyallup, Auburn and Sumner. The average daily commute for Kent CTR employees is approximately 34 round trip miles per day. Each trip reduced prevents an average of 32.3 pounds of carbon dioxide (CO2) per vehicle per day from entering our atmosphere.

Under the new CTR Efficiency Act, Kent will reduce the SOV and VMT rate by focusing on strategies specific to Kent. The local goal for the new program is to reduce the SOV rate by 10 percent and the VMT rate by 13 percent by 2011. The 2011 drive alone goal for the overall jurisdiction is 83 percent and the VMT goal is 13.7 miles per commuter per day.

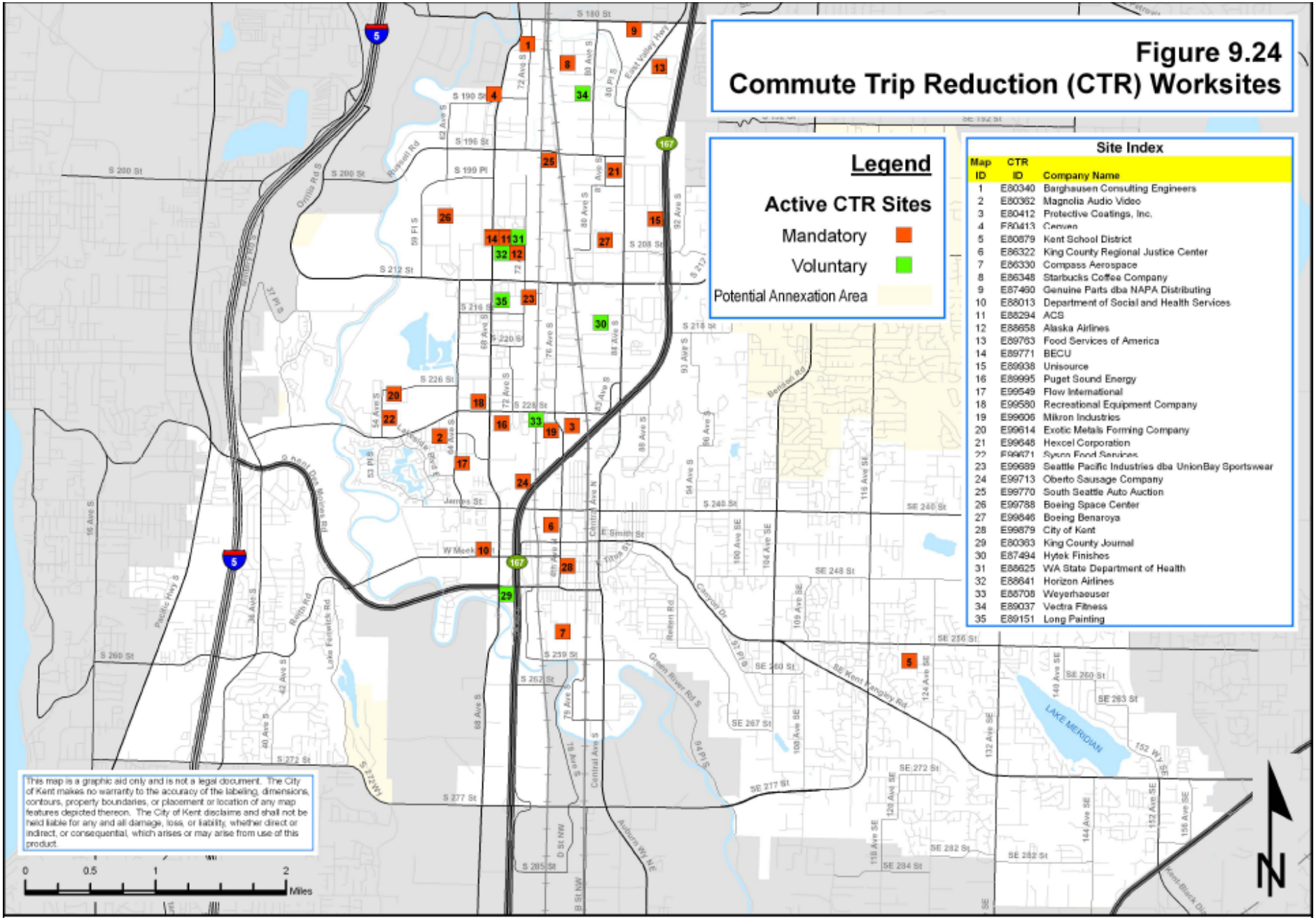


Figure 9.24
Commute Trip Reduction (CTR) Worksites
Legend
Active CTR Sites
Mandatory
Voluntary
Potential Annexation Area
Site Index
Map ID | CTR ID | Company Name
1 E80340 Barghausen Consulting Engineers
2 E80362 Magnolia Audio Video
3 E80412 Protective Coatings, Inc.
4 E80413 Cerveo
5 E80879 Kent School District
6 E86322 King County Regional Justice Center
7 E86330 Compass Aerospace
8 E86348 Starbucks Coffee Company
9 E87460 Genuine Parts dba NAPA Distributing
10 E88013 Department of Social and Health Services
11 E88294 ACS
12 E88658 Alaska Airlines
13 E89763 Food Services of America
14 E89771 BECU
15 E89938 Unisource
16 E89995 Puget Sound Energy
17 E99549 Flow International
18 E99580 Recreational Equipment Company
19 E99606 Mikron Industries
20 E99614 Exotic Metals Forming Company
21 E99648 Hexcel Corporation
22 E99671 Sysco Food Services
23 E99689 Seattle Pacific Industries dba UnionBay Sportswear
24 E99713 Oberto Sausage Company
25 E99770 South Seattle Auto Auction
26 E99788 Boeing Space Center
27 E99846 Boeing Benaroya
28 E99879 City of Kent
29 E80383 King County Journal
30 E87494 Hytek Finishes
31 E88625 WA State Department of Health
32 E88641 Horizon Airlines
33 E88708 Weyerhaeuser
34 E89037 Vectra Fitness
35 E89151 Long Painting
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COMMUTE ALTERNATIVES

There are a number of alternative ways for commuters to travel to work and reduce the number of SOV work trips including: transit service, ridesharing, non-motorized options, alternative work schedules, and telecommuting

Each CTR worksite has an Employee Transportation Coordinator (ETC) that serves as the employer representative to the City and is charged with promoting commute alternatives to employees. The City facilitates promotional events at CTR worksites that help encourage employees to use the alternative commute options that are available to them.

Employee subsidies offset commuting costs and encourage employees to break the habit of driving alone. Common subsidies include discount bus, ferry, or train passes, reduced vanpool fees, reserved HOV parking, and/or vouchers for walking or biking to work. Employers that offer subsidies for parking, transit, and/or ridesharing experience increased participation in their CTR program.

The Guaranteed Ride Home (GRH) program provides employees who regularly commute to work with a free ride when unexpected situations at work or home arise. GRH is a cost effective solution that employers can utilize to promote their CTR program.

By investing more in employees' work environments, CTR employers are able to reduce their employees' needs to make midday trips. Showers and storage lockers are key features for promoting a successful walking or biking program. On-site amenities such as daycare, cafeterias, and ATM machines reduce the need for midday trips.

Employers can offer their employees federal tax commute-to-work fringe benefits. Employees are eligible for a pre-tax payroll deduction to help offset the cost of transit or vanpooling. Employers can annually claim up to fifty percent of the amount paid to or on behalf of each employee for ride sharing, car sharing, using public transportation, or non-motorized commuting.

TRANSPORTATION SYSTEM MANAGEMENT

Transportation system management (TSM) techniques, which make more efficient use of the existing transportation system, can reduce the need for costly system capacity expansion projects. These techniques can also be used to improve LOS when travel corridors approach the adopted LOS standard. TSM techniques include:

- Rechannalization/restriping, adding turn lanes, adding /increasing number of through lanes;
- Signal interconnect and optimization;
- Signalization;
- Turn movement restrictions;
- Access Management; and
- Intelligent Transportation Systems (ITS).

The City uses TSM techniques to maximize the efficiency of the street network. ITS is a relatively new technology that has proven itself a successful and cost effective means of increasing system capacity. With an ITS system the City is able to change traffic signals in real-time, thereby handling unusual increases in traffic or traffic obstacles, such as event related traffic and accidents. ITS is included in the City's new Transportation Management Center which will be part of the Kent East Hill Operations Center, which is expected to be operating by 2012. The City will assess the opportunity for ITS capabilities on corridors around the City.

In addition to TSM strategies, the City strives to provide viable alternatives for the traveler, to ensure freedom of choice among several transportation modes (such as transit, biking and walking) as alternatives to the automobile. The City stresses the development of pedestrian-friendly environments such as bicycle routes and pedestrian paths as the non-motorized system expands.

FUNDING TRANSPORTATION PROJECTS

The GMA requires that a multi-year financing plan be identified for the needed multi-modal improvements. A key GMA planning requirement is the concept of fiscal restraint in transportation planning. The purpose of the financial element is to balance the transportation projects recommended for implementation with the ability of the City to build and maintain transportation facilities and services. The following section summarizes funding strategies available for Kent's Transportation Plan.

THE "BIG PICTURE" – OVERVIEW OF COSTS AND REVENUES

The proposed 2006-2030 Transportation Master Plan developed for the City of Kent contains a variety of projects that will cost between $511 and 595 million[1] over 20 years.

Table 9.21 summarizes the costs of the major types of transportation improvements. Street improvement projects comprise approximately $360 million, grade separation projects $170 million, transit projects $4 million, and non-motorized projects up to $40 million. The transit costs represent a six-year City commitment to fund the existing transit shuttles program and to partner with King County in the new *Transit Now* program.

These costs represent the portion of the projects located within the City of Kent. An additional $100 million of street needs were identified within the potential annexation area of the City, within King County. These costs are not included in Table 9-1 since they are not currently the responsibility of the City of Kent.

[1]*This cost is consistent with the City's past investment in transportation improvements. During the past eleven years, the City of Kent built $260 million of transportation capital improvements (in 2006 dollars). The annual average was $23.6 million. If the City continues to find ways to fund transportation projects during the next 25 years at the same level as the past eleven years, the City would pay $592 million for transportation capital improvement projects*

Table 9.21. Costs of Kent Transportation Master Plan ($ Millions)

Project Needs 2006 - 2030*	Without Grade Separation Projects	Grade Separation Projects	All Projects
Street Projects*	$ 341-373	$ 162-179	$ 503-552
Non-Motorized Projects	4-38	0	4-38
Transit Projects	4-5	0	4-5
Total	$ 349-416	$ 162-179	$ 511-595

*Note: The street projects also include 16 miles of new bicycle routes representing approximately $36 million of additional bicycle investment. The street projects also include 15 miles of new sidewalks.

Table 9.22 summarizes the projections of potential 20-year revenues from existing and new sources. It appears that the City has several viable options for raising significant revenue for the City of Kent's Transportation Master Plan. These options will be presented to the City Council for consideration as additional revenue is needed to complete projects. The public will have opportunities to participate in these decisions.

Table 9.22. Potential Revenues for Kent Transportation Master Plan ($ Millions)

Projected Revenue 2006 - 2030	Without Grade Separation Projects	Grade Separation Projects	All Projects
Existing Revenues	$ 131-234	$ 18-73	$ 149-307
Potential Additional Revenue	$ 164-383	0	$ 164-383
Total	$ 295-617	$ 18-73	$ 313-690

ESTIMATES OF SPECIFIC SOURCES OF REVENUE

The estimates of existing funding and potential additional funding summarized in Table 9-2 are from a detailed analysis of each source of revenue and identification of the assumptions that are appropriate to each source. **Table 9.23** presents 25-year revenue estimates for five existing and six potential additional sources of revenue for transportation capital improvements for the City of Kent. Each source of revenue has a low estimate, a high estimate, and the average of the two.

The estimate of each of the existing and potential additional revenue sources listed in Table 9-3 is described below. The existing revenue sources are numbered 1 to 5, and the potential additional revenue sources are lettered A to F.

All revenue estimates are in 2007 dollars to match the costs of projects that are a blend of 2006 and 2007 dollars; therefore, the two sets of data are comparable.

Table 9.23. Estimates of Specific Revenue Sources 2006-2030 ($ Millions)

	Source of Revenue	Low Estimate	High Estimate	Average
I. Existing Revenue Sources for Capital				
1.	Committed Funding	$ 77.3	$ 77.3	$ 77.3
2.	Grants - Annual Average*	11.6	63.9	37.8
3.	Grants for Grade Separation Projects	17.8	73.3	45.6
4.	Local Improvement Districts (LIDs)*	35.2	75.0	55.1
5.	Transfer from Street Fund*	7.2	17.6	12.4
	Total: Existing Revenue for Capital	$ 149.6	$ 307.6	$ 228.7
	Source of Revenue	Low Estimate	High Estimate	Average
II. Potential Additional Revenue Sources for Capital				
A.	Impact Fees - City of Kent[1]	$ 45.0	$ 180.0	$ 112.5
B.	Impact Fees - Reciprocal from King County	5.0	10.0	7.5
C	Business License Fee for Transportation	73.8	98.7	86.3
D	Voted General Obligation Bonds	5.5	27.5	16.5
E.	Real Estate Excise Tax	4.5	22.3	13.4
F.	Vehicle License Fee for Transportation Benefit District[2]	30.0	44.0	37.0
	Total: Potential Additional Revenue for Capital	$ 163.8	382.5	273.2
	Combined Total for Capital: Existing + Potential	$ 313.4	$ 690.1	$ 501.9

* Net of Committed Funds

1- Impact Fees. The low estimate is based on rates of approximately $3,000 per PM peak hour trip; the high estimate is based on the potential maximum of approximately $15,000 per trip.

2- Vehicle License Fee. The range of estimates is based on a $20 per vehicle fee using varying estimates of registered vehicles in Kent and the percent of license fee revenues that would be used for the TMP Projects.

EXISTING CITY REVENUES

1. Committed Funding

The City of Kent has already secured funding for some of the projects in the Transportation Master Plan. The estimate is based on a list of the specific projects with committed funding, and the amounts and sources of the committed funds. The committed funds total $77.3 million, of which $56.8 million is from grants, $4.5 million is from local improvement districts, $12.6 million is from environmental mitigation fees, and $3.2 million is from City revenues.

The $77.3 million of committed revenue is listed as both the low estimate and the high estimate because the amounts are known, and are not estimated.

2. Grants – Annual Average (net of Committed Grants)

The estimate is based on the annual average of $4.2 million of grants received by the City since 1990, other than grants for grade separation projects.

The low estimate of $11.6 million is based on 50 percent of the historical average, but the estimate is then reduced by $40.6 million of grants already committed (other than grants for grade separation projects, which are estimated separately).

A high estimate of $63.9 million is based on 100 percent of the historical average, but the high estimate is also reduced by $40.6 million of grants already committed to City projects.

The average of these values is $37.8 million.

3. Grants for Grade Separation Projects (net of Committed Grants)

The low estimate of grants for grade separation projects is based on the annual average of $2.7 million of grants received by the City since 2004 for grade separation projects. The low estimate of $17.8 million is based on 50 percent of the historical average, reduced by $16.2 million of grants for grade separation that are already committed.

A conservative high estimate of $73.3 million was based on 50 percent of the cost of the grade separation projects in the TMP, reduced by $16.2 million of grants already committed to City grade separation projects. The high estimate uses the cost of projects as the basis because the City's policy has been to only build grade separation projects if there is substantial funding from grant sources. While the grants have typically covered 85 percent of the project cost, it is unlikely that grants will continue to fund grade separation projects at this level. A more conservative high estimate would be 50 percent, so the high estimate is now 50 percent of $179 million, reduced by $16.2 million of grants already committed to City grade separation projects for a high estimate of $73.3 million.

The net low estimate of grant revenue for grade separations is $17.8 million, and the net high estimate is $73.3 million. The average is $45.6 million.

The City's match would need to come from City revenues, such as LIDs, transfers from the street fund, real estate excise tax, vehicle license fee for transportation benefit district, and/or a business license fee for transportation.

4. Local Improvement Districts (net of Committed LIDs)

Local Improvement Districts (LIDs) have been a major source of transportation funding for the City during the past 20 years. The City anticipates that LID's will continue to be used. The City will also continue to use its authority under law, including chapter 35.72 RCW and Chapter 6.05 KMC. Such authority allows for contracts with developers for the construction or improvement of street projects which the owners elect to install as a result of ordinances that require the projects as a prerequisite to further property development. Contracts may provide for LIDs, assessment reimbursement areas, or other available programs.

The estimate of future revenue from local improvement districts (LIDs) is based on the annual average of $3.18 million of LIDs established by the City since 1986.

A low estimate of $35.2 million is based on 50 percent of the historical average, reduced by $4.6 million of LIDs already committed.

The high estimate of $75.0 million is based on 100% of the historical average, reduced by the $ 4.6 million of LIDs already committed to City projects.

The net low estimate of LID revenue is $35.2 million, and the net high estimate is $75.0 million. The average is $55.1 million.

5. Transfer from Street Fund (net of committed funds)

The City of Kent has a separate fund, the "Street Fund" in which it deposits a portion of the City's utility tax and all of the City's share of the state's tax on motor fuels. The Street Fund is used primarily for ongoing operating and maintenance expenses of the street system. However, the City transfers a portion of the Street Fund money to the City's capital improvement program (CIP) for transportation projects. The estimate is based on the annual average of $0.8 million of Street Fund revenue budgeted to be transferred to the CIP and available for capital projects during the 2007 – 2012 CIP. In other words, the estimate is based on extending the 2007 – 2012 commitment for the whole 25 years of the TMP. Continued use of the Street Fund for capital improvements will reduce the amount of money in the Street Fund for the Pavement Management Program.

A low estimate of $7.2 million is based on 50 percent of the historical average, reduced by $3.2 million of Street Fund money already committed.

The high estimate of $17.6 million is based on 100 percent of the historical average, also reduced by $3.2 million of Street Fund money already committed.

The average of these values is $12.4 million.

POTENTIAL ADDITIONAL REVENUES

A. Impact Fees – City of Kent

The Growth Management Act created RCW 82.02.050 et seq. that authorizes impact fees for streets and roads. The fees must be based on, and used for, specific improvement projects in the Transportation Master Plan. The projects must be "system improvements" that provide service and benefits to the community, and not "project improvements" that provide service and benefits to individual developments. Impact fees are calculated by identifying the cost of the road projects that serve new development, adjusting for other sources of revenue that would pay for part of the same projects, and then dividing the remaining cost by the number of trips that the road projects will accommodate. The result is the cost per trip. The amount of impact fee to be paid by each new development is calculated by multiplying the cost per trip times the number of trips that the new development will add to the roadway system.

The forecast of impact fees assumes that they would supplement or replace the existing program of environmental mitigation fees. The City would continue to use the State Environmental Policy Act (SEPA) to ensure that new development adequately mitigates its impacts on the transportation system.

Impact fees can only be imposed if the City prepares and adopts an impact fee ordinance that follows the requirements of RCW 82.02.050 et seq. The estimates are based on forecasts of future growth from 2006 to 2030.

The low estimate of $45.0 million is based on low to moderate impact fee rates charged by other cities in the area, and the high estimate of $180.0 million is based on initial estimates of the maximum amount the City of Kent could legally charge to new development for projects in the draft TMP.

B. Impact Fees – Reciprocal from King County

The reciprocal impact fees that could be received from King County are based on the same methodology as the impact fees for the City of Kent, but the growth forecasts are for the Potential Annexation Areas.

The low estimate of $5.0 million is based on low to moderate impact fee rates charged by other cities in the area, and the high estimate of $10.0 million is based on estimates of the impact on Kent roads from development in King County and review of higher impact fee rates charged by other cities in the area.

The fees would be negotiated with King County; the City would be required to raise its own impact fees in order to make reciprocal payments to the County. An alternative would be to pursue annexations and then charge Kent's mitigation fees (i.e., EMAs or impact fees) rather than to negotiate reciprocal payments from the County.

C. Business License Fee for Transportation

The cities of Renton and Redmond have used their authority to license businesses to impose a license fee that is used to build transportation improvements that benefit businesses. The fee would be on the basis of employee count or other measure of potential business impact on City facilities and demand on the transportation system. The estimate below indicates how much revenue could be generated from a similar business license in Kent, using employee count as the measure, similar to the approaches in Renton and Redmond.

The low estimate of $73.8 million uses a low estimate of 67,050 employees in Kent, the lower rate of $55 per employee count per year charged by Renton, and the lower portion of 80 percent of the license revenue committed to transportation by Renton.

The high estimate of $98.7 million uses a higher estimate of 71,915 employees in Kent, Redmond's rate of $83.25 per employee count per year, and 66 percent of the license revenue committed to transportation by Redmond.

The Renton program began in the early 1980s to finance the Oaksdale Avenue underpass under I-5, then it was continued to fund other transportation projects. There was a sunset for the first ten years. The fee was developed after significant discussions with Boeing, the Chamber of Commerce, and other key businesses. A committee met every year to review the program. The City was able to leverage the money, typically obtaining $3.00 of state and federal money for every $1.00 of business license fee. After the initial 10 years, the business community felt that the City was putting the money to good use and agreed to continue the program, and to remove the sunset clause. Renton's business license fee applies to for-profit businesses, so governments and non-profits do not pay. Renton's transportation money has been used for street projects.

The Redmond program was developed in active consultation with the business community. The initial fee was authorized at $65 per employee per year between 1997 and 2000. The program was extended for 2001 to 2004 and the rate was increased to $67.50. The program was extended again for 2005 to 2006 and the rate was increased to $83.25. Some of the transportation money is used for transportation demand management and intelligent transportation programs.

D. Voted General Obligation Bonds

The City of Kent can issue bonds to borrow money for a variety of purposes. The legal limit on such borrowing is an amount equal to 2.5% of the taxable value of the property in the City. In order to borrow the funds, and to authorize an additional property tax to repay the bonds, the City would be required to obtain approval by 60 percent or more of the voters. The estimates are based on remaining debt capacity of the City.

The low estimate of $5.5 million is based on a bond issue of 10 percent of the remaining debt capacity, and the high estimate of $27.5 million is based on a bond issue of 50 percent of the City's remaining debt capacity.

Other potential projects may, or may not, compete for the City's borrowing capacity. If the City proposes a voted general obligation bond for the aquatic center, the bond could be proposed under RCW 39.36.020 (4) for "*… park facilities …" and thus not use any of the statutory debt limit of the City under RCW 39.36.020 (2)(b), and thus preserve that authority for transportation. Furthermore, if the City were to propose a voted bond issue for specific transportation projects that support jobs, employment and the economy, the bond could be considered part of the borrowing authority of RCW 39.36.020 (4) for "… capital facilities associated with economic development…"* The City Attorney and/or bond counsel could provide information on applicability of these potential strategies.

E. Real Estate Excise Tax (REET)

The City of Kent has adopted both 0.25% real estate excise taxes (REET) authorized by the state law. REET is collected each time a real estate transaction occurs in the city. The money is used for many types of infrastructure improvements, including transportation projects. Kent uses half of its REET money for parks and recreation, and the other half for a variety of other capital improvements. This analysis does not change the REET for parks and recreation, but it does examine the potential revenue for transportation from the other half of the REET.

The estimate is based on the annual average of $1.8 million the City receives for the half of REET that is not used for parks and recreation. While there is significant competition among Kent's capital projects for funding by REET, the City could choose to dedicate a portion of its REET for major transportation projects.

The low estimate of $4.5 million is based on 10 percent of the annual revenue, and the high estimate of $22.3 million is based on 50 percent of the annual revenue.

F. Vehicle License Fee for Transportation Benefit District

In 2007, the legislature passed and the Governor signed a law authorizing a $20 vehicle license fee.[2] In order to obtain this revenue, the following would have to occur:

1. King County would have to decide to not impose the fee (County's have right of first refusal), or the County would need to adopt a program and share revenue with cities.
2. Kent would have to create a city-wide transportation benefit district as the entity that would charge or expend the fee.
3. Kent would have to identify specific transportation projects to be funded by the vehicle license fee. The projects must be necessitated by current or future congestion levels on roads of statewide or regional significance.
4. Kent would need to ensure that the eligible project(s) are listed in a state or regional transportation plan.
5. The City would need to adopt the license fee, or enter into an agreement with King County regarding sharing of the revenue from the County, including a provision that it would "sunset" when the project(s) were paid for.

The estimate is based on the $20 vehicle license fee and an estimate of the number of registered vehicles in Kent and assumptions about how much of the money would be used for TMP projects, as opposed to a portion that could be used for operations and maintenance (as allowed by the new law).

The low estimate of $30.0 million is based on an estimate of 80,000 registered vehicles and 75 percent of the revenue being used for TMP projects. The high estimate of $44.0 million is based on an estimate of 88,000 registered vehicles and 100 percent of the revenue being used for TMP projects.

TRANSIT FUNDING

Operating funding for transit services primarily comes from local (regional) sales tax revenues, farebox revenues and in the case of Sound Transit, a Motor Vehicle Excise Tax. Capital funding primarily comes from federal grants. Metro bus service is allocated to three subareas of the County, the East, South, and West (Seattle/north suburban) subareas. The West subarea has 63 percent of the bus service, and the current *Six-Year Transit Development Plan* provides that every 200,000 hours of additional bus service will be

[2] *The law authorizes a $20 per vehicle license fee using Council approval. An additional incremental fee up to $80 per vehicle can be imposed with voter approval.*

allocated among the three subareas on a 40:40:20 basis with the East and South subareas each receiving 40 percent of new service hours and the West subarea receiving 20 percent.

The City of Kent currently contributes $21,265 annually toward the farebox replacement for the Shopper Shuttles. In 2006 the City paid $43,174 for 10 months of operation of the Commuter Shuttle. Estimated 2007 expenses are $70,250 to provide two additional runs, meeting up with the additional Sounder trains.

IMPLEMENTING THE PLAN

Implementing the Transportation Master Plan will require close coordination among the City departments, along with key actions to be taken by the City Council. This chapter identifies the high priority implementation actions and their potential schedule.

The TMP is a living document and as incorporated into the City's Comprehensive Plan will serve as the blueprint for transportation in Kent over the next several years. Realistically, the actions in the plan are most useful over the next three to five years, at which point a plan update will be required. Several implementation steps should be initiated over the next couple of years to determine if changes are needed, or to reaffirm a particular strategy.

ANNUAL MOBILITY REPORT CARD

An annual mobility report card will be developed to document progress towards plan implementation and to monitor the transportation system performance. The City will use this information to provide accurate information to the public regarding the City's actions, and results, related to the TMP. The report card will also provide a basis for future updates of the TMP.

TRANSPORTATION MASTER PLAN REVIEW

The TMP is adopted in summary into the Transportation Element of the City's Comprehensive Plan, and will be amended as needed as part of the City's regular Comprehensive Plan amendment cycle. The process ensures that proposed changes go through a public review process before the amended plan is adopted by the City Council. In preparation for the amendment cycle, the City will review the plan and propose updates as needed. These proposed updates may be due to shifts in City priorities, the availability of new information, or the relevance of certain plan components.

As part of the process, the City will review the future list of projects and update the Capital Facilities Plan as needed. The City will submit all changes into the Regional Transportation Improvement Plan so that they can be evaluated by the regional air quality model and become eligible for federal grants. The City will also review and update the Policies and

Funding chapters, in order to remain consistent with the City's vision and current with available funding strategies.

GOALS AND POLICIES

This Transportation Element and the TMP will guide the development and funding of a transportation network that will provide mobility for residents and employees within the City of Kent in a way that preserves the quality of life. Policies are established on how to prioritize the City's transportation improvements and how to identify the City's strategic interests in regional investments, adjacent transportation facilities and funding alternatives.

The residents of Kent value specific attributes of our community, whether it is the economic vitality of the downtown area, the ease of mobility and safe streets, the quality of the schools, or the system of parks. These values are important; as they help the City Council and staff make decisions and manage the City. These values are integrated into the policies that guide the City and the evaluation criteria that are used to prioritize transportation improvement projects.

The City's review of transportation goals and policies began with the TMP Task Force. The group developed statements that best described the type of future transportation system they envisioned for Kent. Community members also confirmed the core values that had been identified from the community interviews. These core values became the foundation for evaluating the proposed multi-modal transportation improvements.

The previous transportation related principles, goals and policies were reviewed and revised using input from the community and stakeholder interviews, the task force, and City Council members. The policies were revised to align with community values and maintain consistency with the other elements of the Comprehensive Plan.

Using the City's overall transportation goal as a base, several specific transportation system goals and policies were established. These goals and policies, described in the remainder of this chapter, provide guidance to implementing the Transportation Master Plan.

Transportation and Land Use

GOAL TR-1. COORDINATE LAND USE AND TRANSPORTATION PLANNING TO MEET THE NEEDS OF THE CITY CONSISTENT WITH THE GROWTH MANAGEMENT ACT.

Policy TR-1.1: Work actively and cooperatively with state, regional and other South County jurisdictions to plan, design, fund and construct regional transportation projects that further the City's transportation and land use goals.

Policy TR-1.2: Ensure consistency between land use and transportation plans so that transportation facilities are compatible with the type and intensity of land uses.

Policy TR-1.3: Prohibit development approval if the proposed development would cause the level of service to fall below the City's adopted level of service standards, unless improvements or strategies to accommodate the impacts of development are made concurrent with the development.

Policy TR-1.4: Phase implementation of transportation plans with growth to allow adequate transportation facilities and services to be in place concurrent with development. Approval of new development will be dependent on the active participation of development property owners in the funding of the transportation improvements needed to maintain the City's level of service standards. The City may contract with owners of real estate for the participation in LIDs, assessment reimbursement areas, or other available processes for construction or improvement of street projects required for further property development.

Policy TR-1.5: Use a "Plan-Based" approach as the basis for a multimodal transportation concurrency management system. A plan-based approach means that the funding of programs, construction of facilities, and provision of services occur as envisioned in the Comprehensive Plan and are proportionate with the pace of growth.

Policy TR-1.6: Coordinate new commercial and residential development in Kent with transportation projects to assure that transportation facility and service capacity is sufficient to accommodate the new development.

Policy TR-1.7: Prioritize those projects that improve transportation facilities and services within designated centers and along identified corridors connecting Centers; those that support the existing economic base and those that will aid the City attracting new investments to those centers.

Policy TR-1.8: Ensure the transportation system is developed consistent with the anticipated development of the land uses and acknowledge the influence of providing transportation facilities to accelerate or delay the development of land uses, either by type or by area.

Policy TR-1.9: Promote multimodal facilities and services, street design, and development that includes residential, commercial and employment opportunities within walking/bicycling distance so that distances traveled are shorter and there is less need for people to travel by automobile.

Policy TR-1.10: Incorporate pedestrian and transit friendly design features into new development. Examples include:

- Orient entries of major buildings to the street and closer to transit stops rather than to parking lots.
- Avoid constructing large surface parking areas between the building frontage and the street.
- Provide pedestrian pathways that provide convenient walking distances to activities and to transit stops.
- Cluster major buildings within developments to improve pedestrian and transit access.
- Provide weather protection such as covered walkways connecting buildings, and covered waiting areas for transit and ridesharing.
- Design for pedestrian safety, providing adequate lighting and barrier free pedestrian linkages.
- Provide bicycle connections and secure bicycle storage lockers convenient to major transit facilities.
- Use design features to create an attractive, interesting and safe pedestrian environment that will encourage pedestrian use.
- Design transit access to large developments, considering bus stops and shelters as part of the project design.
- Encourage developers of larger commercial and public projects to provide restrooms for public use.

Policy TR-1.11: Manage access to all residential, recreational, commercial, and industrial properties along principal, minor and collector arterials. Consider consolidating access points whenever feasible during development review or design of road improvement projects.

Street System

GOAL TR-2: IDENTIFY A HIERARCHAL STREET CLASSIFICATION THAT IS DESIGNED TO BALANCE STREET CAPACITY NEEDS, COMPATIBILITY AND CONTEXT OF ADJACENT LAND USES, EMERGENCY RESPONSE EFFORTS, NON-MOTORIZED TRAVEL, AND MULTIMODAL USER SAFETY.

Policy TR-2.1: Assign a functional classification to each street in the City based on factors including travel demand of motorized and non-motorized traffic, access to adjacent land use and connectivity of the transportation network.

Policy TR-2.2: Preserve needed traffic capacity when planning street improvements by consistent application of functional classification standards.

Policy TR-2.3: Establish procedures to implement the authority granted to the City by RCW 35.79 to inventory, evaluate, and preserve right-of-way needs for future transportation purposes, and wherever possible, make advance acquisition in order to minimize inconvenience to affected property owners and to safeguard the general public interest.

Policy TR-2.4: Consider the context of adjacent land uses (existing and future), the benefits and desirability of non-motorized travel, and the competition for street space when reconstructing or adding streets.

Traffic Flow

GOAL TR-3: PRESERVE AND EXPAND CAPACITY, MOBILITY AND ACCESS MANAGEMENT FOR ALL TRANSPORTATION MODES ON THE ARTERIAL NETWORK TO REDUCE CONGESTION.

Policy TR-3.1: Maintain level of service (LOS) standards that promote growth where appropriate while preserving and maintaining the existing transportation system. Set LOS E as the standard for City Street Corridors. Set LOS F as the standard for the Pacific Highway (SR 99) Corridor and for downtown Kent while recognizing WSDOT's LOS D for SR 99.

Policy TR-3-2: Evaluate the City's transportation facilities annually to determine compliance with the adopted level of service standards and, as necessary, amend the Six-Year Transportation Improvement Program (TIP) and Capital Improvement Plan (CIP)

Policy TR-3-3: Maintain the flow of traffic on the road system and provide adequate access to adjacent land uses by using adopted Access Management strategies. These include: limiting the number of driveways (usually one per parcel); locating driveways away from intersections; connecting parking lots and consolidating driveways to create more pedestrian-friendly streets.

Policy TR-3.4: Use Transportation System Management (TSM) strategies to maximize the efficiency of the existing street network; include techniques such as intelligent transportation systems (ITS) and synchronizing traffic signals to facilitate safe and efficient traffic flow on the arterial street system.

Policy TR-3.5: Develop Transportation Demand Management (TDM) strategies in support of mode-split goals and Commute Trip Reduction.

Neighborhood Traffic

GOAL TR-4: BALANCE THE DUAL GOALS OF PROVIDING ACCESSIBILITY WITHIN THE LOCAL STREET SYSTEM AND ENSURING NEIGHBORHOOD STREET SAFETY.

Policy TR-4.1: Ensure reliable traffic flow and mobility on arterial roads, especially on regional through routes, while protecting local neighborhood roads from increased traffic volumes.

Policy TR-4.2: Minimize through traffic on residential streets by emphasizing through traffic opportunities on collector and arterial streets.

Policy TR-4.3: Protect residential areas that are impacted by overflow traffic from the regional system.

Policy TR-4.4: Enhance the Neighborhood Traffic Control Program (NTCP) to help residents identify and resolve neighborhood traffic concerns.

Policy TR-4.5: Maintain a connected street network to give people more options and to spread out the traffic over more streets.

Transportation Facility Design

GOAL TR-5: DESIGN TRANSPORTATION FACILITIES USING CONTEXT SENSITIVE DESIGN STRATEGIES TO PRESERVE AND TO BE CONSISTENT WITH THE NATURAL AND BUILT ENVIRONMENTS.

Policy TR-5.1: Encourage landscapes at transportation facilities that complement neighborhood character and amenities, incorporate street trees in planting strips to improve air quality and visual aesthetics, and implement traffic calming strategies.

Policy TR-5.2: Separate pedestrians from traffic lanes on all arterials, wherever possible, by the use of street trees and landscaped strips, and avoid the construction of sidewalks next to street curbs.

Policy TR-5.3: Maintain and incorporate prominent features of the natural environment when landscaping transportation facilities.

Policy TR-5.4: Encourage pedestrian and bicycle connections between residential developments, neighborhood commercial centers, and recreation areas.

Policy TR-5.5: Arrange streets and pedestrian paths in residential neighborhoods to form a grid network, providing multiple choices as to path and mode.

Policy TR-5.6: Avoid the creation of excessively large blocks and long local access residential streets.

Freight Movement

GOAL TR-6: SUPPORT KENT'S INDUSTRIAL VALLEY AND MORE SPECIFICALLY THE MANUFACTURING AND INDUSTRIAL CENTER AS A PRIMARY HUB FOR REGIONAL GOODS MOVEMENT AND AS A GATEWAY FOR INTERNATIONAL GOODS DISTRIBUTION TO THE NATIONAL MARKETPLACE.

Policy TR-6.1: Support investments in trucking and rail facilities to enhance the freight transportation system and strengthen the City's economic base.

Policy TR-6.2: Establish a network of freight routes to improve freight reliability and mobility incorporating sensitivity to land use context into roadway design.

Policy TR-6.3: Coordinate with BNSF Railroad, UP Railroad, Washington Utilities and Trade Commission (WUTC), and Sound Transit to ensure maximum transportation efficiency on both roads and rails, while minimizing adverse impacts on the community.

Policy TR-6.4: Locate new spur tracks to provide a minimum number of street crossings and to serve a maximum number of sites.

Policy TR-6.5: Provide, when feasible, grade-separated railroad crossings on arterial corridors to eliminate conflict between rail and road traffic and to enhance the safety and efficiency of both transportation systems.

Policy TR-6.6: Provide protective devices, such as barriers and warning signals, on at-grade crossings. Develop traffic signal preemption that is activated by crossing signals in order to maintain non-conflicting auto/truck traffic flow and to facilitate clearing of the grade crossings prior to when crossings are occupied by trains.

Non-Motorized Transportation

GOAL TR-7: IMPROVE THE NON-MOTORIZED TRANSPORTATION SYSTEM TO PROVIDE A COMPREHENSIVE SYSTEM OF CONNECTING SIDEWALKS, WALKWAYS, ON-STREET BICYCLE FACILITIES AND SHARED-USE PATHS THAT WILL ENCOURAGE INCREASED USAGE AND SAFE TRAVEL.

Policy TR-7.1: Implement the Non-Motorized system in a way that reflects the priorities identified by the public process. Emphasize completion of sidewalks identified as the highest-high priority (shown in Figure 6-6) and bicycle facilities identified on the Bicycle System Map (shown in figure 6-11).

Policy TR-7.2: Provide non-motorized facilities including signage within all areas of the City to connect land use types, facilitate trips made by walking or bicycling, and reduce the need for automobile trips.

Policy TR-7.3: Create a comprehensive system of pedestrian facilities using incentives and regulations. All future development should include pedestrian and bicycle connections to schools, parks, community centers, public transit services, neighborhoods and other services. Provide special attention to the requirements set forth in the Americans with Disabilities Act (ADA) regarding the location and design of sidewalks and crosswalks.

Policy TR-7.4: Encourage schools, safety organizations, and law enforcement agencies to provide information and instruction on pedestrian safety issues that focus on prevention of the most important accident problems. The programs will educate all roadway users of their privileges and responsibilities when driving, bicycling, and walking.

Policy TR-7.5: Encourage an increase in the percent of modal share of commuter trips made by cyclists by the year 2030 by fostering an environment that eliminates deterrents to bicycling and encourages bicycle use city-wide for all types of trips.

Policy TR-7.6: Consider needs of bicyclists and pedestrians when developing design plans for City street construction projects consistent with the City's bicycle system plan and Construction Standards.

Policy TR-7.7: Encourage the installation of safe and secure bicycle parking facilities at park and ride facilities, train/transit stations, shopping malls, office buildings, and all land use types that attract the general public.

Policy TR-7.8: Work with the Kent, the Federal Way, the Highline school districts and neighborhood associations to support programs that encourage walking and bicycling to local schools.

Policy TR-7-9: Encourage efforts that inform the public about the health effects of cycling and walking. Encourage walking and cycling for travel and recreation to achieve personal health and well-being and to support a more healthful environment for the community by reducing noise and pollution.

Policy TR-7.10: Encourage schools, safety organizations, and law enforcement agencies to provide information and instruction on bicycle safety issues that focus on prevention of the most important accident problems. .

Transit and High Occupancy Vehicles (HOV)

GOAL TR-8: ENCOURAGE THE DEVELOPMENT AND USE OF ALTERNATIVES TO SINGLE-OCCUPANCY VEHICLES.

Policy TR-8.1: Work with regional transit providers to resolve the transit needs identified in the TMP and provide high quality travel options for local residents, employees, students, visitors, business, and other users of local and regional facilities.

Policy TR-8.2: Work with regional transit providers to establish a hierarchy of transit services focused on three major elements:

- Kent-Kent Connections
- Kent-South County Connections
- Kent-Regional Connections

Policy TR-8.3: Emphasize transit service and capital investments that provide mobility and access within the City of Kent and make it possible for residents to access local services and support local businesses while reducing their travel by auto.

Policy TR-8.4: Work with transit providers to maintain and expand direct and frequent regional bus routes.

Policy TR-8.5: Develop a network of park and ride facilities in cooperation with regional transit providers and the Washington State Department of Transportation. Work to ensure that the regional transit system includes park and ride lots in outlying areas, which could:

- Intercept trips by SOVs closer to the trip origins;
- Reduce traffic congestion; and
- Reduce total vehicle miles traveled

Policy TR-8.6: Secure a share of regional transit system facilities and service priorities for Kent residents proportional to the City of Kent's contributed share of regional transit revenues.

Policy TR-8.7: Coordinate with transit providers to enhance transit service information and provide incentives to encourage and facilitate transit use and ridesharing.

Policy TR-8.8: Develop the Kent Transit Center with complete set of transit center amenities, including timed transfers between most routes, passenger waiting areas, Intelligent Transportation System (ITS) bus arrival notification, on-site route information, and other amenities.

Policy TR-8.9: Coordinate with transit providers and other transportation agencies in the design and placement of bus shelters and transit supportive facilities that are needed at both ends of the transit trip when the transit rider becomes a pedestrian or a bike rider. These include but are not limited to transit shelters, bike racks or lockers, good (illuminated) pedestrian paths to and from transit stops and covered walkways wherever possible. Work with transit agencies and developers to design transit facilities that are compatible with neighborhood character.

Policy TR-8.10: Work with employers to provide Transportation Demand Management (TDM) measures in the workplace that promote alternatives to single occupant vehicles (SOV). The City will lead by example by implementing a successful Commute Trip Reduction (CTR) program for City employees.

Policy TR-8.11: Develop Transportation Demand Management (TDM) strategies in support of mode-split goals. These include, but are not limited to, parking management, individualized marketing, ridesharing and support of non-motorized travel.

Policy TR-8.12: Work with private developers and transit providers to integrate transit facilities into residential, retail, manufacturing, commercial, office and other types of development using the following actions:

- Support transit by including land uses with mixed-use and night-time activities;
- Support transit-oriented development opportunities with the private and public sectors;
- Integrate multiple access modes, including buses, carpools, vanpools, bicycles and pedestrians;
- Support and facilitate transit use by choice of urban design and community character.

Funding

GOAL TR-9: PURSUE FUNDING FOR TRANSPORTATION IMPROVEMENTS FROM ALL POTENTIAL SOURCES IN AN EFFICIENT AND EQUITABLE MANNER.

Policy TR-9.1: Consider the full range of public and private funding sources available for all modes of transportation.

Policy TR-9.2: Allow for funding of growth-related traffic improvements by impact fees or other mechanisms that apportion costs in relation to the impact of new development.

Policy TR-9.3: Identify and evaluate alternative land use and transportation scenarios, including assumptions about levels and distribution of population and employment densities, types and mixes of land use, and transportation facilities and services, and assess their effects on transportation funding needs.

Policy TR-9.4: Support regional, state and federal initiatives to increase transportation funding. The City will also continue to use its authority under law, including chapter 35.72 RCW and Chapter 6.05 KMC. Such authority allows for contracts with developers for the construction or improvement of street projects which the owners elect to install as a result of ordinances that require the projects as a prerequisite to further property development. Contracts may provide for LIDs, assessment reimbursement areas, or other available programs.

Policy TR-9.5: Coordinate equitable public/private partnerships, such as Local Improvement Districts (LID), Transportation Benefit Districts (TBD), Transportation Benefit Zones (TBZ), and Transportation Management Associations (TMA) to help pay for transportation improvements. The City may contract with owners of real estate for the participation in LIDs, assessment reimbursement areas, or other available processes for construction or improvement of street projects required for further property development.

Policy TR-9.6: Establish a mechanism to provide a multi-jurisdictional cooperation to fund transportation improvements, participate in joint ventures and promote them to improve inter-jurisdictional transportation systems.

Policy TR-9.7: Create a funding mechanism that can be applied across boundaries to address the impact on the City's transportation system of growth outside the City's boundaries.

Policy TR-9.8: Emphasize investments for the preservation and enhancement of the existing transportation facilities. Seek funding from a variety of sources and consider pursuing new revenue opportunities for roadway maintenance and improvements to encourage non-SOV modes of travel.

Intergovernmental Coordination

GOAL TR-10: COORDINATE TRANSPORTATION OPERATIONS, PLANNING, AND IMPROVEMENTS WITH THE STATE, THE COUNTY, NEIGHBORING JURISDICTIONS, AND ALL TRANSPORTATION PLANNING AGENCIES TO ENSURE THE CITY'S INTERESTS ARE WELL REPRESENTED IN REGIONAL PLANNING STRATEGIES, POLICIES AND PROJECTS.

Policy TR-10.1: Emphasize City representation on planning boards that have authority over or can affect the City's transportation system.

Policy TR-10.2: Identify opportunities to partner with neighboring jurisdictions, regional transit agencies, or other agencies in order to improve funding opportunities from state, federal or other grant providers.

Policy TR-10.3: Coordinate planning for developments that impact transportation level-of-service across jurisdictional boundaries.

Policy TR-10.4: Support intergovernmental programs that emphasize regional mobility for people and goods, promote the urban center approach to growth management, and seek to reduce greenhouse gas emissions.

Policy TR-10.5: Coordinate with state, regional and neighboring agencies to encourage pass-through traffic to by-pass downtown Kent, thus reducing unnecessary air pollution and congestion.

Policy TR-10.6: Support innovative transportation system management strategies such as High Occupancy Toll (HOT) lanes that help keep the regional traffic on the freeways rather than spilling over onto the City arterials.

Environmental Preservation

GOAL TR-11. ENSURE THAT TRANSPORTATION FACILITIES ARE DEVELOPED AND MAINTAINED IN A MANNER THAT IS SENSITIVE TO THE NATURAL ENVIRONMENT AND SUPPORT A TRANSPORTATION SYSTEM THAT MINIMIZES ITS IMPACT ON THE ENVIRONMENT.

Policy TR-11-1: Minimize levels of harmful pollutants generated by transportation-related construction, operations, and maintenance activities from entering surface and groundwater resources.

Policy TR-11.2: Improve management strategies to reduce contamination from street runoff and stormwater. Coordinate these efforts with other jurisdictions, as well as regional and state agencies.

Policy TR-11.3: Ensure that transportation-related improvement projects comply with state and federal guidelines for air and water quality.

Policy TR-11.4: Promote energy conservation and greenhouse gas reductions by implementing TDM goals and policies and Commute Trip Reduction strategies.