

# Transportation 2040

## UPDATE



toward a sustainable transportation system

### Appendix D: The Metropolitan Transportation System



MAY 29, 2014

Puget Sound Regional Council

## Appendix D: The Metropolitan Transportation System

This appendix contains a detailed description of the central Puget Sound Metropolitan Transportation System, in accordance with federal Metropolitan Planning Organization planning requirements. See 23 USC 134(g). As part of a cooperative effort between PSRC, Washington State Department of Transportation (WSDOT) and local jurisdictions, regional facilities and services that comprise the region's Metropolitan Transportation System were identified as part of the 1995 Metropolitan Transportation Plan (MTP) and updated in 1998.

**Transportation 2040** once again updates the Metropolitan Transportation System. The plan emphasizes an integrated multimodal transportation system and describes the regionally significant modal and programmatic components of that system. The Metropolitan Transportation System consists of regionally significant multimodal transportation facilities and services that are crucial to the mobility needs of the region. The Metropolitan Transportation System serves as a planning tool used to identify regional transportation problems, analyze and develop regional solutions, and it serves as a focus for required state and regional transportation system performance monitoring, particularly for the federally required congestion management process (CMP).

Some transportation facilities may be included within more than one Metropolitan Transportation System component; this occurs most often with roadway facilities. These systems are highly interdependent. The ferry system, for example, would not perform as well without a roadway or transit system. Services included in the Metropolitan Transportation System, unlike facilities, do not necessarily have a physical structure to them, but nevertheless are considered regionally significant. Services help provide access to activities that are crucial to the social or economic health of the central Puget Sound region. Regionally significant transportation services help to improve overall system performance and include Transportation System Management and Operations (TSM&O) and Transportation Demand Management (TDM) strategies. System management services help to optimize and integrate the operation of the multimodal transportation system, while TDM programs encourage people to make fewer single occupant vehicle trips.

### TRANSPORTATION FACILITIES AND SERVICES OF STATEWIDE SIGNIFICANCE

In 1998, the state Legislature enacted HB 1487, more commonly known as the Level of Service or LOS bill, to recognize the importance of specific categories of transportation facilities and services that are of statewide significance. This legislative action amended the Growth Management Act (RCW 36.70A), Priority Programming for Highways (RCW 47.05), and Regional Transportation Planning Organizations (RCW 47.80) to direct further definition and planning through state, regional and local actions. As now codified under RCW 47.06.140, the nine categories of transportation facilities and services of statewide significance include:

1. The interstate highway system
2. Inter-regional state principal arterials including ferry connections that serve statewide travel
3. Intercity passenger rail services
4. Intercity high-speed ground transportation
5. Major passenger inter-modal terminals, excluding all airport facilities and services
6. The freight railroad system
7. The Columbia/Snake navigable river system
8. Marine port facilities and services that are related solely to marine activities affecting international and interstate trade

9. High-capacity transportation systems serving regions as defined in RCW 8M04.015 (in the central Puget Sound, this is the Sound Transit express bus and rail system plus the state HOV system and related supporting facilities).

The first two categories include the interstate highway system and inter-regional state principal arterials and ferry connections. These state system elements were formally defined and designated in 1999 by respective actions of the State Transportation Commission and State Legislature as Highways of Statewide Significance (HSS) and include key ferry routes.

On October 30, 2003, the Puget Sound Regional Council Executive Board adopted level of service (LOS) standards for regionally significant state highways in the central Puget Sound region. Regionally significant state highways are state transportation facilities that are not designated as being of statewide significance. PSRC took this action to comply with 1998 amendments (HB 1487, the "Level of Service Bill") to the Growth Management Act (GMA).

Adoption of LOS standards for regionally significant (also called non-HSS) state highways followed a year-long process involving WSDOT and the region's cities and counties. For further information, see the PSRC website, psrc.org.

## ROADWAY SYSTEM

The roadway and high occupancy vehicle (HOV) systems are integral components to the region's transportation system and will continue to be into the foreseeable future.

The 1995 Metropolitan Transportation Plan advanced a balanced multimodal transportation system that provides options to users and reduces the dependence upon single-occupant vehicles, while encouraging alternate modes of travel. *Transportation 2040* also recognizes that highway improvements and capacity enhancements are needed to improve mobility on the region's roadways. Since 1995, great progress has been made in identifying local and regional arterial network improvements. Map D-1 displays the roadway component of the Metropolitan Transportation System.

Individual streets and roads do not function independently, but rather form a network through which traffic flows. The roadways in the region can be

## Metropolitan Transportation System (MTS) Definition

MTS facilities and services are defined both functionally and geographically. A facility or service is part of the MTS if it provides access to any activities crucial to the social or economic health of the central Puget Sound region. Facilities that weave parts of the regional together by crossing county or city boundaries are critical to the MTS. Any link that accesses major regional activity centers, such as an airport, is also a critical element of the MTS. Specific facilities or services are included in the MTS based on their function within the regional transportation system rather than their geometric design or physical characteristics.

Facilities and support services in the MTS include the following:

- Roadway System
- Ferry System
- Transit System
- Nonmotorized System
- Freight and Goods system
- Intercity Passenger Rail
- Regional Aviation
- Transportation Demand Management

## Regional Roadway Component of the Metropolitan Transportation System

Streets and highways are the backbone of the region's transportation system. Any highway or roadway facility that is part of one of the three following categories is included as part of the roadway MTS.

- Roadways included in the National Highway System (includes all interstate and U.S. highways)
- Washington State Highways
- Principal arterials, either locally identified or officially identified according to the Federal Functional Classification System (approved by FHWA in April 1993)

classified along two dimensions: the functional classification system that is used to characterize the purpose of a roadway, and the system of ownership by which the management and financing of the roadway system is organized.

Roads serve two primary functions: mobility to move traffic, goods, and people from one location to another; and to provide access to land. The degree to which one of these functions predominates over the other determines the road's functional classification. The functional classification system describes roadways via a hierarchy, and is comprised of the following categories: (1) interstate highways, (2) principal arterials, (3) minor arterials, (4) collectors, and (5) local streets.

	<b>King</b>	<b>Kitsap</b>	<b>Snohomish</b>	<b>Pierce</b>
<b>Interstate*</b>	241	0	53	90
<b>Other Freeway**</b>	149	31	85	65
<b>Ramp</b>	194	18	80	47
<b>Principal Arterial</b>	448	79	205	124
<b>Minor Arterial</b>	735	127	556	219
<b>Collector</b>	403	222	276	347
<b>Local</b>	251	46	100	113
<b>Totals</b>	<b>2,421</b>	<b>522</b>	<b>1,355</b>	<b>1,004</b>

\* Interstate Miles reflect a dual carriageway representation  
 \*\*The majority of Other Freeway miles reflect a dual carriageway representation.

**The National Highway System (NHS).** Title 23 of the U.S. Code section 103 states that the purpose of the NHS is to provide an interconnected system of principal routes that serve major population centers, international border crossings, ports, airports, public transportation facilities, intermodal transportation facilities, major travel destinations, meet national defense requirements, and serve interstate and inter-regional travel. Facilities included in the NHS are of clear regional significance.

**Washington State** highways are inherently of regional significance since inclusion in the state highway system requires that these routes function as the most important inter-regional, intra-regional, and urban-rural connections. It should be clarified that the term “highways” is not meant to indicate the functional classification. All the state highways are considered MTS facilities regardless of functional class.

**Principal Arterials.** Principal arterials are classified by either the state for federal purposes or local jurisdictions for developing Comprehensive or Arterial Plans. Classification as a principal arterial in either system denotes a facility of regional significance.

**HOV System.** The high occupancy vehicle (HOV) system includes dedicated lanes on freeways, regional arterials and local streets, limited access ramps to those facilities and designated by-pass lanes. Transit-emphasis or transit-only lanes, including “Business Access/Transit” (BAT) lanes, are considered to be part of the MTS. High occupancy vehicles that use the dedicated facilities include public transit, vanpools, and carpools that carry at least two or more passengers (three or more in one case).

The Washington State Department of Transportation has responsibility for the planning,

construction, and operations of freeway high occupancy vehicle lanes in the region, but coordinates planning and operations with local jurisdictions, transit service providers and PSRC. The department has further prioritized the freeway system through the identification of the "core" HOV lanes. The core system represents a subset of those identified in *Destination 2030* and includes higher priority dedicated lanes on interstate and limited access state routes. Like freeway HOV lanes, arterial HOV lanes provide greater speed and reliability for high occupancy vehicles. Arterial HOV lanes increase service reliability by avoiding congested intersections and general-purpose lanes.

## **FERRY SYSTEM**

The regional ferry system is a unique hybrid of two modes. Ferry routes function as vehicle-carrying marine highways moving people and goods across Puget Sound. Ferries also are a high capacity transit mode for thousands of walk-on passengers. In addition to boats, the ferry system includes routes and terminals, as well as other support facilities.

The Washington State Department of Transportation operates ferry service on 10 routes in the four-county region. In addition, King County Ferry District operates two passenger ferry routes: Vashon Island – downtown Seattle and West Seattle – downtown Seattle (the Elliott Bay Water Taxi). The regional system also includes service by two other providers: Kitsap Transit operates the Bremerton – Port Orchard and Bremerton – Annapolis foot ferries and Pierce County operates auto ferries between Steilacoom and Anderson and Ketron Islands. The ferry system component of the Metropolitan Transportation System is displayed on Map D-2.

***Terminals and Other Support Facilities.*** These facilities provide an important link between the termination of the ferry route and the landside transportation system on both sides of Puget Sound. Ongoing improvement projects at all terminals are designed to strengthen connections between ferries and other forms of transportation, such as bus, rail, auto, pedestrian, bicycle, and other modes. Other facilities are important in supporting these transportation system interconnections. These include park-and-ride lots at most of the terminals, dedicated HOV lanes to assure ridesharing vehicles minimal delay when boarding or leaving ferries and maintenance facilities such as the primary maintenance base at Eagle Harbor on Bainbridge Island.

### **Ferry Component of the Metropolitan Transportation System consists of:**

- Auto ferries
- Passenger-only ferries
- All ferry terminals and support facilities owned and/or operated by WSDOT, King County Ferry District, Kitsap Transit, and Pierce County

### **Regional Transit Component of the Metropolitan Transportation System**

The regionally significant transit component of the Metropolitan Transportation System consists of:

- Existing and planned High Capacity Transit (HCT) services defined as public transportation services operating on exclusive right-of-way to provide a substantially higher level of passenger capacity, speed and service frequency than typical bus services operating on general purpose roadways.
- Other existing and planned bus services (not considered HCT) that link major regional destinations and/or provide travel options in highly congested corridors.
- Existing and planned facilities that provide connections among and between the regional transit services, including large park-and-ride lots (>250 stalls), major bus transit centers, light rail and commuter rail stations, and auto and passenger-only ferry terminals.
- Bus rapid transit (BRT) and roadside improvements needed to support BRT such as intelligent transportation systems, business access transit (BAT) lanes and queue jumps.

## TRANSIT SYSTEMS

The transit component of the Metropolitan Transportation System is comprised of major regional transit services and facilities that make a regionally significant contribution toward providing public transportation access between activities that are crucial to the social or economic health of the central Puget Sound region.

Regional transit services that weave various parts of the region together and provide access to major regional activity centers, including connections between the designated urban centers and other major regional employment locations, are included as part of the Metropolitan Transportation System. In addition, regional transit services are those that provide efficient travel opportunities in congested areas by accommodating high volume demand. These services help to provide an alternative where congestion is particularly severe and travel options may be limited. In addition to the region's planned fixed-route high capacity transit systems (light rail and commuter rail service and infrastructure plus passenger-only ferry service and infrastructure), regionally significant transit services include Sound Transit Express Bus and other operators' Bus Rapid Transit services as well as the roadway facilities they use. The supporting MTS roads include general purpose roadways, Business-Access/Transit and other transit-emphasis lanes, HOV lanes, exclusive transit rights-of-way, and road-side and management infrastructure necessary to the delivery of high-performance bus services.

Regional transit facilities are included as part of the Metropolitan Transportation System based on their ability to facilitate convenient connections between different public transit modes (for example, ferry and bus) and between transit and other transportation modes (for example, bus and auto). The major transit connection points include major park-and-ride lots, major transit centers, and ferry terminals. Transit centers, including rail, bus, and ferry, primarily serve connections between public transit modes while park-and-ride lots primarily serve connections between transit and auto. Some facilities serve as both major park-and-ride lots and transit centers (such as Northgate and Tacoma Dome). Major park-and-ride lots were defined as having a minimum of 250 parking stalls. Major transit centers are defined as locations with facility and access improvements focused on providing transfer opportunities to or between one or more regionally significant transit routes. All WSDOT ferry terminals, commuter rail stations, and light rail stations are considered major transit facilities as well as the larger bus transit facilities in the region. The public transit component of the Metropolitan Transportation System displayed on Map D-3.

## PEDESTRIAN AND BICYCLE NONMOTORIZED TRANSPORTATION SYSTEM

The regional nonmotorized system includes facilities for both bicycle and pedestrian travel. The system consists of three conceptual components: linking communities at the regional level, substituting nonmotorized trips for vehicle trips at the local level, and providing intermodal connections at rail, ferry, and other transit stops. The nonmotorized component of the Metropolitan Transportation System is displayed on Map D-4. There are five general types of nonmotorized facilities, each with varying levels of separation from adjacent roadways:

- **Shared Use Bicycle/Pedestrian Paths** are facilities that are physically separate from roadways. These are usually appropriate for both bicycle and pedestrian travel.
- **Bike Lanes** are portions of roadways that are physically designated for exclusive bicycle travel by signs and pavement markings.
- **Bike Routes** are portions of roadways that are signed as preferred routes for bicycle travel, but not striped for exclusive bicycle use. On-road markings such as sharrows, and other non-exclusive markings or signage, fall into this category.
- **Bikeways** are portions of roadways that are not signed or marked, but are accessible to bicycle travel and identified by the local jurisdiction as a preferred bicycle route.
- **Walkways** are pedestrian facilities that can be either separated from roadways, such as sidewalks and paths, or part of roadways, such as crosswalks or wide shoulders. Walkways are designed, or appropriate, for use by pedestrians.

An important distinction should be made between local and regional facilities. At the local level, facilities are important links in the nonmotorized transportation system, as they both feed into regional-level facilities. However, it is not effective or efficient to designate all facilities as regional. Therefore, subsets of facilities were identified as regional, based on their function and location. Regional pedestrian facility improvement zones are located in designated urban centers and regional transit station areas. Regional transit station areas include bus, rail and ferry facilities.

Due to safety concerns, much of the regional nonmotorized network is situated on roads with lower levels of automobile traffic. These roads often are parallel to major arterials and highways that comprise the roadway component of the MTS. A road that is not part of the roadway MTS, yet contains a regional nonmotorized facility, does not necessarily become part of the federally required Congestion Management Process, and is considered regional for nonmotorized transportation planning purposes only.

**Pedestrian Improvement Zones.** Pedestrian improvement zones are areas that are targeted as top priority for pedestrian improvements. These zones generally extend for ½ mile radius around designated urban centers, regional transit station areas, and other regionally significant places.

The regional nonmotorized network is based on county and local jurisdiction nonmotorized plans. It was designed to link and provide access to urban centers and major destinations, and to provide connections to major intermodal facilities.

### **Nonmotorized Component of the Metropolitan Transportation System**

Facilities within the *Transportation 2040* regional nonmotorized network meet one or more of the following criteria:

1. Multi-use trails and bike lanes within the corridors of the roadway component of the Metropolitan Transportation System
2. Multi-use trails and bike lanes that connect designated urban centers.
3. Multi-use trails and bike lanes that are within, or provide direct access to, designated urban centers or high capacity transit station areas.
4. Pedestrian facilities that provide circulation within, access to, or enhance designated urban centers, or high capacity transit station areas.

### **Pedestrian Improvement Zones**

Pedestrian infrastructure and design in these zones should include;

- Wide, continuous sidewalks on both sides of the streets
- Narrower streets sealed for pedestrians and lower vehicle speeds
- Interconnected streets and small block patterns
- Marked crosswalks & signal improvements at major intersections with crossing opportunities at least every two blocks
- Wide curb bulbs, and crosswalks and intersections with curb ramps
- Street furniture & amenities such as benches and water fountains
- Street lighting at pedestrian scale
- Awnings/covered building entrances that shelter pedestrians from weather
- Planting buffers, landscaping and/or street trees
- Public spaces adjacent to main pedestrian travel ways that provide places to rest and interact
- Traffic calming devices to slow traffic
- Median islands to provide safe refuge areas for pedestrians
- On-street parking restrictions near pedestrian crossing areas
- Signage identifying nearby services

## FREIGHT AND GOODS MOBILITY

The regional Freight and Goods System consists of roadways, port facilities, railroads and rail yards, pipeline, and airport facilities, all of which serve to move freight within and through the region. The Freight and Goods mobility component of the Metropolitan Transportation System is displayed on Map D-5.

**Freight Roadways.** Parts of the freight and goods system were first designated as critical for freight movement by the state of Washington in 1995, and updated in 1998, 2001, 2003, 2005, and 2007. The heaviest tonnage routes, those designated for 4 million annual tons and above (T-1 and T-2), may receive priority for funding improvements. These routes are primarily freeways and major state highways. In addition to T1 and T2 routes, as part of the Freight and Goods component of the Metropolitan Transportation System, PSRC has identified additional regionally significant roadways, also based on current use and a broad set of regional criteria.

### Freight and Goods Component of the MTS

Facilities that meet the following criteria are included as the Freight and Goods mobility component of the MTS.

- State and local principal arterials, as identified on Map D-1
- National Highway System routes within the region
- T1 and T2 Freight and Goods Transportation System routes, as defined by the Washington State Transportation Commission in 1995, and updated in 1998, 2001, 2003, 2005, and 2007
- Routes providing access to the designated urban centers, other major industrial and commercial sites
- Port of Everett, Seattle & Tacoma facilities
- Mainline and branch rail lines, as well as intermodal rail yards associated with Burlington Northern/Santa Fe and Union Pacific railroad facilities.
- Air cargo facilities (Sea-Tac and King County International Airports)
- Major pipeline facilities
- Military facilities identified in the rail or highway network.

**Ports.** There are three marine deep-water ports in the region: Everett, Seattle, and Tacoma. These ports accommodate ocean-going container ships that carry cargo in and out of the region. Together the ports of Seattle and Tacoma are the second largest marine container terminal complex in North America. The ports of Seattle, Tacoma, and Everett are making ongoing improvements to their facilities (berths, cranes, on-dock rail and access roads) to meet changing demand in regional and Pacific Rim trade.

**Railroad.** Two major national railroads serve the central Puget Sound region. Burlington Northern/Santa Fe and Union Pacific provide intercontinental freight service on their nationwide rail networks; each maintains significant yard and on-dock capacity to serve the ports. Both mainline and branch lines as well as intermodal connector rail yards are indicated on Map D-5.

**Airport.** Freight is transferred to and from aircraft at two major airports in the region: Seattle-Tacoma International Airport (Sea-Tac) and King County International Airport (Boeing Field). Sea-Tac Airport handles the majority of the freight, although Boeing Field has captured a growing percentage. Freight is carried in the cargo holds of passenger aircraft, or in all-cargo aircraft. A limited amount of freight is moved by the "sea-air" link; that is, cargo is transferred from ships, loaded onto aircraft, and flown to the East Coast, Europe, or other international destinations. Roadways accessing Sea-Tac Airport and Boeing Field are important parts of the intermodal and freight roadway systems.

**Pipeline** capacity is provided by the Olympic pipeline, which carries gasoline, diesel, and jet fuel along its 299-mile alignment that connects Blaine, Washington with Portland, Oregon. Pipelines are included in the regional freight and goods transportation system not only because of the volume of commodity they carry, but also because of the important role in servicing facilities such as Sea-Tac International Airport, by providing this commodity that would otherwise need to be delivered by truck.

**Military.** The region's military goods movement system (shown in Map D-8) consists of the Strategic Highway Network (STRAHNET), Strategic Rail Corridor Network (STRACNET), military bases, and sea ports of embarkation. STRAHNET and STRACNET system

overlap with many of the vital freight corridors already identified. The Strategic Highway Network (STRAHNET) is a system of public highways that is a key component of U.S. strategic policy. It provides defense access, continuity, and emergency capabilities for movements of personnel and equipment in both peace and war. Similarly, STRACNET rail lines are critical for movement of essential military equipment to ports located around the country as well as to connect one facility to another. The military goods movement component of the Metropolitan Transportation System is displayed on Map D-8.

## REGIONAL AVIATION SYSTEM

The existing regional airport system is comprised of 26 public use airports and two military airfields within the four central Puget Sound counties of King, Kitsap, Pierce, and Snohomish. The airport system includes Seattle-Tacoma International Airport (the region's primary commercial service airport), McChord Air Force Base, Gray Army Airfield at Fort Lewis (these two airfields have been merged as Joint Base Lewis-McChord), five general aviation reliever airports, 13 general aviation airports, four seaplane bases, and three state-owned emergency airfields. A subset of this regionwide aviation system is considered regionally significant, and is included in the Metropolitan Transportation System. The Aviation System component of the MTS includes six airports: Seattle-Tacoma International Airport plus five reliever airports: King County International Airport/Boeing Field, Snohomish County Airport/Paine Field, Harvey Field, Renton Municipal Airport, and Auburn Municipal Airport.

The region's five reliever airports provide alternate landing areas for flights that might otherwise use Seattle-Tacoma International Airport, thereby allowing Sea-Tac to focus almost exclusively on meeting the region's commercial passenger and air cargo market. These reliever airports provide a high level of aviation services and facilities to meet the aviation needs of the region. Together, these five reliever airports served some 800,000 annual take-offs and landings in 2006, and were home to nearly 1,800 based aircraft, about half of the regional total. Three of the region's five reliever airports (Boeing Field, Paine Field, and Renton Airport) provide critical airport infrastructure supporting the Boeing Commercial Airplane Company's production of commercial jet aircraft to serve the world's passenger and air cargo markets. These airports support the production, testing, certification, and eventual customer delivery of the majority of Boeing's large commercial jet aircraft. The aviation component of the Metropolitan Transportation System is displayed on Map D-6. While the region's other public use airports do not appear on the MTS, they serve unique and important roles in the regional airport system. For more information about the regional airport system see the 2001 Regional Airport System Plan at <http://www.psrc.org/about/pubs/airtrans/>.

## TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a major policy focus of *Transportation 2040*. Unlike other MTS components, demand management is not focused on facilities, but rather on programs or strategies designed to manage demand for vehicle travel to achieve system performance, environmental, and growth objectives.

Demand management strategies are designed to:

- 1) Promote alternatives to driving alone
- 2) Shift trips out of peak travel periods, or
- 3) Eliminate the need for certain trips.

### Commuter Trip Reduction

The Commuter Trip Reduction (CTR) law was enacted in 1991 and later streamlined in 2006 with the CTR Efficiency Act. It has proven that vehicle trip reduction programs can have a significant impact on the populations they serve. Between 1993 and 1999, the region reduced its single-occupant vehicle rate for work commutes of CTR-covered employees by 5.5%. However, only 22% of the region's jobs are covered by the law, and only 20% of the region's trips are work trips.

There are a wide variety of TDM programs implemented in the region at the local, regional, and state level. As a subset of these efforts, the TDM component of the MTS is focused on programs that specifically target MTS facilities and regional growth centers as well as larger efforts that have the capacity to greatly reduce vehicle trips. Currently, one of most visible vehicle trip reduction efforts in the region is WSDOT's Commute Trip Reduction program.

## **Transportation Demand Management Component of the MTS**

The programs or projects designed to reduce transportation demand on roadway facilities specifically identified on the MTS are those that affect three or more regional growth centers, or have an overall project impact of reducing 1,500 daily peak period trips from the system.

## **Transportation System Management and Operations Components of the MTS**

The transportation system management and operations (TSM&O) components of the MTS include selected Intelligent Transportation Systems (ITS) and regional operational strategies and the personnel necessary to provide Active Traffic Management (ATM) of the transportation system. This combination of technology and operational oversight delivers maximum efficiency of the transportation system. TSM&O components provide communication linkages between travelers, vehicles, operation centers and the transportation system.

TSM&O components of the MTS are deployed to serve key regional arterials, principal arterials, freeway, transit, ferries and the users of those systems; and to serve people, freight and emergency services so that they can be operated and utilized as safely and as efficiently as possible. System operations on the Puget Sound region's multimodal transportation system are the responsibility of the many jurisdictions and agencies within the region.

Regional TSM&O components of the MTS must be included in the Regional Intelligent Transportation System (ITS) Architecture or amended into the architecture. These components include the full existing and planned components of the Regional ITS Architecture. The current architecture includes the following market packages and flows:

- WSDOT freeway management system
- Local agency traffic management system
- Center to center communications, ITS backbone
- Transit ITS, central operations and signal priority
- Traveler Information
- Critical infrastructure protection
- Road pricing, electronic toll and fare collection
- Commercial vehicle operations
- Parking management
- Emergency services
- IntelliDrive<sup>SM</sup>

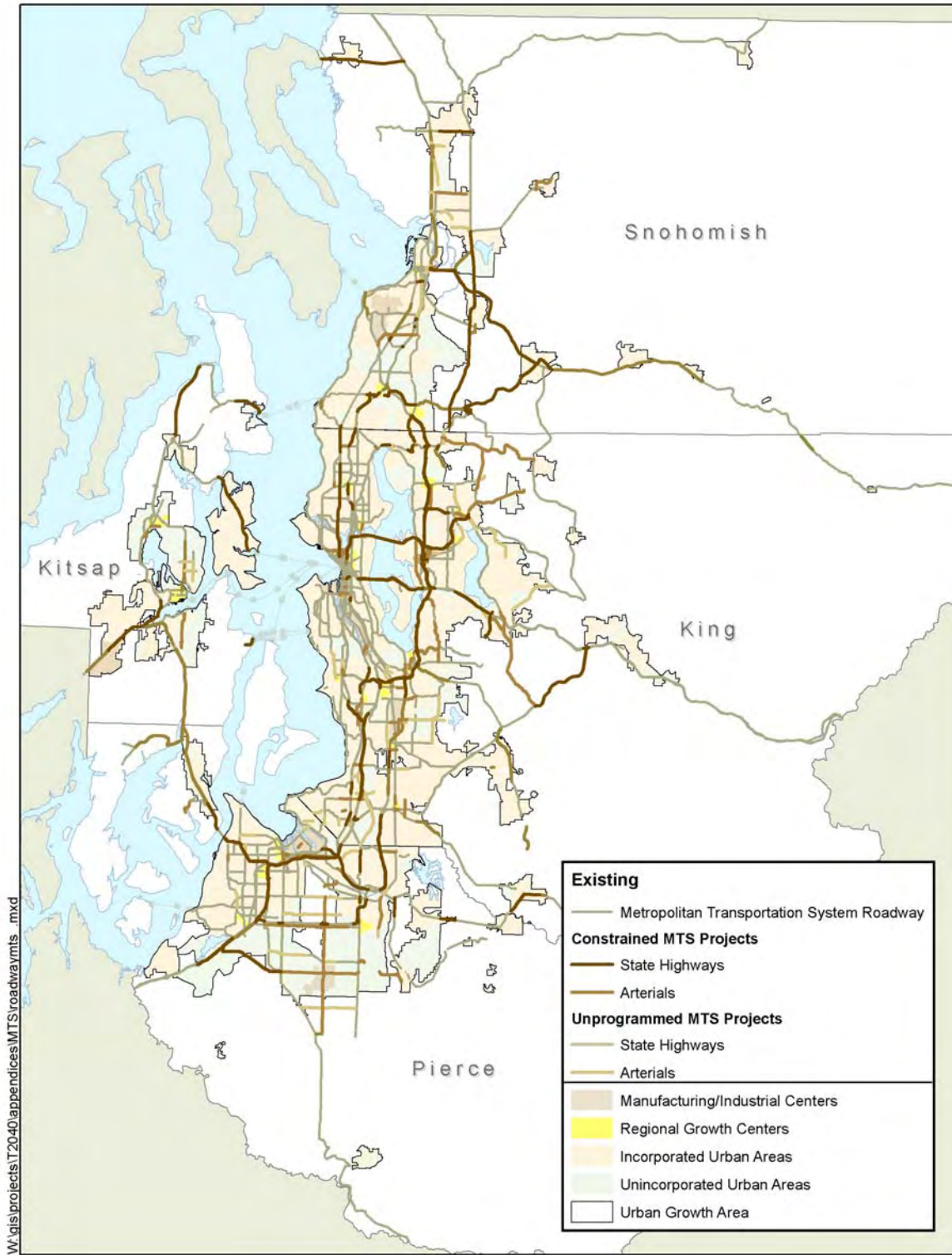
The MTS includes the traffic management centers, the communications infrastructure and the roadside equipment that are used to operate and integrate this system as an integral part of the Metropolitan Transportation System. The WSDOT Traffic Management Centers (TMCs) in Shoreline and Tacoma are one example of a type of management center that is used to optimize the performance of part of the MTS, in this case the freeway system. The TMCs monitor traffic and road conditions, identify and verify incidents, detect faults in operations, and collect data for traffic strategy development and long-range planning. This is done using information collected by roadside equipment, such as cameras and loop detectors, supplied by a communication link to the TMC. The WSDOT TMCs also have a communication link to the Washington State Patrol's (WSP)

Computer Aided Dispatch System so they can respond quickly to incidents in coordination with WSP.

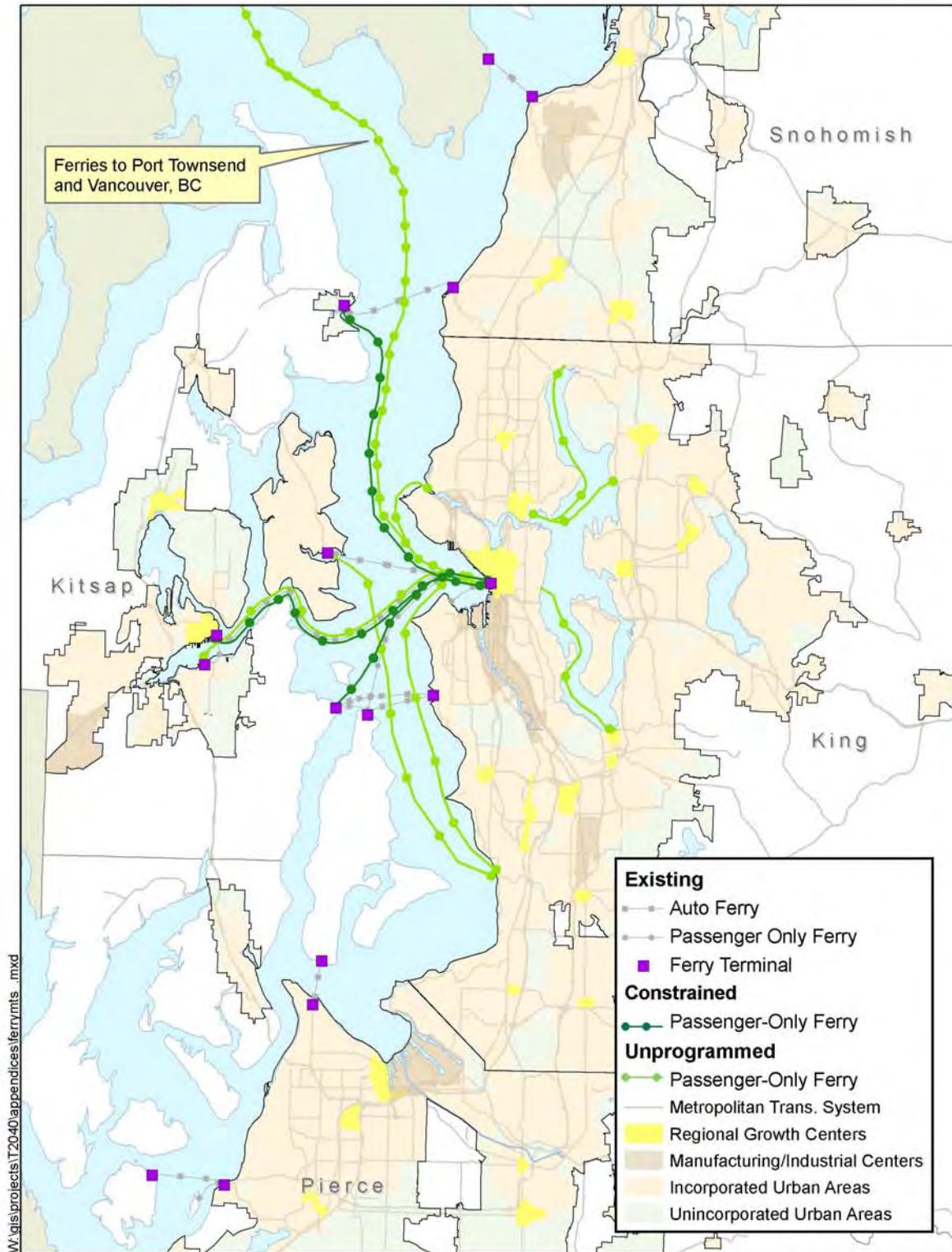
Transit agencies also operate management centers that use communications and roadside equipment to help optimize the routing and scheduling of transit services. Transit operators use management centers to monitor performance of the transit system to aid in schedule adherence and to respond to incidents. This information is provided to the management center over communication links. Transit vehicles also communicate in the field with other devices to enable technologies such as transit signal priority (TSP), which allows a transit vehicle a longer green light at traffic signals so that it can remain on schedule or get back on schedule.

Through a collaborative process, the Regional Traffic Operations Committee (RTOC) has identified 135 arterials of regional significance. These facilities are all viewed as ones in need of efficient operations. From this list the group used a set of criteria to identify the top 25 key arterials. These Key Top 25 Key Arterials are identified on the Map D-7. This screening weighted multiple considerations including considerations for transit, freight and emergency management priority facilities as well as routes that serve as alternatives to the freeway system. Because of their significance, these Top 25 Key Arterials are identified as part of the TSM&O component of the MTS. The TSM&O component of the MTS is displayed on Map D-7.

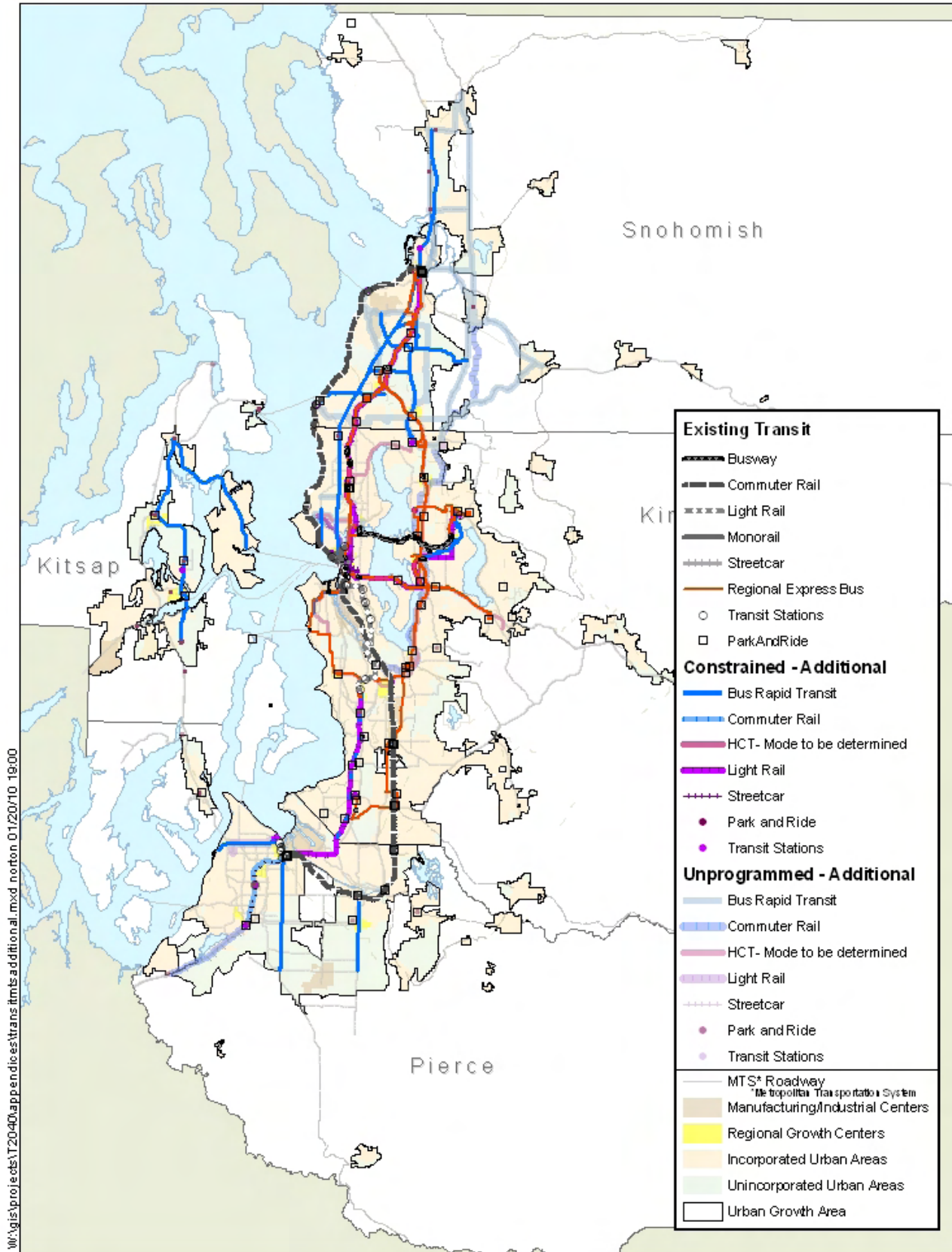
**Map D-1: Metropolitan Transportation System (MTS) Roadway Component**



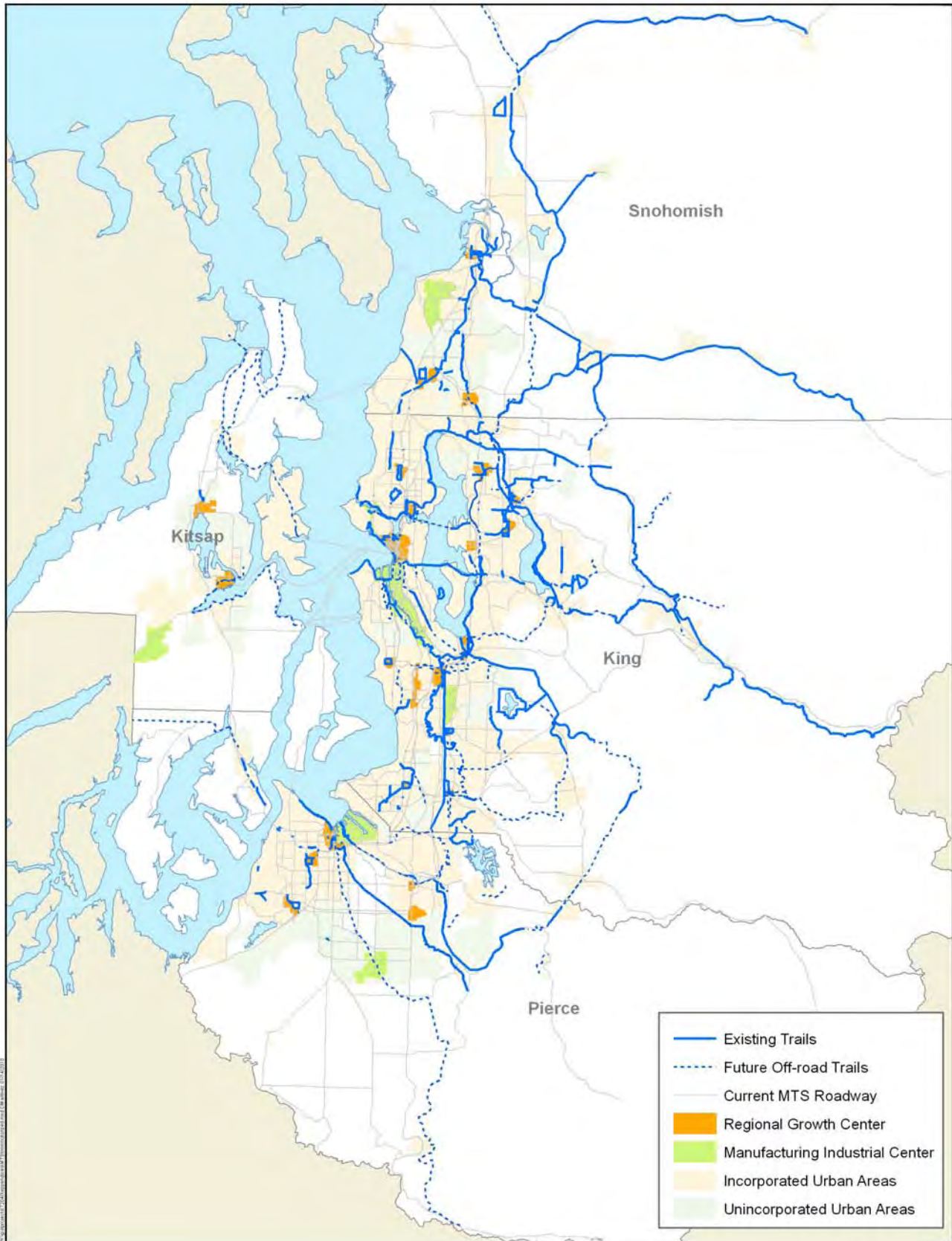
**Map D-2: MTS Ferry Component**



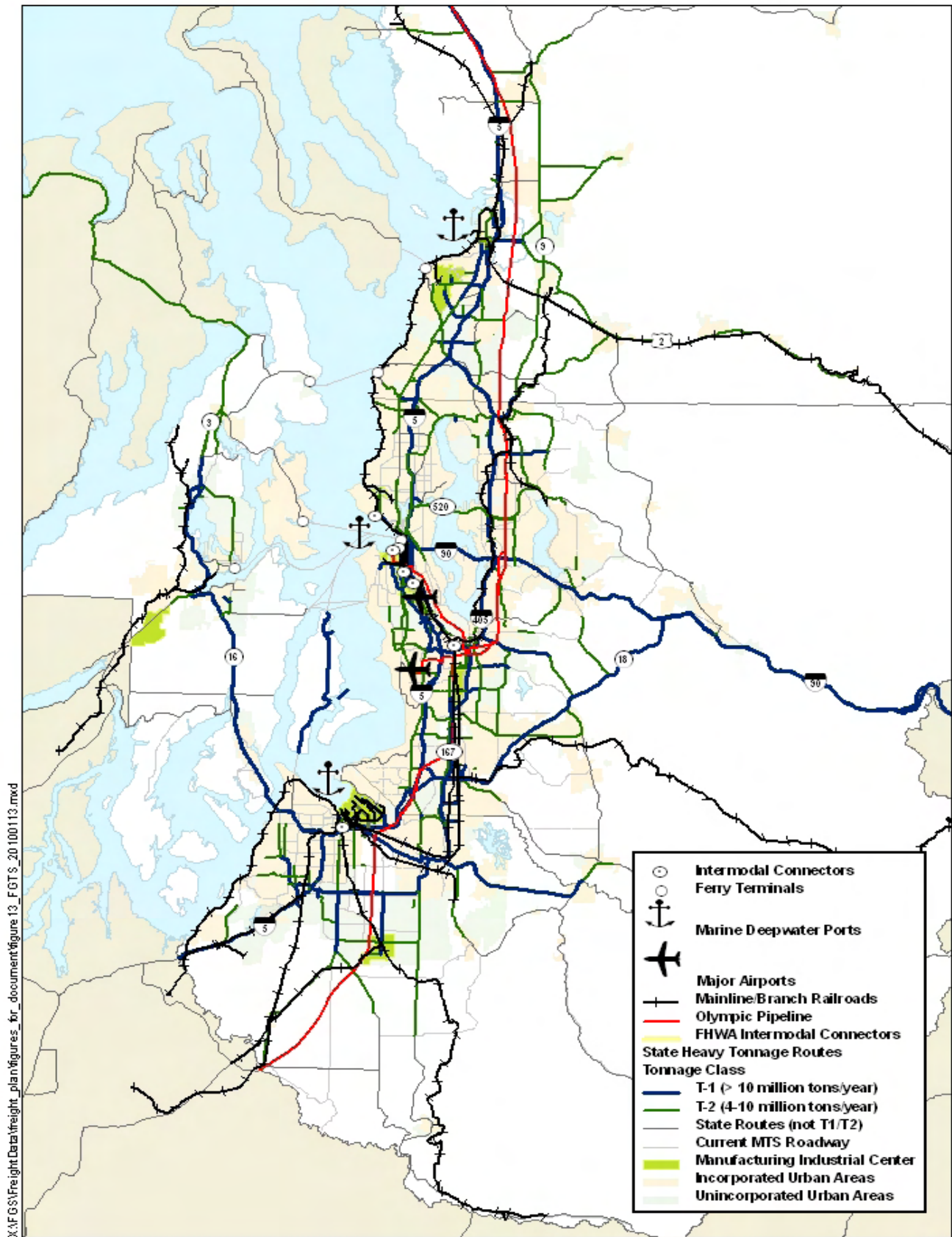
**Map D-3: MTS Regional Transit Component**



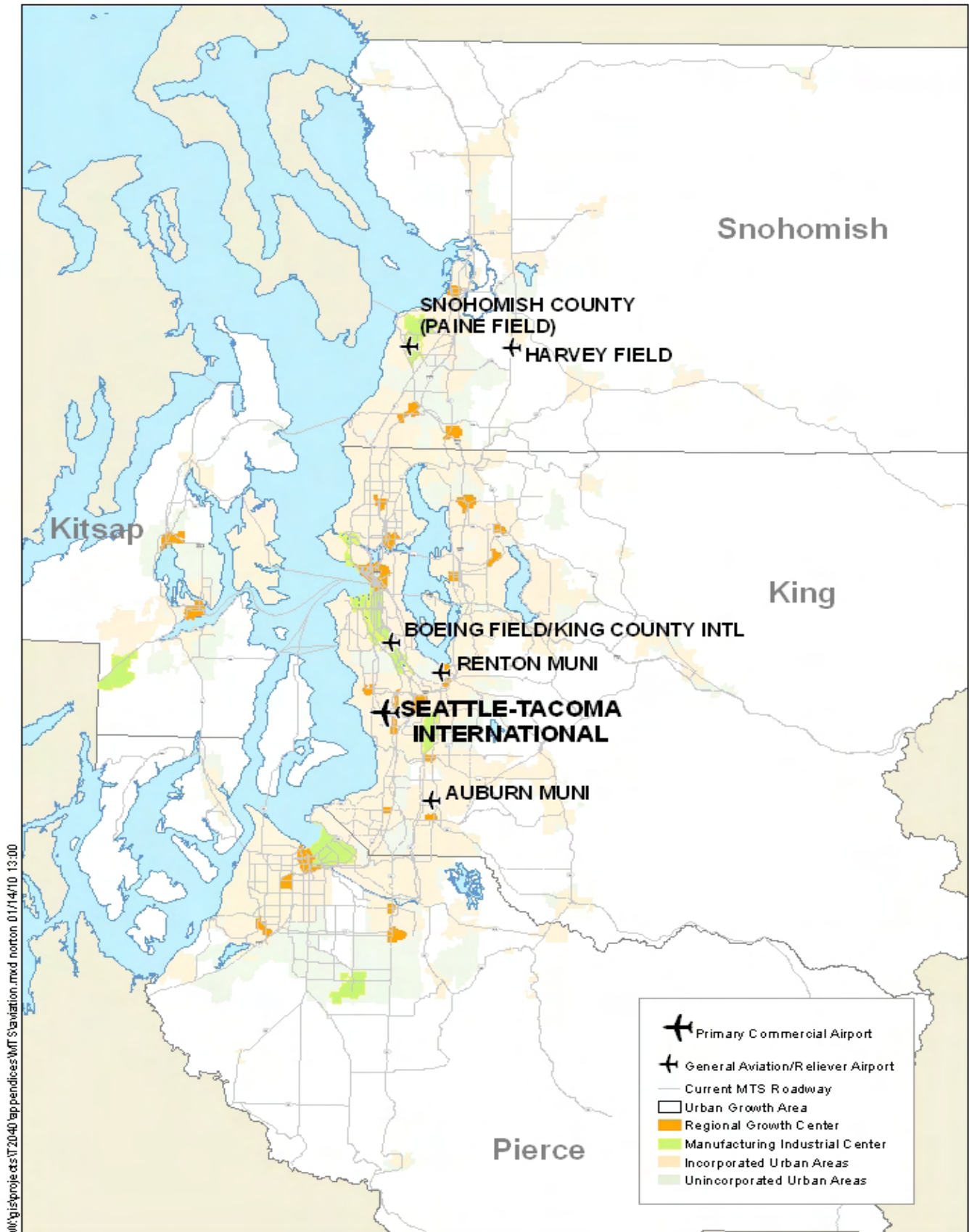
**Map D-4: MTS Nonmotorized Transportation Component**



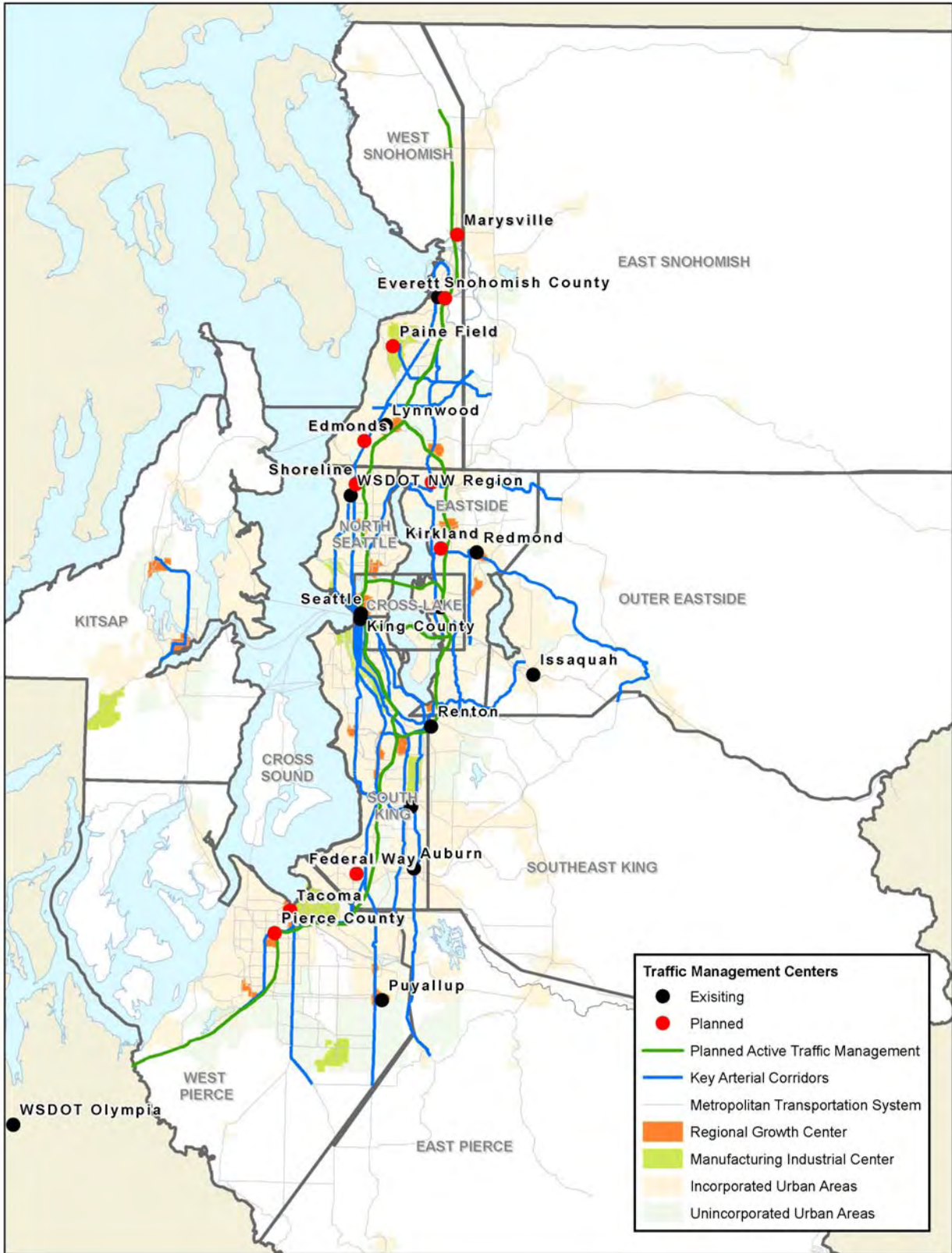
**Map D-5: MTS Freight Mobility Component**



**Map D-6: MTS Aviation Component**



**Map D-7: Regional Traffic Management Centers and Top 25 Key Arterials**



**Map D-8: MTS Military Goods Movement Component**

