

APPENDIX K
METRO CLASSIFICATION DEFINITIONS



METRO

Chapter 1 Glossary

Accessibility • The ability to move easily from one mode of transportation to another mode or to a given land use destination. This is determined by the spatial distribution of potential destinations, the ease of reaching each destination and the magnitude, quality and character of the activities found there. The less that travel costs in time and money, the more places that can be reached within a certain budget, the greater the accessibility. Accessibility is governed by **both** land use patterns and the number of travel alternatives provided by the transportation system.

Access Management - The principles, laws and techniques used to control **access off and onto** streets, roads and highways from roads and driveways. One of the primary purposes of controlling access is to reduce conflicts between motor vehicles, pedestrians and bicyclists. Examples of **access** management include **limiting** or consolidating driveways, selectively prohibiting left turn movements at and between intersections and **using** physical controls **such as** signals and raised medians.

Air Quality Conformity • This term refers to the Clean **Air Act Amendments** of 1990 which require the metropolitan region to document with computer modeling that **regionally** significant transportation projects, if built, would result in (1) automotive emissions lower than those estimated to have occurred in 1990; (2) lower **emissions than** would result without **building** the project; and (3) **total** emissions lower **than** the "mobile source budget" adopted in the **regional air** quality maintenance plan.

Alternative Transportation Mode • This term refers to **all** passenger **modes** of travel except for single occupancy vehicle, **including** bicycling walking, public transportation, carpooling and **vanpooling**.

Advanced Traffic Management System (ATMS) • This **term** refers to **traffic** management techniques that use computer processing and communication technologies to optimize **performance** of motor vehicle, freight and public transportation systems. **ATMS** is a subset of Intelligent Transportation System (ITS) technologies and must be addressed **as** one of the **sixteen** ISTEA planning factors.

Americans With Disabilities Act (ADA) of 1990 • **Civil rights** legislation enacted by the **US** Congress that mandates the development of a plan to address **discrimination** and **equal** opportunity for **disabled persons** in employment, transportation, public accommodation, public services and telecommunications. **Tri-Met's** ADA transportation plan outlined the **requirements** of the ADA **as** applied to Tri-Met services, the deficiencies of the **existing** services when compared to **the requirements** of the new Act and the remedial measures necessary to **bring** Tri-Met and the **region** into compliance with the Act. **Metro**, as the region's Metropolitan **Planning** Organization (MPO) is required to review Tri-Met's ADA Paratransit **Plan** annually and **certify** that the plan **conforms** to the **Regional** Transportation **Plan**. Without **this** certification, Tri-Met cannot be found to be in compliance with the ADA. ADA **also** affects **the** design of pedestrian facilities being constructed by local governments.

Bicycle - A vehicle having **two tandem** wheels, a **minimum of 14"** in diameter, propelled solely by human power, upon **which** a person or **persons** may ride. A **three-wheeled** adult **tricycle** is considered a bicycle. In Oregon, a bicycle is legally defined **as** a vehicle. Bicyclists have the **same** right to the roadways and

Congestion Pricing - A transportation management tool which applies market pricing principles to roadway use. This tool involves the use of user surcharges or tolls on congested facilities during peak traffic periods. The theory of peak period pricing suggests that charging drivers per mile of travel during the congested times of the day will relieve traffic congestion by discouraging some vehicle trips and shifting others to alternative modes, facilities, destinations or times of travel.

Density Bonus - This term refers to allowing developers to build at higher densities than stated in local zoning code. This incentive is designed to promote more compact development, reduce trip lengths and promote alternative modes of travel.

Employee Commute Options (ECO) Rule - The ECO Rule is part of House Bill 2214 which was adopted by the 1992 Legislature. The Rule directs the Department of Environmental Quality to institute an employee trip reduction program. The Rule is designed to reduce 10 to 20 percent of commuter trips for all businesses that employ 50 or more persons at a single site.

Freight Intermodal Facility - An intercity facility where freight is transferred between two or more modes (e.g., truck to rail, rail to ship, truck to air, etc.)

Functional Plan - A limited purpose multi-jurisdictional plan for an area or activity having significant district-wide impact upon the orderly and responsible development of the metropolitan area that serves as a guideline for local comprehensive plans consistent with ORS 268.390.

Greater Metropolitan Region - Defined as the greater area surrounding and including Metro's jurisdictional area, including parts of Multnomah, Clackamas and Washington counties as well as urban areas in Marion, Columbia and Yamhill counties (see "Metropolitan Region").

Growth Concept - A concept for the long-term growth management of our region, stating the preferred form of the regional growth and development, including if, where, and how much the urban growth boundary should be expanded, what densities should characterize different areas, and which areas should be protected as open space.

High Occupancy Vehicle (HOV) - This term refers to vehicles that are carrying two or more persons, including the driver. An HOV could be a transit bus, vanpool, carpool or any other vehicle that meets the minimum occupancy requirements of the specific facility. In practice, only vehicles with two or three or more persons would be able to use a designated "HOV" travel lane.

Intermodal Facility - A transportation element that accommodates and interconnects different modes of transportation and serves the statewide, interstate and international movement of people and goods. See also passenger intermodal facility and freight intermodal facility definitions.

Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 - The federal highway/public transportation funding reauthorization which among other features funds the national highway system and gives states and local governments more flexibility in making transportation decisions. The Act places significant emphasis on broadening public participation in the transportation planning process to include key stakeholders, including the business community, community groups, transit operators, other governmental agencies and those who have been traditionally underserved by the transportation system. Among other things, the Act requires the metropolitan area planning process to consider such issues as land use planning, energy conservation, intermodal connectivity and enhancement of transit service. Finally, the Act integrates transportation planning with achievement of the air quality conformity requirements embodied in the Clean Air Act Amendments of 1990 and State air quality plans.

Motor Vehicle Level of Service (LOS) - A qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience and safety. An LOS rating of "A" through "F" describes the traffic flow on streets and highways and at intersections. The following table describes general traffic flow characteristics for each level of service on a street or highway:

LOS	Traffic Flow Characteristics
A	Virtually free flow; completely unimpeded
B	Stable flow with slight delays; reasonably unimpeded
C	Stable flow with delays; less freedom to maneuver
D	High density but stable flow
E	Operating conditions at or near capacity; unstable flow
F	Forced flow, breakdown conditions
Greater than F	Demand exceeds roadway capacity, limiting volume than can be carried and forcing excess demand onto parallel routes and extending the peak period

Source: 1985. Highway Capacity Manual (A through F descriptions)
Metro (>F Description)

Multi-use Path - A path that is physically separated from motor vehicle traffic by an open space or barrier and is either within the highway right-of-way or within an independent right-of-way, used by bicyclists, pedestrians, joggers, skaters and other non-motorized travelers.

Neighbor City - Nearby incorporated cities with separate urban areas from the Metro urban area, but connected to the metropolitan area by major highways. Neighbor cities include Sandy, Estacada, Canby, Newberg, North Plains and Scappoose.

Oregon Bicycle and Pedestrian Plan - An element of the Oregon Transportation Plan, this plan offers the general principles and policies that ODOT follows to provide bikeways and walkways along state highways. This plan also provides guidance to cities and counties, as well as other organizations and private citizens, in establishing bicycle and pedestrian facilities on local transportation systems.

Oregon's Statewide Planning Goals - The 19 goals which provide a foundation for the state's land use planning program. The 19 goals can be grouped into four broad categories: land use, resource management, economic development, and citizen involvement. Locally adopted comprehensive plans and regional transportation plans must be consistent with the statewide planning goals.

Oregon Transportation Plan (OTP) - The State's official statewide, intermodal transportation plan that will set priorities and state policy in Oregon for the next 40 years. The plan, developed by the Oregon Department of Transportation through the statewide transportation planning process, responds to federal ISTEA requirements (see above) and Oregon's Transportation Planning Rule (TPR - see below).

Park-and-Ride - A mode of travel, usually associated with movements between work and home, that involves use of a private auto on one portion of the trip and a transit vehicle (i.e., a bus or a light rail vehicle) on another portion of the trip. Thus, a park-and-ride trip could consist of an auto trip from home to a parking lot, and transfer at that point to a bus in order to complete the trip to work.

Parking Cash-Out - This term refers to a transportation demand management strategy where the market value of a parking space is offered to an employee by the employer. The employee can either spend the money for a parking space, or pocket it and then use an alternative mode to travel to work. Measures such as parking cash-out provide disincentives for commuting by single occupancy vehicles.

Telecommute - This term refers to a transportation demand management strategy whereby an individual substitutes working at home for commuting to a work site on either a part-time or full-time basis.

Traffic Calming - A transportation system management technique that aims to prevent inappropriate through-traffic and reduce motor vehicle travel speeds on a particular roadway. Traditionally, this technique has been applied to local residential streets and collectors and may include speed bumps, curb extensions, planted median strips or rounds and narrowed travel lanes.

Transit - For purposes of the RTP, this term refers to publicly-funded and managed transportation services and programs within the urban area, including light rail, regional rapid bus, frequent bus, primary bus, secondary bus, mini-bus, paratransit and park-and-ride.

Transit Level of Service - The comfort, safety, convenience and utility of transportation service, measured differently for various types of transportation systems.

Transit-Oriented Development - A mix of residential, retail and office uses and a supporting network of roads, bicycle and pedestrian ways focused on a major transit stop designed to support a high level of transit use. Key features include: a mixed use center and high residential density.

Transportation Demand Management (TDM) - Actions, such as ridesharing and vanpool programs, the use of alternative modes, and trip-reduction ordinances, which are designed to change travel behavior in order to improve performance of transportation facilities and to reduce need for additional road capacity.

Transportation Disadvantaged/Persons Potentially Underserved by the Transportation System - Those individuals who have difficulty in obtaining transportation because of their age, income, physical or mental disability.

Transportation Management Area (TMA) - As defined in federal regulations, this term refers to "an urbanized area with population over 200,000" and "applies to the entire metropolitan planning area." All locations must meet certain standards and non-attainment TMA's must meet additional planning requirements.

Transportation Planning Rule (TPR) - The implementing rule of statewide land use planning goal (#12) dealing with transportation, as adopted by the State Land Conservation and Development Commission (LCDC - see above). Among its many provisions, the Rule includes requirements to preserve rural lands, reduce vehicle miles traveled (VMT) per capita by 20% in the next 30 years, reduce parking spaces and to improve alternative transportation systems.

Transportation Policy Alternatives Committee (TPAC) - Senior staff-level policy committee which reports and makes policy recommendations to JPACT (see above). TPAC's membership includes technical staff from the same governments and agencies as JPACT, plus representatives of the Federal Highway Administration and the Southwest Washington Regional Transportation Council (SWRTC - see above); there are also six citizen representatives appointed by the Metro Council (see above).

Transportation System Management (TSM) - Strategies and techniques for increasing the efficiency, safety, capacity or level of service of a transportation facility without major new capital improvements. This may include signal improvements, intersection channelization, access management, HOV lanes, ramp metering, incident response, targeted traffic enforcement and programs that smooth transit operations.

Transportation System Plan (TSP) - A plan for one or more transportation facilities that are planned, developed, operated and maintained in a coordinated manner to supply continuity of movement between modes, and within and between geographic and jurisdictional areas.



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Chapter ■ Acronyms

ADA	Americans with Disabilities Act
ATMS	Advanced Traffic Management System
CBD	Central Business District
FHWA	Federal Highway Administration
FTA	Federal Transit Administration (formerly UMTA)
FY	Fiscal Year
HCT	H igh Capacity Transit
HOV	High-Occupancy Vehicle
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991 (Federal)
JPACT	Joint P olicy Advisory C ommittee on Transportation (Regional)
LCDC	Land Conservation and Development C ommission (State)
LRT	Light R ail Transit (MAX)
MCCI	Metro C ouncil for C itizen Involvement
MPAC	Metro P olicy Advisory C ommittee
MPO	Metropolitan Planning Organization (Metro)
MTIP	Metropolitan Transportation Improvement Program
NHS	National Highway System
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation (State)
ORS	Oregon Revised Statutes
R.O.W.	Right of Way
RTP	Regional Transportation P lan (Metro)
RUGGO	R egional U rban Growth G oals and O bjectives
SOV	Single-Occupancy Vehicle
TPAC	Transportation Policy Alternatives C ommittee (Regional)
TPR	Transportation P lanning R ule (State)
Tri-Met	Tri-County Metropolitan Transportation D istrict
TSM	Transportation System Management
UGB	U rban Growth Boundary
USDOT	US. Department of Transportation
VMT	V ehicle Miles Traveled

During the past several years, the region has experienced unprecedented growth — a trend that is predicted to continue in the 2015 regional forecast. Subsequently, a significant amount of urbanization is likely to occur while local jurisdictions are in the process of adopting local ordinances that implement the 2040 Growth Concept. Therefore, the phasing of RTP projects and programs will reflect this period of transition, with project identification and selection increasingly tied to implementation of the growth concept.

The RTP includes three implementation scenarios based on varying financial assumptions. The "preferred" system (Chapter 5) includes an optimal package of regional transportation projects and programs that best addresses the region's needs over the 20-year plan period. The "constrained" system (Chapter 7) is limited to those improvements to the regional transportation system that can be made by projecting existing revenue sources for the plan period, and does not adequately meet the region's 20-year needs. The "strategic" system (Chapter 8) includes a mix of regional projects and programs from both the preferred and financially constrained systems. The strategic system represents the minimum set of actions needed to adequately serve the region's 20-year transportation needs, and thus establishes a target for additional funding.

Environmental, Economic & Social Impacts

Transportation systems have a significant effect on the physical and socioeconomic characteristics of the areas they serve. As such, transportation planning must consider larger regional and community goals and values, such as protection of the environment, the regional economy and the quality of life that area residents presently enjoy.

The RTP measures economic and quality of life impacts of the proposed system by evaluating key indicators, such as job and retail service accessibility, economic benefits to the community and transportation for the traditionally underserved, including low income and minority households and the disabled. Other key system indicators include reduction in VMT's, travel times, travel speeds, congestion, energy costs, protection of natural resources and air quality impacts. RTP objectives are sometimes in conflict, so each transportation project or program must be evaluated in terms of relative tradeoffs, and how it best achieves an overall balance between those conflicting goals.

D. Urban Form And Land Use

Regional Urban Growth Goals and Objectives

The Regional Urban Growth Goals and Objectives (RUGGOs) were adopted in 1991 in response to direction by the Oregon Legislature to develop regional land use goals and objectives that would replace those adopted by the Columbia Region Association of Governments. The RUGGOs establish a process for coordinating planning in the metropolitan area in an effort to preserve regional livability. The RUGGOs also provide a policy framework for guiding Metro's regional planning program, including development of functional plans and management of the region's urban growth boundary.

In 1992, the region's voters approved a charter for Metro that formally gave responsibility for regional land use planning to the agency, and requires adoption of a Regional Framework Plan that integrates land use, transportation and other regional planning mandates. In late 1995, the Metro Council adopted the 2040 Growth Concept, a document that serves as the first step in developing the framework plan. Like the RUGGOs, the growth concept is not a final plan for the region, but rather, is a starting point for developing the Regional Framework Plan, which will be a more focused vision for the future growth and development of this region. The growth concept includes a series of regional measures intended to accelerate both development of the framework plan elements and local implementation of growth concept principles. The 1996 Regional Transportation Plan serves as a functional plan and will be the transportation element of the Regional Framework Plan.

While the 2040 Growth Concept is primarily a land use framework, the success of the concept, in large part, hinges on regional transportation policy. The following are the 2040 Growth Concept land use components and a description of their associated transportation elements. The land use components are grouped according to their relative significance in the region:

Primary Components

The central city, regional centers, industrial areas and intermodal facilities are centerpieces of the 2040 Growth Concept, and form the geographic framework for more locally oriented components of the plan. Thus, implementation of the overall growth concept is largely dependent on the success of these primary components. For this reason, these components are the focus of 2040 Growth Concept implementation policies and infrastructure investments.

- **Central City and Regional Centers**

Portland's central city already forms the hub of the regional economy. Regional centers in suburban locales such as Gresham, Beaverton and Hillsboro are envisioned in the 2040 Growth Concept as complementary centers of regional economic activity. These areas have the region's highest development densities, the most diverse mix of land uses and the greatest concentration of commerce, offices and cultural amenities. They are the most accessible areas in the region by both auto and public transportation, and have very pedestrian-oriented streets.

In the 2040 Growth Concept, the central city is highly accessible by a high quality public transportation system, multi-modal street network and a regional freeway system of through-routes. Light rail lines radiate from the central city, connecting to each regional center. The street system within the central city is designed to encourage public transportation, bicycle and pedestrian travel, but also accommodate auto and freight movement. Of special importance are the bridges that connect the east and west sides of the central city, and serve as critical links in the regional system.

Regional centers also feature a high quality radial transit system serving their individual trade areas and connecting to other centers, as well as light rail connections to the central city. In addition, a fully improved network of multi-modal streets tie regional centers to surrounding neighborhoods and nearby town centers, while regional through-routes will be designed to connect regional centers with one another and points outside the region. The

street design within regional centers encourages public transportation, bicycle and pedestrian travel while also accommodating automobile and freight movement.

- **Industrial Areas and Intermodal Facilities**

Industrial areas serve as "sanctuaries" for long-term industrial activity. These areas are primarily served by a network of major **street connections** to both the **regional freeway system** and intermodal facilities. Many **industrial areas are also** served by freight rail, and have **good access** to intermodal facilities. Freight intermodal facilities, including **air and marine terminals, freight rail yards and common carrier truck terminals are an area of regional concern.** **Access** to these areas is centered on rail, the **regional freeway system, public transportation, bikeways and key roadway connections.** While industrial activities **often** benefit from roadway improvements largely aimed at auto travel, there are roadway needs unique to freight movement that are **critical** to the continued **vitality** of industrial areas and intermodal facilities.

Secondary Components

While more locally oriented than the primary components of **the 2040 Growth Concept, town centers, station communities, main streets and corridors are significant centers of urban activity.** Because of their density and **pedestrian-oriented design,** they play a key role in promoting public transportation, bicycling and walking as viable travel alternatives to the **automobile, as well as conveniently close services for surrounding neighborhoods.** **As** such, these secondary components are **an important part of the region's strategy for achieving state goals for reducing per-capita automobile travel.**

- **Station Communities**

Station communities are located along light rail corridors and feature a **high-quality pedestrian and bicycle environment.** These communities are designed around the transportation system to best benefit from the public **infrastructure.** While they include some local services and employment, they are mostly residential developments that are oriented toward the central city, regional centers and other areas that can be accessed by **rail** for most services and employment.

- **Town Centers and Main Streets**

Town Centers function as local activity areas that provide close access to a **full range of local retail and service offerings within** a few miles of most residents. While town centers will not compete with regional centers in **scale or economic diversity,** they will **offer some** specialty attractions of regional interest. **Though the character of these centers varies greatly, each will function as strong business and civic communities with excellent multi-modal arterial street access and high quality public transportation with strong connections to regional centers and other major destinations.** **Main streets** feature mixed-use, storefront style development that serve the same **urban functions** as town centers, but are located in a **linear** pattern along a limited number of bus corridors. **Main streets** feature **street designs** that emphasize **pedestrian, public transportation and bicycle travel.**

- **Corridors**

Corridors **will not be as** intensively planned **as** station communities, but similarly **emphasize** a high-quality bicycle and pedestrian environment and convenient access to public transportation. Transportation improvements in **corridors** will focus on nodes of activity – often at major street intersections – where transit and pedestrian improvements **are especially** important. Corridors can **include** auto-oriented land **uses between** nodes of activity, but **such** uses are carefully planned to preserve the pedestrian orientation and scale of the overall corridor design.

Other Urban Components

Some components of the 2040 Growth Concept **are** primarily of local significance, including employment centers and neighborhoods. Urban activities **in** these **areas often** impact the regional transportation system, but are best addressed **through** the local planning process.

- **Employment Centers**

Employment centers **allow** mixed commercial and industrial **uses**, including some residential development. These areas are primarily served by a network of arterial **connections to** both the regional freeway system and **intermodal** facilities. Some employment centers are **also** served by freight rail. Employment centers are often located near industrial **areas**, and thus may benefit from freight improvements **primarily directed** toward industrial **areas** and intermodal facilities.

- **Neighborhoods**

In recent decades, the newest **neighborhoods** have become the most congested largely due to a **lack** of street **connections**. A lack of street **connections** discourages **walking** and bicycling for local trips in these areas, and forces **local** auto trips onto **the** regional multi-modal arterial network. The 2040 Growth Concept envisions master street plans **in all** areas **to** increase the number of **local** street connections to the regional roadway network. However, new connections must be designed to discourage through-travel on local **neighborhood streets**.

Exurban Components

- **Urban Reserves**

These **reserves, which** are currently located outside the UGB, **are** relatively undeveloped, with limited transportation facilities. Urban **reserves are** intended to accommodate future growth and will eventually require multi-modal access to the rest of the **region**. Because they may be added to the urban area **during** the 20-year RTP **planning** period, they **are** included in the RTP functional classification scheme (Chapter 4). General street and public **transportation** planning is completed prior to urbanization **as** part of the RTP process, and based on specific 2040 Growth Concept land use **policies** for these **areas**. **Once** urban reserves are brought within the UGB, more detailed **transportation** system planning at the regional and local level **occurs** in conjunction with detailed land use planning.

- **Rural Reserves**

These **largely** undeveloped **reserves are also** located outside the **UGB, and** have very limited transportation facilities. Roadways in these areas are intended to serve **rural** industry and

needs, and urban travel on these routes is accommodated with designs that **are** sensitive to their basic rural function. **Rural** reserves will be protected from urbanization for the foreseeable future **through** state statutes and **administrative rules, county-land use ordinances, intergovernmental agreements** and by **Limiting rural access to urban through-routes** whenever possible. **Urban-to-urban** travel is generally discouraged on most rural routes, with exceptions identified in **this** plan.

- **Neighboring Cities and Green Corridors**
Neighboring cities are separated from the main urban area by **rural reserves**, but **are** connected to regional centers **within** the metropolitan area by limited-access **green** corridor transportation routes. Green corridor routes will include bicycle and public transportation service to neighboring cities. Neighboring cities will be encouraged, through **intergovernmental agreements**, to balance jobs and households in order to limit travel demand on these connectors. The region **also has** an interest **in maintaining** reasonable levels of through-travel on major routes that pass **through** neighbor cities and function **as** freight corridors. **Growth** of neighboring cities will ultimately **affect through-travel** and **could** create a need for bypass routes. **Such** impacts **will also be** addressed **through** coordination with **county and state agencies, as well** as individual **neighboring** cities.

E. Transportation System Design

Systemwide Goals and Objectives

The overall goal of the **RTP** is to develop a safe, efficient and cost-effective transportation system that serves the region's **current and future** travel needs and **implements** the **2040 Growth Concept** while also recognizing the **financial** constraints and **environmental** impacts associated with that system. **The remainder of this section: (1)** presents the systemwide **goals** and objectives of **this** Plan; **(2)** defines adequate accessibility, mobility and safety and the **types of fiscal** and environmental constraints that must be addressed; and **(3)** details the criteria against **which** the performance of the system **will** be measured.

System Goal 1: Implement a transportation system that **serves** the **region's** current **And** future travel needs and implements the **2040 Growth Concept**.

1. Objective: Provide the **highest levels of access** by multiple **modes** to, **between** and within the **central city, regional centers, intermodal facilities** and industrial areas.
2. Objective: Provide high levels of access by multiple **modes** to, **between** and within station communities, town centers, main **streets and** corridors.
3. Objective: Provide access by multiple **modes** to, **between** and **within** areas in the **region** not identified above.

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- **Metro will develop performance measures and standards related to levels of access as part of the RTP system development phase and Chapter 1 will be updated as necessary.**

4. Objective: Consider safety, right-of-way, environmental, **storm** water management **and** topographic constraints, while satisfying the general intent of **the** regional street design concepts.

Goal 3: Manage the **regional** street system **to achieve the access** and mobility needs **of** the **2040** land use components.

1. **Objective:** Provide for **through** travel on major **routes** that connect major regional destinations.
2. Objective: Provide access **from** local **areas to** nearby **regional** or **community-scale** activity centers.

Regional Street Design Concepts

The regional street design concepts **are** intended to serve multiple modes of travel in a manner that supports **the** specific needs of the 2040 land use components. **The** street design concepts fall into five broad classifications:

- Throughways that emphasize motor vehicle **travel** and connect major activity centers;
- *Boulevards* that serve major centers of **urban activity** and emphasize public **transportation**, bicycle and pedestrian travel while balancing the many travel demands of intensely developed areas;
- *Streets* that serve transit corridors, main streets and neighborhoods **with** designs that integrate many modes of travel and provide **easy pedestrian**, bicycle and public transportation travel;
- *Roads* that **are** traffic oriented; with designs that integrate **all modes** but primarily serve motor vehicles; and
- *Local streets* that complement the regional system by **servicing** neighborhoods and **carrying** local traffic.

These design concepts apply **to** the regional system **as** it relates **to** specific **2040 Growth** Concept land use components. Figure **1.1** provides **a chart of regional street design classifications** for roadways that serve a given **2040 land use**. **The** most appropriate street design classification for roadways that serve a given land **use** is indicated with a solid square(s). **Following** Figure 1.1 is a detailed description of the purpose and design **emphasis** of each design **type**.

Figure 1.1
Regional Street Design Classifications and the
2040 Growth Concept

Regional Street Design Classifications		Primary Components			Secondary Components				Other Urban Components				
		Central City	Regional Centers	Industrial Areas	Station Communities	Town Centers	Main Streets	Corridors	Employment Areas	Inner Neighborhood	Outer Neighborhood	Exurban Areas	
Regional Street Design Classifications	Throughways	Freeway	■	■	■	■	■	∞	·	■	■	■	■
	Boulevards	Highway	■	■	■	■	■	■	■	■	■	■	■
		Regional Boulevard	■	■	□	■	■	■	↔	□	□	□	□
	Streets	Community Boulevard	■	■	□	■	■	■	↔	□	□	□	□
		Regional Street	□	□	□	□	□	■	■	□	■	■	■
	Roads	Community Street	□	□	□	□	□	■	■	□	■	■	■
		Urban Road			■					■			
	Rural Road											■	

- Most appropriate street design classification
- Appropriate street design classification in transition areas
- ↔ Main Streets feature Boulevard designs along key segments and at major intersections

Throughways

The purpose of these facilities is to connect major activity centers within the region, including the central city, regional centers, industrial areas and intermodal facilities to one another and to points outside the region. Throughways are divided into limited access Freeway designs where all intersections have separated grades, and Highways that include a mix of separate and at-grade intersections.

Both Freeways and Highways are designed to provide high speed travel for longer motor vehicle trips throughout the region, are primary freight routes and serve all 2040 Growth Concept land use components. In addition to facility designs that promote mobility, Throughways may also benefit from access management and Advanced Traffic Management System (ATMS) techniques. These facilities may carry transit through-service, with supporting amenities limited to transit stations. These facilities may also incorporate transit-priority design treatment where appropriate, and may incorporate light rail or other high-capacity transit.

Freeways

Freeways usually consist of four to **six** vehicle travel **lanes**, with additional **lanes** in some situations. They are completely divided, with no left **turn** lanes. Freeway designs have few street connections, and they always **occur** at separated grades with access controlled by ramps. There is no driveway access to Freeways or **buildings** oriented toward these facilities, and **only** emergency **parking** is allowed. Freeway **designs** do not include **pedestrian** amenities, with the exception of improved **crossings** on overpasses and **access** ramps. Bikeways designed in conjunction with Freeway improvements usually follow parallel routes.

Highways

Highways usually consist of four to **six** vehicle **travel** lanes, with additional **lanes** in some situations. Highway designs have few street **connections**, and they may **occur** at **same-grade** or on separate grades. **Highways** are usually divided with a median, but **also** have left turn lanes where at-grade intersections exist. There are few driveways **on** Highways, and buildings are not oriented toward these facilities. **On-street** parking is usually prohibited in Highway designs, but may exist in some locations. Highway designs include striped bikeways and sidewalks with optional buffering. **Improved** pedestrian **crossings** are located on overpasses, underpasses and at **same-grade** intersections.

Boulevards

Boulevards are designed with special amenities that promote pedestrian, bicycle and public transportation travel in the districts they serve. Boulevards **serve** the multi-modal needs of the region's most intensely developed activity centers, including **the** central **city**, regional centers, station communities, **town** centers and some main streets. **As such**, these facilities may benefit from access management, **traffic** calming and **ATMS** techniques that reinforce pedestrian, bicycle and public transportation travel. Boulevards **are** divided into regional and community scale designs.

Regional Boulevards

Regional Boulevards **mix** a significant amount of motor vehicle **traffic** with public transportation, bicycle and pedestrian **travel** where dense **development** is oriented toward the street. These **designs** feature low to **moderate** vehicle **speeds** and usually include **four** vehicle lanes. Additional lanes or one-way couplets may **be** included in **some** situations. Regional Boulevards have many street connections and some driveways, although combined driveways **are** preferable. These facilities may include **on-street** parking when possible. The center median **serves** as a **pedestrian** refuge and **allows** for left **turn** movements **at** intersections.

Regional Boulevards **are** designed to **be** transit-oriented, with high-quality service and substantial transit amenities at stops and station **areas**. Pedestrian improvements are substantial on boulevards, including broad sidewalks, **pedestrian** buffering, **special** street **lighting** and **crossings** at all intersections with **special** crossing amenities at major

intersections. These facilities have bike lanes or wide outside lanes where bike lanes are not physically possible, or are shared roadways where motor vehicle speeds are low. They also serve as primary freight routes, and may include loading facilities within the street design.

Community Boulevards

Community Boulevards mix motor vehicle traffic with public transportation, bicycle and pedestrian travel where dense development is oriented toward the street. These facilities are designed for low motor vehicle speeds and usually include four vehicle lanes and on-street parking. Fewer vehicle lanes may be appropriate in some situations, particularly when necessary to provide on-street parking. Community Boulevards have many street connections and some driveways, although combined driveways are preferable. Where appropriate, center medians offer a pedestrian refuge and allow for left turn movements at intersections.

Community Boulevards are designed to be transit-oriented, with high quality service that is supported by substantial transit amenities at stops and station areas. Pedestrian improvements are also substantial, including broad sidewalks, pedestrian buffering, special street lighting and crossings at all intersections with special crossing amenities at major intersections. Community Boulevards have striped or shared bikeways and some on-street parking. These facilities also serve as secondary freight routes, and may include loading facilities within the street design.

Streets

Streets are designed with amenities that promote pedestrian, bicycle and public transportation travel in the districts they serve, particularly where development densities warrant special transit and pedestrian design consideration. Streets serve the multi-modal needs of the region's corridors, neighborhoods and some main streets. As such, these facilities may benefit from access management, traffic calming and ATMS techniques that enhance pedestrian, bicycle and public transportation travel, while providing appropriate vehicle mobility. Streets are divided into regional and community scale designs.

Regional Streets

Regional Streets are designed to carry significant vehicle traffic while also providing for public transportation, bicycle and pedestrian travel. These facilities serve a development pattern that ranges from low density residential neighborhoods to more densely developed corridors and main streets, where buildings are often oriented toward the street at major intersections and transit stops. Regional Street designs accommodate moderate motor vehicle speeds and usually include four vehicle lanes. Additional motor vehicle lanes may be appropriate in some situations. These facilities have some to many street connections, depending on the district they are serving. Regional Streets have few driveways that are combined whenever possible. On-street parking may be included, and a center median serves as a pedestrian refuge and allows for left turn movements at intersections.

These facilities are designed to be transitoriented, with highquality **service** and substantial transit amenities at stops and station **areas**. Although **less** substantial **than** in **Boulevard** designs, pedestrian improvements **are** important along **Regional Streets**, including sidewalks that are buffered **from** motor vehicle travel, crossings at **all** intersections and **special** crossing amenities at major intersections. **Regional Streets** have bike lanes or wide outside lanes where bike lanes are not physically possible, or **are** shared roadways where motor vehicle speeds are low. They **also** serve **as** primary freight routes, and may include loading facilities **within** the street design, where appropriate.

Community Streets

Community Streets are designed to **carry** vehicle traffic while providing for public transportation, bicycle and pedestrian travel. These facilities serve low density residential neighborhoods as well as more densely developed **corridors** and main streets, where buildings are often oriented toward the street at **main** intersections and transit stops. **Community** Street designs allow for **moderate** motor vehicle **speeds** and **usually** include four motor vehicle lanes **and** on-street **parking**. However, **fewer** **travel lanes** may be appropriate when necessary to provide for on-street **parking**. These facilities have same to many street connections, depending on the 2040 Growth Concept land-use **components** they **serve**. **Community** Streets have few driveways that are shared when possible. **A** center median serves as a pedestrian refuge and allows for left **turn movements** at **intersections**.

Community Streets are transitoriented in design, with transit amenities at stops and station **areas**. Although less substantial **than** in **Boulevard** designs, pedestrian improvements are important on **Community** Streets, including sidewalks that **are** buffered **from** motor vehicle travel, crossings at **all** intersections and **special crossing** features at major intersections. **Community** Streets have striped or shared bikeways. These **facilities** **also** serve **as** secondary freight routes, and may include loading facilities within the **street** design, where appropriate.

Roads

Roads are traffic-oriented designs that provide motor vehicle mobility in the 2040 Growth Concept land use components they serve and accommodate **a** minimal **amount** of pedestrian and public transportation travel. These facilities may benefit from access management and **ATMS** techniques. Roads **serve** the travel **needs** of the region's low density industrial and employment areas as well as **rural** areas **located** outside the **urban** growth boundary (**UGB**). Roads are, therefore, divided into **urban** and **rural** designs.

Urban Roads

These facilities are designed to **carry** significant motor vehicle traffic while providing for some public transportation, bicycle and **pedestrian** travel. **Urban** Roads **serve** low density industrial areas, intermodal facilities and employment centers where buildings **are** less oriented toward the street. These **facilities** **also** **serve** **new** urban areas (**UGB** additions) where plans for urban land **use** and infrastructure are not complete. **Urban** Roads are designed to accommodate moderate vehicle speeds and usually include four motor vehicle lanes, **although** additional **lanes** may be appropriate in some situations. **These** designs have some

street connections, but few driveways. Urban Roads rarely include on-street parking, and a center median primarily serves to optimize motor vehicle travel and to allow for left turn movements at intersections.

Urban Roads serve as primary freight routes, and often include special design treatments to improve freight mobility. These facilities are designed for transit through-service, with limited amenities at transit stops. Sidewalks are included in Urban Road designs, although buffering is optional. Pedestrian crossings are included at intersections. Urban Roads have striped bikeways.

Rural Roads

Rural roads are designed to carry rural traffic while accommodating limited public transportation, bicycle and pedestrian travel. In some cases rural roads serve to connect urban traffic to throughways. Rural roads serve urban reserves, rural reserves and green corridors, where development is widely scattered and usually located away from the road. These facilities are designed to allow moderate motor vehicle speeds and usually consist of two to four motor vehicle lanes, with occasional auxiliary lanes appropriate in some situations. Rural Roads have some street connections and few driveways. On-street parking occurs on an unimproved shoulder, and is usually discouraged. These facilities may include center turn lanes, where appropriate.

Rural Roads serve as primary freight routes and often provide important farm-to-market connections. Special design treatments to improve freight mobility are therefore important in these designs. Rural Roads rarely serve public transportation, but may include limited amenities at rural transit stops where transit service does exist. Bicycles and pedestrians share a common striped shoulder on these facilities, and improved pedestrian crossings occur only in unique situations (such as rural schools or commercial districts).

Local Street Design

Local streets serve the immediate travel needs of the region at the neighborhood level. These facilities are multi-modal, and are designed to serve most short automobile, bicycle and pedestrian trips. They generally do not carry freight in residential areas, but are important to freight movement in industrial and commercial areas. Local streets may serve as transit routes in some situations. Local street designs include many connections with other streets, and bicycle and pedestrian connections where topography or development patterns prevent full street extensions.

The design of local street systems is generally beyond the scope of the RTP. However, the aggregate effect of local street design impacts the effectiveness of the regional system when local travel is restricted by a lack of connecting routes, and local trips are forced onto regional facilities. The following connectivity principles should guide future development of local street designs:

reasonable levels of mobility on the region's main throughways. Therefore, regional congestion standards and other regional system performance measures are tailored to reinforce the specific development needs of the individual 2040 Growth Concept land use components.

Regional Motor Vehicle System

The motor vehicle system provides access to the central city, regional centers, industrial areas and intermodal facilities, with an emphasis on mobility between these destinations. These goals and objectives recognize the need to accommodate a variety of trip types on the regional motor vehicle system that include personal errands, commuting to work or school, commerce, freight movement and public transportation. In general, this plan recognizes there would be a higher degree of mobility during the midday from the peak-hour.

Traditionally, the automobile has been the dominant form of passenger travel, and much of the region's roadway system has been designed to accommodate growing automobile demands. In addition, the motor vehicle system also plays an important role in the movement of freight, providing the backbone for commerce in the region. The motor vehicle system also serves the bus element of the regional public transportation system (which carries the largest share of public transportation riders). Finally, motorcycles and mopeds also use the motor vehicle system, and provide more fuel-efficient alternatives to automobile travel. Although motorcycles and mopeds are governed by the same traffic laws as other motor vehicles, they have special parking and security needs.

Although focused on motor vehicle travel, the system described in this section is multi-modal, with design criteria intended to serve motor vehicle mobility needs, while reinforcing the urban form of the 2040 Growth Concept. While the motor vehicle system usually serves bicycle and pedestrian travel, the system is designed to limit impacts of motor vehicles on pedestrian and transit-oriented districts.

Regional Motor Vehicle System Goals and Objectives

Goal 1: Provide a regional motor vehicle system of arterials and collectors that connect the central city, regional centers, industrial areas and intermodal facilities, and other regional destinations, and provide regional mobility.

1. Objective: **Maintain** a system of principal arterials for long distance, high speed, interstate, inter-region and intra-region travel.
2. Objective: **Maintain** an appropriate level of mobility on the motor vehicle system during periods of peak demand.
3. Objective: **Maintain** an appropriate level of mobility on the motor vehicle system during off-peak periods of demand.
4. Objective: Provide an adequate system of local and collector streets that supports the regional system.

5. **Objective:** Develop improved measures of traffic generation and parking patterns for regional centers, town centers, station communities and **main streets**.
6. **Objective:** Develop improved measures of freight movement as defined in the 2040 Growth Concept.

Regional Motor Vehicle Classification System

The motor vehicle system includes principal **arterials**, major **arterials** and minor **arterials** and collectors of regional **significance**. These routes **are** designated on the motor vehicle system map in Chapter 4. Local comprehensive plans **also** include additional minor arterials, **collectors** and local **streets**. **Figure 1.2** provides a **chart** of the regional **motor** vehicle functional classifications **and** their relationship to the regional street design **classifications**. The most appropriate street design classification for roadways that serve a given functional classification is indicated with a **solid** square(s). Following Figure 1.2 is a detailed description of the regional functional classification categories.

Figure 1.2
Relationship Between Regional Street Design and Motor Vehicle Classifications

Regional Street Design Classifications			Regional Motor Vehicle Functional Classifications				
			Principal Arterial	Major Arterial	Minor Arterial	Collector	Local Street
Local Street Designs	Rural Roads	Freeway	■				
		Highway	■				
		Regional Boulevard		■			
	Community Streets	Community Boulevard			■		
		Regional Street		■			
		Community Street			■		
	Urban Roads	Urban Road	■	■	■		
		Rural Road	■	■	■		
	Local Street Designs					■	■

■ Most appropriate street design classification

The following are the regional functional classification categories:

Principal Arterials: These facilities form the backbone of the motor vehicle network. Motor vehicle trips entering and leaving the urban area follow these routes, as well as those destined for the central city, regional centers, industrial areas or intermodal facilities. These routes also form the primary connection between neighbor cities and the urban area. Principal arterials serve as major freight routes, with an emphasis on mobility. These routes fall within regional freeway, highway and road design principles.

Principal Arterial System Design Criteria:

- Principal arterials should provide an integrated system that is continuous throughout the urbanized area and also provide for statewide continuity of the rural arterial system.
- The principal arterial system should serve the central city, regional centers, industrial areas and intermodal facilities, and should connect key freight routes within the region to points outside the region.
- A principal arterial should provide direct service: (1) from each entry point to each exit point or (2) from each entry point to the central city. If more than one route is available, the most direct route will be designated as the principal arterial when it supports the planned urban form.

Major Arterials: These facilities serve as primary links to the principal arterial system. Major arterials, in combination with principal arterials, are intended to provide general mobility for travel within the region. Motor vehicle trips between the central city, regional centers, industrial areas and intermodal facilities should occur on these routes. Major arterials serve as freight routes, with an emphasis on mobility. These routes fall within regional boulevard, regional street, urban road and rural road design principles.

Major Arterial System Design Criteria:

- Major arterials should provide motor vehicle connections between the central city, regional centers, industrial areas and intermodal facilities and connect to the principal arterial system. If more than one route is available, the more direct route will be designated when it supports the planned urban form.
- Major arterials should serve as primary connections to principal arterials, and also connect to other arterials, collectors and local streets, where appropriate.
- Freight movement should not be restricted on the principal arterial network.
- The principal and major arterial systems in total should comprise 5-10 percent of the motor vehicle system and carry 40-65 percent of the total vehicle miles traveled.*

* Metro will test the "system percentage" design criteria as part of the RTP system development phase to verify their appropriateness.

Minor Arterials: The minor arterial system complements and supports the principal and major arterial systems, but **is** primarily oriented toward motor vehicle **travel** at the community level connecting town centers, corridors, main **streets** and neighborhoods. **As** such, minor arterials usually serve shorter trips **than** principal and major arterials, and therefore must balance mobility and accessibility demands. Minor **arterials** may serve **as** freight routes, providing both access and mobility. **These** routes fall **within** community boulevard, community street, **urban** road and rural road design principles.

Minor Arterial System Design Criteria:

- Minor arterials generally **connect** town centers, corridors, **main streets** and neighborhoods to the nearby **regional** centers or **other** major destinations.
- Minor arterials should connect to major **arterials**, collectors, local **streets** and some principal arterials, where appropriate.
- The principal, major and minor arterial system should comprise **15-25** percent of the motor vehicle system and **carry** 65-80 percent of the total vehicle miles traveled.*

Collectors: While some collectors **are** of **regional** significance, most **of** the collector system operates at the community level to provide local connections to the minor and major arterial systems. **As** such, collectors **carry** fewer motor vehicles than arterials, with reduced travel speeds. However, **an** adequate collector system is needed to serve these local motor vehicle travel needs. Collectors **may** serve **as** freight access routes, providing local **connections** to the arterial network. Collectors fall **within** the plan's local **street** design principles.

Collector System Design Criteria:

- Collectors should connect neighborhoods to nearby centers, corridors, **station** areas, main **streets** and other nearby destinations.
- Collectors should connect to minor and major **arterials** and other **collectors**, as well as local streets.
- The collector system should comprise **5-10** percent of the motor vehicle system and carry **5-10** percent of the **total** vehicle **miles** traveled.*

Local **Streets**: The local **street** system is **used** throughout the **region** to provide for local circulation and access. However, arterials in the region's newest neighborhoods are **often** the most congested due to **a** lack **of** local street **connections**. The **lack** of local street connections forces local auto trips onto the principal and major arterial network, resulting in **significant** congestion on many suburban **arterials**. **These** routes **fall** within **the** plan's local street design principles.

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- Metro will test the "system percentage" design criteria as part of the RTP system development phase to verify their appropriateness.

Local Street System Design Criteria:

- Local streets should connect neighborhoods, provide local circulation and give access to adjacent centers, corridors, station areas and main streets.
- The local street system should be designed to serve local, low speed motor vehicle travel with closely interconnected local streets intersecting at no more than 660-foot intervals. Closed local street systems are appropriate only where topography, environmental or infill limitations exist. Local streets should connect to major and minor arterials and collectors at a density of 8-20 connections per mile.
- Direct freight access on the local residential street system should be discouraged.
- Local streets should comprise 65-80 percent of the motor vehicle system and carry 10-30 percent of the total vehicle miles traveled.,

Regional Public Transportation System

The regional public transportation system is a key component in providing access to the region's most important activity centers, and for 25 years has been the centerpiece to the region's strategies for improving air quality and reducing reliance on the automobile as a mode of travel. Since the construction of the transit mall in the early 1970s, peak-hour transit ridership to downtown Portland has grown to more than 40% of work trips, and the system has expanded to include light rail transit.

In 1994, the region's residents overwhelmingly approved funds to extend light rail as part of the South/North transit project. Public transportation service is also prominent in Metro's 2040 Growth Concept, such that key elements of the concept, including regional centers, town centers, corridors, main streets and station communities, are strongly oriented toward existing and planned public transportation. The overarching goal of the public transportation system within the context of the 2040 Growth Concept is to provide an appropriate level of access to regional activities for everyone residing within the Urban Growth Boundary (UGB).

Public transportation should serve the entire urban area, and the hierarchy of service types described in this section define what level of service is appropriate for specific areas. The public transportation section is divided into two parts. The first defines the regional public transportation system components that are the basis for implementing the 2040 Growth Concept. The second section provides specific goals and objectives for implementing the appropriate level and type of public transportation service for each 2040 Growth Concept land use designation.

* Metro will test the "system percentage" design criteria as part of the RTP system development phase to verify their appropriateness.

Regional Public Transportation System Components

The following public transportation system components establish a network that serves the needs of individual 2040 land use components. This system serves as the framework for consistency among plans of local jurisdictions and Tri-Met. Underlying this network of fast and frequent service is a secondary network of local bus, park-and-ride and demand responsive type Service that provide local public transportation. Specific elements of the secondary network will be developed by Tri-Met and local jurisdictions. Tri-Met is the primary public transportation provider for the metropolitan region and is committed to providing the appropriate level of service to achieve regional objectives and to implement the 2040 Growth Concept. However, the RTP recognizes providers other than Tri-Met to serve special transportation needs. While this is not required in the RTP, Metro is committed to helping coordinate agreements to address special needs as they arise. Such special needs may include private, public/private partnerships, or public actions, as appropriate. The following sections present a description of the modes that comprise the regional public transportation system (primary and secondary), the principal 2040 Growth Concept land uses (primary and secondary) served by each mode, and facility design guidelines to provide an appropriate operating environment and level of pedestrian and bicycle accessibility.

Primary Transit Network

The Primary Transit Network (PTN) is a long range transit network designed to serve the growth patterns adopted in the 2040 Growth Concept. The PTN supports intensification of specific land uses identified in the growth concept by providing convenient transit access and improved transit service connectivity. The PTN consists of four major transit modes (e.g., Light Rail Transit (LRT), Regional Rapid Bus, Frequent Bus and primary bus service) that operate at frequencies of 15 minutes or less all day. Specific modes of the PTN will target service to primary land use components of the 2040 Growth Concept including central city, regional centers, industrial areas and intermodal facilities (includes the Portland International Airport). Some secondary land-use components comprised of station communities, town centers, main streets and corridors will also be served by the PTN. Any transit trip between two points in the central city, regional centers, town centers, main streets, stations areas or corridors can be completed on the PTN. The functional and operational characteristics of the PTN's major transit modes are described below.

Light Rail Transit

Light rail transit (LRT) is a high speed and high capacity service that operates on a fixed guideway within an exclusive right-of-way (to the extent possible) that connect the central city with regional centers. LRT also serves existing regional public attractions such as a civic stadium, the convention center, and the Rose Garden, and station communities (secondary land use component) LRT service runs at least every 10 minutes during the weekday and weekend midday base periods, operates at higher speed outside of the CBD and makes very few stops. A high level of passenger amenities are provided at transit stations and station communities including schedule information, ticket machines, lighting, benches, shelters, bicycle parking and commercial services. The speed and schedule reliability of LRT can be maintained by the provision of signal preemption at grade crossings and/or intersections.

Regional Rapid Bus

Regional Rapid **Bus** provides high frequency, high speed **service** along major transit routes with limited stops. This service is a high-quality **bus** that emulates LRT service in speed, frequency and comfort. A high level of transit amenities are provided at major transit stops and at station communities. Regional Rapid **Bus** passenger amenities include **schedule** information, ticket machines, **lighting**, **benches**, covered bus shelters and **bicycle parking**.

Frequent Bus

Frequent **Bus** provides high frequency local **service along** major transit routes with frequent stops. This services include a **high** level of transit preferential treatments and passenger amenities **along** the route **such** as covered **bus** shelters, **curb** extensions, reserved **bus** lanes, lighting, median stations and/or signal preemption.

Primary Bus

Primary bus service is provided on most major **urban streets**. This **type** of **bus** service operates with maximum frequencies of **15** minutes with conventional stop spacing along the route. Transit preferential treatments and passenger amenities such as covered **bus** shelters, lighting, signal preemption and curb extensions are appropriate at **high** ridership locations.

Secondary Transit Network (STN)

The secondary transit network is comprised of secondary **bus**, **mini-bus**, paratransit and **park-and-ride** service. Secondary service is focused more on accessibility, frequency of service along the route and coverage **to** a wide range of land use options rather than on speed **between two** points. Secondary transit is designed **as** an alternative to the **single-occupant vehicle** by providing frequent, reliable service. Secondary **bus** service **generally** is designed to serve travel with one trip end **occurring** within a secondary land use component.

Secondary Bus

Secondary **bus** lines provide coverage and access to primary and **secondary** land use components. Secondary bus service **runs as** often **as** every 30 minutes on weekdays. Weekend **service** is provided as demand warrants.

Minibus

These services provide coverage in lower density **areas** by providing transit **connections** to primary, and secondary land use components. **Minibus services**, which **may** range from fixed route to purely demand responsive including dial-a-ride, employer shuttles and **bus** pools, provide at least a 60 minute **response** time **on** weekdays. Weekend **service** is provided **as** demand **warrants**.

Paratransit

Paratransit service is defined as non-fixed route service that serves special transit markets, including "ADA service throughout the greater metro region.

Park-and-Ride

Park-and-ride facilities provide convenient auto access to regional trunk route service for areas not directly served by transit. Bicycle and pedestrian access as well as parking and storage accommodations for bicyclists are considered in the siting process of new park-and-ride facilities. In addition, the need for a complementary relationship between park-and-ride facilities and regional and local land use goals exists and requires periodic evaluation over time for continued appropriateness.

Other Public Transportation Options

Other public transportation options may serve certain destinations in the metropolitan area. These services include commuter rail- and streetcars.

Interurban Public Transportation

The federal ISTEA has identified interurban travel and passenger "intermodal" facilities (e.g., bus and train stations) as a new element of regional transportation planning. The following interurban components are important to the regional transportation system:

Passenger Rail

Inter-city high-speed rail is part of the state transportation system and will eventually extend from the Willamette Valley north to British Columbia. Amtrak already provides service south to California and east to the rest of the continental United States. These systems should be integrated with other public transportation services within the metropolitan region with connections to passenger intermodal facilities. High-speed rail needs to be complemented by urban transit systems within the region.

Inter-city Bus

Intercity bus connects points within the region to nearby destinations, including neighboring cities, recreational activities and tourist destinations. Several private inter-city bus services are currently provided in the region.

Passenger Intermodal Facilities

Passenger intermodal facilities serve as the hub for various passenger modes and the transfer point between modes. These facilities are closely interconnected with urban public transportation service and highly accessible by all modes. They include Portland International Airport, Union Station and intercity bus stations.

4. Objective: **As** appropriate, consider providing secondary **bus** or other public transportation alternatives to **serve outlying regional** destinations.

Goal 4 Continue to develop fixed-route service and complementary **paratransit** services which comply with the Americans with Disabilities Act of **1990** (ADA).

1. Objective: Provide service to **persons** determined to be eligible for **ADA** paratransit that is comparable with service provided on the **fixed** route system.
2. Objective: Continue **to** work with **local jurisdictions** to **make** public **transportation** stops and walkway approaches accessible.

Goal 5: Continue efforts **to** maintain transit **as** the safest forms of motorized transportation in the region.

1. Objective: Improve the **existing** level of safe public transportation operations.
2. Objective: Reduce the number of avoidable accidents involving transit vehicles.
3. Objective: Improve the **existing** level of passenger **safety** and security **on** public transportation.

Goal 6: Expand the amount of information available about public transportation **to** allow more people **to** use the system.

1. Objective: **Increase** awareness of public transportation and how to use it through expanded education and public information media and easy to understand schedule information and **format**.
2. Objective: Improve the system for receiving and responding to feedback **from** public transportation users.
3. Objective: Explore new technologies **to** improve the availability of **schedule**, route, transfer and other service information.

Goal 7: Continue efforts to make public transportation **an** environmentally friendly form of motorized transportation.

1. Objective: Continue to reduce **the amount of air pollutants** and noise generated by public **transportation** vehicles.

Regional Freight System

Developing and adopting the Regional Freight Network **and associated** system **goals and** objectives acknowledges that the movement of **goods and services** **makes** a significant contribution **to** the region's economy and wealth, and that it contributes to **our** quality of life. The

region's relative number of jobs in transportation and wholesale trade exceeds the national average. The regional economy **has historically, and** continues to **be** closely tied to the transportation and distribution **sectors**. This trend is projected to increase. Freight volume is projected (by the 2040 Commodity **Flow** Analysis) to **grow** two to three times by 2040 - a rate faster than population growth.

The significant growth in freight projected by the 2040 **Commodity Flow Analysis** indicates the need to make available adequate land for expansion of intermodal **facilities**, manufacturing, wholesale and distribution activities, and to continue **maintaining and enhancing** the freight transportation network. The 2040 Land Use **Scenario** identifies industrial sanctuaries for distribution and **manufacturing** activities; the RTP freight network identifies the transportation infrastructure and intermodal facilities that **serve** these land **uses and** commodities **flowing** through the region to national and international markets. The following **goals** and objectives direct the region's planning and investment in the freight transportation **system**.

Regional Freight System Goals and Objectives

Goal 1: Provide efficient, cost-effective and safe movement of freight in and through the region.

1. Objective: Maintain a reasonable and reliable travel (transit) time for moving freight through the region in freight transportation corridors.
 - Freight Operation (such as weigh-in-motion, automated **truck** counts, enhanced signal timing on freight **connectors**)
 - Where appropriate, consider improvements that are dedicated **to** freight travel **only**
2. Objective: Consider the movement of freight when conducting multi-modal transportation studies, as identified in the RTP of local transportation system plans (TSPs).
3. Objective: Work with the private sector, local jurisdictions, ODOT and other public agencies to:
 - develop the regional Intermodal Management System (IMS) and Congestion Management system (CMS);
 - monitor the efficiency of freight movements on the regional transportation network;
 - **identify** existing and **future** freight mobility problems and opportunities; and
 - reduce inefficiencies or conflicts **on** the freight network
4. Objective: Coordinate public policies to reduce **or** eliminate **conflicts** between current and future land **uses**, transportation **uses** and freight mobility needs, **including** those relating to:

- hazardous materials movement.

2 . Objective: Identify and monitor potential safety problems on the freight network

- Collect and analyze accident data related to the freight network **using** the **DMS** data base.

Regional Bicycle System

The bicycle is **an** important component in the **region's** strategy to provide a multi-modal transportation system. **The 2040** growth concept focuses growth in the central **city and** regional centers, station communities, **town** centers and main streets. One way to meet the region's travel needs is to provide greater opportunity to use **bicycles** for shorter trips.

The regional bikeway system identifies a network of bikeways throughout the region that provide for bicyclist mobility **between** and accessibility to and **within** the central city, regional centers and town centers. **A** complementary system of **on-street** regional bikeway corridors, regional multi-use trails and local bikeways is proposed to provide a continuous network. In addition to major bikeway corridors that create a network of regional **through** routes, the system provides accessibility to **and** within regional and town centers. Metro's **1994** travel behavior survey found that places in the region with **good** street continuity, ease of street **crossing** and gentle topography experience more than a three percent bicycle mode share, while lower density areas experience around one percent bicycle mode share. **A** greater understanding of bicycle travel is **still** needed, **and** development of a regional bicycle forecasting model is underway. Implementation of the regional bicycle plan element of the RTP **will** provide for consistently designed, safe and convenient routes **for bicyclists between jurisdictions** and to major attractions **throughout** the region, will **work** toward increasing the modal share of bicycle trips, **and** will encourage bicyclists and motorists to share the road **safely**.

Regional Bicycle System Goals and Objectives

Goal 1: Provide **a** continuous regional network of safe and convenient bikeways integrated with other transportation **modes** and local bikeway systems.

1. Objective: **Integrate** the **efforts** of the state, **counties** and cities in the region to develop a convenient, safe, accessible and appealing regional system of bikeways.
2. Objective: **Ensure** that the regional bikeway system **functions** as part of the overall transportation system.

Goal 2: Increase the modal share of bicycle trips.

1. Objective: Develop and update a **system** of regional bikeways that connect activity centers **as identified** in the **2040** Growth Concept and the Regional Framework Plan .

2. **Objective:** Promote **increased** bicycle use for **all** travel purposes.
3. **Objective:** Coordinate with Tri-Met to **ensure** improved bicycle access and parking facilities at existing and future LRT stations, transit centers and park-and-ride locations.
4. **Objective:** Develop travel-demand forecasting for bicycle-use and integrate with regional transportation planning.

Goal 3: Ensure that all transportation projects include bicycle facilities using established design standards appropriate to regional land use and street classifications.

1. **Objective:** Ensure that bikeway projects, bicycle parking and other end-of-trip facilities are designed using established Standards, and that bikeways **are** connected with **other jurisdictions** and the regional bikeway **network**
2. **Objective:** Ensure that jurisdictions implement bikeways in accordance with established design standards.
3. **Objective:** **Ensure** integration of multi-use paths with on-street bikeways using established design standards.
5. **Objective:** Provide appropriate short and long term bicycle parking and other end-of-trip facilities at regional activity centers through the use of established design standards.

Goal 4: Encourage bicyclists and motorists to share the road safely.

1. **Objective:** Coordinate regional **efforts** to promote safe use of roadways by bicyclists and motorists through a public awareness program.
2. **Objective:** Expand upon local traffic education programs to provide region wide coverage and actively distribute safety information to local **jurisdictions**, law enforcement agencies, **schools** and community organizations that **informs** and educates bicyclists, pedestrians and motorists.
3. **Objective:** Reduce the rate of **bicycle-related** accidents in the region.
4. **Objective:** Identify and improve high-frequency **bicycle-related** accident locations.

R gional Pedestrian System

By providing dedicated space for those **on** foot or **using** mobility devices, pedestrian facilities **are** recognized **as** an important incentive that promotes **walking as** a mode of travel. Throughout this document, the term "walking" should be interpreted to include traveling on foot **as** well as those pedestrians using mobility aids, such **as** wheelchairs. **Walking** for short distances is an attractive option for most people when safe and convenient pedestrian facilities are available. Combined with adequate sidewalks and **curb** ramps, **amenities** such **as** benches, **curb** extensions,

marked street crossings, landscaping and wide planting strips **make** walking **an** attractive and convenient mode of travel. The focus of the regional pedestrian system is identifying **areas** of **high**, or potentially **high**, pedestrian activity in order to target infrastructure improvements that can be made with regional funds.

A wellconnected, **high-quality** pedestrian environment **facilitates** walking trips by providing safe and convenient access to pedestrian destinations **within** a **short** distance. Public transportation use is enhanced by pedestrian improvements, especially those facilities **that** connect stations or bus stops to **surrounding** areas or that provide safe and attractive waiting **areas**. Improving walkway connections between office and commercial **districts** and **surrounding** neighborhoods provides **opportunities** for residents to walk to work, shopping or to **run** **personal** errands. This reduces the need to bring an automobile to work and enhances public transportation and carpooling as commute options. **An** integrated pedestrian system supports and **links** every other element **of** the regional transportation system and complements the region's urban form and growth management **goals**.

Regional Pedestrian System Goals and Objectives

Goal 1: Increase walking for **short** trips and improve access to the region's public transportation system **through** pedestrian improvements and changes in land use patterns, designs and densities.

1. Objective: Increase the walk mode **share** for short trips, including walking to public transportation, near and within the central city, regional centers, town centers, main streets, corridors and LRT station communities.
2. Objective: Improve walkway networks serving transit **centers**, stations and stops.

Goal 2 Make the pedestrian environment safe, convenient, attractive **and** accessible for all users.

1. Objective: Complete pedestrian facilities (i.e., sidewalks, street crossings, curb ramps) needed to provide safe and convenient pedestrian access to and within the central city, regional centers, town centers, main streets, corridors and to the region's public transportation network.
2. Objective: Improve street **amenities** (e.g., landscaping, **pedestrian-scale** street lighting, benches and shelters) affecting the pedestrian and transit user near and within the central city, regional centers, town centers, main **streets**, corridors and the primary transit network

Goal 3: Provide for pedestrian access, appropriate **to existing** and planned land uses, street classification and public transportation, **as a part of all** transportation projects.

1. Objective: **Focus** priority among regionally funded pedestrian projects on those projects **which** are most likely to increase pedestrian travel, improve the quality of the pedestrian