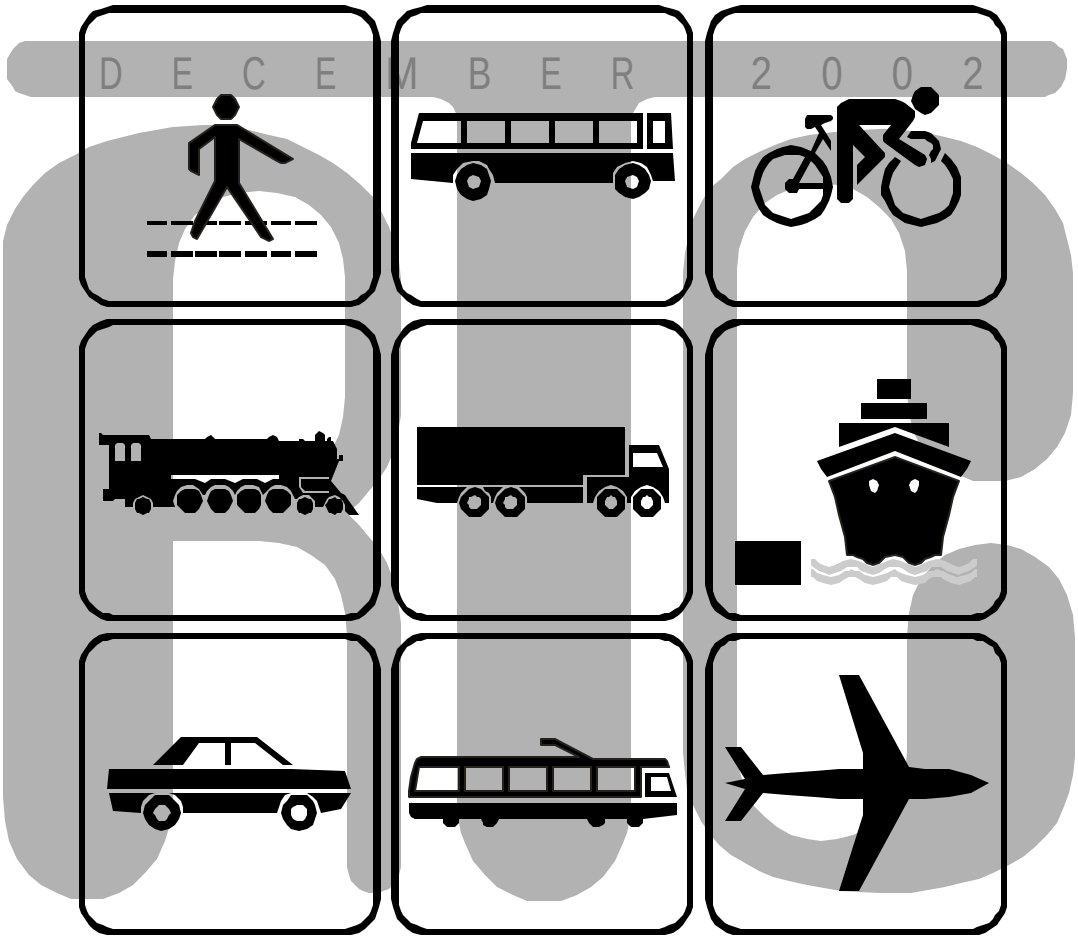
Metropolitan Transportation Plan for Clark County



Southwest Washington Regional Transportation Council

METROPOLITAN TRANSPORTATION PLAN

FOR CLARK COUNTY

December 3, 2002

RTC Board Resolution 12-02-24

Preparation of this Plan was funded by grants from the Washington State Department of Transportation, U.S. Department of Transportation (Federal Highways Administration and Federal Transit Administration) and local funds from RTC member jurisdictions

Southwest Washington Regional Transportation Council
RTC
1351 Officers' Row
Vancouver, WA 98661
Phone: (360) 397-6067
FAX: (360) 696-1847
http://www.rtc.wa.gov

SOUTHWEST WASHINGTON REGIONAL TRANSPORTATION COUNCIL

RTC Board of Directors

Clark County	Commissioner Craig Pridemore (Vice-President)
Clark County	Commissioner Betty Sue Morris
Clark County	Commissioner Judie Stanton
City of Vancouver	Mayor Royce Pollard
City of Vancouver	Thayer Rorabaugh (Transportation Manager)
Cities East	Mayor Jeff Guard (Washougal)
Cities North	Bill Ganley (Battle Ground council person)
Ports	Commissioner Arch Miller (Port of Vancouver) (RTC Board President)
C-TRAN	Lynne Griffith (Executive Director/CEO)
WSDOT	Donald Wagner (Southwest Region Administrator)
ODOT	Kay Van Sickle (Region 1 Manager)
Metro	Councilor Rod Monroe
Skamania County	Commissioner Bob Talent
Klickitat County	Commissioner Ray Thayer

Regional Transportation Advisory Committee Members

WSDOT Southwest Region	Mike Clark
Clark County Public Works	Pete Capell / Bill Wright
Clark County Planning	Patrick Lee / Evan Dust
City of Vancouver, Public Works	Matt Ransom / Phil Wuest
City of Vancouver, Community Development	Bryan Snodgrass
City of Washougal	Mike Conway
City of Camas	Jim Carothers
City of Battle Ground	Rob Charles
C-TRAN	Dale Miller
Port of Vancouver	John Fratt
ODOT	Tomas Picco
Metro	Christina Deffebach
Regional Transportation Council	Dean Lookingbill

METROPOLITAN TRANSPORTATION PLAN FOR CLARK COUNTY
DECEMBER, 2002
TABLE OF CONTENTS

CHAPTER 3 3-1

CHAPTER 4 4-1

CHAPTER 5 5-1

APPENDIX B

MTP GLOSSARY

Agenda Item VI
Resolution 12-02-24

STAFF REPORT

TO: Southwest Washington Regional Transportation Council Board of Directors

FROM: Dean Lookingbill, Transportation Director

DATE: November 26, 2002

SUBJECT: **Metropolitan Transportation Plan 2002-2023 Update, Resolution 12-02-24**

BACKGROUND

The Metropolitan Transportation Plan (MTP) for Clark County is the long-range regional transportation plan for the region. It has a twenty-year planning horizon and represents the collective strategy for developing a regional transportation system that provides mobility and accessibility for personal travel and goods movement. The Plan also facilitates existing and planned economic development. The MTP identifies future travel needs, recommends policies/strategies, and identifies implementation programs to meet future needs. Federal and state law requires that the Plan undergo periodic review. The Metropolitan Transportation Plan (MTP) for Clark County was initially adopted by the RTC Board of Directors in December 1994. The Plan has been subject to annual review and since 1994 has undergone two major updates and four amendments. A further MTP update is anticipated once the 2003 update to the Comprehensive Growth Management Plan for Clark County is finalized.

The 2002 MTP represents a comprehensive update to all chapters in the Plan. Key elements in the 2002 MTP include:

- Base Year Update to 2000.
- Horizon Year Update to 2023.
- New Demographic Control Totals.
- Financial Plan Element Update.
- Transportation Project List Update.
- An updated air quality conformity analysis consistent with the Clean Air Act Amendments of 1990.
- MTP Strategic Plan.

The MTP is developed with technical review and input provided by the Regional Transportation Advisory Committee (RTAC) and policy review provided by the RTC Board. During 2002, public involvement activities at which MTP development was presented and/or publicized include the Vancouver Neighborhood Fair in November 2002, three specific MTP outreach

meetings held in March and November, 2002 and a transportation planning booth at the Clark County Fair in August 2002. There were extensive public outreach efforts as part of the Portland-Vancouver I-5 Transportation and Trade Partnership in 2002. The Metropolitan Transportation Plan document is available on RTC's web site at http://www.rtc.wa.gov/programs/mtp/outline.htm.

POLICY IMPLICATION

The MTP represents the framework plan and policies for development of the regional transportation system. Projects programmed for federal funding in the Metropolitan Transportation Improvement Program (MTIP) must first be identified as needed in the MTP. RTC, as the Regional Transportation Planning Organization (RTPO), must certify that there is consistency between the MTP and the transportation elements of local comprehensive plans required under the Growth Management Act (GMA) and that the transportation elements conform with the GMA's requirements. The evaluation of local transportation elements was carried out by RTC in 1994. Consistency and certification will be reviewed following the 2003 update to local comprehensive plans.

BUDGET IMPLICATION

Regular update and amendment of the adopted MTP is a requirement for the receipt of federal transportation funds. Federal regulations require that the MTP contain a financial plan that demonstrates consistency between proposed transportation investments and available and projected sources of revenue. After revenues are set aside for system maintenance, preservation and operating costs, the remaining revenues are available to fund capital improvements to the regional transportation system identified in the MTP.

ACTION REQUESTED

Adoption of Resolution 12-02-24, "Metropolitan Transportation Plan 2002-2023 Update".

ADOPTED this _____ day of _____ 2002,

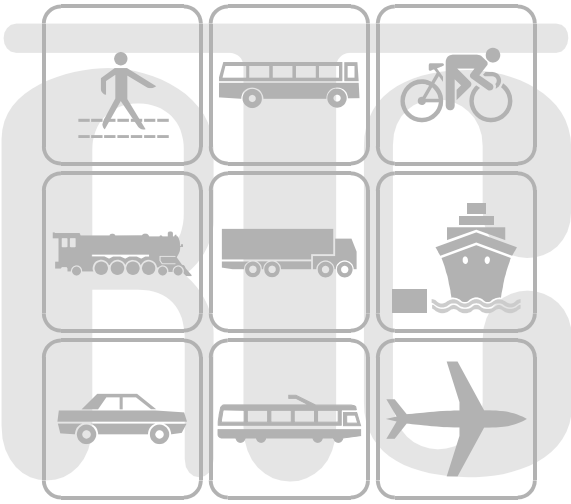
by the Southwest Washington Regional Transportation Council.

SOUTHWEST WASHINGTON
REGIONAL TRANSPORTATION COUNCIL ATTEST:

_____ _____

Arch Miller
President of the Board

Dean Lookingbill
Transportation Director



CHAPTER 1

INTRODUCTION: MTP VISION, PURPOSE AND GOALS

The Metropolitan Transportation Plan (MTP) for Clark County is the region's principal transportation planning document. It represents a regional transportation plan for the metropolitan area of Clark County developed through a coordinated process between local jurisdictions in order to develop regional solutions to transportation needs. The *first Regional Transportation Plan* (RTP) for Clark County was adopted in December 1982. An *Interim Regional Transportation Plan*, which acted as a framework for development of Growth Management Act (GMA) transportation elements, was adopted in September 1993. The first MTP for Clark County adopted to comply with the requirements of the federal Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 was adopted in December 1994. Significant updates were adopted in 1996 and 1999 and minor amendments to the Plan adopted in 1997, 1998, April 1999 and December 2000[1]. This 2002 update to the MTP uses 2023 as the horizon year, reports on the latest data available and incorporates recommendations from recent transportation studies. Project recommendations of the I-5 Partnership Governors' Task Force (June 2002) are included in a new section of the MTP Appendix, The Strategic MTP. The Strategic MTP provides a description of projects and/or planning concepts whose scale, financial structure and economic importance are beyond the 20-year list of projects contained in the "fiscally constrained" MTP. The MTP is intended to be a plan to meet transportation needs over the next 20 years and a plan to direct the metropolitan transportation planning process. This introductory chapter presents the vision, purpose, goals, scope, statutory requirements and decision-making process involved in development of the MTP for Clark County.

VISION

The MTP is a collective effort to address the development of a regional transportation system that will facilitate planned economic growth and help sustain the region's quality of life.

PURPOSE

The MTP identifies future regional transportation system needs and outlines transportation plans and improvements necessary to maintain adequate mobility within and through the region as well as accessibility to land uses within the region. The region has to plan for a future regional transportation system that can adequately support the population and employment growth projected for Clark County. The transportation system is multi-modal and includes the region's highway system for transportation of people and goods, the transit system, pedestrian and bicycle facilities, as well as ports, airports and rail facilities of regional significance. Intermodal connecting points are a vital part of the system. The MTP's goals, objectives and policies help to guide jurisdictions and agencies involved in planning and programming of transportation projects throughout Clark County.

---

[1] A summary of Clark County MTP update and amendment activities can be found in Appendix C.

GOALS

The MTP is a long-range plan that outlines how transportation system and services will provide for the mobility and accessibility of people and freight within and through the region. Goals of the MTP include:

- Supporting community economic development.
- Providing for an acceptable level of mobility for personal travel and freight movement throughout the regional transportation network and adequate access to locations throughout the region.
- Providing for a balanced regional transportation system that allows for the development of the highway, bus transit, high capacity transit, rail, aviation, marine, bicycle and pedestrian modes as well as emphasis on transportation demand management and transportation system management strategies.
- Recommending transportation improvements that will minimize and/or mitigate environmental impacts. Recommended transportation improvements should be consistent with community environmental values and neighborhood structures.
- Considering safety as a prime concern in development of the regional transportation system.
- Identifying cost-effective recommendations; those solutions that provide adequate mobility to the users while minimizing total system costs.
- Recommending transportation improvements for which revenues are likely to be available to build or implement the improvement. The MTP has to be "fiscally constrained".

Figure 1-1 provides an overview of MTP Goals.

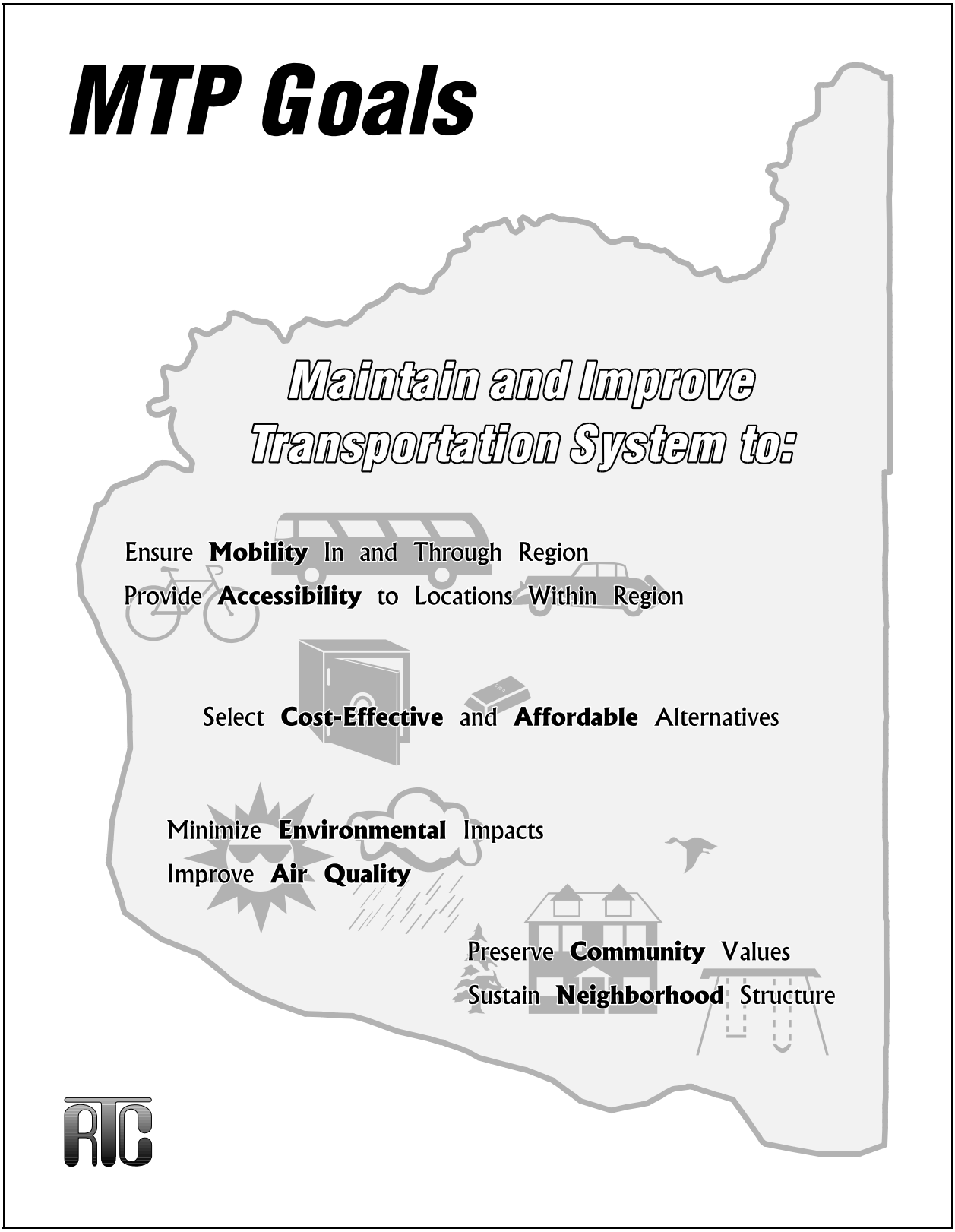


Figure 1-1: RTP Goals

There is general consistency between the general MTP goals outlined above and the policies established by local jurisdictions and agencies working together through the Growth Management Act (GMA) planning process. Excerpts from the adopted *Community Framework Plan* and the County-wide Planning Policies relating to transportation are re-printed below and these constitute the Principles and Guidelines with which the transportation elements of local comprehensive plans required under the Growth Management Act are reviewed for certification purposes.

Transportation (5.0)

The Transportation Element is to implement and be consistent with the land use element. The *Community Framework Plan* envisions a shift in emphasis of transportation systems from private vehicles to public transit (including high-capacity transit and light rail), and non-polluting alternatives such as walking and bicycling. The following policies are to coordinate the land use planning, transportation system design and funding to achieve this vision.

COUNTY-WIDE PLANNING POLICIES (5.1)

a. Clark County, Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Organization (RTPO), state, bi-state, municipalities, and C-TRAN shall work together to **establish a truly regional transportation system** which:

   1) **reduces reliance on single occupancy vehicle transportation** through development of a **balanced transportation system** which emphasizes **transit**, **high capacity transit**, **bicycle and pedestrian improvements**, and **transportation demand management**;

   2) encourages **energy efficiency**;

   3) recognizes **financial constraints**; and

   4) **minimizes environmental impacts** of the transportation systems development, operation and maintenance.

b. Regional and bi-state transportation facilities shall be planned for within the context of county-wide and **bi-state air, land and water resources**.

c. The State, MPO/RTPO, County and the municipalities shall adequately **assess** the **impacts of regional transportation facilities** to maximize the benefits to the region and local communities.

d. The State, MPO/RTPO, County and the municipalities shall strive, through **transportation system management strategies**, to optimize the use of and maintain existing roads to minimize the construction costs and impact associated with roadway facility expansion.

e. The County, local municipalities and MPO/RTPO shall, to the greatest extent possible, establish **consistent roadway standards**, **level of service standards** and **methodologies**, and **functional classification schemes** to ensure consistency throughout the region.

f. The County, local municipalities, C-TRAN and MPO/RTPO shall work together with the business community to develop **a transportation demand management strategy** to meet the goals of state and federal legislation relating to transportation.

g. The State, MPO/RTPO, County, local municipalities and C-TRAN shall work cooperatively to consider the development of transportation corridors for **high capacity transit** and adjacent land uses that support such facilities.

h. The State, County, MPO/RTPO and local municipalities shall work together to establish a **regional transportation system** which is planned, balanced and compatible with planned land use densities; these agencies and local municipalities will work together to ensure coordinated transportation and land use planning to achieve adequate mobility and movement of goods and people.

i. State or regional facilities that generate substantial travel demand should be sited along or near major transportation and/or public transit corridors.

SCOPE

The MTP for Clark County takes the year 2023 as its horizon year. Travel demand for the region is forecast for this future year and improvements to the transportation system are recommended based on the projected travel demand.

The area covered by the MTP is the whole of Clark County (see Figure 1-2). Clark County is located in the southwestern part of the state of Washington at the head of the navigable portion of the Columbia River. The Columbia River forms the western and southern boundaries of the county and provides over 41 miles of river frontage. The county's northern boundary is formed by the Lewis River and to the east are the foothills of the Cascades. Urban Clark County is part of the northeast quadrant of the Portland, Oregon metropolitan area.

People and goods move throughout the regional transportation system without consideration for city, county, and state boundaries. Transportation problems extend beyond jurisdictional boundaries so the MTP analyzes the future transportation needs for the entire region and, at the same time, provides a cooperative framework for coordinating the individual actions of a number of jurisdictions.

Figure 1-2: Clark County Washington (location map)

TRANSPORTATION ISSUES ADDRESSED IN MTP

- Transportation system maintenance, preservation and safety.
- Emphasis on existing regional corridors to minimize neighborhood disruption.
- Development of corridors to improve economic development potential.
- The role of transit in serving peak hour commuters and in serving general transportation needs in both peak and non-peak hours.
- The future role for high capacity transit alternatives in Clark County.
- Accessibility across the Columbia River in terms of capacity, economic development, corridor location, connecting roadways.
- Encouragement of non-motorized transportation modes.
- The role of system management (TSM) and demand management (TDM) techniques in transportation provision.
- Federal, state, local and private sources of revenue for transportation capital and maintenance projects.
- Air quality impacts of regional transportation system improvements.
- The role of the private sector in transportation system development.
- Intermodal transportation facilities, such as ports, rail terminals and airports.

STATUTORY REQUIREMENTS

FEDERAL

The joint Federal Highways Administration (FHWA) and Federal Transit Administration (FTA) regulations require that, as a condition for receiving federal transportation funding, urbanized areas with over 50,000 population establish a "continuing, cooperative, and comprehensive transportation planning process". The process should result in transportation plans and programs that are consistent with the comprehensive land use plans of all jurisdictions within the region.

Federal regulations require a designated **Metropolitan Planning Organization** (MPO) be the forum for cooperative decision-making by principal elected officials of the region's general purpose local governments. Southwest Washington Regional Transportation Council (RTC) was designated as the Metropolitan Planning Organization (MPO) for Clark County by agreement of the Governor of the State of Washington and units of general purpose local governments (representing at least 75 percent of the affected population, including the central cities) on July

8th of 1992. RTC succeeded the Intergovernmental Resource Center (IRC) as MPO for the Clark County region. With passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, Clark County became a federally-designated Transportation Management Area (TMA).

The Southwest Washington Regional Transportation Council, as the MPO, in cooperation with the Washington State Department of Transportation and C-TRAN, Clark County's transit operator, is responsible for carrying out federal transportation planning requirements. Federal requirements include the development of a long-range Metropolitan Transportation Plan.

The first RTP for Clark County was developed by the MPO and was adopted in December 1982. An *Interim Regional Transportation Plan for Clark County* was adopted in September, 1993. The *Interim RTP* served to establish regional transportation policies and to provide consistency with the regional Transportation Improvement Program (TIP). This MTP version provides not only a bench-mark document for local decision-makers but also meets federal requirements of the FHWA and FTA. Prior to the development of the 1982 RTP, the Portland-Vancouver Metropolitan Area Transportation Study (PVMATS) served as the long-range plan for Portland and Vancouver. PVMATS was carried out by the Columbia Regional Association of Governments (CRAG) and listed a number of highway projects needed in the region by 1990.

The federal government requires the MPO to develop a Metropolitan Transportation Plan, to meet the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and its successor Act, the Transportation Equity Act for the 21st Century (TEA-21) of 1998. In air quality non-attainment areas, review and Plan updates are required at least every three years. Updates are to confirm the Plan's validity and its consistency with developing trends in transportation system use and conditions. The MPO also has to select and prioritize transportation projects for programming in a **Transportation Improvement Program** (TIP) to be updated at least every two years. The TIP specifies federally funded transportation projects to be implemented during the next three years. Projects are listed in the TIP based upon a realistic estimate of available revenues. Projects programmed for funding in the TIP have to be consistent with the adopted MTP.

The MTP should be a central mechanism for structuring effective investments to enhance transportation system efficiency. It should consist of short- and long-range strategies to address transportation needs. The transportation plan is to be consistent with the region's comprehensive long-range, land use plans, development objectives, and the region's overall social, economic, environmental, system performance, and energy conservation goals and objectives.

The urban transportation planning process to be followed in the development of a transportation plan shall include:

- consideration of the social, economic and environmental effects in support of Intermodal Surface Transportation Efficiency Act (1991) and the Clean Air Act,

- provisions for citizen participation,

- no discrimination on the grounds of race, color, sex, national origin, or physical disability under any program receiving federal assistance,
- special efforts to plan public mass transportation facilities and services for the elderly and for people with disabilities,
- consideration of energy conservation goals and objectives,
- involvement of appropriate public and private transportation providers, and
- the following activities as necessary, and to the degree appropriate, for the size of the metropolitan area and the complexity of its transportation problems:
    - analysis of existing conditions of travel, transportation facilities, vehicle fuel consumption and systems management,
    - projections of urban area economic, demographic, and land use activities consistent with urban development goals, and projections of potential transportation demands based on these activity levels,
    - evaluation of alternative transportation improvements to meet area-wide needs for transportation and make more efficient use of existing transportation resources and reduce energy consumption,
    - refinement of transportation plan by corridor, transit technology, and staging studies; and subarea, feasibility, location, legislative, fiscal, functional classification, institutional, and energy impact studies, and
    - monitoring and reporting of urban development, transportation and energy consumption indicators and a regular program of reappraisal of the transportation plan,

The MTP is to meet federal planning requirements outlined above and should comply with provisions set forth in the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), the Clean Air Act, the Americans with Disabilities Act and Title VI of the Civil Rights Act of 1964. ISTEA outlined sixteen planning factors which were to be incorporated into the regional transportation planning process in non-attainment areas for carbon monoxide or ozone. TEA-21 legislation consolidates these planning factors into **seven** broad areas to be considered in the planning process. The growing importance of operating and managing the transportation system is recognized as a focal point for transportation planning. The seven areas are listed below:

1. Support the **economic vitality** of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
2. Increase the **safety** and **security** of the transportation system for motorized and non-motorized users;

3. Increase the **accessibility** and **mobility** options available to **people** and for **freight**;

4. Protect and enhance the **environment**, promote **energy conservation**, and improve **quality of life**;

5. Enhance the integration and **connectivity** of the transportation system, across and between modes, for people and freight;

6. Promote efficient **system management** and **operation**; and

7. Emphasize the **preservation** of the existing transportation system.

STATE

Metropolitan Transportation Plans are expected to be consistent with the policy framework and objectives described in Washington's Transportation Plan (WTP) 2003-2022 (WSDOT; February 2002). In the 1998 session, the Washington State Legislature directed WSDOT to focus the 2002 WTP update on five primary goals for the state transportation system:

- Congestion Relief
- Preservation
- Safety
- Freight Mobility, and
- Seamless Connections

The WTP provides an overview of the state and its transportation systems, presents transportation issues and trends, and describes transportation issues and needs from an RTPO, a tribal and a statewide perspective. The WTP policy framework sets a course for the state's transportation future and determines which transportation investments are needed. Statewide policy is established to achieve three key elements of a desirable future: vibrant communities, a vital economy, and a sustainable environment.

The WTP is a statewide multimodal transportation plan that addresses transportation facilities owned and operated by the state, including state highways, the Washington State Ferries, and state-owned airports. It also addresses facilities and services that the state does not own, but has an interest in. These include public transportation, freight rail, intercity passenger rail, marine ports and navigation, non-motorized transportation, and aviation. Specific state highway needs are identified in the *State Highway System Plan (HSP), 2003-2022* (WSDOT; February, 2002). The HSP is a primary element of the WTP and is updated every two years to guide WSDOT in prioritizing and budgeting for highway projects. The *Public Transportation and Intercity Rail Passenger Plan for Washington State, 1997-2016,* (December 1996), is the twenty-year Plan for preserving public transportation systems while improving mobility for a growing population.

WASHINGTON STATE'S REGIONAL TRANSPORTATION PLANNING PROGRAM

Washington State's Growth Management Act, enacted in 1990, approved the Regional Transportation Planning Program which created a formal mechanism for local governments and the state to coordinate transportation planning for regional transportation facilities. The Growth Management Act (GMA) authorized the creation of Regional Transportation Planning Organizations (RTPOs) by units of local government. Southwest Washington Regional Transportation Council (RTC) is the designated RTPO for the three-county area of Clark, Skamania and Klickitat. In 1994 further state legislation (SHB 1928) clarified the duties of the RTPO outlined in the GMA and further defined RTPO planning standards.

The duties of the RTPO, as outlined in the GMA and SHB 1928, include:

- Designation of the regional transportation system.

- Development of a six-year **Transportation Improvement Program** (TIP) to include regionally significant city road projects, county road projects, transit capital projects and WSDOT transportation projects. The TIP must include a financial plan.

- Development of a **Regional Transportation Plan** (RTP) to include a regional transportation strategy, identification of existing and planned facilities and programs, Level of Service standards, a financial plan, assessment of regional development patterns and capital investment using a regional transportation approach. The Plan should also establish the relationship of High Capacity Transit to other public transportation providers. The concept of least cost planning was introduced in SHB 1928 and it is required that it be employed in development of the RTP.

- Review of the Regional Transportation Plan at least every two years to ensure that it is current.

- Establish guidelines and principles for development and evaluation of local comprehensive plan transportation elements and certify that the transportation elements meet the requirements of the GMA and are consistent with the MTP.

- Develop a regional Level of Service (LOS) standard for the regional system as required by the LOS Bill (HB 1487).

It is intended that the Regional Transportation Planning Program be integrated with, and augment, the federally-required Metropolitan Planning Organization (MPO) Program. The RTPO has to be the same organization as that designated as the current MPO. The regional transportation planning program extends transportation planning by the RTPO's to rural areas not covered by the federal program. It is intended that the program tie in and be consistent with local comprehensive planning in urban, and rural areas.

It is intended that the regional transportation planning process follow the listed principles. The process should:

- guide the improvement of the regional transportation system
- use regionally consistent technical methods and data
- consider environmental impacts
- ensure early and continuous public involvement
- be consistent with the local comprehensive planning process
- be an ongoing process
- incorporate multimodal planning activities
- address major capacity expansion and operational improvements to the regional transportation system
- be a partnership, including federal, state, and local governments, special districts, private sector, general public and others during conception, technical analysis, policy development and decision-making

RTC will continue the previously established regional transportation planning process for the MPO, supplemented by the regional transportation planning standards formulated by WSDOT for RTPOs, in order to meet the requirements of the state's 1990 Growth Management Act. To comply with the state standards the MTP will include the following components:

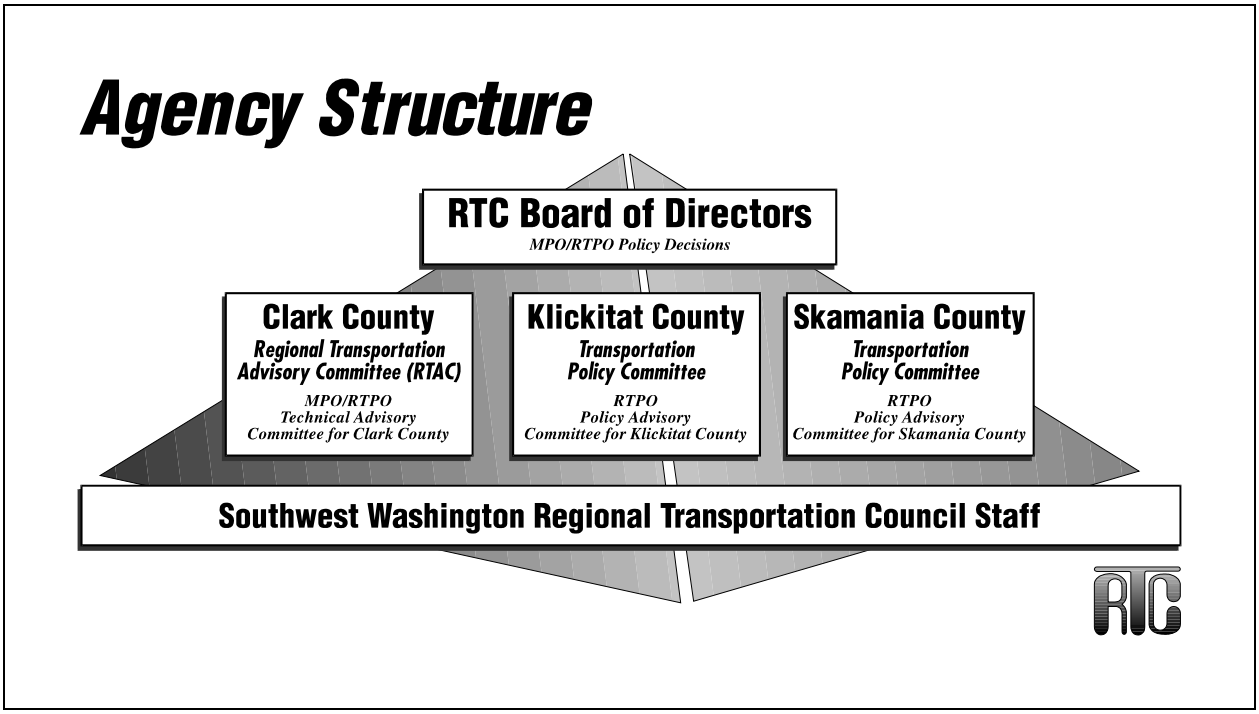
- description of the designated regional transportation system,
- regional transportation goals and policies. Level of service standards will be established and used to identify deficient transportation facilities and services,
- regional land use strategy. Existing and proposed land uses defined on local comprehensive land use plans determine the regional development strategy and will be used as the basis for transportation planning,
- identification of regional transportation needs. An inventory of existing regional transportation facilities and services, identification of current deficiencies and forecast of future travel demand will be carried out,
- development of financial plan for necessary transportation system improvements,
- regional transportation system improvement and strategy plan. Specific facility or service improvements, transportation system management and demand management strategies will be identified and priorities determined,
- establishment of a performance monitoring program. The performance of the transportation system will be monitored over time. The monitoring methodology, data collection and analysis techniques to be used will be outlined, and
- plans for implementation of the MTP.

State legislation of significance in regional transportation planning includes the Growth Management Act (1990), High Capacity Transit legislation (1990), the Clean Air Washington Act (1991), the Commute Trip Reduction law (1991) and SHB 1928 (1994).

INTERGOVERNMENTAL COORDINATION - CLARK COUNTY MTP UPDATE DEVELOPMENT PROCESS

In order to make the MTP not only a Plan to provide carefully thought-out solutions to transportation issues and problems but also a Plan that all jurisdictions can subscribe to and implement, the regional transportation planning committee structure has been established. The committees established by RTC to carry out MPO/RTPO activities work to strengthen the process of MTP development. Consistent with the 1990 GMA legislation, a three-county RTC Board of Directors has been established to serve the RTPO region. Individual County Committees and Boards also play a part in regional transportation decision-making. Representation on the RTC Board of Directors includes three representatives from Clark County, one from Skamania County, one from Klickitat County, two from the City of Vancouver, one from small cities to the East, one from small cities to the north, one from C-TRAN, and one representative of the Ports of Clark County. The role of, and representation on, the RTC Board of Directors and individual County Policy Boards and Committees is described in the *Bylaws of Southwest Washington Regional Transportation Council* (July 7, 1992) and *Interlocal Agreement for Establishment of the Southwest Washington Regional Transportation Council*. The regional transportation committee structure is outlined in Figure 1-3. For Clark County, the Regional Transportation Advisory Committee (RTAC) provides technical advice to the RTC Board of Directors.

Figure 1-3: RTC Agency Structure



BI-STATE COORDINATION

Clark County, Washington forms part of the Portland-Vancouver metropolitan area; the remainder of the metropolitan area being in the state of Oregon. Planning for the metropolitan area is undertaken by two regional planning agencies, the Metropolitan Service District (Metro) in Portland, Oregon and the Southwest Washington Regional Transportation Council (RTC) in Clark County. Each agency carries out transportation planning activities for its respective geographic areas in accordance with the designated federal, state and local authority. However, since the two agencies represent the interests of a single metropolitan area it is necessary to have coordination between them to address interstate transportation issues and problems.

Coordination and cooperation in transportation planning activities between the two states are afforded by cross-representation on transportation committees and by coordination in development of the Metropolitan Transportation Plans, Transportation Improvement Programs and Unified Planning Work Programs (UPWPs) for the two respective areas. Membership of both the RTC Board of Directors and Regional Transportation Advisory Committee (RTAC) includes representatives from Oregon Department of Transportation (ODOT) and Metro. The Metro Joint Policy Advisory Committee on Transportation (JPACT) includes representatives from WSDOT, Clark County and the City of Vancouver and the Metro Transportation Policy Alternatives Committee (TPAC) includes representatives of WSDOT and RTC, with C-TRAN an associate member.

TRANSPORTATION FUTURES COMMITTEE AND THE REGIONAL TRANSPORTATION PLANNING PROCESS

In February 1995 Clark County voters defeated the financing proposal for the Clark County portion of the South/North Light Rail Transit (LRT) project. The defeat of the LRT vote led to an extensive discussion of the next steps for addressing bi-state transportation needs. Policy makers agreed that it was imperative to engage the community in a full debate on a wide range of transportation issues and needs facing Clark County. Hence, shortly after the vote, local elected officials recommended that a citizen-based discussion of future transportation issues be implemented. This led to the appointment of the Transportation Futures Committee. The Committee's purpose was to provide elected officials with a set of citizen findings that can be considered as transportation plans and programs are developed. Between September 28, 1995 and July 11, 1996, the Committee met twenty times. These included evening meetings and three all-day Saturday workshops. The findings of the Transportation Futures Committee are outlined in Chapter 5 (System Improvement and Strategy Plan).

LEVEL OF SERVICE STANDARDS

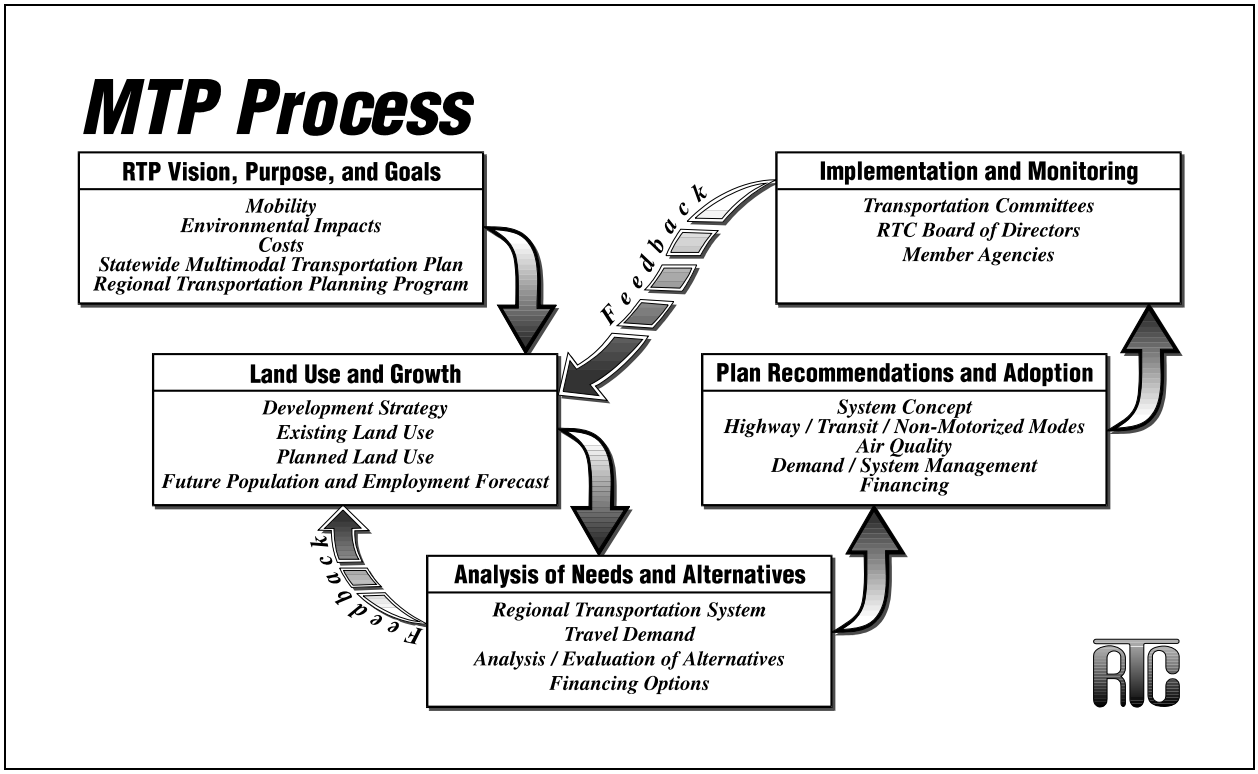
Level of service standards represent the minimum performance level desired for transportation facilities and services within the region. They are used as a gauge for evaluating the quality of service on the transportation system and can be described by travel times, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The Washington State Growth Management Act states that these standards should be regionally coordinated. The standards are used to identify deficient facilities and services in the transportation plan, and are also to be used by local governments to judge whether transportation funding is adequate to support proposed

land use developments. Level of service standards for Clark County, are further addressed in Chapter 3.

CLARK COUNTY METROPOLITAN TRANSPORTATION PLAN UPDATE: WORK PLAN

As a first step in preparation of the Clark County MTP a work plan to be followed in the development process was put together (see Figure 1-4). The work plan outlines major tasks to be covered in the development of the MTP. The MTP is designed as a benchmark Plan to meet federal MPO requirements for regional transportation planning in Clark County and incorporates elements required by the state regional transportation planning standards as a result of the 1990 GMA legislation and SHB 1928 legislation passed in 1994.

Figure 1-4: MTP Process



An outline of the chapters of the Plan is provided below. The MTP relies on regional transportation policies, known growth trends and base case regional travel forecasting results to present regional transportation needs.

OUTLINE OF MTP CHAPTERS

Chapter 1: **Introduction; MTP Vision, Purpose and Goals**. The MTP is introduced and its general goals, policies, statutory authority and purpose are described. The MTP process is outlined as well as regional transportation committee structure and intergovernmental cooperation and coordination in MTP development. The concept of level of service standards is introduced.

Chapter 2: **Regional Land Use and Growth**. Clark County's demographic data, development trends and regional development strategy are discussed. Existing and future land uses and development patterns are identified.

Chapter 3: **Identification of Regional Transportation Needs**. The regional transportation system is designated and defined. The characteristics and patterns of today's and future regional travel demand, today's transportation problem locations and future regional needs are described. Needs criteria such as acceptable levels of service, safety and accessibility are outlined. Transportation system alternatives are described and evaluated.

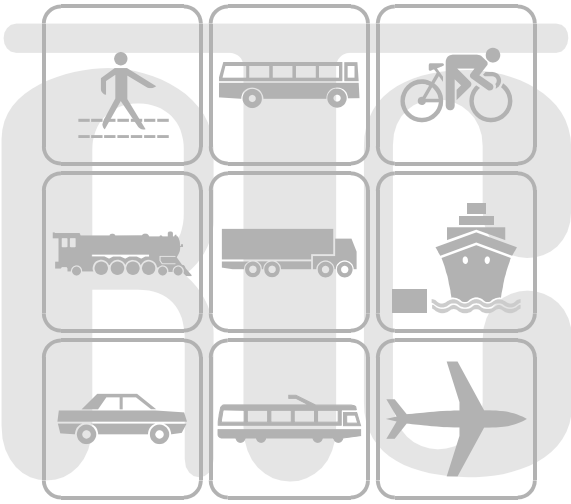
Chapter 4: **Financial Plan**. Revenue sources are identified and described and a plan for financing transportation system improvements is presented.

Chapter 5: **System Improvement and Strategy Plan**. Recommendations for development of the regional transportation system are made. Highways, transit systems and demand management alternatives are considered. The findings of the Transportation Futures Committee are also addressed.

Chapter 6: **Performance Monitoring**. Performance monitoring measures are described. Procedures to maintain the MTP's consistency with the state transportation plan, local transportation plans, major land use decisions and regional demographic projections are outlined.

Chapter 7: **Plan Development and Implementation**. Provisions for involvement of the public in development of the MTP are described. Provisions for implementation of regional transportation goals, policies and actions established by the MTP are described. The MTP review and amendment process is outlined, should changing policies, financial conditions or growth patterns warrant amendment of the Plan. The GMA-required biennial review process and need for triennial update to satisfy federal requirements is described.

Appendices: The Appendices to the MTP contain a list of projects included in the regional travel forecast model for air quality planning purposes, a description of the methodology used and results of air quality conformity analysis as well as the Strategic Plan element of the MTP that outlines MTP projects and/or planning concepts that currently cannot be brought into the “fiscally-constrained” MTP but that have been considered and/or recommended in regional transportation studies and should be brought to the attention of the community for possible future inclusion into the Plan.



CHAPTER 2

LAND USE, GROWTH AND TRANSPORTATION

LAND USE AND TRANSPORTATION

In developing a metropolitan transportation plan the fundamental relationship between transportation and land use should be recognized and the effect that land use and growth have on transportation considered.

The linkage between land use and transportation is a complex issue but on a simple level the linkage can be thought of as working in two ways:

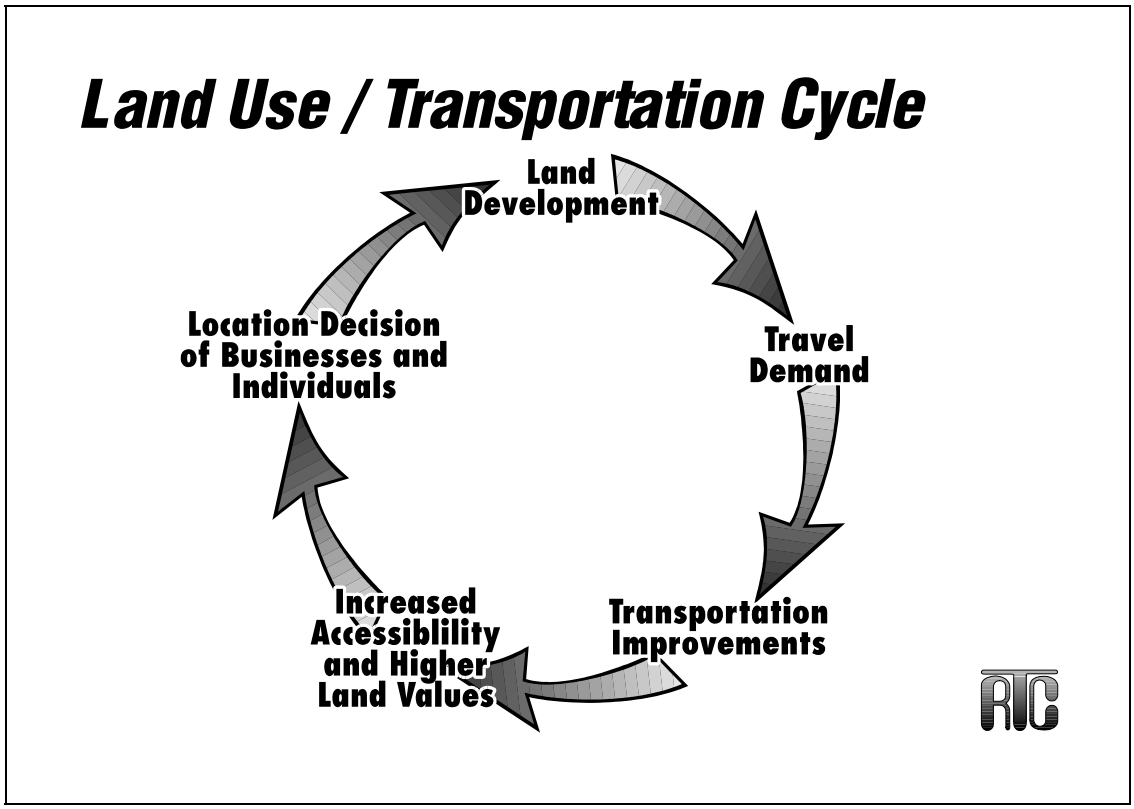
1) The spatial distribution and type of land use activity influences both the demand for travel and travel characteristics.

   Different types of land use generate and attract differing traffic rates, for example, retail land uses will generate more trips than residential land uses.

2) Improving access by expanding the transportation system allows for the development of land that was formerly inaccessible.

The Land Use/Transportation cycle is illustrated in Figure 2-1.

Figure 2-1: Land Use/Transportation Cycle



The Washington State 1990 Growth Management Act (GMA) recognized the importance of the linkage between land use and transportation. The Act requires that local comprehensive plans include a transportation element. Under the GMA, RTPOs were established to extend transportation planning. RTC was designated as RTPO for a three-county region which includes Clark, Skamania and Klickitat counties. The RTPOs were authorized to review the transportation elements of local comprehensive plans and certify that they comply with the GMA that requires consistency between land use and transportation elements.

Land use and transportation are inter-linked; land use activities largely determine travel demand and desire. When different land uses are segregated, length of trips tends to increase. These longer trips are usually served more conveniently by the automobile, thus reducing the use of transportation alternatives, such as walking or transit, to meet mobility needs.

GROWTH AND DEVELOPMENT

Sustained economic development and growth within a region is desirable because of the economic benefits that increased employment and a larger tax base can bring. However, while growth can contribute to the health of a region's economy it can also have adverse impacts. Unmanaged, fast rates of growth can have a severe impact on the ability of a community to provide needed infrastructure and services. The costs of growth can include worsening levels of traffic congestion, decline in air quality, and overall degradation of the quality of life.

The need to maintain economic viability and, at the same time, quality of life is a challenge. Components which contribute to a desirable quality of life include job opportunities, affordable housing, a healthy environment with clean air and recreational opportunities. An efficient, safe transportation system contributes to the quality of life for residents of a region and can act as an attractor for economic development.

GROWTH IN CLARK COUNTY

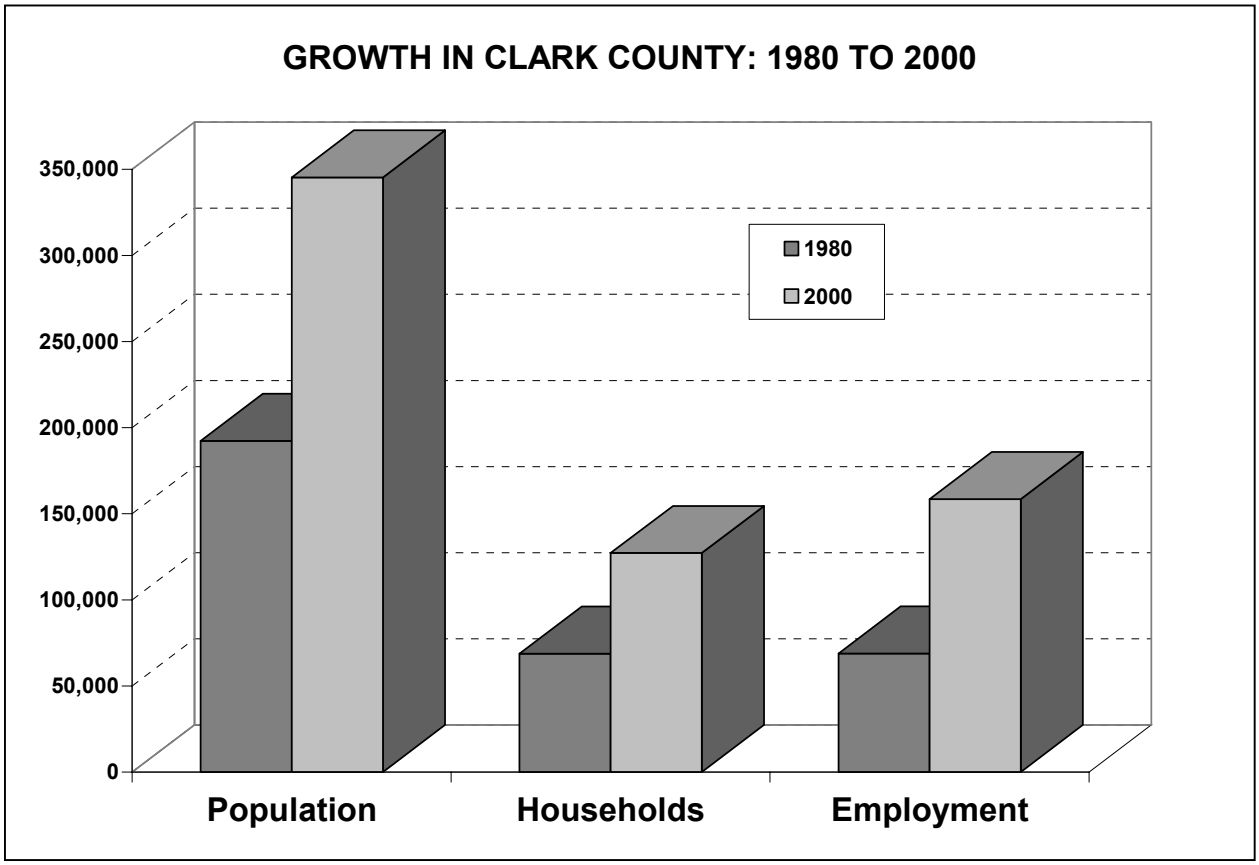
Clark County has seen significant rates of growth in the last two decades. Between 1980 and 2000 the population of the county increased by 80% from 192,227 in 1980 to 345,238 in 2000 while the number of households increased by 85% from 68,750 in 1980 to 127,208 in 2000 (see Figure 2-2). The 1980 to 2000 increase in total employment[1] in the county was 130% from 68,859 in 1980 to 158,535 in 2000. Washington State's Office of Financial Management (OFM) estimates that Clark County's 2002 population is at 363,400. The rapid growth seen in the County in the last two decades has increased demands on the regional transportation system.

Development of a transportation policy plan to provide for mobility of people and goods has to consider how to plan for a transportation system which can support increases in travel demand caused by growth in population and employment. At the same time this system has to be

[1] MTP total employment includes total employment as measured by the federal Department of Commerce, Bureau of Economic Analysis (BEA). Total employment includes all wage and salaried jobs as well as proprietors jobs that includes sole proprietor, self employed and farm employment.

affordable and minimize environmental impacts to maintain the quality of life. A safe, efficient transportation system can work to enhance economic development within a region and development of the transportation system in conjunction with land use plans can contribute to positive growth management.

Figure 2-2: Growth in Clark County, 1980-2000



Sources: U.S. Census Bureau, U.S. Bureau of Economic Analysis

EXISTING LAND USES IN CLARK COUNTY

From the City of Vancouver, the urban hub of the county on the banks of the Columbia River, Clark County spreads through a rapidly growing suburban band, across agricultural lands and a network of smaller cities and towns to the slopes of the Cascade Mountain Range. The county is compact, measuring approximately 25 miles across in either direction and has an area of 405,760 acres (627 square miles).

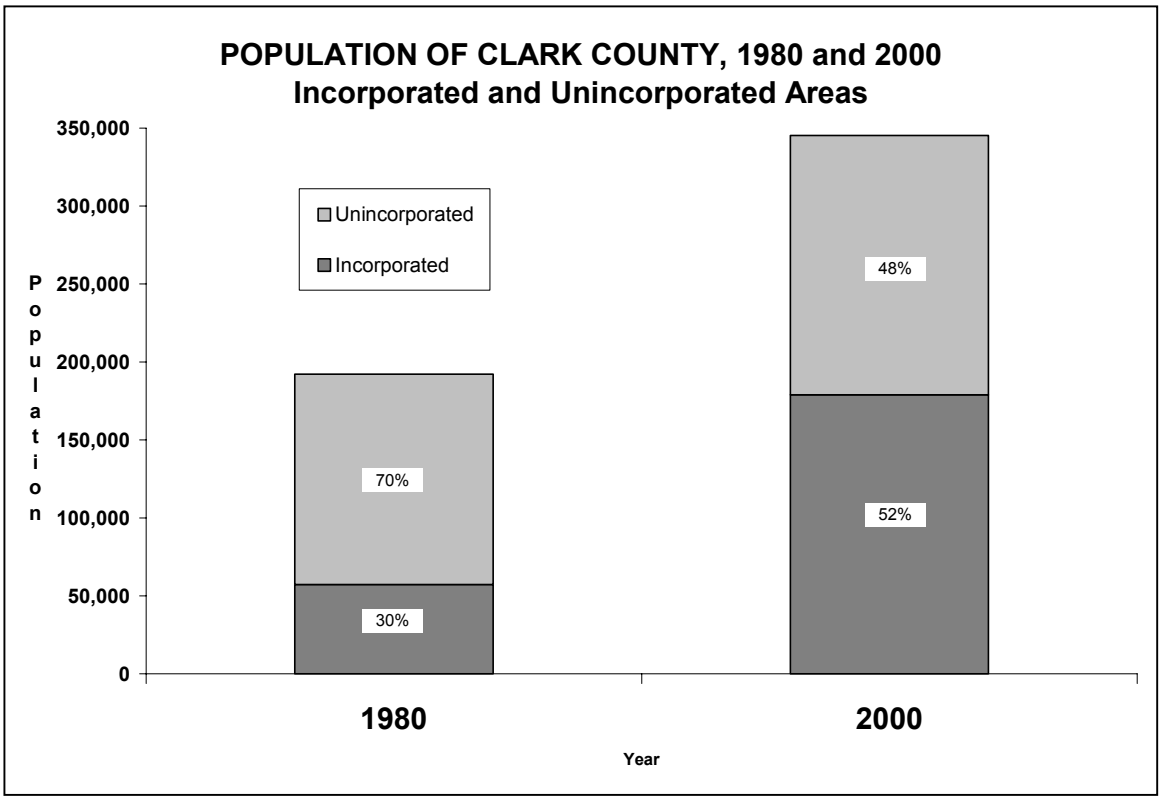
Clark County's growth was stimulated by the development of "traditional" industries such as pulp and paper manufacturing, aluminum production and, during the wartime years, shipbuilding activities. In recent years the county has proved to be attractive to new manufacturing activities; the region is able to offer reasonably priced land for development in an attractive setting within a metropolitan area. Power is affordable and the region's location on the Pacific Rim, with easy access to Portland International Airport, has contributed to its growth and development. With

the establishment of "new" high technology industries the region has been successful in diversifying its economic base. Major employers include Hewlett-Packard, SEH America, Georgia-Pacific Corporation, Fred Meyer, Southwest Washington Medical Center, Frito-Lay, Burlington Northern Railroad, Wafertech, Columbia Machine, AVX Vancouver Corporation, Matsushita Kotobuki Electronics Industries of America (MKA), the Vancouver Clinic, Sharp Microelectronics, and Underwriters' Laboratory.

Clark County's location on the northern periphery of the Portland metropolitan area has contributed to the significant growth in residential developments and employment activities within the county in recent years. The nationwide trend toward development of the suburbs of metropolitan areas for residential developments, as well as employment activities, is apparent in this region. This development trend has implications for the provision of transportation infrastructure and services.

In Clark County the past two decades has seen population growth in both the incorporated and unincorporated areas. Between 1980 and 2000 the incorporated areas saw a growth in population of 213% (57,248 population in 1980 to 178,959 in 2000) while the growth in the unincorporated areas was 23% (from 134,979 population in 1980 to 166,279 in 2000). The proportion of the population living in the unincorporated areas decreased from 70% in 1980 to 48% in 2000 while the proportion living in the incorporated areas increased from 30% in 1980 to 52% in 2000 (see Figure 2-3). Annexations by the City of Vancouver and the County's smaller cities have produced this trend. A large annexation of the Cascade Park area to Vancouver took place in 1997 when Vancouver became the State's fourth largest city. In 1996, the City of Vancouver's population was at 67,450 and in 2002 it is estimated at 148,800.

Figure 2-3: Incorporated and Unincorporated Population, 1980 and 2000



Sources: Washington State Office of Financial Management (OFM)

The provision of public facilities and services, including transportation facilities such as highways, bicycle lanes and pedestrian paths as well as transit services, is a principal determinant of land use patterns. Contemporary land use patterns in Clark County have evolved largely as a result of dependence on the automobile for mobility of its residents. An examination of land use maps for Clark County indicates that residential and commercial development has spread out along Highway 99, Fourth Plain, Mill Plain and SR-14. The opening of SR-500 and I-205 stimulated growth in the Vancouver Mall and Cascade Park/East County areas in the late 1980's and 1990's by offering increased accessibility to the two areas.

The City of Vancouver had seen relatively small growth in its population in the 1970's and 1980's. However, several significant annexations of land into the City boosted its population from 65,360 in 1995 to 127,900 in 1997. In 2002, Vancouver's population is estimated at 148,800. Several new office buildings have opened in downtown Vancouver and efforts are underway to revitalize the downtown area with apartments under construction, plans for new office buildings and an events center. However, the focus for retail activity has shifted to the Vancouver Mall area. The Vancouver Mall area was annexed to the City of Vancouver in 1992.

The Vancouver Mall area was a relatively isolated and undeveloped tract of the unincorporated County when the 918,000 square foot shopping mall was constructed in two phases in 1977 and 1980. However, the improved access provided by the completion of the I-205 Glenn Jackson Bridge in 1982 and SR-500 in 1984, contributed to the area's rapid development in recent years.

New commercial, retail, and residential developments have been attracted to the area, including offices, shops, restaurants, hotel units and apartments. The first phase (over 440,000 square feet) of Vancouver Plaza, a retail development on 45 acres to the south-west of Vancouver Mall, opened in fall 1988 and the Parkway Plaza development to the west of the Mall has seen the completion of several large office buildings.

The Glenn-Jackson Bridge that carries I-205 traffic across the Columbia opened in 1982. This provided a second Portland-Vancouver area river crossing. It relieved the bottleneck on I-5 and opened up access to the Portland region, including access to Portland International Airport located just to the south west of the bridge, from east Clark County. Rapid development of the area to the east of I-205 followed. A lot of the County's 1990's growth focused on the Mill Plain and 164/162nd Avenue corridors in east County. A mix of residential, commercial and business development has taken place. Residential development ranges from the adult community at Fairway Village to numerous large apartment developments and the Fisher's Landing development. Commercial development began in the area in 1978 when Fred Meyer opened a shopping center at Chkalov and Mill Plain. Others were quick to realize the area's commercial potential. Recent commercial developments have included the Fred Meyer development at SE 164th Avenue and SE 20th Street and the Mill Plain Town Center, anchored by Target, at Mill Plain and 164th Avenue. Business center developments include Columbia Tech Center and Stonemill Business Park.

Provision of public facilities and services, including transportation, has shaped the development of land uses in Clark County up to the present and will continue to do so in the future.

LAND USE: PLANS FOR THE FUTURE

Comprehensive plans are the means by which local jurisdictions plan for their future growth and development; they can provide a process for anticipating and influencing the orderly and coordinated development of land. Within Washington State planning authority is delegated by the state to local governments in RCW 36.70A, 35.63 and 35A.63. Before passage of the Growth Management Act, comprehensive plans were required to have a land use element showing the general distribution and location of land for various uses, as well as a circulation element showing the street system and transportation routes. Under planning provisions contained in the 1990 Growth Management Act, now codified in RCW 36.70a and RCW 47.80, local comprehensive plans become the basis for defining and integrating land use, transportation, capital facilities, public utilities and environmental protection elements. Within the comprehensive planning process these elements have to be inter-related and there has to be consistency between them. The GMA legislation requires that land use decisions should not be made without consideration of transportation needs and impacts.

CLARK COUNTY JURISDICTIONS' COMPREHENSIVE LAND USE PLANS AND ZONING - THEIR USE IN THE REGIONAL TRANSPORTATION PLANNING PROCESS

As part of the Growth Management planning process, Clark County adopted a *Community Framework Plan* in April 1993 to serve as a guide for the County's long-term growth over a period of fifty plus years. The *Framework Plan* envisions a collection of distinct communities; a

hierarchy of growth and activity centers. Land outside the population centers is to be dedicated to farms, forests, rural development and open space. The twenty-year *Comprehensive Growth Management Plan for Clark County* is to guide the growth of the County toward the future vision. Growth Management plans for the urban areas of Clark County were developed by Clark County and the cities and town of the region through a Partnership Planning process. Plans for the rural and natural resource lands are handled by Clark County. GMA plans for the County and urban areas were subject to review under the State Environmental Policy Act (SEPA). In September, 1994, the *Final Supplemental Environmental Impact Statement for the Comprehensive Growth Management Plans of Clark County, Battle Ground, Camas, La Center, Ridgefield, Vancouver, Washougal, Yacolt, Volume I and Public Comments, Volume II* was published by Clark County. The public was given many opportunities to be involved in and provide input to the planning process. In December of 1994 the GMA plans for Clark County were adopted and in May of 1996 revisions were adopted. The twenty year plans include urban area boundaries.

Comprehensive plans are used in the regional transportation planning process as the basis for determining future land uses and identifying where future development is likely to occur. The visionary land use development strategy presented in the *Community Framework Plan* and 20-year GMA Plan was used as the basis for determining the future demographic distribution throughout Clark County.

Currently the Comprehensive Growth Management Plan for Clark County is in the process of being updated. The update is due to be adopted by the end of 2003. The update to the Plan will be the basis for the next MTP update that will follow completion of the GMA Plan update process.

POPULATION AND EMPLOYMENT FORECAST

For the Portland-Vancouver metropolitan region as a whole, demographic forecasts are usually formulated through a cooperative planning process led by the Metropolitan Service District (Metro), Portland, Oregon. The forecast region includes Clark County in Washington State, as well as Multnomah, Clackamas, Washington and Yamhill counties in Oregon. Worldwide, national and regional economic assumptions are the basis for determining future forecast demographics in the region. The Growth Management Act passed in Washington State in 1990 requires that Growth Management Plans have to support a population forecast developed by the Washington Office of Financial Management (OFM). The GMA directs OFM to prepare twenty-year GMA planning projections that are updated every five years. Each County's GMA projection is expressed as a range between a reasonable High and Low projection. Counties select a GMA planning population within the range released by OFM. In this region, OFM consults with Metro and local jurisdictions in determining the forecast. In January 2002, OFM released the GMA County projections to 2025. For Clark County, the OFM projected 2023 population falls within a range from a low of 465,591 to a high of 600,963 with a mid-range projection of 530,962.

For GMA and MTP update purposes, Clark County has chosen to use a 2023 population projection of 486,225. The number of households is forecast to be 200,094, and total

employment is forecast to be 248,396 with 18.5% (46,048) of the employment being in retail jobs. The 2023 forecasts represent a 41% increase in population from a 2000 population of 345,238, a 57% increase in households, and a 57% increase in employment from 158,535 total full- and part-time jobs in Clark County in 2000 (see Figures 2-4 and 2-5).

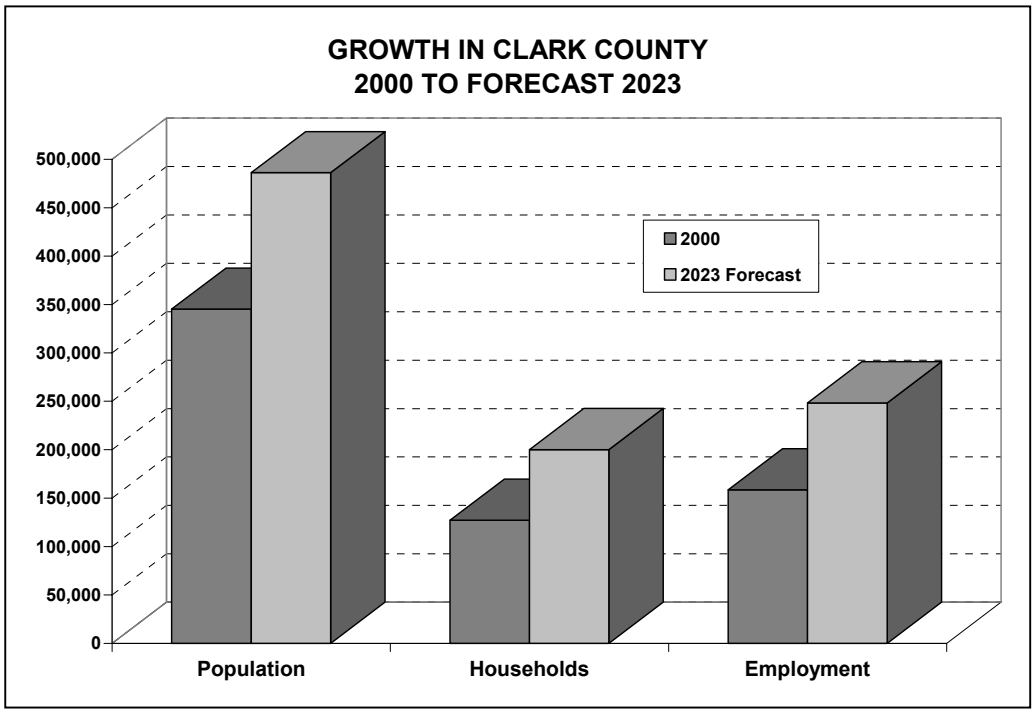
TRANSPORTATION ANALYSIS ZONES

In the regional transportation planning process the forecast growth in housing and employment for the year 2023 is converted into projections of future travel demand. For the purpose of analyzing future travel demand, a "Transportation Analysis Zone" (TAZ) System is used. The Portland metropolitan area is divided into TAZs; there are 615 zones in Clark County and 2 Clark County external zones. For each Clark County TAZ, the comprehensive plan land use designations and existing zoning are used as a basis for distributing 2023 forecasts for housing and employment. The demographic distributions are based on the County Assessor's data, building permit data and on vacant, buildable lands analysis.

DISTRIBUTION OF FUTURE GROWTH

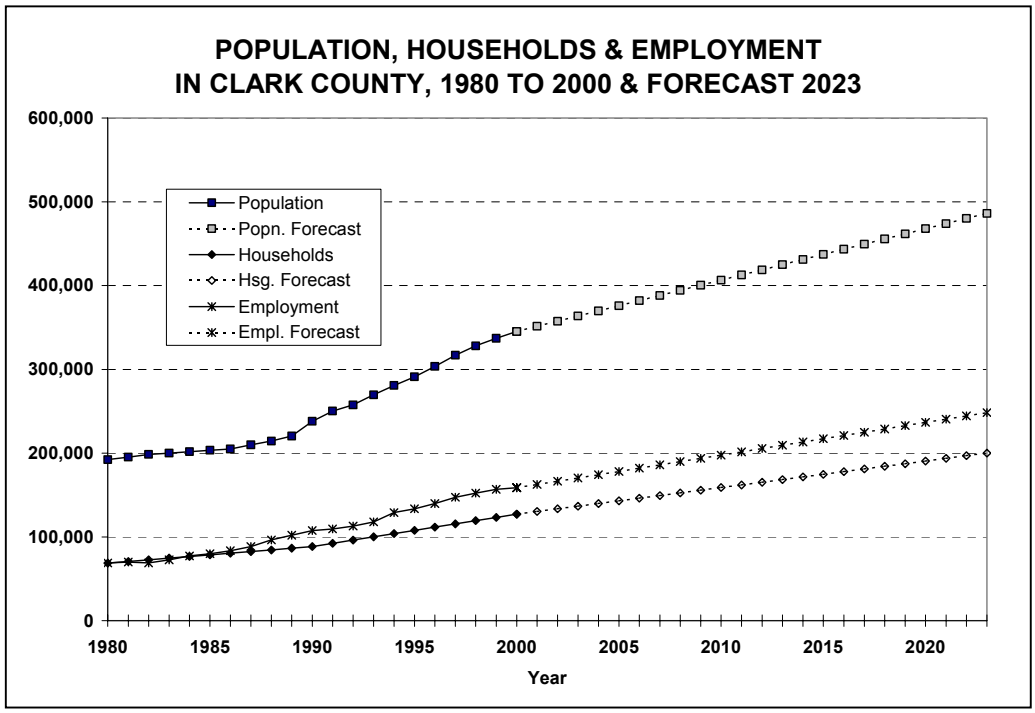
As described above, the population of Clark County is forecast to grow by 140,225 during the planning period from 2000 to 2023 and employment is set to grow by 92,209. GMA plans call for the focus of development to be in three growth centers within the Vancouver UGA: Downtown Vancouver, Vancouver Mall and the Salmon Creek/Washington State University vicinity. Denser patterns of development are to be encouraged along the main transportation corridors where there is transit service. In designated High Capacity Transit corridors, I-5, I-205 and SR-500/Fourth Plain, densities and appropriate urban designs are to be encouraged to maximize the efficiencies of land use and transit development. The smaller cities of Clark County are planning for denser development and expansion of their urban boundaries as they become the focus for growth outside of the core urban area of Vancouver.

Figure 2-4: Growth in Clark County, 2000 to Forecast 2023



Sources: U.S. Census Bureau, U.S. Bureau of Economic Analysis, Washington State Office of Financial Management (OFM), and Clark County

Figure 2-5: Population, Housing and Employment in Clark County, 1980 to 2000 & Forecast 2023



Sources: U.S. Census Bureau, U.S. Bureau of Economic Analysis, Washington State Office of Financial Management (OFM), and Clark County

DEMOGRAPHIC AND LAND USE TRENDS

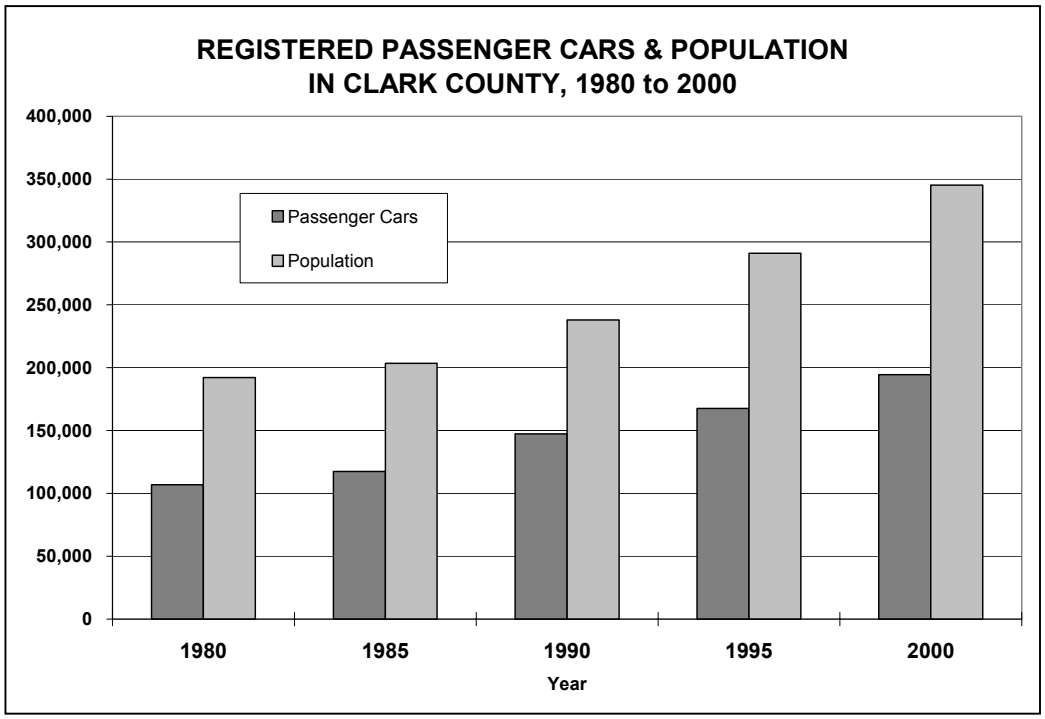
Growth in population and employment, development and resulting land use patterns together with its distribution all affect travel demand. However, other demographic factors also influence travel demand. These factors include household size, workforce participation, employment patterns and vehicle ownership. While the decades of the 1970s and 1980s saw significant change in these demographics, the decade of the 1990s has not seen as much change.

Household size is one of the most significant demographic factors that influences land use and demand for transportation services. In the decade of the 1980s there was a trend toward smaller household size due to more single-person households and smaller family size. In 1980 the average number of persons per household in Clark County was 2.76 but by 1990 it had fallen to 2.69. The decade of the 1990's saw no change in average household size in Clark County with the 2000 U.S. Census recording an average 2.69 persons per household in Clark County. By 2023 the number of persons per household is expected to decrease to around 2.43 persons per household. Decreased household size can result in development pressures for more housing and further expansion of land for residential uses to accommodate the additional houses. Expansion of residential land uses requires improvements and expansion to the transportation system to access new and developing residential areas. However, over the past two decades, the ratio of single family to multi-family housing has changed in Clark County with a move toward more multi-family housing. In 1980 there were 81% single family (including mobile homes) compared with 19% multi-family housing units. By 2000 these housing numbers had changed to 77% single family and 23% multi-family.

Another demographic trend that affects travel demand is the increase in two-worker households. Typically, the two workers in the household each use an auto to get to work, use the auto for work purposes while at work, use it to run errands at lunch time and before or after work and, if they have a family, to take their children to daycare facilities. All result in people's increased reliance on the automobile that people consider their most convenient transportation mode. Employment patterns have also been changing, with a relative decline seen in the traditional, blue-collar, industrial jobs and an increase in service sector employment. Clark County has seen this change in employment structure and has seen growth in "high-tech" employment and a large increase in the retail sector in recent years. The number of jobs is increasing in suburban areas such as Clark County and employment is dispersing throughout the region. The "new" suburban places of employment have also tended to add to travel demand because of their dispersal, their design has catered to auto-commuters and they are not as easily served by transit service.

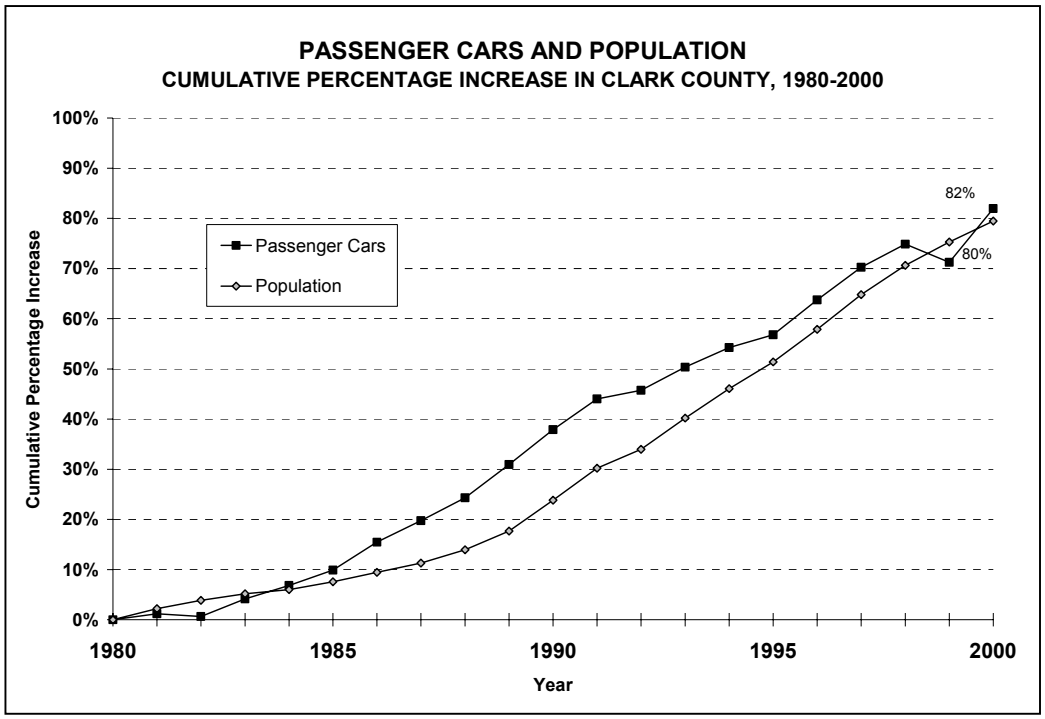
Travel demand has also grown as the number of registered passenger cars in Clark County has increased. From 1960 to 1980 there was a 171% increase in passenger cars registered in Clark County (from 39,502 to 106,889 cars). In the period, 1960 to 1980, population increased by 105% from 93,809 to 192,227. However, in the past two decades, from 1980 to 2000, the percentage increase in population and passenger cars has been very similar with an 82% increase in passenger cars and an 80% increase in population. (see Figures 2-6 and 2-7).

Figure 2-6: Registered Passenger Cars & Population in Clark County, 1980-2000



Source: U.S Census Bureau, Washington State Department of Licensing

Figure 2-7: Passenger Cars and Population, Cumulative Increase in Clark County, 1980-2000



Source: U.S Census Bureau, Washington State Department of Licensing

NOTE: 1999 vehicle registrations are influenced by Initiative-695; many people deferred registration of vehicles until 2000.

Table 2-1 shows the 1970 to 2000 increase in registered passenger cars and total registered vehicles (includes all trucks, commercial and recreational vehicles plus passenger cars) in Clark County. The number of passenger cars per household has increased at the same time as household size has decreased.

Table 2-1: Clark County Demographic Data, 1970, 1980, 1990 and 2000

CLARK COUNTY GROWTH TRENDS: 1970, 1980, 1990 and 2000										
Year	Popn.	Housing Units	Households	Persons per House-hold[1]	Jobs in Clark County[2]	Jobs per Household	Registered Passenger Cars	Registered Passenger Cars Per Household	Registered Vehicles	Registered Vehicles Per Household
1970	128,454	42,816	41,064	3.10	43,050	1.05	62,586	1.52	95,788	2.33
1980	192,227	72,806	68,750	2.76	68,859	1.00	106,889	1.55	171,474	2.49
1990	238,053	92,849	88,440	2.69	107,642	1.22	147,401	1.67	238,629	2.70
2000	345,238	134,030	127,208	2.69	158,681	1.25	194,492	1.53	301,104	2.37

Source: U.S. Bureau of the Census, Washington State Department of Licensing and Washington Office of Financial Management.
[1] from census data
[2] Bureau of Economic Analysis (total jobs)

Tables 2-2 and 2-3 also provide information that compares 1990 and 2000 census demographic data which is of relevance in the metropolitan regional transportation planning process.

Table 2-2: Summary of Clark County Demographics

		1990	1990 %	2000	2000 %
Population		**238,053**		**345,238**	
Age:	Under 70	221,034	92.9%	312,430	90.5%
	70 and Over	17,019	7.1%	32,808	9.5%
Race:	White	225,192	94.6%	306,648	88.8%
	Black or African American	2,976	1.3%	5,813	1.7%
	American Indian and Alaska Native	2,296	1.0%	2,910	0.8%
	Asian*	5,670	2.4%	11,095	3.2%
	Other*	1,919	0.8%	18,772	5.4%
Origin:	Non-Hispanic/Non-Latino	232,181	97.5%	328,990	95.3%
	Hispanic/Latino	5,872	2.5%	16,248	4.7%
Language Spoken at Home	Population over 5 years	219,563	100%	318,152	100%
	Speak English Only	207,291	94.4%	281,613	88.5%
	Language other than English	12,272	5.6%	36,539	11.5%
	Speak English less than "Very Well"	4,556	2.1%	17,638	5.5%
Poverty:	Total Population for whom poverty status is determined	212,660	100%	341,464	100%
	Poverty Status (as defined by U.S. Census Bureau)	21,910	10.3%	31,027	9.1%

Source: U.S. Census Bureau

** NOTE: Direct comparison between 1990 and 2000 data is not possible for some categories. In 1990, Asian and Pacific Islanders were grouped and there was no reporting on two or more races.*

Table 2-3: Clark County Journey to Work

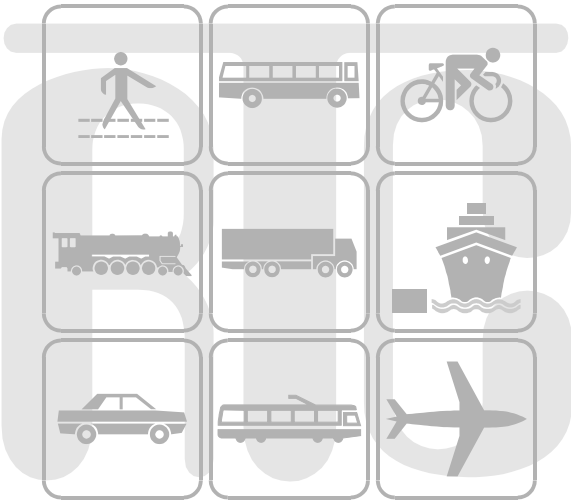
Clark County	1990	1990 Percent	2000	2000 Percent	1990 to 2000 Growth	1990 to 2000 Percent Growth
Commuters	108,945		161,471		52,526	48.2%
Drive Alone	87,748	80.5%	128,014	79.3%	40,266	45.9%
Carpool	12,017	11.0%	18,089	11.2%	6,072	50.5%
Transit	2,275	2.1%	4,228	2.6%	1,953	85.8%
Other	1,224	1.1%	1,788	1.1%	564	46.1%
Walk and Home	5,681	5.2%	9,352	5.8%	3,671	64.6%
Mean Travel Time to Work (those that work outside home)	21.2 mins.	N/A	24.7 mins.	N/A	3.5 mins.	16.5%

Source: U.S. Census Bureau

Growth in population as well as the other demographic factors described above has resulted in increase in travel demand to be met by Clark County's transportation system. Development of land, growth in population and travel demand requires a combination of expansion of public facilities and service provision and a revision to land use plans to ensure mixed use developments and better balance of jobs and housing throughout the region. One of the goals of the comprehensive plan for the Clark County region, developed under the Growth Management Act (GMA), is to reverse the trend of increased dependence on the automobile. In the comprehensive plan, land uses and transportation have been linked in the planning process and their inter-relationships considered in developing a vision for future growth and future growth patterns. In assessing future transportation needs for the Clark County region the comprehensive plans of its jurisdictions are used as a basis for analysis of the transportation system. The GMA requires that transportation system improvements be put in place 'concurrent' with land development.

Table 2-4: Summary of Clark County Growth Forecasts

CLARK COUNTY 2000 TO 2023 GROWTH FORECASTS: MTP			
	2000	**MTP 2023**	**% Change 2000 to 2023**
Population	345,238	486,225	41%
Households	127,203	200,094	57%
Employment	158,535	248,396	57%



CHAPTER 3

IDENTIFICATION OF REGIONAL TRANSPORTATION NEEDS

INVENTORY OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

As an introduction to planning for the future development of a regional transportation system, an inventory of the existing system is provided. Also, a brief description of the context for regional transportation planning, with regard to meeting federal requirements and designation of federal transportation area boundaries is described.

FEDERAL TRANSPORTATION BOUNDARIES

When the Intermodal Surface Transportation Efficiency Act (ISTEA) was passed in 1991, the Act required Metropolitan Planning Organizations (MPOs), such as RTC, to carry out review of several elements of the regional transportation planning program. First, the Act called for review and revision of the federal transportation **Urban Area Boundary** (UAB); a boundary delineating areas that are urban in nature from those that are largely rural in nature. The federal transportation Urban Area Boundary is not to be confused with the Urban Growth Areas being established under the Washington State Growth Management Act (GMA), as described in Chapter 2. The UAB should cover, at a minimum, the area designated by the 1990 Census[1] as "urbanized" by meeting certain population and density criteria. Within Clark County, the Vancouver urban area has a population of over 50,000 and is therefore defined as an urbanized area by the U.S. Census and Camas/Washougal are defined as an urban area or urban place because they have populations of over 5,000 but are not within the main Vancouver urbanized area. Therefore, for federal transportation purposes there is a Vancouver federal transportation Urban Area Boundary and an adjoining Camas/Washougal Urban Area Boundary. (Refer to Figure 3-1; *Transportation Boundaries*).

ISTEA also called for MPO's to establish a **Metropolitan Area Boundary** which marks the area to be covered by MPO regional transportation planning activities and which, at a minimum, has to include the urban area, the contiguous area expected to be urbanized within the next twenty years, and in air quality attainment areas must include the area enclosed by the **attainment area boundary** which in the Clark County region is the Vancouver Air Quality Maintenance Area[2]. The Metropolitan Area Boundary established for the Clark County region includes the whole of Clark county (refer to Figure 3-1; *Transportation Boundaries*).

With a population of over 200,000 the Portland-Vancouver metropolitan area was designated as a **Transportation Management Area** (TMA) by the U.S. Secretary of Transportation. Within

---

[1] The 2000 Census population numbers will result in changes to the Urban Area Boundary (UAB) described in this MTP chapter. The new Urban Area Boundary will be incorporated into a future update to the MTP once the federal functional classification system has been updated in 2003.

[2] Although classified in the early 1990's by the Environmental Protection Agency (EPA) as a moderate non-attainment area for carbon monoxide and a marginal non-attainment area for ozone, the Vancouver area has since attained maintenance status for these pollutants. Air quality has implications for regional transportation planning as the region strives to maintain national ambient air quality standards.

TMAs, the MPO has to develop a congestion management system which was adopted by the RTC Board in May 1995 (RTC Board Resolution 05-95-14). The MPO has authority to select, in consultation with the state, projects to receive federal funds (see Chapter 4 for further details).

Figure 3-1: Transportation Boundaries

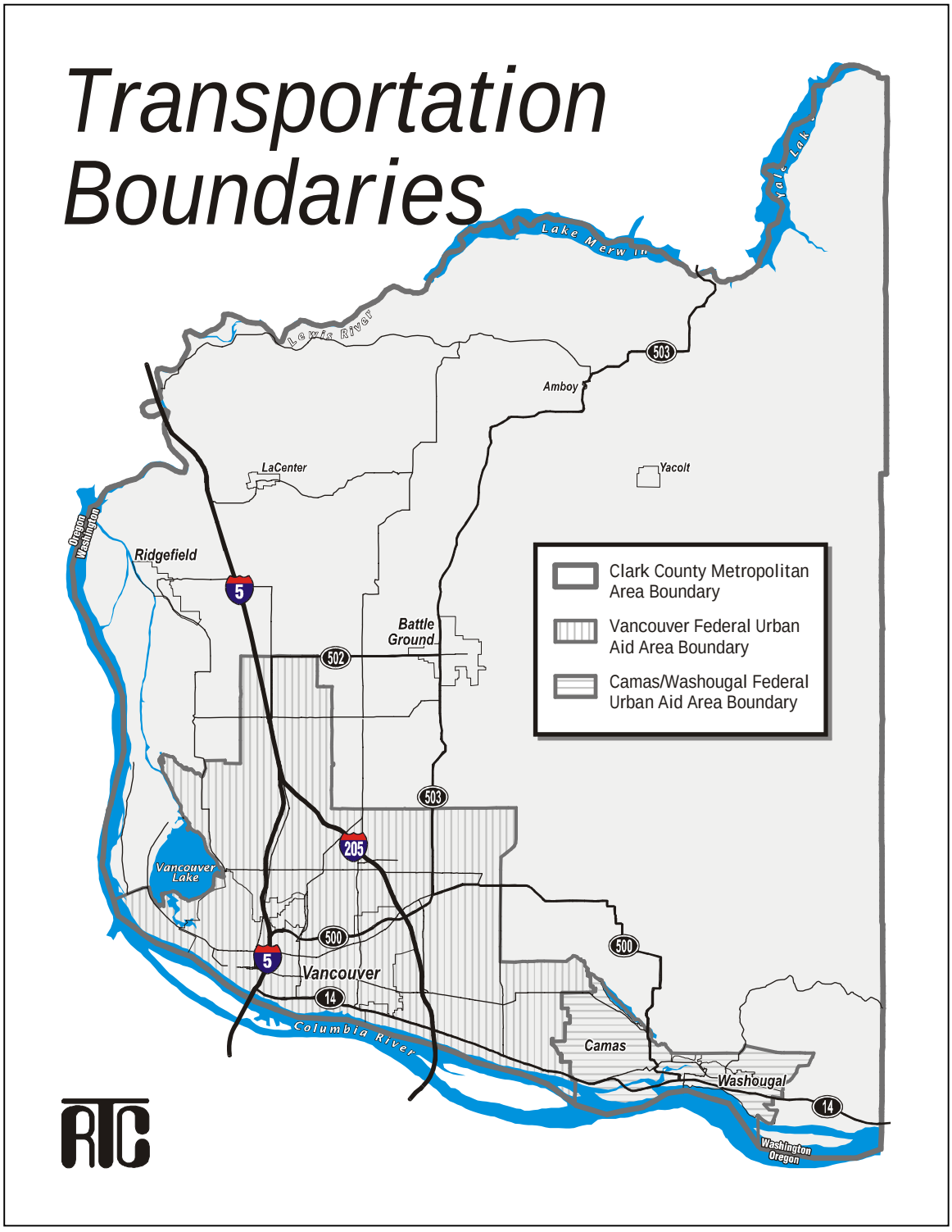
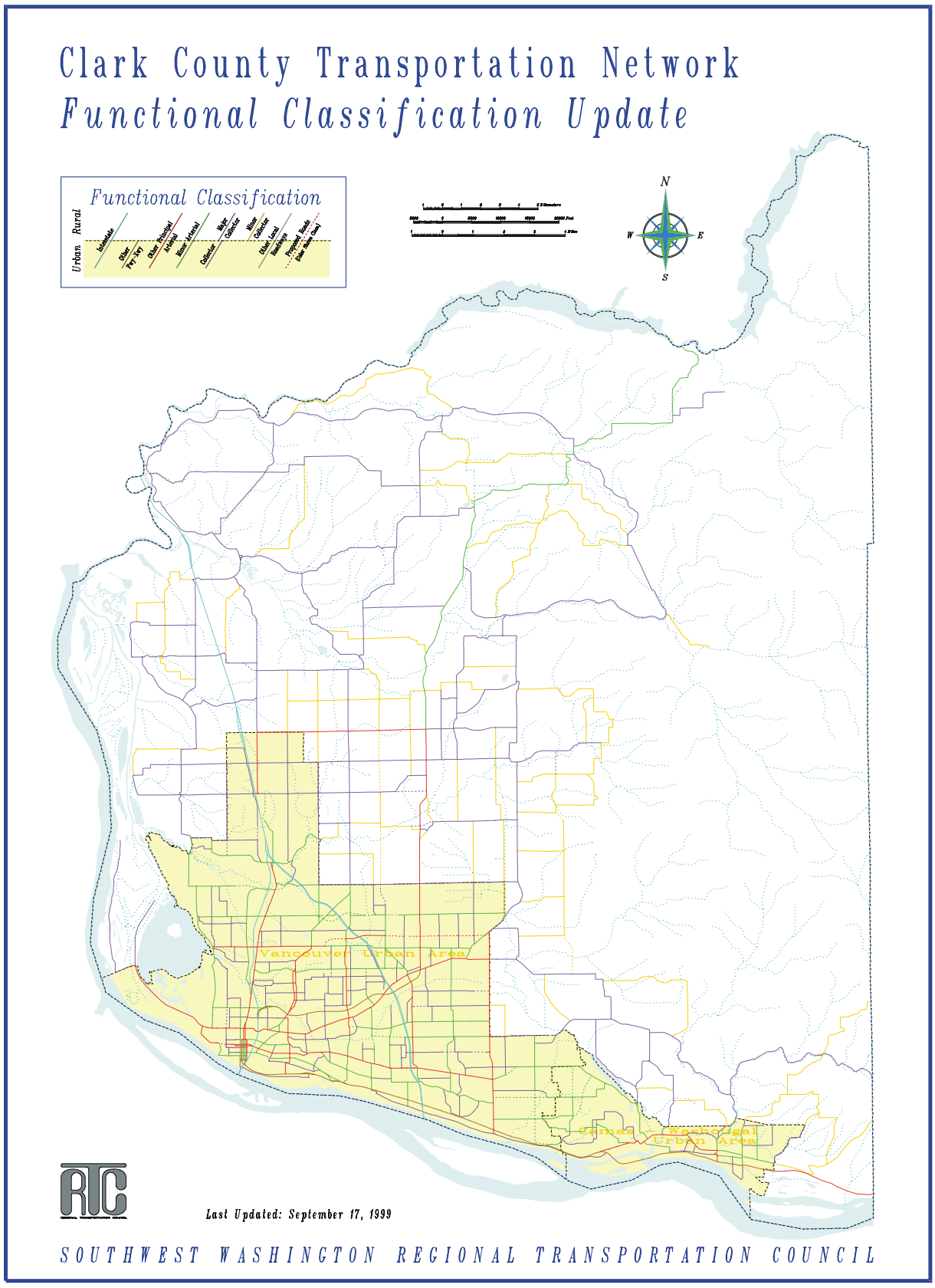


Figure 3-2: Clark County Federal Functional Classification Map



FUNCTIONAL CLASSIFICATION OF THE REGIONAL HIGHWAY SYSTEM

Arterials are categorized into a functional classification system; the classifying of highways, roads and streets into groups having similar characteristics for providing mobility and/or land access. Interstate freeways, classified as divided principal arterials, are designed to provide for the highest degree of mobility of large volumes of long-distance traffic, they are not designed to provide for access to land uses. Collector facilities generally provide equal emphasis upon mobility and land use accessibility. Local facilities emphasize access to land uses.

To meet the requirements of ISTEA, the Federal Functional Classification system for Clark County roads was reviewed in 1993. This review led to a revision of the classification system within some jurisdictions and the result was a county-wide uniform classification system (see Figure 3-2; *Clark County Transportation Network, Functional Classification Update*). The revised functional classification system was approved by the Federal Highway Administration in May 1993. Since the 1993 approval, minor changes have been made to the federal functional classification system. The changes include re-designation of Burton Road, from Andresen Road to NE 162nd Avenue from a collector to minor arterial (MTP, 1996), and re-affirmation of NE 20th Avenue/NE 15th Avenue from Highway 99 to NE 179th Street as a minor arterial. Local jurisdictions periodically review the classification of streets. The City of Vancouver has requested street re-classifications for: Simpson Avenue (Mill Plain to Fourth Plain) from minor arterial to local and NE 97th Avenue (between Mill Plain and NE 18th Street) from collector to minor arterial. Clark County also maintains a Clark County Arterial Atlas, approved by the Board of County Commissioners, that reports on arterial and local street cross-sections anticipated for roads in Clark County.

As a pre-requisite for review of the federal functional classification system, the Urban Area Boundary had to be defined (refer to Figure 3-1; *Transportation Boundaries*). Facilities classified as collector or above in urban areas are eligible for federal funding while in the rural area those facilities classified as major collector and above are eligible. Generally, minor collectors in rural areas are not eligible for federal funding. A description of the urban functional classification categories follows:

PRINCIPAL ARTERIALS

Principal arterials permit traffic flow through the urban area and between major elements of the urban area. They are of great importance in the regional transportation system as they interconnect major traffic generators, such as the central business district and regional shopping centers, to other major activity centers and carry a high proportion of the total urban area travel on a minimum of roadway mileage. They also carry traffic between communities. Frequently principal arterials carry important intra-urban as well as intercity bus routes.

Many principal arterials are fully or partially controlled access facilities emphasizing the through movement of traffic. Within the category are (1) interstates (2) other freeways and expressways and (3) other principal arterials.

Spacing of principal arterials may vary from less than one mile in highly developed central business areas to five miles or more in the sparsely developed urban fringes.

MINOR ARTERIALS

Minor arterials collect and distribute traffic from principal arterials to lesser classified streets, or allow for traffic to directly access their destinations. They serve secondary traffic generators such as community business centers, neighborhood shopping centers, multiple residence areas, and traffic from neighborhood to neighborhood within a community. Access to land use activities is generally permitted. Such facilities are usually spaced under two miles apart and in core areas can be spaced at 1/8 to 1/2 mile apart.

COLLECTORS

Collectors provide for land access and traffic circulation within residential neighborhoods and commercial and industrial areas. They distribute traffic movements from such areas to the arterial system. Collectors do not handle long through trips and are not continuous for any great length.

LOCAL STREETS

Local streets provide direct access to abutting land and access to the higher classification facilities. They offer the lowest level of mobility and usually contain no bus routes. They are not intended to carry through traffic but make up a large percentage of the total street mileage.

Rural roads consist of those facilities that are outside of urban areas. They too are categorized into functional classifications:

RURAL PRINCIPAL ARTERIALS

Rural principal arterials are sub-divided into two sets (1) interstate facilities and (2) other principal arterials. They consist of a connected rural network of continuous routes and provide an integrated network without stub connections.

RURAL MINOR ARTERIALS

In conjunction with the principal arterials, the rural minor arterials form a rural network which link cities and larger towns together with other major traffic generators. The principal arterials and rural minor arterials are spaced at such intervals that all developed areas of the state are within a reasonable distance of an arterial highway. Minor arterials should be expected to provide for relatively high overall travel speeds with minimum interference to through movement.

The other rural road classifications are:

Rural Major Collector Roads (are eligible for federal funding)

Rural Minor Collector Roads (are not eligible for federal funding) and

Rural Local Roads

NATIONAL HIGHWAY SYSTEM (NHS)

ISTEA also required that roads be designated as National Highway System (NHS) facilities. Congress approved the NHS System with passage of the National Highway System Designation Act of 1995 (NHS Act). In Clark County the roads listed in Table 3-1 have been designated as NHS facilities. 1993 center line mileage by functional type is listed in Table 3-2. Data in Table 3-2 will be updated with the review of the federal functional classification in 2003.

Table 3-1: Designated NHS Facilities; Clark County

DESIGNATED NHS FACILITIES - Clark County	
Facility	**Extent**
I-5	Oregon State Line to Clark County line (north)
I-205	Oregon State Line to I-5 Interchange
SR-14	I-5 to Clark County line (east)
SR-500	I-5 to SR-503 intersection
SR-501	I-5 to Port of Vancouver access
SR-502	I-5 to SR-503 intersection
SR-503	SR-500 intersection to SR-502 intersection

Table 3-2: Federal Functional Classification Mileage 1993

FEDERAL FUNCTIONAL CLASSIFICATION OF CLARK COUNTY ROADS Mileage of Classified and Local Roads					
Facility Type	**Vancouver Urban Area**	**Camas Urban Area**	**Rural Remainder of County**	**Total Clark County**	**% of Total**
Interstates	22.1	0.0	9.2	31.4	1.2%
Expressways & Principals	78.2	11.5	14.2	103.9	4.0%
Minor Arterials	94.5	24.1	19.7	138.3	5.3%
Urban Collectors and Rural Major Collectors	133.2	16.0	204.4	353.5	13.6%
Rural Minor Collectors	0.0	0.0	143.1	143.1	5.5%
Local Roads	625.8	71.3	1,136.3	1,833.4	70.4%
Total	953.8	123.0	1,526.9	2,603.6	100.0%

Source: WSDOT, Clark County

There is a statewide limitation on the percentage of roads that can be functionally classified as Principal Arterial per federal guidelines. As a result, Clark County was unable to classify the facilities listed in Table 3-3 according to their plans for design standards for the facilities. The County intends that the facilities listed in Table 3-3 be developed to the design standards noted in the Clark County Arterial Atlas and should be included in the facilities considered for re-classification when the federal functional classification system is updated in 2003. As the total mileage of local roads increases, then the mileage of principal arterials or minor arterials can be increased.

Table 3-3: Examples of Federal and Clark County Road Classification Differences

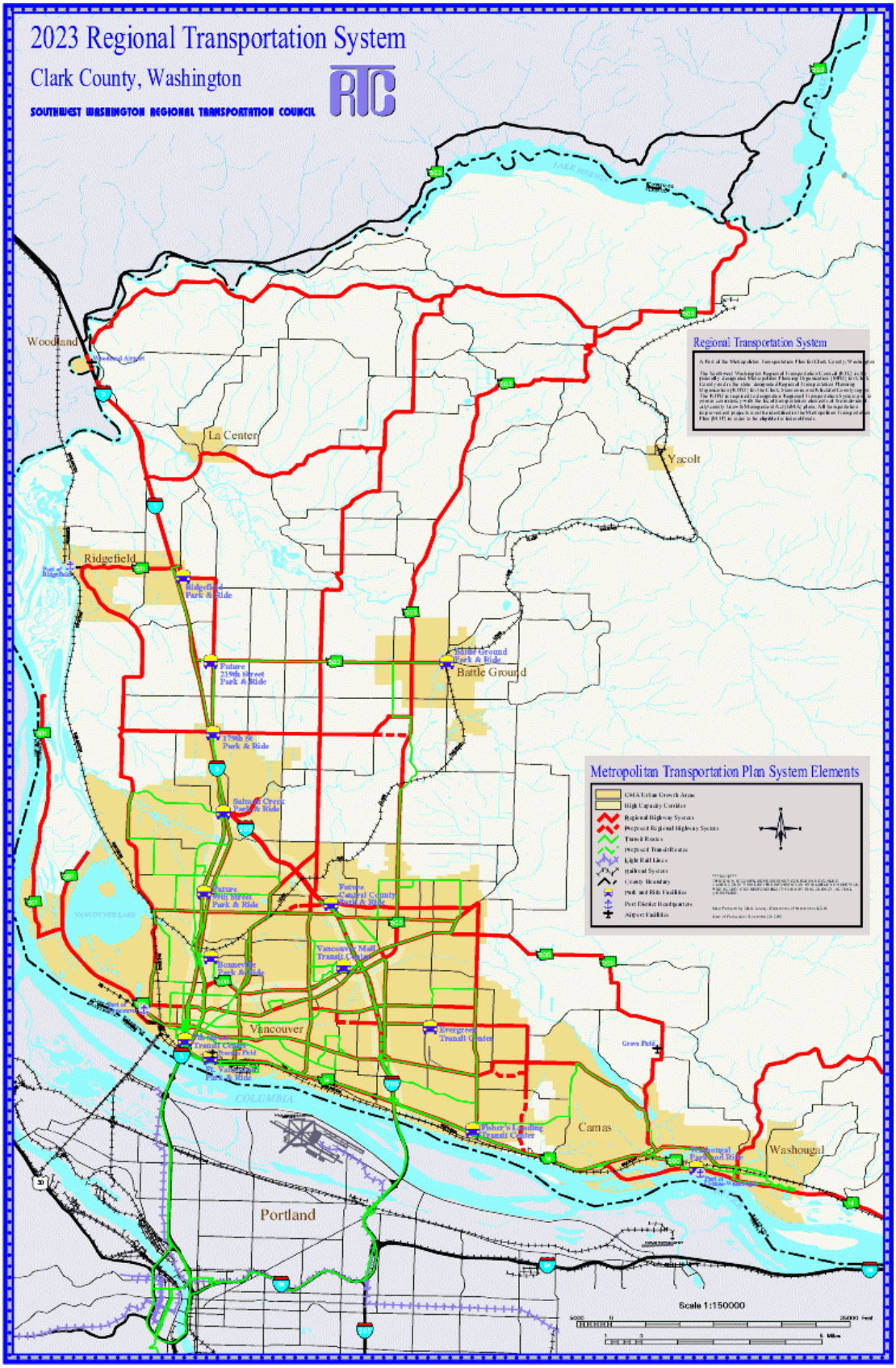
Differences between Federal Functional Class and Clark County Arterial Atlas Designations: Examples			
Facility	**Extent**	**Federal Functional Classification**	**GMA Functional Classification per Clark County Arterial Atlas**
St. John's	NE 78th St to NE 72nd Ave	Minor Arterial	Principal
Andresen/NE 72nd Ave	NE 78th St to NE 119th St	Minor Arterial	Principal
NE 18th St (part proposed, part existing)	Andresen to NE 162nd Ave	Minor Arterial	Principal
SE/NE 192nd Ave (part proposed, part existing)	SR-14 to NE 18th St	Minor Arterial	Principal
Mill Plain (part proposed, part existing)	NE 164th Ave to SE 1st St (180th Ave vicinity)	Minor Arterial	Principal
Mill Plain	180th Ave vicinity to Camas City Limits	Minor Arterial	Principal
179th St	NW 11th to NE 29th Ave	Collector	Principal
Lakeshore/36th Ave	Bliss Rd to NE 78th St	Minor Arterial	Principal
Ward Rd	Fourth Plain to 162nd Ave	Minor Arterial	Principal
Andresen Rd	NE 18th St to Mill Plain	Minor Arterial	Principal

Clark County (1993-1994)

HIGHWAYS OF STATEWIDE SIGNIFICANCE (HSS)

In 1999 the state legislature adopted Highways of Statewide Significance, fulfilling a requirement of House Bill 1487 passed in 1998. In Clark County highway facilities defined as "of Statewide Significance" are I-5, I-205, SR-14 and part of SR-501 to access the Port of Vancouver.

Figure 3-3: 2023 Regional Transportation System



DESIGNATION OF THE RTP REGIONAL TRANSPORTATION SYSTEM

Consistent with the state's Regional Transportation Planning Program Planning Standards, the designated MTP regional transportation system (see Figure 3-3) includes:

1. All state transportation facilities and services (including highways, state-owned park-and-ride lots etc.).

2. All local freeways, expressways, and principal arterials (the definition of principal arterials can be the same as used for federal classification or be regionally determined).

3. All high-capacity transit systems (any express-oriented transit service operating on an exclusive right-of-way including high occupancy vehicle (HOV) lanes).

4. All other transportation facilities and services, including airports, transit services and facilities, roadways, rail facilities, marine transportation facilities etc. that the RTPO considers necessary to complete the regional plan.

5. Any transportation facility or service that regional need or impact places in the plan, as determined by the RTPO.

It is the designated regional transportation system that is the focus for transportation planning in the MTP.

A detailed description of the designated MTP Regional Transportation System follows:

1. **All state transportation facilities and services** (including state highways, state owned park and ride lots etc.)

In Clark County this category includes Interstate facilities I-5 and I-205.

Clark County has a 20.78 mile section of **I-5**, the major interstate freeway serving the west coast of the U.S.A.. I-5 provides for north-south travel and is used for interstate travel from southern California, through the state of Oregon northward through Washington State to the Canadian border. I-5 crosses the Columbia River from Oregon to Washington over the Interstate Bridge. I-5 has three lanes in each direction from the Interstate Bridge north to the Highway 99 off-ramp. There are currently two travel lanes in each direction from I-5/Highway 99 to the point at which I-205 joins I-5. North of the I-5/I-205 interchange there are again three travel lanes in each direction.

A 10.07 mile stretch of **I-205** traverses Clark County until it joins I-5 just north of N.E. 134th Street. I-205 was constructed as an alternative route to I-5, as a by-pass facility through the Portland/Vancouver metropolitan area. I-205 crosses the Columbia River over the Glenn Jackson Bridge that was opened in 1982. The Glenn Jackson Bridge has four travel lanes in each direction. North of the bridge the facility has three lanes in each direction to a point just north of the interchange with SR-500. I-205 continues as a two lane in each direction facility until it joins I-5.

State routes in Clark County include SR-14, SR-500, SR-501, SR-502 and SR-503.

SR-14 provides the main east-west access from the southwest of Washington state to the southeast of the state along the north bank of the Columbia River. The facility extends 21.77 miles through Clark County to the Skamania County line with two lanes in each direction up to milepost 12 and one lane in each direction thereafter.

SR-500 is a 20.37-mile facility entirely within Clark County and allows for east-west cross-county travel. From the interchange with I-5 the facility has two-lanes in each direction until it reaches Ward Road. The facility then becomes a one-lane in each direction facility and traverses rural Clark County until the Camas urban area is reached. SR-500 meets SR-14 in Camas. The facility carries traffic to and from the Clark County regional shopping mall. The segment of SR-500 between I-5 and I-205 was first opened as a limited access facility in 1984.

SR-501 is comprised of two unconnected segments. The south segment extends from the interchange with I-5 westward with three lanes in each direction along the Mill Plain/15th Street couplet to Columbia Street. West of Columbia the facility is two lanes in each direction. This segment of SR-501 carries traffic to and from the Port of Vancouver. The facility reduces to two lanes, one in each direction, and branches into two in the Vancouver Lake lowlands area with both branches terminating in the lowlands. The northern segment of SR-501 extends as a two-lane facility from I-5 westward to the City of Ridgefield where it terminates. Originally it was intended that the two segments be joined to complete a circumferential route around the westside of the Vancouver urban area and to carry traffic to and from the lowlands industrial area. However, the facility was never completed.

SR-502 extends from the I-5/N.E. 179th Street interchange northward to N.E. 219th Street where it turns eastbound toward Battle Ground.

SR-503 extends northward from its intersection with SR-500 to the Cowlitz County line. The route has four lanes to SR-502 in Battle Ground at which point it reduces to two lanes.

Table 3-4: State Route Mileage in Clark County

STATE ROUTE MILEAGE IN CLARK COUNTY					
Facility	**Beginning Mile Post**	**Begins at: (Description)**	**Ending Mile Post**	**Ends at: (Description)**	**Route Mileage**
I-5	0	Oregon State Line on Interstate Bridge	20.78	Cowlitz Co. Line	20.78
I-205	0	Oregon State Line on Glenn Jackson Bridge	10.57	Interchange with SR-5	10.57
SR-14	0	Interchange with SR-5, Vancouver	21.77	Skamania Co. Line	21.77
SR-500	0	Interchange with SR-5	20.37	Intersection with SR-14, Camas	20.37
SR-501 S. Section	0	Interchange with SR-5	12.72	Terminus of south segment	12.72
SR-501 N. Section	16.91	City of Ridgefield	19.88	Interchange with I-5/ N.E. 269th St.	19.88 Total north and south sections
SR-502	0	Intersection with SR-5, at N.E. 179th St.	7.56	Intersection with SR-503	7.56
SR-503	0	Intersection with SR-500	27.87	Cowlitz Co. line	27.87

2. **All local freeways, expressways, and principal arterials**

Local expressways and principal arterials are also designated as part of the regional transportation system. Principal arterials, such as Mill Plain, Fourth Plain, N.E. 78th Street, Padden Parkway, N.E. 112th Avenue, SE/NE164th/162nd Avenue and segments of St. John's and Andresen are included. Future planned arterials on the regional system are marked on Figure 3-3 by a dashed red line. Future planned facilities include the Mill Plain extension, 192nd Avenue (from SR-14 north) and NE 18th Street extension west from NE 102nd Avenue to NE 87th Avenue.

3. **All high-capacity transit systems** (any express-oriented transit service operating on an exclusive right-of-way including high occupancy vehicle (HOV) lanes).

The I-5 (from State line to the vicinity of NE 134th Street), I-205 (from state line to vicinity of NE 134th Street) and SR-500 (from I-5 to the Orchards area) corridors are designated as High Capacity Transit (HCT) corridors. The extension of Light Rail Transit (LRT) from Portland to Clark County is a recommendation of the I-5 Transportation Partnership (2002) and is included in the MTP Strategic Plan (see MTP Appendix).

4. **All other transportation facilities and services considered necessary to complete the regional transportation plan**. These include transit services and facilities, roadways, rail facilities, airports, marine transportation facilities etc.

Clark County is served by the C-TRAN transit system that operates a **FIXED ROUTE BUS SYSTEM** on urban and rural routes in Clark County and express bus service for commuters to Portland, Oregon. C-TRAN also administers Americans with Disabilities Act (ADA)-compliant paratransit service, administers Commute Trip Reduction (CTR) services and provides additional jurisdictional support programs. Figure 3-3 maps C-TRAN's existing fixed route system and potential extension of the system with green dashed lines. Table 3-5 summarizes the existing fixed-route bus system. C-TRAN operates 28 routes with urban, intercity, rural and commuter-oriented lines. Operating hours are generally between 5:30 a.m. and 9:30 p.m. on weekdays, 6:45 a.m. and 8 p.m. on Saturdays and 8 a.m. and 7 p.m. on Sunday. C-TRAN has installed and maintains 220 passenger shelters and benches throughout the fixed route system within Clark County. Data for Tables 3-5 through 3-9 was supplied by C-TRAN.

Table 3-5: C-TRAN Fixed Route System (August 2002)

C-TRAN FIXED SYSTEM - BUS ROUTES (April 2002)							
Bus Route Number	**Route Name**	**Weekday Service First Run Begins**	**Weekday Service Last Run Begins**	**Weekday Service Frequency**	**Saturday Service**	**Sunday/ Holiday Service**	**Area Served** (TC = Transit Center; P&R = Park and Ride)
1	Fruit Valley	6:05 a.m.	8:45 p.m.	30 mins.	Yes	Yes	7th St TC to west side Vancouver
2	Lincoln/Felida	6:15 a.m.	8:45 p.m.	30 mins.	Yes	Yes	7th St TC to residential neighborhoods north of downtown Vancouver and Felida
3	City Center	5:45 a.m.	9:00 p.m.	15 mins.	Yes	Yes	7th St TC to close in east side Vancouver including Vancouver Memorial Hospital and waterfront
4	Fourth Plain	5:10 a.m.	9:15 p.m.	15 mins.	Yes	Yes	7th St TC to Vancouver Mall, via Fourth Plain Blvd.
6	Hazel Dell	5:45 a.m.	8:45 p.m.	30 mins.	Yes	Yes	7th St. TC to Salmon Creek P& R on west side of I-5
7	Battle Ground	5:45 a.m.	8:45 p.m.	45 mins.	Yes	Yes	Battle Ground to Van Mall TC
25	St John's	5:45 a.m.	8:45 p.m.	30 mins..	Yes	Yes	7th St. TC to Minnehaha area via St. John's and Hazel Dell
30	Burton	5:32 a.m.	8:45 p.m.	30 mins.	Yes	Yes	7th St TC to Fisher's Landing via Burton Rd
32	Evergreen	5:45 a.m.	8:45 p.m.	30 mins.	Yes	Yes	7th St TC to Van Mall, via Evergreen Blvd
37	Mill Plain	5:18 a.m.	9:15 p.m.	15 mins.	Yes	Yes	7th St TC to Fisher's Landing via Mill Plain Blvd
39	Clark College & SWWMC	7:15 a.m.	8:15 p.m.	60 mins.	Yes	Yes	7th St TC to Clark College and SWWMC
71	Highway 99	5:15 a.m.	9:15 p.m.	15 mins.	Yes	Yes	7th St. TC to Salmon Creek P&R on east side of I-5

C-TRAN FIXED SYSTEM - BUS ROUTES (April 2002)							
Bus Route Number	**Route Name**	**Weekday Service First Run Begins**	**Weekday Service Last Run Begins**	**Weekday Service Frequency**	**Saturday Service**	**Sunday/ Holiday Service**	**Area Served** (TC = Transit Center; P&R = Park and Ride)
72	Orchards	6:45 a.m.	8:45 p.m.	30 mins.	Yes	Yes	Vancouver Mall to Orchards area
76	76th/Sifton	5:30 a.m.	8:00 p.m.	30 mins.	Yes	Yes	Vancouver Mall to Sifton/Five Corners
78	78th Street	6:15 a.m.	8:15 p.m.	60 mins.	Yes	Yes	Vancouver Mall to 78th St and Hazel Dell
80	Van Mall/FLTC	5:30 a.m.	8:45 p.m.	30 mins.	Yes	Yes	Fisher's Landing TC to Van Mall
92	Camas/ Washougal	6:15 a.m.	8:15 p.m.	30 mins.	Yes	Yes	Local Camas/Washougal service to Fisher's Landing TC
93	SE 34th/LaCamas	6:45 a.m.	8:15 p.m.	60 mins.	No	No	Fisher's Landing TC to Camas via high-tech sites
105	Express via I-5	5:21 a.m.	6:29 p.m.	All day	No	No	Express service between 7th St TC and downtown Portland
114	Camas/ Washougal Ltd	6:30 a.m.	5:15 p.m.	1, a.m. trip 1, p.m. trip	No	No	Express from Camas/Washougal via SR-14 to downtown Portland
134	Salmon Creek Express	5:15 a.m.	7:00 p.m.	Peak only	No	No	Express from Salmon Creek P&R to downtown Portland
135	Ridgefield Express	6:30 a.m.	6:05 p.m.	1, a.m. trip 1, p.m. trip	No	No	Express between Ridgefield P&R and Salmon Creek P&R
157	BPA/Lloyd Center Limited	6:05 a.m.	5:12 p.m.	Peak only	No	No	Express service between Van Mall and Lloyd Center
164	Fisher's Landing Express	5:20 a.m.	7:00 p.m.	Peak only	No	No	Express service to downtown Portland from Fisher's Landing TC
165	Parkrose Express	6:15 a.m.	7:15 p.m.	All day	Yes	No	Express from Fisher's Landing TC to Parkrose TC
173	Battle Ground Ltd.	6:35 a.m.	5:22 p.m.	1, a.m. trip 1, p.m. trip	No	No	Express service from Battle Ground to 7th St. TC
177	Evergreen Express	5:20 a.m.	6:40 p.m.	Peak only	No	No	Evergreen TC via Rose Quarter to downtown Portland
190	Marquam Hill Express	6:00 a.m.	4:45 p.m.	Peak only	No	No	Van Mall to Marquam. Hill via BPA P&R

During regular C-TRAN service hours, a connection is provided between the Vancouver Amtrak Station and the 7th Street Transit Center through a taxi voucher program. All of C-TRAN's fixed route system and facilities are included as part of the designated regional transportation system.

All of C-TRAN Clark County local routes use lift-equipped buses making them accessible to people with disabilities. C-TRAN also administers the C-VAN paratransit service. C-TRAN's paratransit service plan is described in the publication *1997 C-TRAN ADA Paratransit Service Plan* (January, 1997). C-TRAN attained full compliance with the ADA in January of 1997. All of C-TRAN's buses are also equipped with bicycle racks that will hold two bicycles. C-TRAN runs a training program to prepare bicyclists for use on transit. Table 3-6 provides a summary of

paratransit service hours and use between 1994 and 2001. Paratransit service hours decreased in 2000 with the decrease in fixed-route system service hours following loss of Motor Vehicle Excise Tax (MVET) revenues.

Table 3-6: C-TRAN; Paratransit Service

C-TRAN PARATRANSIT SERVICE (C-VAN)		
Year	Paratransit Trips	Revenue Hours Per Year
1994	99,036	32,212
1995	115,841	41,803
1996	142,495	48,317
1997	170,816	56,728
1998	186,665	67,769
1999	188,367	65,822
2000	162,130	55,308
2001	175,029	58,695

C-TRAN's facilities include transit centers and park-and-ride lots described in Tables 3-7 and 3-8 below. C-TRAN park and ride facilities provide more than 1,600 parking spaces at eight locations. Some are operated by C-TRAN under a site-use lease agreement. C-TRAN uses security measures to make the transit system safer for its users. These security measures include provision of security patrols at the Seventh Street Transit Center in Downtown Vancouver, Fisher's Landing Transit Center and Vancouver Mall Transit Center. The City of Vancouver's Police Department bike patrol regularly patrols the 7th Street Transit Center. C-TRAN has contracted with the City of Vancouver to ensure that the bike patrol monitors the 7th Street Transit Center. C-TRAN buses are equipped with emergency alarms and two-way radios. Additionally, randomly placed surveillance cameras are located on various buses. Customer service facilities are located at the 7th Street, Fisher's Landing and Vancouver Mall Transit Centers, and public restrooms are located at 7th Street, and Fisher's Landing. Passenger shelter, bench, and waiting facilities are provided at most of the park and ride lots. Bicycle locker or rack facilities are provided at some of the lots (see Table 3-9).

Table 3-7: C-TRAN Transit Centers (August 2002)

C-TRAN TRANSIT CENTERS						
Transit Center	Customer Service	Security	Public Restrooms	Bicycle Locker/ Rack	Operator Lounge	Admin Offices
7th Street	Yes	Yes	Yes	Yes	Yes	Yes
Fisher's Landing	Yes	Yes	Yes	Yes	Yes	Yes
Vancouver Mall	Yes	Yes	No	Yes	Yes	Yes

Table 3-8: C-TRAN; Park and Ride Facilities (August 2002)

C-TRAN PARK AND RIDES				
Park and Ride	**Lot Capacity**	**Passenger Shelters**	**Public Restrooms**	**Bicycle Locker/Rack**
Salmon Creek	436	Yes	No	Yes
Evergreen	279	Yes	Yes	Yes
BPA Ross Complex	200+	Yes	No	No
Fisher's Landing	560	Yes	Yes	Yes
Vancouver Mall	60+	Yes	No	No
Battle Ground	28	Yes	No	Yes
Ridgefield	42	No	No	No
Camas/Washougal	20	No	No	No

Table 3-9 summarizes the bicycle facilities C-TRAN provides at transit centers and park and ride facilities as well as at the agency's administrative offices.

Table 3-9: C-TRAN; Bicycle Facilities (August 2002)

C-TRAN BICYCLE FACILITIES			
Location	**Bike Locker**	**Bike Bank**	**Bike Rack**
7th Street	5	9	N/A
Vancouver Mall	6	8	N/A
Salmon Creek	4	8	1
Evergreen	4	8	1
Camas/Washougal	2	N/A	N/A
Operating Facility	2	N/A	1
Annex	2	N/A	1
Fisher's Landing	4	N/A	2

Greyhound provides **INTER-CITY BUS** service in the I-5 corridor from its bus depot in Downtown Vancouver.

Clark County has three **PORT DISTRICTS**; the Port of Vancouver, the Port of Camas-Washougal and the Port of Ridgefield.

The **Port of Vancouver** is situated at the terminus of the Columbia River's deep draft channel and forms a natural gateway to the river-barge ports of eastern Oregon/Washington and northern Idaho. The Port operates international cargo docks currently offering 11 deep draft vessel berths.

In 2001, over 475 ships carrying over 4.5 million metric tons of cargo used the Port. The Port handles a wide range of cargoes including general breakbulk, project and director transfer cargoes, containers, automobiles, forest products, meal products, and dry bulk commodities such as bauxite, ores sands, and grains. The Port has dockside warehousing for general cargo and bulk storage warehouses. Deepening of the Columbia River channel from the existing 40-foot navigation channel to 43 feet would facilitate the deep-draft transportation of goods for years into the future and would help to keep the region competitive.

The Port of Vancouver also has 600 acres of developed industrial property with around forty tenants. It holds additional property in the Vancouver Lake Lowlands for future development of recreational facilities, business park, industrial sites and expansion of its marine terminal operations. A key focus for the Port of Vancouver in 2002 is the Columbia Gateway property. This 1,094 acre property would provide one of the largest resources of marine and industrial land available within the region. A Draft Environmental Impact Statement (DEIS) is circulating for comment. The Port is located within 2 miles of I-5 and is served by Burlington Northern Santa Fe and Union Pacific Railroad, Canadian National and Canadian Pacific Railroads.

The **Port of Ridgefield** is located about 15 miles north of Vancouver USA. The Port's taxing district extends over 57 square miles and the district is bisected by the I-5 corridor. Port-owned assets include an industrial park, located near the I-5/269th interchange and N.W. Timm Road. The Port's land adjacent to the Ridgefield Junction is zoned for light industrial use and is currently home to 8 businesses employing approximately 380 people. The Port also holds a 41-acre industrial site 3 miles from I-5. The Lake River Industrial Park currently has 7 tenants employing about 80.

The **Port of Camas/Washougal**'s taxing district extends over 95 square miles of land with an industrial park, marina, airport, a park and wildlife refuge. The 430-acre industrial park, located south of SR-14 by Index and 27th to 32nd Streets, has a wide range of industries that provide jobs for a total of about 1,000 employees. The Port has approximately 200 acres of prime property available for development. The marina has moorage to accommodate 356 and a boat launch. The Port district also operates Grove Field Airport (described in a later section).

There are two main **RAIL LINES** in use in the County which provide freight and passenger service. Burlington Northern Santa Fe (BNSF) owns both main lines. In addition, the Rye branch line provides freight movement for industrial operations along its route.

The BNSF Seattle/Vancouver line is in excellent condition and has 70 to 80 trains operating in the corridor each day. The Vancouver/Eastern Washington line is also in excellent condition and handles about 35 trains daily. Union Pacific Railroad operates some freight trains to Tacoma and Seattle on BNSF's lines. The Rye Branch is a short segment which diverges from the main northern line around NW 78th Street to Rye yard off St. John's Road. The track is in fair condition; freight trains use it about twice weekly.

AMTRAK has an agreement with BNSF to operate passenger service on the freight carrier's rail lines. AMTRAK trains serve Vancouver daily. During the 1990's Washington and Oregon began to invest transportation funds to improve local AMTRAK service. In 1993, Amtrak

offered a single local daily round-trip connecting Eugene and Seattle with ridership totaling 94,061 trips. By 2000, service had grown to three daily Amtrak Cascades roundtrips operating between Seattle and Portland, with two extending to Eugene. One daily roundtrip serves Seattle and Vancouver, BC and one daily roundtrip serves Seattle and Bellingham. Between 1993 and 2000, ridership has increased five times, with 2000 ridership levels for the Amtrak Cascades service at 525,000 trips. This is a 16% increase compared with 1999 ridership of 449,974 trips. The *Coast Starlight*, with service between Seattle and Los Angeles via Vancouver and Portland, also serves the corridor. The *Empire Builder* travels between Chicago and Spokane with one part of the train continuing on to Seattle and the other part continuing on, via Pasco and Bingen-White Salmon, to Vancouver with service terminating in Portland.

The Pacific Northwest Rail Corridor is one of only five designated high-speed corridors in the nation that pre-qualifies the region for federal high-speed rail funding. In late 1995, the Washington State Department of Transportation (WSDOT) and project partners published *Options for Passenger Rail in the Pacific Northwest Rail Corridor* report. An Environmental Impact Statement on corridor improvements was completed and construction on some rail system improvements began in 1998. Custom-built Talgo trains are now in service on Amtrak's Pacific Northwest Rail Corridor service. Plans are underway to upgrade the Vancouver Amtrak station facility and site as part of the Eugene to Vancouver B.C. passenger rail service improvements in preparation for high speed rail service in the corridor. On February 8, 2002, the Washington State Department of Transportation (WSDOT) issued a Draft Environmental Impact Statement (DEIS) for the Vancouver Rail Project for public review and comment. This proposed project would add new rail bypass tracks and improve or close the west 39th Street at-grade crossing. The intent of the Vancouver Rail Project would be to increase safety, reduce rail congestion, and improve the on-time performance of Amtrak's passenger rail service.

The Lewis & Clark Railway line (LINC) has 30 miles of track from Rye Junction near Vancouver to Chelatchie Prairie. Freight cargo deliveries of plasterboard, plastics, chemicals and machinery can be made to local industries. Formerly known as the Chelatchie Prairie Railroad, a tourist passenger service used to run from Battle Ground to Moulton Falls Park but operations ceased in 1997 due to damage caused by heavy rains. Common carrier operations are conducted between Rye Junction and Battle Ground. Clark County purchased the railroad in 1986 and contracts with a private company for maintenance and operations.

Commuter Rail has been considered as an option for travel within the region. The Commuter Rail Study considered the options and reported on future capacity of the rail corridors in the region. Commuter rail was also considered as part of the I-5 Partnership study in 2001/2.

For **AIR TRANSPORTATION**, Clark County largely relies on the Portland International Airport (PIA) located in Portland, Oregon to the southwest of the I-205 Glenn Jackson Bridge. This is a regional airport with domestic and international passenger and freight service. Passenger airlines currently serving PIA include Air Canada Jazz, Alaska Airlines, America West, American Airlines, Continental, Delta, Frontier, Hawaiian, Horizon, Northwest Airlines, Skywest Airlines, Southwest Airlines, Sun Country Airlines, United, and United Express. In addition, air freight carriers that serve Portland include Airborne, Kitty Hawk Cargo, Ameriflight, Bax Global, Cargolux Airlines, DHL Worldwide Express, Emery Worldwide, Empire Airlines, Evergreen

Airlines, Federal Express, Korean Air, United Parcel Service, and Western Air Express. PIA saw rapid growth in passenger numbers and freight in the 1990's and now consistently serves over 1 million passengers per month. In 1998, passenger numbers surpassed 13 million for the first time. In 1999 passenger numbers totaled 13.7 million. 1999 cargo was 274,971 tons. August 1999 passengers served by PDX exceeded 1.39 million, beating all previous monthly records. The airport is served by Tri-Met's MAX light rail which connects the airport to downtown Portland.

Within Clark County, the following general aviation airfields are in operation: **Pearson Field**, located 2 miles south west of Downtown Vancouver off SR-14, is operated by the City of Vancouver and covers 134 acres owned by the U.S. Park Service. The Airpark has one paved runway (3,200 feet by 60 feet) and can accommodate 177 aircraft. The Airpark is on the Washington State Historical Register. Pearson is designated as a part of the regional transportation system. **Grove Field** is a Basic Utility Stage I Airport operated by the Port of Camas/Washougal. Located in the Fern Prairie area 5 miles north of Camas, Grove Airfield is one of only two publicly owned airfields in the county. Grove Field has a 2,832 foot paved runway illuminated by a low intensity lighting system and also a PAPI system, an above-ground self-fueling station and hangar space for 65. A commercial hangar is currently occupied by an aircraft fabricator. **Evergreen Airport** is located six miles east of Vancouver, off Mill Plain. The airfield is privately owned but is soon to cease operations. Estimates of aircraft operations at the three airfields are provided in Table 3-10.

In addition, there are a number of private airfields located in Clark County that include those described below. Taylor's Green Mountain Airpark is a 23-acre facility, located 9 miles east of downtown Vancouver with one paved runway, six hangars and ten-tie downs. Eight aircraft are based at the Airpark. Goheen Airport, located three miles northwest of Battle Ground, is privately owned. It has one turf runway and provides a base for about 18 planes. 45 acres of Goheen's 60 acre area are zoned for airport use.

The Washington State Department of Transportation's Aeronautics Division and the local pilots' association have proposed that an additional airport should be sited in Clark County because of the vulnerability of existing airfields in the County due to ownership issues and development pressures. Efforts in the 1980's to site such a facility were thwarted when neighborhood residents opposed a proposed airport location in the vicinity of the I-5/Ridgefield Junction. Federal and state agencies and local jurisdictions have to work together to site such facilities and local jurisdictions must ensure that the land uses surrounding the facility are compatible with aircraft operations and remain that way.

Table 3-10: Aircraft Operations Estimates

AIRCRAFT OPERATIONS ESTIMATES, 1998 from *Washington State Continuous Airport System Plan* (WSDOT/Aeronautics)								
	Based Aircraft:							
Airport Name All are Private	Single Engine	Multi-Engine	General Aviation Local	General Aviation Itinerant	Air Carrier	Air Taxi	Commuter	Military
Evergreen Field (Vancouver)	240	5	170,000	30,000			0	50
Fly for Fun (Clark County)	9		500	2,500	0	0	0	0
Goheen (Battle Ground)	35		1,350	270	0	0	0	0
Grove Field (Camas)	60	1	5,600	7,000			0	0
Pearson Field (Vancouver)	210	10	23,228	84,201		3,471	0	1,100

Notes:
(1) No regional airlines or major national airlines serve Clark County airports/airfields

Source: FAA 5010 Forms; Airport Management Records; Washington State Aeronautics Division Records

REGIONAL TRANSPORTATION SYSTEM PERFORMANCE

GROWTH IN TRAFFIC VOLUMES

As a result of socio-economic and demographic changes described in Chapter 2 Clark County has seen significant growth in traffic volumes in recent years. The MPO compiles traffic count data from local jurisdictions and publishes the compiled data on RTC's website (see below). Traffic count data is factored to adjust for seasonal, monthly, weekly and daily fluctuations in volumes. Examples of growth in traffic volumes at selected Clark County locations are listed in Table 3-11 below.

Permanent traffic recorders are in place on the I-5 and on the I-205 bridges. RTC compiles the traffic counts provided by Oregon Department of Transportation from these recorders or estimates provided by ODOT. In March 1995 RTC published the *Columbia River Bridge Traffic, 1961 - 1994* report. This data is now updated annually and is available on RTC's web site (http://www.rtc.wa.gov/tc/brdgawd.htm). Figure 3-4 shows the average weekday traffic volumes crossing the Columbia river bridges, 1978 to 2001. In May 2002 the estimated average daily traffic (ADT) for the month on the I-5 Interstate Bridge was 125,800 (130,000 estimated average weekday traffic (AWDT)). On the I-205 Glenn Jackson Bridge, the average daily traffic for the month of May 2002 was 135,014 (ADT) and 140,739 average weekday traffic (AWDT). In May 2002, the maximum northbound weekday evening peak hour crossings on the I-5 Interstate Bridge were 5,722 and 7,996 on the I-205 Glenn Jackson Bridge. In the southbound direction, maximum weekday morning peak hour crossings were estimated at 5,700 on the I-5 Interstate Bridge and were 8,058 on the I-205 Glenn Jackson Bridge.

Table 3-11: Traffic Volumes; 1985 to Current Years

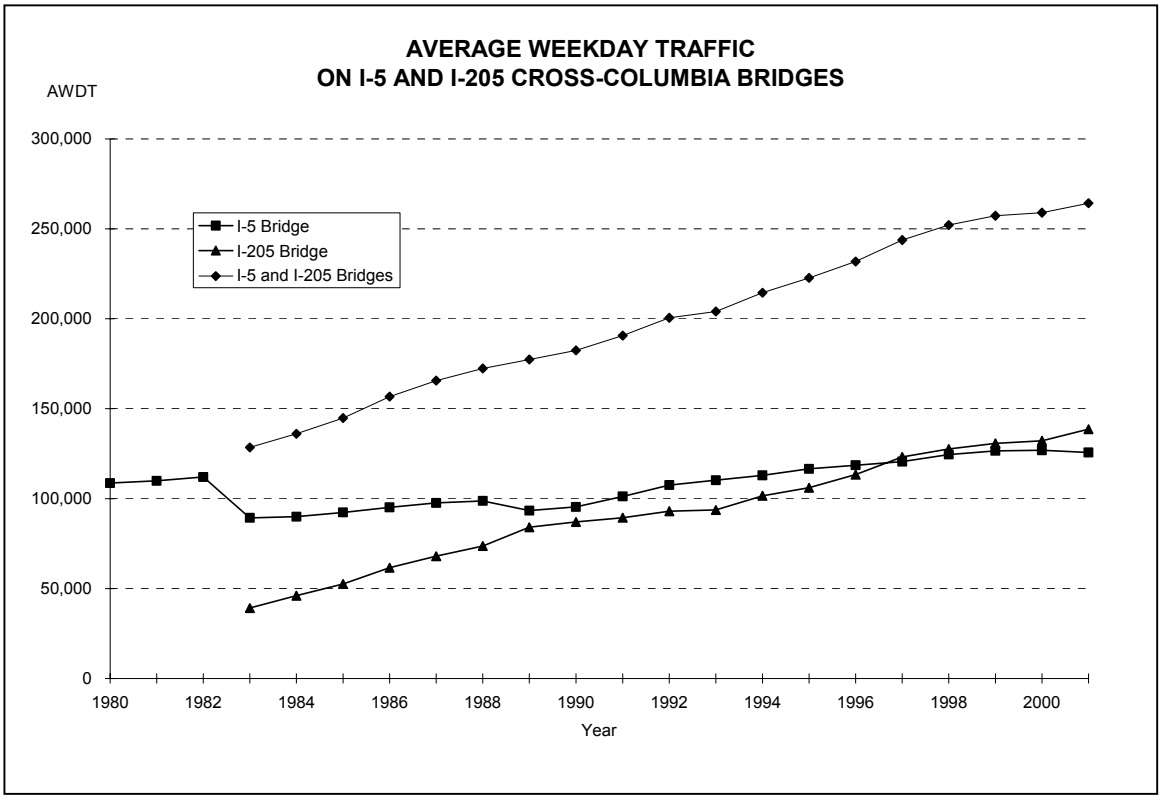
Location	1985 Volumes	Current Volumes	Year of Current Volumes	% Increase	Annual % Increase
I-5 Bridge	92,301	130,000	2002	41%	2.40%
I-5, South of SR-500	54,400	124,879	2001	130%	8.10%
I-5, South of NE 78th St	52,784	96,551	1999	83%	5.92%
I-5, South of Woodland	33,748	58,351	2001	73%	4.56%
I-205 Bridge	52,568	140,739	2002	168%	9.87%
I-205, South of SR-500	40,440	109,308	2001	170%	10.64%
78th St, West of Hwy 99	23,646	28,679	2000	21%	1.42%
164th Ave, South of SE 34th St	7,052	41,809	1999	493%	35.20%
Fourth Plain, West of NE Andresen	16,060	27,943	2000	74%	4.93%
Hwy 99, South of NE 99th St	19,653	19,178	1999	-2%	-0.17%
Mill Plain, East of NE Andresen	21,021	31,454	2001	50%	3.10%
Mill Plain, East of NE Chkalov	18,220	48,002	2000	163%	10.90%
SR-14, West of SE 164th Ave	22,600	70,680	1999	213%	15.20%
SR-14, West of NW 6th Ave	17,600	31,983	2000	82%	5.45%
SR-500, West of NE Andresen	20,054	47,886	1999	139%	9.91%
SR-500, West of 137th Ave	14,671	26,345	2002	80%	4.68%
SR-503, South of NE 76th St	17,460	39,042	2000	124%	8.24%
SR-503, South of SR-502	7,360	19,207	2002	161%	9.47%

The highest daily traffic ever recorded on the I-5 Interstate Bridge was on Friday June 18, 1999 when 149,847 bridge crossings were made. The highest evening peak hour traffic ever recorded on the I-5 Bridge was on Tuesday May 28, 1996 when 10,838 bridge crossing were made; of these 5,520 were northbound and 5,318 were southbound. For the northbound direction, the highest evening peak hour traffic was recorded on Thursday June 11, 1998 when 5,987 bridge crossings were made. For the southbound direction, the highest morning peak hour traffic was recorded on Wednesday May 10, 1995 when 6,069 bridge crossings were made.

The I-205 Glenn Jackson Bridge's highest daily crossings ever recorded was on Friday June 14, 2002 with 167,184 crossings. The highest evening peak hour traffic recorded on the I-205 Glenn Jackson Bridge was on Friday May 24, 1996 (Memorial Day weekend) when 12,800 bridge crossings were made. Of these bridge crossings, 8,426 were northbound and 4,374 were southbound. The highest northbound evening peak hour traffic recorded on the Bridge is the 8,426 crossings made on Wednesday Friday May 24, 1996. For the southbound direction, the

highest morning peak hour traffic was recorded on Monday April 8, 2002 when 8,200 bridge crossings were made.

Figure 3-4: I-5, I-205 Average Weekday Bridge Crossings



Regional transportation system intersections with the highest traffic volumes, measured in terms of number of vehicles entering intersection are listed in Table 3-12.

Table 3-12: Highest Volume Intersections in Clark County, 2001

CLARK COUNTY HIGHEST VOLUME INTERSECTIONS - 2001				
Rank	**East-West**	**North/South**	**Approx. Volume**	**Count Year**
1	State Route 500	Gher Rd/NE 112th Avenue	85,000	2001
2	State Route 500	Thurston Way	82,000	1999
3	Mill Plain Blvd.	Chkalov Drive	80,000	2000
4	State Route 500	State Route 503	66,000	2001
5	State Route 500	St. John's Road	64,000	2001
6	State Route 500	NE 54th Avenue	58,000	1999
7	State Route 500	NE 42nd Avenue	56,000	1999
8	Fourth Plain Blvd.	Andresen Road	55,000	2000
9	NE 76th Street	State Route 503	54,000	2000
10	Mill Plain Blvd.	NE 123rd/124th Avenue	52,000	1998
11	NE 78th Street	Highway 99	50,000	2001
12	Mill Plain Blvd.	136th Avenue	50,000	1999
13	SE 34th Street	SE 164th Avenue	47,000	1999
14	Mill Plain Blvd.	Andresen Road	47,000	2001
15	134th Street	Highway 99	44,000	2001

Notes: Volumes are based on the total number of vehicles entering an intersection on an average weekday, and are approximate due to the variability from year to year.
Freeway ramp intersections with streets were not considered for this listing
Source: RTC's Regional Traffic Count Program.

REGIONAL TRAVEL FORECASTING MODEL: FORECASTING FUTURE TRAVEL DEMAND AND TRANSPORTATION NEEDS

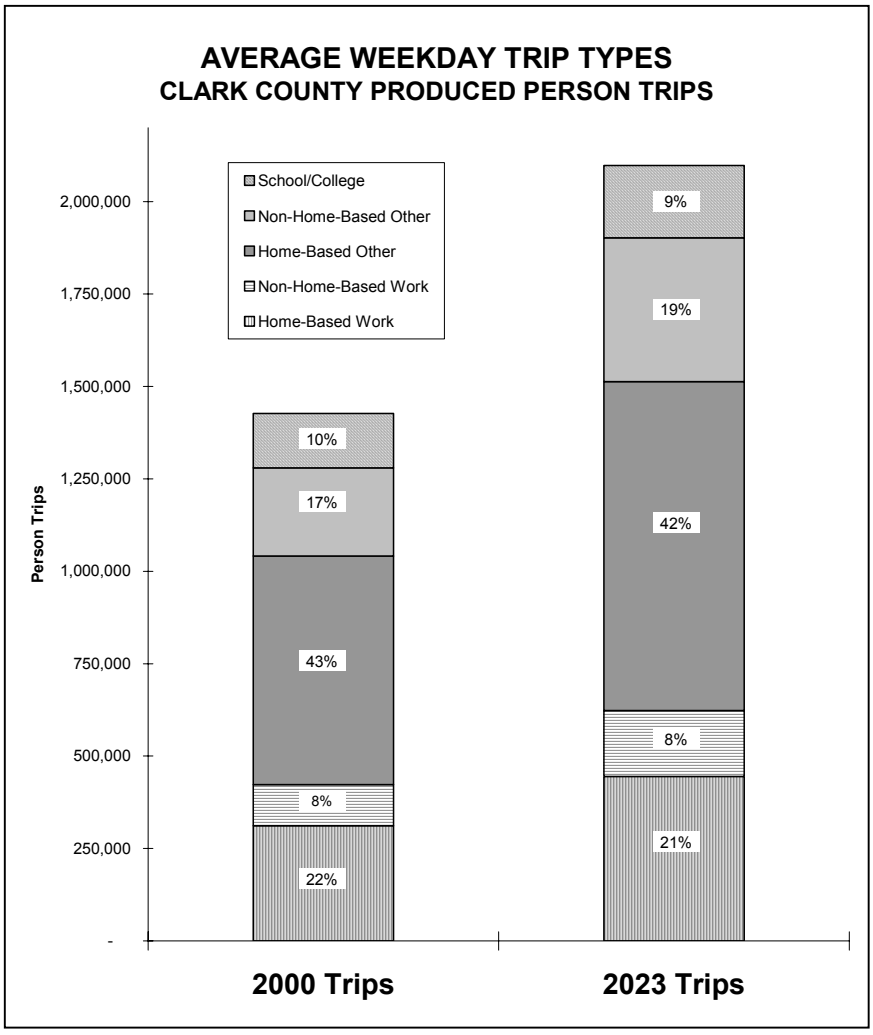
The Regional Travel Forecasting Model for the Clark County region was used to forecast future traffic volumes on the regional transportation system. EMME/2 software is used for the Clark County region's travel forecasting model. In the modeling process, a base year of 2000 was used and a forecast to the year 2023 was made. Growth allocations for future population, housing and employment (as described in Chapter 2) and existing local comprehensive land use plans and zoning were used as a basis for forecasting future population and employment distributions within Clark County. The regional model uses demographic data as a basis for travel forecasts and the data is run through trip generation, trip distribution, mode split and trip assignment processes. Alternative land use scenarios were tested, and their effect on regional transportation needs measured, as a part of the Growth Management planning process. This regional travel forecasting model for the MTP is based on GMA plans.

Trips can be classified according to place of trip production and purpose of trip. The regional travel forecasting model for Clark County categorizes trips into six groups, they are Home-Based Work, Non-Home-Based Work, Home-Based Other, Non-Home-Based Other, School and College trips. Figure 3-5 show the proportion of trips in each of these categories for average

weekday Clark County-produced person trips. In Figure 3-5 College and School trips have been aggregated.

Figure 3-5 shows that in the 2000 base year the largest proportion of trips during a 24-hour period are Home-Based-Other trips (43%). This category can include trips from home to the grocery store, home to childcare, home to leisure activities etc. The second highest category is Home-Based Work trips (22%). Non Home-Based-Other trips make up 17% of the trips. This category can include such trips as shopping mall to restaurant trips. The home-based categories include trips originating at home and going to a destination as well as the return trip to home. The proportions for the year 2023 are 42% Home-Based-Other trips, 21% Home-Based-Work trips and 19% Non-Home Based Other. From 2000 to 2023 there is forecast to be a 47% increase in all-day person trips from around 1,427,000 trips per day in 2000 to over 2 million in 2023.

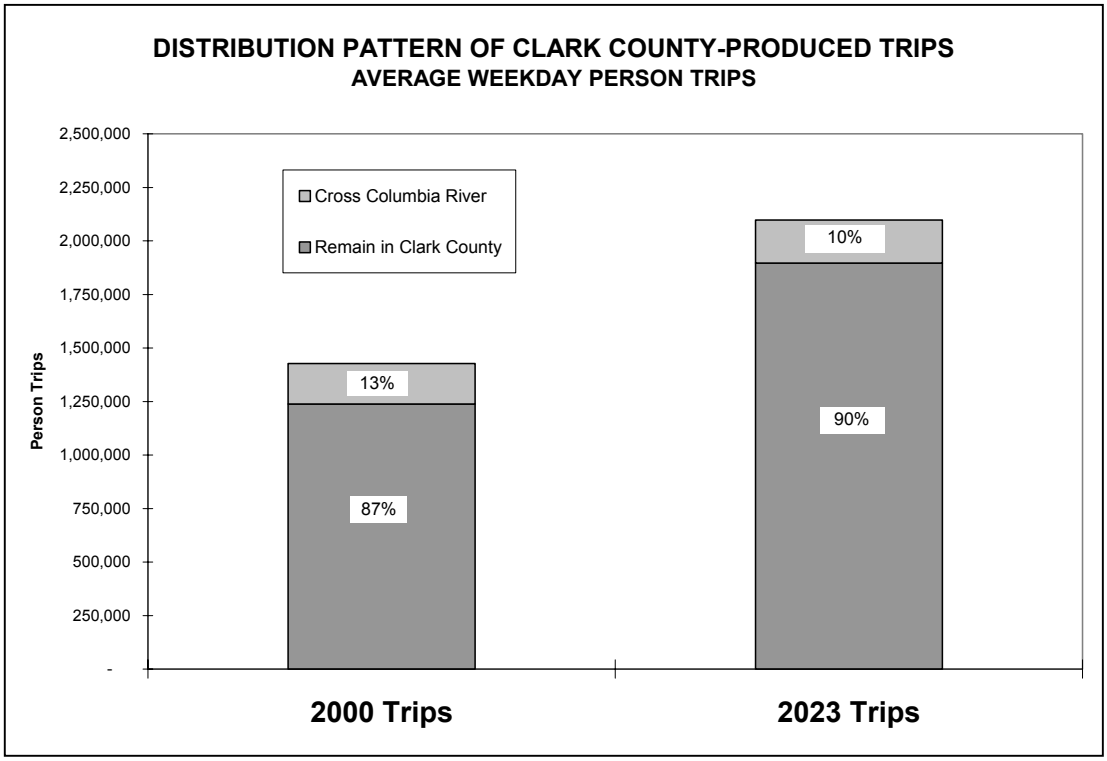
Figure 3-5: Average Weekday Trip Types, Clark County Produced Person Trips



Source: RTC Regional Travel Forecast Model

Trips can also be categorized according to where the trips begin and end. Figure 3-6 shows proportions of trips that use the Clark County highway system in terms of those trips that remain in Clark County (86.7% of trips in 2000 to 90.4% in 2023) and those trips that cross the Columbia River (13.3% in 2000 to 9.6% in 2023).

Figure 3-6: Distribution Patterns of Clark County Produced Person Trips, Average Weekday



Source: RTC Regional Travel Forecast Model

Needs analysis was then carried out to determine what impact this forecast growth in travel demand might have on the transportation system. In carrying out analysis of existing and future transportation needs the regional travel forecasting model was used to run three scenarios:

Base-Year 2000 traffic volumes on 2000 highway network

No-Build Forecast 2023 traffic volumes on "committed" highway network.

The "committed" network has improvement projects for which funds are already committed in the Metropolitan Transportation Improvement Program (MTIP).

MTP (Year 2023) Forecast 2023 traffic volumes on 2023 highway network with *MTP* improvements listed in Appendix A.

MTP improvements are projects for which funds are already programmed and committed in the *2002-2004 Metropolitan Transportation Improvement Program* as well as projects for which there is an identified regional need, strong regional commitment, and a reasonable expectation that funds will be available within the twenty-year horizon to construct them.

Tables 3-13, 3-14, 3-15 and 3-16 present system-wide benchmark results from testing the scenarios described above. Each table presents data by functional classification.

Table 3-13: P.M. Peak Hour Speed

AVERAGE PEAK HOUR SPEED ON CLARK COUNTY HIGHWAYS (Results from Regional Travel Forecasting Model, using EMME/2 software)			
	Speed in Miles per Hour		
Facility Type/Region	**Base-Year 2000**	**No-Build (2023 demand on Committed System)**	**2023 MTP**
Interstates (excluding Ramps)	48	38	42
Interstates (including Ramps)	45	36	40
Expressways & Principals	36	32	36
Minor Arterials	31	28	30
Major & Minor Collectors	34	32	33
Other Roads	27	28	28
Total Clark County System	37	33	35

Table 3-14: Peak Hour Vehicle Miles Traveled

VEHICLE MILES TRAVELED ON CLARK COUNTY HIGHWAYS IN P.M. PEAK HOUR (Results from Regional Travel Forecasting Model, using EMME/2 software)			
	Miles of Travel		
Facility Type/Region	**Base-Year 2000**	**No-Build (2023 demand on Committed System)**	**2023 MTP**
Interstates (excluding Ramps)	191,750	281,889	296,977
Interstates (including Ramps)	214,065	309,731	333,269
Expressways & Principals	195,661	285,544	268,391
Minor Arterials	85,773	141,390	136,151
Major & Minor Collectors	106,360	208,150	197,565
Other Roads	12,918	22,062	20,413
Total Clark County System	614,777	966,877	955,789

Source: Tables 3-13 through 3-16: RTC Regional Travel Forecast Model

Table 3-15: Peak Hour Lane Miles of Congestion

LANE MILES OF CONGESTION IN P.M. PEAK HOUR (Results from Regional Travel Forecasting Model, using EMME/2 software)			
	Lane Miles of Congestion		
Facility Type/Region	**Base-Year 2000**	**No-Build (2023 demand on Committed System)**	**2023 MTP**
Interstates (excluding Ramps)	7.02	38.33	31.12
Interstates (including Ramps)	10.72	43.86	35.07
Expressways & Principals	21.12	86.35	34.18
Minor Arterials	9.45	38.46	20.05
Major & Minor Collectors	3.53	40.29	22.40
Other Roads	0.66	2.09	2.31
Total Clark County System	45.48	211.04	114.01

Table 3-15 (above) presents data on congestion on the Clark County highway system. This measure represents the number of lane miles that operate under congested conditions (at volume to capacity ratio of 0.9 or above; equivalent to level of service E or F) during the full p.m. peak hour. The table is of most use when used to assess the relative growth in congestion that is expected to occur in the future, given the forecast increase in travel demand.

Table 3-16: Peak Hour Vehicle Hours of Delay

P.M. PEAK HOUR VEHICLE HOURS OF DELAY - CLARK COUNTY HIGHWAYS (Results from Regional Travel Forecasting Model, using EMME/2 software)			
	Hours of Vehicle Delay		
Facility Type/Region	**Base-Year 2000**	**No-Build (2023 demand on Committed System)**	**2023 MTP**
Interstates (excluding Ramps)	484.0	2,056.2	1,400.1
Interstates (including Ramps)	559.4	2,291.3	1,476.7
Expressways & Principals	289.3	1,222.9	440.2
Minor Arterials	109.7	454.3	208.5
Major & Minor Collectors	46.5	451.7	362.9
Other Roads	29.5	48.2	48.4
Total Clark County System	1,034.4	4,468.4	2,536.8

Table 3-16 presents vehicle hours of delay. Using the time taken to travel a highway segment at level of service C as a base condition, any road segment operating at LOS D, E or F is measured against the level of service C base condition. The time difference is calculated, aggregated for the entire highway system and the result is Vehicle Hours of Delay. The data is of use in analyzing the relative increase in delay expected to occur, given the forecast growth in travel demand.

The preceding system-wide data represents measures of assessing highway system performance, but perhaps more meaningful is an analysis of performance and needs within corridors or on individual system links and at intersecting points. A planning level of analysis, using capacity analysis and level of service standards criteria, was carried out resulting in a first-cut analysis of existing and forecast future deficiencies of the regional transportation system.

LEVELS OF SERVICE

Level of service standards represent the minimum performance level desired for transportation facilities and services within the region. They are used as a gauge for evaluating the quality of service of the transportation system and can be described by travel times, travel speed, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The Washington State Growth Management Act states that these standards should be established locally and standards should be regionally coordinated. The standards are used to identify deficient facilities and services in the transportation plan, and are also to be used by local governments to judge whether transportation funding is adequate to support proposed land use developments.

Levels of service are defined as "qualitative measures 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, volume conditions, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. These levels of service are designated A through F, from best to worst. Level of service E describes conditions approaching and at capacity (that is, critical density).

For uninterrupted flow conditions (such as freeways and long sections of roadways between stop signs or signalized intersections), the following definitions[3] apply:

- Level of Service A describes free flow conditions, with low volumes and high speeds. Freedom to select desired speeds and to maneuver with the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

- Level of Service B is in the range of stable flow but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver with the traffic stream from LOS A.

[3] ..From *Highway Capacity Manual*, Transportation Research Board, 1985

- Level of Service C is still in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

- Level of Service D represents high-density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

- Level of Service E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

- Level of Service F describes forced or breakdown flow. These conditions usually result from queues of vehicles backing up from a restriction downstream. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. It marks the point where arrival flow exceeds discharge flow.

These definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. Levels of service for interrupted flow facilities vary widely in terms of both the user's perception of service quality and the operational variables used to describe them.

LEVEL OF SERVICE STANDARDS ON HIGHWAYS OF STATEWIDE SIGNIFICANCE AND HIGHWAYS OF REGIONAL SIGNIFICANCE

Congestion and Levels of Service continue to be issues of significance for Clark County as the region continues to experience rapid growth. In 1998 the Washington State Legislature passed House Bill 1487, otherwise known as the Level of Service (LOS) Bill. The Bill set new requirements relating to transportation and growth management planning. The LOS Bill aimed at clarifying how state-owned transportation facilities should be planned for and included in city and county comprehensive plans required under the Growth Management Act. The intent of the legislation was to enhance the coordination of planning efforts and plan consistency at the local, regional and state levels. The LOS Bill amended several laws including the Growth Management Act (RCW 36.70A), Priority Programming for Highways (RCW 47.05), Statewide Transportation Planning (RCW 47.06) and Regional Transportation Planning Organizations (RCW 47.80). The combined amendments to these RCWs were provided to enhance the identification of, and coordinate planning for major transportation facilities identified as "transportation facilities and services of statewide significance". The key requirements to the bill are listed below

- Designation of Highways of Statewide Significance (HSS) completed in 1999. The State must give higher priority to correcting identified deficiencies on transportation facilities

of statewide significance. In the Clark County region the HSS system is I-5, I-205, SR-14 and SR-501 between I-5 and the Port of Vancouver.

- State-owned facilities, including Highways of Statewide Significance, to be included in local plans.
- Level of Service for Highways of Statewide Significance is set by the State in consultation with other jurisdictions.
- Level of Service for regional state highway facilities (not part of the HSS) to be set through a Regional Transportation Planning Organization (RTPO) coordinated process with state, regional and local input.
- Highways of Statewide Significance (HSS) are not part of local concurrency requirements.
- The LOS Bill does not address concurrency requirements for regional state highway facilities.

For the HSS system the Bill requires that the transportation element of the comprehensive plan address the land use impact on the state highway facilities. The State, in consultation, will set the LOS for the HSS system and they are exempt from local concurrency analysis. In Clark County, WSDOT has established a LOS 'C' for rural HSS facilities and 'D' for urban HSS facilities.

Non-HSS state highways, otherwise known as Highways of Regional Significance, in Clark County include SR-500, non-HSS segments of SR-501, SR-502, and SR-503 must also be addressed in the comprehensive plan, and have LOS set in coordination with the RTPO. The law is silent in terms of including or exempting them from local concurrency rules. In December 2001, the RTC Board adopted LOS 'E' of better for non-HSS urban state highway facilities and LOS 'C' or better on rural non-HSS facilities.

Urban areas and urban facilities are defined by the GMA urban growth boundaries. Rural areas and rural facilities are outside of the GMA urban growth boundaries. Although local agencies may establish their own methodology for analyzing LOS, these LOS standards must be consistent with the Highway Capacity Manual LOS criteria.

As local agencies continue with the GMA comprehensive land use plan process, they will need to incorporate both the Highways of Statewide Significance and regional state highway facilities (or non-HSS) LOS standards in the transportation elements. Once Growth Management Plans are updated, RTC will need to certify these transportation elements are consistent with the Metropolitan Transportation Plan, include these LOS standards and describe impacts of land use on the state highway system.

CLARK COUNTY/VANCOUVER LOS STANDARDS

Capacity analysis is an estimate of the maximum amount of traffic that can be accommodated by a facility while maintaining prescribed operational qualities. The definition of operational criteria is through levels of service, as described above, or by other operational criteria. The Growth Management Act requires local jurisdictions to set levels of service standards for

transportation facilities. This ties in with the GMA concurrency requirement that transportation and other infrastructure is available concurrently with development. Levels of Service (LOS) standards are to be regionally coordinated. LOS standards were coordinated within the region during the GMA planning process. Clark County's initial 1994 LOS standards are outlined in Table 3-17. These have now been updated and/or repealed by actions of the Board of Clark County Commissioners and City of Vancouver as described below.

Table 3-17: Clark County Level of Service Standards (Established in GMA Plan, 1994)

CLARK COUNTY LEVEL OF SERVICE (LOS) STANDARDS (1994)	
LOS B	Rural arterials not identified as LOS C or below
LOS C	Rural connectors that link urban areas to the inter-urban routes Arterials within La Center and Yacolt that are not rural connectors of inter-urban routes All Vancouver urban area roadways not defined as LOS D and were at LOS C or above under 1994 conditions High Occupancy Vehicle (HOV) lanes[1]
LOS D	Battle Ground, Camas, Ridgefield, and Washougal urban areas Vancouver Urban Area: • WSU and Vancouver Mall activity centers • Community subcenters • Arterials connecting community centers and subcenters • Arterials leading out of Vancouver Central Business District (CBD); and, • All other roadways maintain LOS D or maintain existing LOS, if at LOS D or below under 1994 conditions Rural interurban routes (predominantly state highways)
Mitigated LOS D	Major multimodal transportation corridors, LOS D consistent with WSDOT service objective H-23(b), and minimum LOS E[2] Community centers within Vancouver urban area, with existing LOS E, provided TSM or other congestion mitigation measures are in place
LOS E	Downtown Vancouver Activity Center Unsignalized arterial approaches that do not meet signal warrants or a signal is not desired per an approved access management plan for the specific corridor
Mitigated LOS E	Columbia River bridges at or below LOS E are allowed a LOS threshold of E with a 15 percent increase in V/C ratio over existing conditions (i.e. a volume/capacity ratio range of 1.05 to 1.15 vs 0.90 to 1.00).

Sources: 20 Year Comprehensive Growth Management Plan for Clark County; Clark County, (1994)
Growth Management Plan for Clark County, Transportation Element; Clark County, (1994)

1 For future High Occupancy Vehicle (HOV) lanes

2 "Mitigate congestion on urban highways in cooperation with local and regional jurisdictions when the peak period LOS falls below Level of Service D".
Source: Washington Transportation Commission, System Plan Service Objectives, H-23(b), approved January 26, 1993

Vancouver adopted a corridor-based concurrency ordinance in March 1998. In 1999, the City of Vancouver amended the existing Level of Service (LOS) standards contained in the Mobility Management element of the Comprehensive Plan. Levels of service standards to meet Vancouver's concurrency test requirements include: 1) corridor travel times (maximum allowable travel time between two designated points along a corridor); 2) an Average Signalized Intersection Performance Standard (a quantitative standard of the performance of all signalized intersections within an identified transportation corridor or Transportation Management Zone (TMZ); and 3) Mobility Index (the maximum number or percentage of signalized intersections which may have an operating level below the Average Signalized Intersection Performance Standard. The City of Vancouver's concurrency corridors are listed below (Table 3-18):

Table 3-18: City of Vancouver Concurrency Measurement Corridors

Andresen Rd
- Mill Plain to SR-500
- SR-500 to 78th St.

Burton Rd
- 18th St to 112th Ave

NE 28th St
- 112th Ave to 138th Ave
- 138th Ave to 162nd Ave

Mill Plain Blvd
- I-5 to Andresen Rd.
- Andresen Rd. to I-205
- I-205 to 136th Ave
- 136th Ave to 164th Ave

164th Ave
- SE 1st St to SR-14

162nd Ave.
- SE 1st St. to Fourth Plain Blvd.

Fourth Plain Blvd.
- Port of Vancouver to I-5
- I-5 to Andresen Rd.
- Andresen Rd. to I-205
- I-205 to 117th Ave.
- 117th Ave. to 162nd Ave

St John's Blvd.
- Fourth Plain Blvd to 78th St.

St James' Blvd.
- Fourth Plain Blvd to 78th St

SR-14
- I-5 to I-205
- I-205 to 164th Ave

SR-500
- I-5 to Andresen Rd.
- Andresen Rd. to Fourth Plain Blvd.

NE 18th St.
- 112th Ave to 138th Ave
- 138th Ave to 162nd Ave

NE 112th Ave
- Mill Pain Blvd to 28th St
- 28th St to SR-500

NE 136th Ave
- Mill Plain Blvd to 28th St.

City Center Zone (Downtown)

Remaining Arterials

Further information on the City's Concurrency program can be found at the web site address, http://www.ci.vancouver.wa.us/transportation/concurrency/index.html.

On October 10, 2000, the Board of Clark County Commissioners also adopted a new Transportation Concurrency Ordinance and related levels of service. The County's Level of Service standards rely on meeting minimum travel speeds in each of the transportation corridors designated by the County (see Table 3-19) and/or meeting thresholds for travel delay at signalized intersections within the designated corridors. Outside of designated transportation corridors, all signalized intersections of regional significance shall achieve LOS D or better except for the intersections of SR-500/Falk Road and SR-500/NE 54th Avenue which shall achieve LOS E or better. All unsignalized intersections of regional significance in the unincorporated County shall achieve LOS E standards or better (if warrants are not met) and LOS D or better if warrants are met. For full details of the October 2000 Clark County Concurrency ordinance and travel speed standards refer to the Clark County website at http://www.co.clark.wa.us/site/concurr/index.htm.

Table 3-19: Clark County Concurrency Measurement Corridors

Clark County Concurrency Measurement Corridors: Corridors and Corridor Limits Description

North-South Roadways

Lakeshore Avenue
Bliss Rd to NE 78th St

Hazel Dell Avenue
Highway 99 to NE 63rd St.

Highway 99 & NE 20th Avenue
NE 20th Avenue (North), NE 179th St. to S of NE 134th St.
Central, N of NE 134th St. to NE 99th St.
South, NE 99th St. to NE 63rd St.

St. Johns Road
NE 119th St. to NE 68th St.

NE 72nd Avenue
SR-502 to NE 119th St.

Andresen Road
NE 119th St. to NE 58th St.

Gher/Covington Road
Padden to SR-500

SR-503
North, SR-502 to NE 119th St.
South, NE 119th St. to Fourth Plain

Ward Road
Davis Rd. to SR-500

NE 162nd Avenue
Ward Rd. to NE 39th St.

NE 182nd Avenue
Risto Rd. to Davis Rd.

East-West Roadways

SR-502
SR-503 to NE 179th St.

179th Street
West, NW 41st Ave. to I-5
West Central, I-5 to NE 72nd Ave.

139th St. & Salmon Creek Ave.
139th Street (West), Seward Rd. to I-5
Salmon Creek Ave. (W. Central), I-5 to NE 50th Ave.

119th Street
West, Lakeshore to Hazel Dell
West Central, Hwy 99 to NE 72nd Ave.
East Central, NE 72nd Ave. to SR-503

99th Street
West, Lakeshore to I-5
West Central, I-5 to St. John's Rd.
East, SR-503 to NE 172nd Ave.

Padden Parkway (East Central)
I-205 to SR-503

78th/76th Street
West, Lakeshore to I-5
West Central, I-5 to Andresen
East Central, Andrsen to SR-503
East, SR-503 to Ward Rd.

Fourth Plain Boulevard
East Central, I-205 to SR-503
East, SR-503 to 162nd Ave.

63rd Street
West Central, Hazel Dell to Andresen
East Central, Andresen to NE 107th Ave.

TRANSIT LOS INDICATORS

In 1994, as part of the GMA planning process, C-TRAN also identified LOS indicators to assess the operational quality of the transit system. The matrix outlined in Table 3-20 can be used by local jurisdictions and C-TRAN to assess whether transit system expansion would be feasible in a given area.

Table 3-20: C-TRAN Level of Service Indicators (1994)

C-TRAN LOS INDICATORS (1994)									
	PLANNING INDICATORS							SUPPORTING FACTORS	
Service Classes	Persons per Sq. Mile (Pop+Emp)	Peak/ Non-Peak Headways	Bus Stop Spacing	Accessibility[4]	Load Factor	Travel Time Ratio (transit/ auto)	Service Span (hours/day, days/week)	Expected Market Characteristics	Other Supporting Characteristics
Commuter: Inter-state	20,000-25,000	15/NA	major P&R lots	within 5 miles of 80% of pop+emp	1.0	1.75	M-F Peak	Portland employees who live in Washington	Parking mgmt.; HOV priority treatments; P&R spaces
Commuter: Intra-state	20,000-25,000	15/NA	major P&R lots	within 3 miles of 80% of pop+emp	1.0	1.75	M-F Peak	CBD & urban growth centers; employees living in Washington suburbs	Parking mgmt.; HOV priority treatments; large # of P&R spaces
Urban Corridor Service	18,000-20,000	15/30	1/8 mile	within 1/4 mile of 75% of rural pop+emp	1.5	2.0	7 days 12-16 hrs/day	Income, special generators, age, high density residential development	Land use zoning compatibility; parking mgmt.
Urban Residential Connector Service	12,000-18,000	30/60	1/4 mile	within 1/4 mile of 80% of pop+emp	1.5	2.0	5 days 12-16 hrs/day limited weekend. & evening service	Residential development connecting to major activity centers	Parking mgmt.; zoning; land use compatibility
Rural	Policy coverage	60/120	designated pick-up locations	within 5 miles of 75% of rural pop+emp	1.0	2.0-3.0	M-F 10-12 hrs/day ltd. weekend service	Community centers, city halls, post offices	Citizen requests for service
Subscription Bus	30	as needed	NA	NA	1.0	1.15	M-F Peak	Specialized employer needs	Commute trip reduction; parking mgmt.
Vanpool	8-15	as needed	NA	NA	1.0	1.15	M-F Peak	Specialized employer needs	Commute trip reduction; parking mgmt.
C-VAN (disabled)	Policy	as needed	NA	NA	1.0	NA	7 days, 12-16 hrs/day	Elderly & handicapped	NA

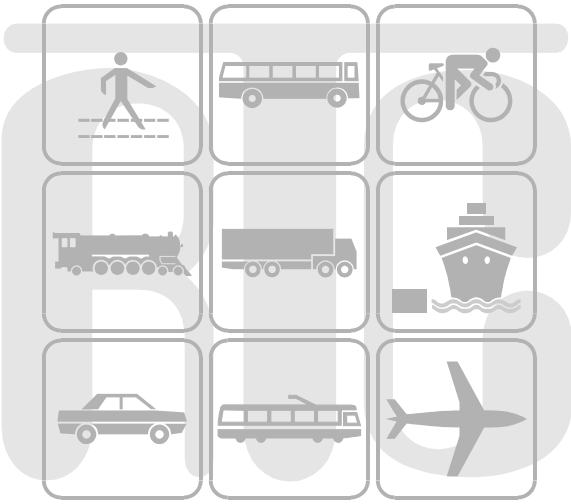
[4] Accessibility is defined as the percent of households and jobs within walking distance of a transit stop, transit center, or park and ride lot.

HIGHWAY SYSTEM CAPACITY ANALYSIS

EMME/2 software is used to analyze highway capacity needs for the Clark County region. Appendix A lists projects identified in the *MTP* as needed to meet existing and future forecast capacity deficiencies determined by assigning forecast 2023 trips onto the existing highway system as described earlier in this chapter. The list contained in Appendix A notes projects which are incorporated into the 2023 regional travel forecasting model and are consequently considered as part of the air quality conformity analysis.

TRANSPORTATION SYSTEM ANALYSIS

Highway capacity is not the only consideration in analysis of the regional transportation system. The Intermodal Surface Transportation Efficiency Act (1991) and Transportation Equity Act for the 21st Century (TEA-21) emphasize the need to develop alternative modes and increase capacity of the existing highway system through more efficient use by means of ridesharing, system management and transit use. Capacity expansion is to be resorted to after other alternatives have been considered. Such strategies are described in more detail in Chapter 5, System Improvement and Strategy Plan. In addition, Chapter 5 also addresses the need for maintenance and preservation of the existing regional transportation system, safety of the transportation system, development of non-motorized modes and high capacity transportation systems.



CHAPTER 4

FINANCIAL PLAN

OVERVIEW

Federal rules require that the MTP be "fiscally constrained" meaning that there must be a reasonable expectation that revenues will be available to provide for the estimated costs of implementing the 20-year list of projects contained in the MTP and to support the operations and maintenance of the multimodal transportation system. The MTP Finance Plan focuses on the Designated Regional Transportation System.

Potential transportation projects proposed in this Plan are intended to meet the MTP policy objective of making the most efficient use of and enhancing the existing transportation system. The potential highway, transit and non-motorized recommendations are designed to meet transportation planning goals addressed in MTP Chapter 1.

The availability of federal, state and local moneys will have a significant impact on the ability to fund proposed projects. Demands on the transportation system have grown significantly over the past 20-years. In the last two decades, Washington state population has increased by 43%, jobs have increase by 58% registered vehicles have increased by 57% and vehicle miles traveled has seen an 88% increase. , In this same two decades, personal income grew, on average, by 110% but the share of each dollar of personal income invested by the state in transportation facilities has fallen by more than half.

This chapter describes revenue sources and discusses changes to revenue sources as a result of federal and state legislation. The projection of funding ability is based on historic funding levels. The ability of the projected funding to meet MTP costs is determined.

Transportation has traditionally been funded by "user fees". Today, the major tax sources to fund transportation are the gas tax, vehicle licenses, permits and fees as well as transit fare box revenues. The Motor Vehicle Excise Tax (MVET) was eliminated after passage of Initiative-695 in 1999. Gas tax is imposed at the Federal level ($0.184 per gallon) which works out to cost the average motorist about $98 per year and at the State level ($0.23 per gallon) which costs the average motorist $125 per year. The gas tax revenue is devoted primarily to highway purposes. At $0.23 cents per gallon, Washington State had the 23rd highest gas tax in the nation as of December 2001.

ACCOMPLISHMENTS SINCE LAST MTP

The Finance Plan component of the MTP last received a comprehensive update in the 1998 MTP amendment. Since that time several significant regional transportation system capital improvement projects have been completed or are nearing completion in the Clark County region. In the past 3 years alone, 2000-2002, $178 million of regional highway system projects have been constructed in Clark County. If this trend continues, the region could anticipate over $1.1 billion in funding for regional highway capital projects over the next 20 years. However, transit service funding in Washington State has received a setback with the 1999 elimination of the Motor Vehicle Excise Tax (MVET) as a funding source.

ASSUMPTIONS

- The Finance Plan addresses a twenty-year period.
- Data on which to base the Finance Plan is from the past decade from WSDOT Economics Branch as well as MTP project cost estimates by WSDOT, local agencies and jurisdictions.
- The level of transit service assumed to be in place by 2023 assumes that an additional 0.3% (three-tenths of a percent) sales tax, or equivalent funding, is in place to help provide for the cost of transit service.

CURRENT REVENUE SOURCES

Revenues for transportation system development are available from federal, state, local and private sources. Funding sources that have been historically available will be extrapolated into the future to provide an estimate of the resources reasonably expected to be available. It is assumed that funds that have traditionally been available for transportation will continue to be available. For example, it is assumed that federal Demonstration funds will continue to be available.

FEDERAL FUNDING

The federal funding picture changed significantly with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and its successor, the Transportation Equity Act for the 21st Century (TEA-21), passed in 1998. Funding programs in ISTEA and TEA-21 allow much greater flexibility in the way money may be used. The federal funding programs now have a multimodal emphasis especially the Surface Transportation Program, which gives regions greater independence to invest in alternate modes of travel, including capital transit projects, such as High Occupancy Vehicle (HOV), Light Rail Transit (LRT), and park and ride facilities. ISTEA was considered landmark legislation because of this and because it enhanced the role of the Metropolitan Planning Organization in the programming, planning, and prioritization of STP funds. The Act also established Transportation Management Areas (TMAs) and made funding available for transportation projects to help regions meet air quality standards. A new federal funding Act should be approved by 2004 and is anticipated to be similar to TEA-21. A brief description of the existing funding programs available through the federal Act follows.

Interstate Maintenance (IM) Program

The Interstate Maintenance (IM) program is similar to the former FAI-4R program and is intended for projects to rehabilitate, reconstruct, restore, and resurface the Interstate System. IM funds may not be used for new travel lanes, other than High Occupancy Vehicle lanes or auxiliary lanes or reconstruction. Six-year funding, 1998 through 2003, is set at $23.8 billion, nationwide. The Washington State apportionment is $505 million over six years as outlined in Table 4-1 below.

National Highway System (NHS)

National Highway System (NHS) was a new funding category in ISTEA. It established a National Highway System that consists of major roads in the U.S. including the interstate system; other routes identified for their strategic defense characteristics; routes providing access to major ports, airports, public transportation and intermodal transportation facilities; and principal arterials that provide regional service. Funding in this category may be used for a wide variety of projects. In addition to roadway construction, operational and maintenance improvements, eligible projects include: start-up for traffic management and control, infrastructure-based intelligent transportation system capital improvements, fringe and corridor parking, carpool and vanpool projects, bicycle and pedestrian projects, and wetlands and natural habitat mitigation. In certain circumstances, transit projects in the corridor are also allowed if they benefit the NHS facility. Publicly-owned intracity and intercity bus terminals are also eligible. In addition, states have the option to shift 50% of the money to the STP category, which has greater project flexibility. The funding level for the NHS program is $28.6 billion nationwide for the six years, 1998 through 2003. Estimated Washington State apportionments are outlined below:

Table 4-1: Estimated Washington NHS Allocations (in millions $)

ESTIMATED WASHINGTON NHS ALLOCATIONS (IN MILLIONS $) (Note: The amounts shown below are authorized amounts; appropriated amounts are lower)	
	TOTAL: Federal Fiscal Years 1998-2003
Interstate Maintenance	$505.0
National Highway System	$565.0
Totals	$1,070.0

Source: *WSDOT web site: http://www.wsdot.wa.gov/KeyFacts/FedHiwayProg.htms*

Surface Transportation Program (STP)

The Surface Transportation Program (STP) is a flexible, intermodal program similar to a block grant program. Generally, it can be used for any road or bridge except for local roads or rural minor collectors, although a portion of the funds reserved for rural areas may be spent on rural minor collectors. In addition to eligibility for operational and capacity improvements to roadways, it allows for the programming of transit capital projects, intracity and intercity bus terminals, carpool projects, fringe and corridor parking, capital and operating costs for traffic monitoring, management or control, transportation enhancements, transportation planning, and transportation control measures for air quality. If an area has been designated a Transportation Management Area, as the Vancouver region has, money cannot be spent on road capacity improvements for general purpose traffic unless the improvements are part of an overall Congestion Management Plan.

Of the money received by the state, 10% must be set aside for safety projects such as hazard elimination and 10% for transportation enhancements such as pedestrian and bicycle facilities. Total funding for the STP is $33.3 billion nationwide. Table 4-2 outlines estimated STP funding

available within the state of Washington for the extent of the TEA-21 (1998-2003). In Washington State federal STP program funds require a 13.5% local match.

Table 4-2: Estimated Washington STP Allocations (in millions $)

ESTIMATED WASHINGTON STATE STP ALLOCATIONS (IN MILLIONS $) (Note: The amounts shown below are authorized amounts; appropriated amounts will be lower)	
	TOTAL: Federal Fiscal Years 1998-2003
Enhancements	$73.0
Safety	$73.0
Urban Areas	$201.0
Areas Under 200,000	$163.0
Statewide Flexible	$380.0
Totals	$890.0

Source: *http://www.wsdot.wa.gov/KeyFacts/FedHiwayProg.htm*

The following outlines the subprograms that are available:

Regional Allocation: Available to cities, counties, and other public agencies on a county basis. Projects must be on a federal functionally-classified route of a rural major collector or above, except for planning studies and enhancement projects. RTC selects projects for funding in cooperation with local jurisdictions and agencies.

Statewide Competitive: Available to all public agencies. Criteria for selection include Multimodal, Innovation, Mobility, Economic Development, Environmental, Financial, Preservation, and Customer Sensitivity/Safety. The State selects and prioritizes projects for funding.

Enhancements: Available to all public agencies. For non-motorized transportation, beautification, scenic highways, pedestrian, and bike facilities. Projects to be submitted to the State for consideration are prioritized by RTC in cooperation with local jurisdictions and agencies. The State selects and prioritizes projects for funding.

Safety: Available for cities and counties to improve safety. There are three programs under safety. (1) Railway/Highway Crossings funds are available to reduce fatalities, injuries, and damages through improved railway crossings. (2) Hazard Elimination funds are available to improve specific locations which constitute a danger to vehicles or pedestrians as shown by frequency of accidents. (3) High Accident Potential funds are to reduce a potentially unsafe situation. The costs are shared approximately 90% federal, and 10% local match. The State selects and prioritizes projects for funding.

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

Congestion Mitigation/Air Quality (CMAQ) funds are specifically targeted for air quality non-attainment and maintenance areas for ozone, carbon monoxide (CO) and small particulate matter (PM-10) to implement projects and strategies which reduce transportation related emissions; to implement Transportation Control Measures (TCM's) listed in Section 108 of the Clean Air Act, or the State Implementation Plan, or that the Department of Transportation or the Environmental Protection Agency has determined will contribute to attainment and maintenance of National Ambient Air Quality Standards (NAAQS). Money in this fund is apportioned by population and weighted by the severity of pollution. Funds in this category cannot be used for new highway capacity. However, construction of high occupancy vehicle lanes are allowed with the understanding that capacity may be used by single occupancy vehicles during the non-rush hour period. The Clean Air Act Amendments of 1990 require that highest priority be given to the implementation of the transportation portions of applicable SIP's and TCM's for applicable SIP's. Total 1998 through 2003, six-year, funding for this program is $8.1 billion nationwide. The state of Washington should receive $144 million for the six-year period from Federal Fiscal Year (FFY) 1998 through FFY 2003. An average of $24 million per federal fiscal year is to be used in the areas of Washington state with air quality problems; Seattle, Vancouver, Spokane and Yakima. RTC is one of the MPO's, statewide, that receives CM/AQ funds.

Bridge Replacement and Rehabilitation Program (BRRP)

The Bridge Replacement and Rehabilitation Program (BRRP) provides funds to assist states in replacement and rehabilitation of deficient highway bridges and to seismic retrofit bridges on any public road. The nationwide program provides $20.4 billion in funding from 1998 through 2003. Within Washington State, about $643 million should be received for bridge projects from 1998 through 2003. Distribution of Bridge funds to individual bridge replacement projects for local agencies is governed by policies established by the Bridge Replacement Advisory Committee (BRAC). The costs are shared approximately 80% federal, and 20% local match.

High Priority (Demonstration) Projects

TEA-21 provides funding for High Priority Projects throughout the nation as identified by Congress. TEA-21 includes 1,850 such projects costing a total of $9.4 billion. The state of Washington should receive $199 million in Demonstration funds during the life of TEA-21 Act (1998-2003) and Clark County is in receipt of High Priority funding as follows: $4 million to the Mill Plain Extension west to the Port of Vancouver and $4.721 million to the 192nd Avenue corridor in east county.

Intelligent Transportation System (ITS) – Deployment Incentives Program

Federal funds are available to accelerate the implementation of Intelligent Transportation System (ITS) projects in metropolitan and rural areas. The program includes ITS Integration, ITS Commercial Vehicle Operations Deployment and Overall ITS Deployment. ITS funds are for improvement of transportation efficiency, promotion of safety, traffic flow increase, reduction of air pollutant emissions, improvement of traveler information, enhancement of alternative

transportation modes, further development of existing Intelligent Transportation System projects and promotion of tourism. The ITS Integration Program was authorized for $482 million nationwide in funding from 1998 through 2003 and the ITS Commercial Program was authorized for $184.1 million nationwide. Federal ITS funding must not exceed 50% of the total project cost.

Transportation and Community and System Preservation Pilot (TCSP)

The Transportation and Community and System Preservation Pilot (TCSP) program is a comprehensive initiative of research and grants to investigate the relationships between transportation and community and system preservation and private sector-based initiatives. States, local governments, and metropolitan planning organizations are eligible for discretionary grants to plan and implement strategies that improve the efficiency of the transportation system; reduce environmental impacts of transportation; reduce the need for costly future public infrastructure investments; ensure efficient access to jobs, services, and centers of trade; and examine private sector development patterns and investments that support these goals. A total of $120 million is authorized for this program for FYs 1999-2003. Clark County received TCSP funds to investigate the impacts of concurrency and Growth Management on implementation of the comprehensive plan.

Job Access and Reverse Commute (JARC)

The federal Transportation Act creates a new program for Job Access and Reverse Commute (JARC) grants. The program is funded for FYs 1999-2003 with $400 million from the Mass Transit Account. An additional $350 million from the General Fund must be appropriated before it becomes available. The twofold purpose of the program is (1) to develop transportation services designed to transport welfare recipients and low-income individuals to and from jobs, and (2) to develop transportation services for residents of urban centers and rural and suburban areas to suburban employment opportunities. Emphasis is placed on projects that use mass transportation services. In 2002, C-TRAN was successful in obtaining $718,500 in JARC funds to implement innovative service to enhance employment access to the industrial and commercial area of East Vancouver/Camas.

National Corridor Planning and Border Infrastructure Programs

The new National Corridor Planning and Development program provides funds for the coordinated planning, design, and construction of corridors of national significance, economic growth, and international or interregional trade. Allocations may be made to corridors identified in Section 1105(c) of ISTEA and to other corridors using specified considerations. The Coordinated Border Infrastructure program is established to improve the safe and efficient movement of people and goods at or across the U.S./Canadian and U.S./Mexican borders. A total of $700 million is provided for these efforts for FYs 1999-2003. Funds from the National Corridor Planning program provided funding to carry out the Portland-Vancouver I-5 Transportation and Trade Partnership in 2001/02.

Community Development Block Grant (CDBG)

Community Development Block Grant (CDBG) funds are administered by the Department of Housing and Urban Development (HUD). Grants are targeted at low and moderate-income areas. Transportation projects that use CDBG funds are usually sidewalk projects and small capital improvements.

Public Lands Discretionary

The intent of the Public Lands Highways Program is to improve access to and within the Federal lands of the nation. This program can be used for road improvements, transportation planning, parking, interpretive signage, acquisition of scenic easement and sites, pedestrian and bicycle facilities, rest areas, and other public road facilities. Roads need to be within, adjacent to, or provides access to Federal lands.

STATE FUNDING

The State gas tax is the major state revenue source for highway maintenance and arterial construction funding. Some of the programs funded by these revenues are described below:

Transportation Improvement Board (TIB) Programs

The Transportation Improvement Board (TIB) invests State Gas Tax funds in local communities through five grant programs (see Table 4-3) serving cities, urban counties and transportation benefit districts in Washington State. The TIB identifies and funds the highest-ranking transportation projects based on criteria established by the Board for each program.

Funding for the Transportation Partnership Program (TPP) comes from the Transportation Improvement Account (TIA) established in 1988 to improve the mobility of people and goods in Washington State by supporting economic development and environmentally responsive solutions to our statewide transportation system. TIA revenues for the 2001-2003 biennium are estimated at $82.9 million statewide. The TIB encourages projects that are coordinated among government agencies and provide for public/private participation. The urban program requires a minimum 20% local match.

The Arterial Improvement Program (AIP), the City Hardship Assistance Program (CHAP), the Pedestrian Safety and Mobility Program (PSMP) and the Small City Program (SCP) are funded from the Urban Arterial Trust Account (UATA). The UATA was established in 1967 to fund transportation projects for urban cities and urban counties that will reduce congestion, strengthen the structural ability to carry traffic loads, address roadway width deficiencies, provide improvements to reduce accident rates, and implement traffic management to maximize mobility of people and goods. The grant programs fund the design and construction of city and county roadways. UATA revenues for the 2001-2003 biennium are estimated at $112.1 million statewide.

Table 4-3 below summarizes the five TIB funding programs and provides an overview of funding received by Clark County from TIB programs over the years.

Table 4-3: Transportation Improvement Board Funding Programs

TRANSPORTATION IMPROVEMENT BOARD FUNDING PROGRAMS			
Funding Program	**Eligible Agencies**	**Type of Projects**	**TIB Program Funds to Clark County** 1989 to 2003
Transportation Partnership Program (TPP)	Urban Counties, Cities > 5,000 Population, Transportation Benefit Districts	Regionally Significant, Improve Mobility and Economic Dev., Multi-Jurisdictional, Multi-Modal, Public/Private Coop.	$74,641,047
Arterial Improvement Program (AIP)	City and County Arterial Streets (within Federal Urban Area Boundary)	Improve Mobility, Safety, Address Geometric and Structural Deficiencies	$32,406,514
Small City Program (SCP)	Incorporated Cities with Population < 5,000 Requires minimum 5% local match; no match for cities < 500	Address Structural Condition, Lane and Shoulder Width Deficiencies, Safety Issues	$2,068,414
Pedestrian, Safety & Mobility Program (PSMP)	Urban and Small City	Enhance and Promote Pedestrian Mobility, Safety, System Continuity and Connectivity	$1,466,293
City Hardship Assistance Program (CHAP)	To offset extraordinary costs associated with the transfer of state highways to cities with population under 20,000	Pavement Condition, Accident Experience and Relationship to Other Local Agency Projects	$249,654
			$110,831,922

Federal ISTEA/TEA-21 Local Match	$1,796,320

In addition to the five funding programs (TPP, AIP, SCP, PSMP, CHAP), the TIB has also provided matching funds for some federally funded local projects. From 1994 to 2000, TIB provided $1.796 million in local matching funds for federally funded local projects in the Clark County region. The funding support continues as three sub-programs of the Small City Program (SCP). The BRAC Sub-Program provides the required 20% matching funds to projects selected by the Bridge Replacement Advisory Committee (BRAC) for federal funding. The TEA-21 Sub-Program typically provides the 13.5% local match for eligible projects awarded TEA-21 funding. The FEMA/ER Sub-Program typically provides 12.5% of the eligible FEMA projects and 13.5% of the eligible FHWA/ER projects. The TIB funds are made available following approval of the federal funds.

The TIB also reviews and recommends route jurisdiction changes under the Route Jurisdiction Transfer (RJT) program.

County Road Administration Board (CRAB)

The County Road Administration Board was created by the Legislature in 1965 to provide statutory oversight of Washington's thirty-nine county road departments. The County Road Administration Board (CRAB) manages two grant programs to assist counties in meeting their transportation needs.

Rural Arterial Program (RAP)

The Rural Arterial Program (RAP) is funded by fuel tax revenues and is available for road and bridge reconstruction funding on a competitive basis. Proposed projects for this program are rated by a specific set of criteria including (1) structural ability to carry loads, (2) capacity to move traffic at reasonable speeds, (3) adequacy of alignment and related geometrics, (4) accident rates and (5) fatal accident rates. The account generates approximately $37 million per biennium

County Arterial Preservation Program (CAPP)

The County Arterial Preservation Program (CAPP) helps counties to preserve their existing paved arterial road networks. Funding is provided to counties as direct allocation based on paved arterial lane miles. The program generates approximately $26 million per biennium.

Community Economic Revitalization Board (CERB)

The Community Economic Revitalization Board (CERB) was established by the legislature to make loans and/or grants for public facilities, including roads, which will stimulate investment and job opportunities, reduce unemployment, and foster economic development.

Public Works Trust Fund (PWTF)

The Public Works Board was created by the 1985 legislature. The mission of this Board is "to assist Washington's local governments and private water systems in meeting their public works needs to sustain livable communities." The Public Works Trust Fund (PWTF) provides low interest loans to local governments for infrastructure improvements and is funded by utility taxes. These loans have a 5-year term for pre-construction and 20-years for construction with an interest rate of one-half percent.

Washington State Department of Transportation

WSDOT administers many transportation related grants that are available to agencies. However, many of these programs are dependent on the legislature allocating funding. The following is a brief list of these programs.

Airport Aid Grant Program: The purpose of this program is to assist airport in funding capital improvement projects. Revenues for this program are collected through a 7-cent per gallon tax on general aviation fuel.

Freight Rail Assistance Program: The purpose of this program is to acquire, rehabilitate, or improve rail lines throughout the state, in order to preserve them for future use.

Main Street Pavement Program: The purpose of this program is to establish and promote an on-going pavement maintenance system in cities with a population under 10,000.

Rural & Special Needs Public Transportation Program: The purpose of this program is to fund capital and operating assistance for rural public transportation. This program combines both state and federal funds.

School Safety Enhancements: The purpose of this program is to fund capital projects for traffic and pedestrian safety improvements near schools.

City and County Congested Corridor Program (CCP): A primary transportation goal within Washington State is to address congestion problems. The intent of the CCP is to improve the mobility of people and goods in the state by supporting economic development and environmentally responsive solutions to transportation needs. Urban counties and cities with more than 5,000 people are eligible. The Transportation Improvement Board (TIB) is to select projects in this Program based on criteria that includes Congestion Relief, Funding Partners, Mode Accessibility, Safety and Corridor Continuity. The Program requires a minimum 20% local match. However, Program funding was contingent on passage of Referendum-51 that failed in November 2002.

LOCAL FUNDING

Local revenue comes from a variety of sources such as property tax for highway projects and sales tax for transit projects. Other revenues include moneys from street use permits, gas tax, utility permits, and impact fees.

Property Tax

Some local County transportation revenues come from property taxes. For example, Clark County's total property tax assessment is about $14.40 per $1,000 of assessed value of which about $2.25 is dedicated to the road fund.

Arterial Street Fund

This is the distribution of the state gasoline tax to cities and counties based on each jurisdiction's population.

Transportation Impact Fees

Transportation impact fees were authorized in HB 2929 by the 1990 Legislature to address the impact of development activity on transportation facilities. Jurisdictions within Clark County have established Transportation Impact Fee programs and are periodically reviewed.

TRANSIT REVENUES

Revenue sources that have been described above are intended exclusively for highway investment or have the flexibility to be used for highway/transit funding. Transit systems are also funded by fare box proceeds, federal funds and other local funds. This section will address revenue sources specifically for the purpose of funding transit needs. C-TRAN is the Public Transportation Benefit Area (PTBA) for the Clark County region. As such it has the authority to impose an additional local sales tax to support operations.

Federal

The Surface Transportation Program of ISTEA places much greater emphasis on intermodal flexibility and allows those funds to be used for transit capital projects. In addition, National Highway System funds can be used on alternative arterials or transit projects within the NHS corridors if there is a direct benefit to an NHS facility. C-TRAN was expected to receive about $6.8 million from federal sources in 2001.

Sales and Use Tax

C-TRAN's major revenue source is a 0.3% sales and use tax that was approved in 1990. C-TRAN is projected to receive $12.9 million in revenues from this source in 2002. The tax rate could be raised to as much as 0.9% to use for operation, maintenance and capital needs of transit districts.

POTENTIAL TRANSPORTATION REVENUES

The revenue sources described in this section are programs approved by the State Legislature which authorize jurisdictions to impose fees at the local level for specific transportation infrastructure categories with voter approval. These programs have not been instituted in this region, but could be imposed in the future.

Local Option Vehicle License Fee

A local option fee of up to $15 per vehicle can be imposed at the county level and can be used for general transportation including: public transportation, high capacity transportation, transportation planning and design, and other transportation related activities. Douglas, King, Pierce, and Snohomish counties imposed the fee. A maximum $15 local license fee could generate up to $4.6 million per year in revenues within Clark County. In November 2002, voters passed Initiative Measure 776 to eliminate the optional fee.

Local Option Fuel Tax

A local option fuel tax of up to 10% of the statewide motor vehicle fuel tax may be imposed by the county with voter approval; this would amount to a 2.3 cents per gallon local option. Revenue from this source must be used for highway purposes including: construction and maintenance of city streets, county and state roads, and related activities. This could raise an estimated $3.5 million per year.

Commercial Parking Tax

The county or city may impose, subject to exclusive referendum procedure, a tax on the commercial parking business to be used for general transportation purposes. The tax could be based on gross proceeds or number of stalls, or on the customer. Some cities in the Puget Sound region, e.g. Bainbridge Island, Bremerton, Marysville, Mukilteo, SeaTac and Tukwila, have instituted this tax.

LOCAL OPTION REVENUES FOR HOVS AND HIGH CAPACITY TRANSPORTATION

There are a number of local option taxes available at the local level that can be implemented with voter approval. Unlike potential revenue sources described earlier, these local tax options would be used exclusively for planning, constructing, and operating high capacity and feeder transportation systems.

Motor Vehicle Excise Tax (MVET)

Additional local level MVET, to a maximum of 0.8% of the vehicle value can be levied for planning, constructing, operating HCT, commuter rail and feeder transportation systems. It is authorized for the RTA in Puget Sound and transit agencies in Thurston, Clark, Spokane and Yakima counties with voter approval.

Employer Tax

A tax on employers of up to $2 a month per employee could generate over $3 million a year in the Clark County region for planning, constructing and operating High Capacity Transportation (HCT), commuter rail and feeder transportation systems.

Sales and Use Tax

This would allow up to a 1% local sales tax option (not to exceed 0.9% where there is a 0.1% Sales and Use Tax for criminal justice) and could generate over $38 million a year in revenue for planning, constructing and operating High Capacity Transportation (HCT), commuter rail and feeder transportation systems.

MTP REVENUES

Historic data covering the past decade from WSDOT Economics Branch relating to revenue receipts for regional transportation improvements is used to assess revenues likely to be received for future transportation needs. Historic data is also derived from Transportation Improvement Programs (TIPs) adopted by local jurisdictions and RTC since the passage of the ISTEA as a basis for annual revenue estimates. Currently, funding is programmed in the Metropolitan Transportation Improvement Program (MTIP) through 2004.

Table 4-4 presents a summary of potential revenue that could be generated in Clark County in the next twenty years (based on 2002 $). However, what has to be recognized is that not all the revenues generated in the County return to Clark County for distribution (see page 4-24 below).

Table 4-4: Potential Revenues Generated in Clark County

POTENTIAL REVENUES GENERATED IN CLARK COUNTY	
REVENUE SOURCES:	**MTP 21-YEARS (in Year 2002 $)**
Federal (about $23.8 million annually)	$499,800,000
State (about $53.3 million annually)	$1,118,583,900
Local	$768,911,077
Federal for Transit Capital Equipment	$63,000,000
Sub-Total	**$2,450,294,977**
TRANSIT REVENUES FOR TRANSIT OPERATIONS:	
Sales Tax, Fare Box Recovery, Interest	$630,000,000
TOTAL	**$3,080,294,977**

Source: State and Federal Transportation Revenue And Expenditure Tables, By County 1990 – 1999 (WSDOT), WSDOT Economics Branch

MTP COSTS

ASSUMPTIONS

Costs of improvements to the Designated Regional Transportation System are the focus of this section. Costs of transportation improvements and projects are expressed in 2002 dollars. Capacity improvement costs, capital costs for the transit system as well as transportation system maintenance, preservation and operations costs are considered in the regional transportation planning process. Costs for regional system highway, transit, pedestrian and bicycle projects are considered in the Finance Plan as well as costs for Intelligent Transportation System, Transportation System Management improvements and Transportation Demand Management. Costs for other modes, e.g. freight rail system improvements and inter-city passenger rail, are assumed to be met at the statewide or national level or by private interests.

SYSTEM MAINTENANCE, PRESERVATION AND OPERATIONS

Before consideration can be given to system expansion, the region needs to ensure that sufficient money is available to adequately maintain, preserve and operate the transportation system already in existence. It costs, on average, $30.2 million annually to maintain and operate the entire highway system in Clark County.

In total, State highway maintenance costs about $27.47 per registered vehicle per year. Some of the component maintenance costs are: $5.52 per vehicle per year for snow and ice control, $3.45 for pavement maintenance, $2.49 for vegetation maintenance, $2.25 for bridge maintenance and operations, $2.18 for storm water management, $1.50 for striping, marking and guidepost maintenance, $1.11 for highway lighting, $1.07 for rest area maintenance and operations, $0.94 for traffic signal maintenance, $0.88 for sweeping and cleaning, $0.84 for roadway hazard patrol and removal, $0.80 for sign maintenance and $0.77 for litter control.

The annual cost of operating C-TRAN service is about $30 million. These costs are likely to take up a greater percentage of available revenues over the twenty year period as the transportation system ages and grows. Transit operating costs are assumed to be covered by available revenues to the transit system. Projected funding for transit system operation and improvement is outlined in C-TRAN's Transit Development Program. The latest published TDP provides a review of 2001 and covers the years 2002 through 2008 and was issued in mid-2002.

SYSTEM IMPROVEMENTS

Capital costs of the proposed improvements to the Designated Regional Transportation System are addressed in this section. In a rapidly growing region such as Clark County, there is large demand for system expansion. Projects that are near completion or are fully funded are listed in

Table 4-5 below. MTP highway system expansion and transit capital costs have been estimated at over $917[1] million over the twenty-year period (see Table 4-6).

Table 4-5: MTP Projects Under Construction and/or Fully Funded

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS Projects Under Construction and/or Fully Funded						
Facility	**Location**	**Improvements**	**Comments**	**Cost Estimate in $'000s (Dec. 2002)**	**Un-funded in $'000s (Dec. 2002)**	**Funded in $'000s (Dec. 2002)**
Mill Plain Blvd.	SE162nd Av to 172nd Av	Widen, 2 lanes each direction with center left turn	Design to begin in 2001	$2,670	$0	$2,670
Burton Rd	86th to NE 112th Av	Widen to include center left turn lane and intersection improvements	Construction to begin 2003	$5,777	$0	$5,777
NE 28th Street	NE 112th to NE 142nd Av	Widen to include center left turn lane and intersection improvements (ROW + CN)	Construction to begin 2003	$6,173	$0	$6,173
NE 76th St	NE 107th Av to NE 117th Av	Widen, to add center left turn lane; bike lanes; sidewalks	Construction to begin 2002	$2,241	$0	$2,241
NE 76th St	NE 117th Av to NE 142nd Av	Widen, to add center left turn lane; bike lanes; sidewalks	Construction to begin 2003	$5,490	$0	$5,490
Padden Parkway, west leg	NE 53rd Av (at 78th St/Padden) to NE 83rd St extending to Andresen Rd	Construct on new alignment. 2 lanes each direction with center left turn lane	Construction began 2001	$13,512	$0	$13,512
Padden Parkway	I-205 to NE 94th Av	Widen, 2 lanes each direction with bike/pedestrian trail	Construction began 2002	$6,150	$0	$6,150
Ward Rd	Fourth Pl (SR-500) to NE 88th St	Widen, 2 lanes each direction with center left turn lane; sidewalks; bike lanes	Under Construction, 2002 Completion	$5,084	$0	$5,084

[1] Cost estimates for the Plan were reviewed in 2002. Credit is taken for projects which are already fully or partially funded.

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS
Projects Under Construction and/or Fully Funded

Facility	Location	Improvements	Comments	Cost Estimate in $'000s (Dec. 2002)	Un-funded in $'000s (Dec. 2002)	Funded in $'000s (Dec. 2002)
Ward Rd (N)/172nd Av	South of Davis to NE 119th St	Realign, use of 172nd Av to through traffic from NE 96th St to NE 119th St; install turn lanes	Construction to begin 2005	$5,551	$0	$5,551
NE 117/119th St	Hwy 99 to 26th Av.	Realign 119th St (East of Hwy 99) with 117th St (West of Hwy 99)	Under Construction (2002)	$6,256	$0	$6,256
NE 134th St	Rockwell Dr to WSU Entrance	Widen, 2 lanes each direction with center left turn lane; bike lanes; sidewalks	Construction to begin 2003	$3,837	$0	$3,837
Hwy 99	NE 20th Av to NE 134th St	Re-align Hwy 99	Construction to begin 2004	$15,350	$0	$15,350
Fruit Valley Rd	34th Street to Whitney Rd.	Widen to add center left turn lane; bike lanes; sidewalks	Construction to begin 2003	$7,510	$0	$7,510
NE 87th Av	Mill Plain to Fourth Plain	Extension on new alignment, 1 lane each direction	Under Construction, 2002 Completion	$6,566	$0	$6,566
SE 192nd Av	SR-14 to SE 34th St	Construct, 2 lanes each direction	Construction to begin 2003, end summer 2004	$15,134	$0	$15,134
SE 192nd Av	SE 34th St to SE 15th St	Construct, 2 lanes each direction	Winter 2002 completion	$4,500	$0	$4,500
SE 192nd Av	SE 15th St to SE 1st St	Widen, 2 lanes each direction	Summer 2003 completion	$5,711	$0	$5,711
Vancouver Amtrak Station	on NW 11th Street	Rehabilitation of existing station building		$1,354	$0	$1,354
Totals				**$118,867**	**$0**	**$118,867**

NOTE*: Project cost estimates provided in Table 4.5 are planning level cost estimates only. Cost estimates are liable to change as more detailed pre-design and design work is initiated for each of the projects. Cost estimates are reviewed in detail at each MTP update.*

Table 4-6: MTP: List of "Fiscally Constrained" Projects 2002-2023

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS LIST OF "FISCALLY-CONSTRAINED" PROJECTS, 2002 TO 2023					
Facility	**Location**	**Improvements**	**Cost Estimate in $'000s (Dec. 2002)**	**Unfunded in $'000s (Dec. 2002)**	**Funded in $'000s (Dec. 2002)**
Interstates					
I-5	Interstate Bridge	Pre-design engineering	$1,000	$1,000	$0
I-5	Salmon Creek (N. of 99th St.) to I-205	Widen, 3 lanes each direction	$33,520	$33,520	$0
I-5	NE 134th Street Interchange	Diamond interchange at I-5, ramp reconfiguration at I-205, 23rd Av extension to 139th St and Park & Ride Relocation and Expansion	$40,000	$40,000	$0
I-5	NE 219th St	New interchange	$40,000	$40,000	$0
I-5	I-205 to 179th Street	Auxiliary lane	$36,140	$36,140	$0
I-5	179th St. to 219th St.	Auxiliary lane and modify NE 179th St. Interchange	$23,080	$23,080	$0
I-5	269th St.	Improve interchange	$8,000	$8,000	$0
I-5	319th St.	Improve Interchange	$13,250	$13,250	$0
I-205	Mill Plain Interchange vicinity	Flyover ramp to 112th Av. (Phase 1)	$16,000	$13,265	$2,735
I-205	NE 18th St/Burton Rd	18th Street Ramps and frontage roads to Burton (Phase 3)	$84,000	$84,000	$0
I-205	Burton Rd.	Burton Road Ramps (Phase 5)	$20,000	$20,000	$0

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS
LIST OF "FISCALLY-CONSTRAINED" PROJECTS, 2002 TO 2023

Facility	Location	Improvements	Cost Estimate in $'000s (Dec. 2002)	Unfunded in $'000s (Dec. 2002)	Funded in $'000s (Dec. 2002)
I-205	SR-14 to Mill Plain	SR-14 and Mill Plain Ramp Separation (Phase 2)	$48,000	$48,000	$0
I-205	SR-500	WB SR-500 to SB I-205 Flyover Ramp (Phase 4)	$27,000	$27,000	$0
I-205	SR-500 to 83rd Street	Widen to 6 lanes (Phase 6)	$22,993	$22,993	$0
I-205	83rd St. to 134th St.	Widen to 6 lanes, widen 83rd St. Ramps	$45,240	$45,240	$0
State Routes					
SR-14	NW 6th Av (Camas) to 32nd St (Washougal)	Widen to 4 lanes	$21,000	$21,000	$0
SR-14	I-205 to 164th Av	Widen to 6 lanes	$28,800	$28,800	$0
SR-14	SR-500	New Interchange	$13,190	$13,190	$0
SR-14	32nd St./27th St. vicinity	New Interchange	$13,080	$13,080	$0
SR-500	at St John's Blvd	Construct Interchange	$19,000	$19,000	$0
SR-500	at 42nd Av	Grade Separation	$5,000	$5,000	$0
SR-500	at NE 112th Av	Construct Interchange	$25,000	$25,000	$0
SR-500	at SR-503	Construct Left-turn Flyover Ramp for W-bound SR-500	$10,009	$10,009	$0
SR-500	at 54th Av	Construct Interchange	$16,000	$16,000	$0
SR-502	Duluth to Battle Ground (W. City Limits)	Widen, 2 lanes each direction	$13,934	$13,934	$0
SR-502	Battle Ground (west city limits) to SR-503	Widen, 2 lanes each direction with center left turn lane	$7,600	$2,477	$5,123

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS
LIST OF "FISCALLY-CONSTRAINED" PROJECTS, 2002 TO 2023

Facility	Location	Improvements	Cost Estimate in $'000s (Dec. 2002)	Unfunded in $'000s (Dec. 2002)	Funded in $'000s (Dec. 2002)
Local Arterials					
Mill Plain Blvd.	SE 172nd Av to 192nd Av	Construct 2 lanes each direction with center left turn	$6,950	$6,950	$0
SE 1st St	SE 164th Av to 172nd Av	Widen, 2 lanes each direction with center left turn	$2,000	$2,000	$0
SE 1st St	SE 172nd Av to 192nd Av	Widen, 2 lanes each direction with center left turn	$8,500	$8,500	$0
SE 1st St/NW Lake Rd	SE 192nd Av to Leadbetter Pkwy.	Widen, 2 lanes each direction with center left turn	$11,300	$1,696	$9,605
NE 18th St	NE 87th Av to NE 97th Av	Construct on new alignment. 1 lane each direction with center left turn lanes	$6,800	$6,800	$0
NE 18th St	NE 97th Av to NE 138th Av	Widen to 5 lanes, 2 lanes each direction with center left turn lane and intersection improvements	$15,824	$13,136	$2,688
NE 18th St	NE 138th Av to NE 162nd Av	Widen to 5 lanes, 2 lanes each direction with center left turn lane and intersection improvements	$7,801	$7,801	$0
NE 28th St	NE 142nd Av to NE 162nd Av	Widen to include center left turn lane and intersection improvements	$3,997	$3,997	$0
Padden Parkway	at SR-503 (117th Av)	Construct diamond interchange	$17,046	$17,046	$0

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS
LIST OF "FISCALLY-CONSTRAINED" PROJECTS, 2002 TO 2023

Facility	Location	Improvements	Cost Estimate in $'000s (Dec. 2002)	Unfunded in $'000s (Dec. 2002)	Funded in $'000s (Dec. 2002)
NW 179th St	I-5 to NW 11th Av.	Widen, 2 lanes each direction (I-5 to NW 5th Av); 1 lane each direction (NW 5th to NW 11th Av); bike lanes; sidewalks	$12,115	$10,000	$2,115
NE 179th St	NE 10th Av to NE 50th Av	Widen, 2 lanes each direction	$16,300	$9,850	$6,450
NE 179th St	NE 50th Av to Cramer Rd	Widen to add center left turn lane; bike lanes; sidewalks	$10,720	$10,620	$100
NE 179th St	Cramer Rd to SR-503	New Roadway, 1 lane each direction	$5,000	$5,000	$0
Fruit Valley Rd	Whitney Rd. to NW 78th St.	Widen to add center left turn lane; bike lanes; sidewalks	$12,000	$11,519	$481
Main St	6th St to Mill Plain	Convert to 2-way traffic	$3,818	$3,818	$0
St John's	NE 50th Av to NE 72nd Av	Widen, 2 lanes each direction with center left turn; bike lanes; sidewalks	$12,400	$2,500	$9,900
NE 72nd Av	St. John's to south of NE 99th St	Widen to accommodate I-205 traffic	$6,900	$3,715	$3,185
NE 112th Av	Mill Plain/Chkalov to NE 28th St	Widen, 2 lanes each direction with CLT; intersection improvements	$7,300	$7,300	$0
NE 112th Av	at NE 49th St	Intersection Improvements	$400	$400	$0
SE 162nd Av	NE 39th St to Ward Rd	Widen, 2 lanes each direction with center left turn lane	$11,300	$3,375	$7,925
SE 192nd Av	SE 1st St to NE 18th St	Widen, 2 lanes each direction	$5,048	$5,048	$0

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS
LIST OF "FISCALLY-CONSTRAINED" PROJECTS, 2002 TO 2023

Facility	Location	Improvements	Cost Estimate in $'000s (Dec. 2002)	Unfunded in $'000s (Dec. 2002)	Funded in $'000s (Dec. 2002)
NE 18th St	NE 162nd to NE 192nd Av	Widen to 5 lanes, 2 lanes each direction with center left turn lane and intersection improvements (subject to 18th St Corridor Study results)	$9,800	$9,800	$0
NE 139th St	NE 20th Av to NE 10th Av	Over-crossing of I-5 freeway (part of the I-5/134th St. interchange re-design)	$10,000	$10,000	$0
NE 76th St	NE 94th Av to NE 107th Av	Widen, bike lanes and sidewalks	$5,700	$5,700	$0
Highway 99	NE 99th Street to NE 117th Street	Bike lane and sidewalk added to existing 2 lanes each direction w/turn lane	N/A	N/A	N/A
Highway 99	South RR Bridge to NE 63rd Street	2 lanes each direction, w/turn lane, bike lane and sidewalk	$3,800	$3,800	$0
Transit Projects					
C-TRAN	99th Street Park & Ride	Construct Park and Ride	$4,251	$0	$4,251
C-TRAN	7th Street Transit Facility	Improve 7th Street Transit Facility	$1,500	$1,350	$150
C-TRAN	65th Street C-TRAN Facility	Expand maintenance and operations facility	$30,000	$30,000	$0
C-TRAN	I-205/Padden Parkway	New Central County Transit Center	$11,900	$11,900	$0
C-TRAN	SR-14/164th Av.	Expand current facility	$2,900	$2,900	$0
C-TRAN	Van Mall	Expansion of current facility	$1,650	$1,650	$0
C-TRAN	I-5/219th St.	New Park and Ride Lot	$14,000	$14,000	$0
C-TRAN	18th St./138th Av.	Expand current facility	$14,200	$14,200	$0
C-TRAN	Washougal	New Washougal Park and Ride facility	$6,000	$6,000	$0

MTP 2002 UPDATE: DESIGNATED REGIONAL TRANSPORTATION SYSTEM PROJECTS LIST OF "FISCALLY-CONSTRAINED" PROJECTS, 2002 TO 2023					
Facility	**Location**	**Improvements**	**Cost Estimate in $'000s (Dec. 2002)**	**Unfunded in $'000s (Dec. 2002)**	**Funded in $'000s (Dec. 2002)**
Intelligent Transportation System (ITS)					
County Wide	Interstate, Highways, Arterials and Transit	ITS	$45,000	$42,100	$2,900
TOTAL			**$975,056**	**$917,449**	**$57,608**

The I-5 Transportation and Trade Partnership addressed bi-state transportation needs and published a list of recommendations in June 2002. The recommendations are incorporated into the Strategic Plan component of this MTP update but recommended projects are not yet included in the "fiscally-constrained" MTP (see Strategic Plan description in MTP Appendix C).

A Summary of Costs of transportation system needs is presented in Table 4-7 below.

Table 4-7: Projected Costs of MTP Transportation System Needs

PROJECTED COSTS OF MTP TRANSPORTATION SYSTEM NEEDS		
	COSTS	
Transportation System Component	**Annual Cost**	**MTP 21-YEARS (in Year 2002 $)**
HIGHWAYS		
Total Highway Maintenance and Preservation	$30,000,000	$630,000,000
Regional Highway and Transit Capital Costs	$3,000,000	$903,000,000
Transportation Demand Management	$2,000,000	$42,000,000
Transportation System Management	$2,000,000	$42,000,000
Pedestrian and Bicycle Projects	$4,000,000	$84,000,000
Sub-Total		**$1,701,000,000**
TRANSIT OPERATIONS		
Transit Operations	$30,000,000	**$630,000,000**
TOTAL		**$2,331,000,000**

CONSISTENCY BETWEEN MTP AND STATE SYSTEMS PLAN AND LOCAL PLANS

All recommended projects contained within the MTP are consistent with State and local plans. The *MTP* financial plan is required by the federal government to be "fiscally constrained". The MTP includes state projects identified in the State Highway System Plan, 2003-2022 (February, 2002). However, the State's Highway System Plan identifies transportation needs beyond the revenue levels currently available for regional transportation uses identified in this MTP.

REVENUES AND COSTS

ISTEA requires that the *MTP* be "fiscally constrained"; there must be a balance between forecast revenues and costs of identified transportation system improvements. With limited revenues available for funding transportation improvements, the most cost-effective transportation solutions must be identified and selected. The analysis of needs and revenues presented in local Growth Management Act (GMA) plans, the *2003-2022 State Highway System Plan*, and *Metropolitan Transportation Improvement Program (MTIP) 2002-2004* are used as the basis for its financial plan. Both state and local transportation planning processes are required to exercise fiscal responsibility in preparing transportation finance plans. The GMA requires that local jurisdictions prepare a Capital Facilities Plan (CFP) element that includes transportation projects.

In comparing Table 4-4 (revenues generated) with Table 4-7 (costs) it appears that Clark County will be able to meet funding needed for its transportation system. However, Clark County is a 'donor' region as the region collects more in transportation taxes and fees than it receives back in transportation revenues. Over the past ten years, 1990 to 1999, the Clark County region has generated $770.6 million in state and federal transportation revenues[2] and has received back only $536.2 million to use in funding transportation system improvements. This amounts to a ratio of 0.70 and a difference of $234.5 million over ten years. The Revenues Distributed data presented in Table 4-8 below anticipates a better return on the dollar to Clark County in the future.

Table 4-8: Projected Revenue Distributions to Clark County

PROJECTED REVENUE DISTRIBUTIONS TO CLARK COUNTY	
REVENUES DISTRIBUTED:	**MTP 21-YEARS (in Year 2002 $)**
Federal (80% return of generated revenues))	$399,000,000
State (77% return of generated revenues))	$861,000,000
Local (49% revenues used for regional projects)	$378,000,000
Transit Federal for Capital Equipment	$63,000,000
Sub-Total	**$1,701,000,000**
TRANSIT OPERATIONS Sales Tax, Fare Box Recovery, Interest**:**	$630,000,000

[2] From Motor Vehicle Fuel Tax, Motor Vehicle Licenses, Permits, Fees, Transportation Related MVET.

The financial analysis presented in this MTP assumes revenues and costs in 2002 dollars. This method has advantages in that the methodology is straightforward, but has drawbacks in that inflation is not considered in the analysis. However, the inflation factor has an impact on both the revenues and costs sides of the equation. On the revenues side, gas taxes do not keep pace with inflation. The $0.23/gallon fuel tax set in 1991 now generates about $.16/gallon in purchasing power due to inflationary construction costs. On the project costs side, the longer a project is deferred the more expensive it will be. Another problem that the transportation sector faces is that although the federal government authorizes transportation dollars at a certain level, the actual appropriation for their use is at a lower level.

In funding the transportation system, revenues have to be allocated to project or operating costs based on funding eligibility requirements. For example, the 18th Amendment to the Washington State Constitution dedicates motor fuel tax proceeds to "highway purposes". Also, projects and/or operating costs have to fit the revenue program rules. The funding of large highway construction projects, such as adding freeway lanes, improving intersections and constructing new freeway interchanges, almost always involves a mix of city, county, state and federal revenue sources which must be packaged together in order to move forward with a particular project.

The type of project and the jurisdiction who owns the roadway (interstate, state highway, local/regional arterial) are often good indicators for how the transportation project is funded. Roadway operations, maintenance and preservation are usually funded locally through an annual budget process. Projects that add system capacity, such as adding lanes on street arterials, state highways, or on the interstate system, will most likely involve multiple sources and may include various competitive grant programs.

FUNDING STRATEGIES

There are some strategies open to the region for seeking new revenue sources. A statewide funding measure, Referendum-51, which included provision for raising the rate of gas tax failed to gain a majority in November 2002. The concept of regionalism is also being discussed in Washington state to allow regions to raise funding for their own regional projects. State Senate Bill 6140 authorized the establishment of Regional Transportation Investment Districts. The introductory section of the bill states: "The state cannot by itself fund in a timely way many of the major capacity improvements required on highways of statewide significance…Timely construction and development of significant transportation improvement projects can best be achieved through enhanced funding options for governments at the county and regional level…". At this time, the regionalism legislation only provides this option for the counties in the Puget Sound area.

There is also need to provide for new revenue sources for transit if current service levels are to be maintained or if additional service is desired. In November 2002, the C-TRAN Board voted to pursue additional sales tax funding. The proposal is to go to voters in either November 2003 or 2004 and ask for an increase in the sales tax rate from 0.3% to either 0.6% or the maximum 0.9%.

As explained below Clark County is a 'donor' region as the region collects more in transportation taxes and fees than it receives back in transportation revenues. As a significant urban area in Washington State, this region can expect to continue as a 'donor' region but if the ratio of collections to distributions changes in Clark County's favor, this could have a significant impact on the ability to fund transportation system improvements in this region.

FISCAL CONSTRAINT AND THE MTP

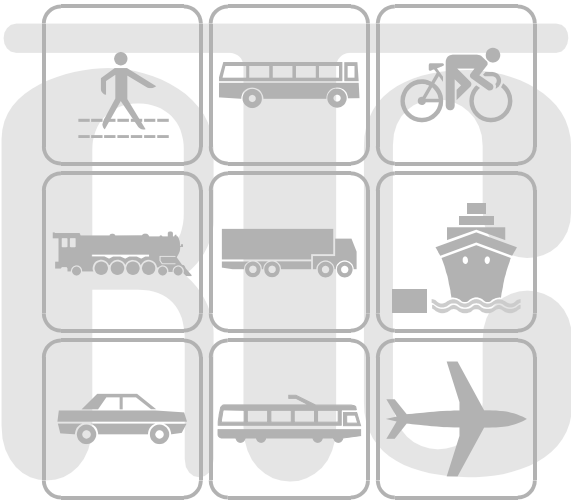
The MTP for Clark County represents a fiscally-constrained transportation Plan in that projected revenues appear to be available in the twenty-year time horizon to meet the estimated cost of designated regional transportation system projects[3] (in 2002 dollars) listed in Appendix A. The financial outlook can change if cost estimates for certain projects are increased and/or if projected revenues increase or decrease. The objective of making most efficient use of limited transportation dollars motivated RTC to conduct a 2001 review of the transportation project prioritization process that was first carried out in 1998. The rationale for the prioritization process was that if the region could agree on top priorities, medium term priorities and longer term priorities, then the region could advance those top priority projects for statewide competitive funding. It was felt that projects that have the top priority support of the whole region may be able to more successfully compete for funds. The process focussed largely on prioritization of regional highway capacity expansion projects. These are the type of projects for which dollars are most difficult to obtain because policy is to ensure the maintenance and preservation of the existing system before funds can be allocated to system expansion. The 2001 Prioritization Process is outlined in Chapter 5 of the MTP and the list of prioritized projects appears in the MTP Appendix A.

The Clark County region does have additional transportation needs beyond those improvements addressed in the "fiscally-constrained" MTP. Projects to meet these needs cannot be incorporated into the Plan at this time as there are insufficient revenues projected to be available for their construction and/or implementation. Some of these projects are outlined in the 2003-2022 Washington State Highway System Plan. Also, I-5 Partnership recommendations are incorporated into the MTP Strategic Plan included in the MTP Appendix.

The Clark County region is faced with addressing transportation revenue issues if the transportation demands of the region are to be met. It has been 11 years since any increase in the gas tax rate yet gas taxes do not keep pace with inflation. The public transportation system needs to find additional revenue sources to recoup the revenues lost when the MVET was repealed in 1999. The alternative is to face reduced levels of transit service in the region. 2003 marks the last year of the current federal Transportation Act. Funding levels in the new Act are not yet known. In addition to revenue issues, finance considerations have to account for cost estimates that may increase as the full extent of work and funding necessary to fulfill certain projects is realized.

---

[3] Regional projects include all state transportation facilities, principal arterials and some minor arterials. Local projects (remainder of the minor arterial system, collectors and local roads) are not included in the MTP's detailed fiscal analysis.



CHAPTER 5

SYSTEM IMPROVEMENT AND STRATEGY PLAN

OVERVIEW: DEVELOPMENT OF A BALANCED REGIONAL TRANSPORTATION SYSTEM

This chapter summarizes the solutions and strategies needed to provide an adequate level of regional mobility and accessibility over the next 20 years and to support the Growth Management Act land use goals for the region. A wide range of solutions and strategies are needed to meet regional travel demand. There are strategies to address the travel demand side as well as transportation system supply side, strategies to increase the efficiency of the existing regional transportation system as well as strategies to provide for capacity expansion to accommodate growth, solutions requiring physical construction and solutions requiring planning applications with consideration for multiple transportation modes. In developing a balanced regional transportation system it is not only capacity deficiencies that must be addressed but also preservation and maintenance of the existing regional transportation system, as well as plans to make for a safer regional transportation system for mobility of people and freight. All transportation modes are to be addressed. Development of a balanced regional transportation system with reduced dependence on the single occupant vehicle (SOV) relies on development of alternative modes of transportation, changed land use densities and patterns and/or changes in lifestyle. The chapter concludes with a map showing transportation system capacity expansion improvements included in the MTP.

MAINTENANCE OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

Of prime importance in the planning for the regional transportation system is the need to maintain the existing system. Maintenance addresses the day-to-day activities needed to keep the transportation system in good working order; daily operations that keep the system safe, clean, reliable and efficient. Such activities include incident response, filling potholes, repairing bridges, drainage ditches, guardrails, plowing snow, removing rocks, and efficiently operating traffic signals. The Washington State Department of Transportation (WSDOT) and local jurisdictions monitor the condition and operation of the existing system and program projects to maintain the system. The *MTP* supports the routine, regularly-scheduled and necessary maintenance work identified by local jurisdictions. The MTP supports maintenance being given high priority in the programming of transportation funds.

PRESERVATION OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

Preservation of the existing regional transportation system is also important to protect the heavy investments already made in the system. Preservation can prolong the life of the existing transportation system through such projects as repaving roads, rehabilitating bridges, seismic retrofit and rock fall protection. Preservation needs are identified through the Pavement Management System (PMS) and local needs analysis and the MTP is highly supportive of giving prime consideration to such project needs.

BRIDGE DEFICIENCIES

Maintenance and preservation projects required on bridges are identified through the Bridge Management System (BMS) managed by WSDOT. Some bridges on the Clark County highway system include: I-5 bridge crossings at the Columbia River, Salmon Creek, NE 129th Street, NE 134th Street, East Fork Lewis River and Lewis River; SR-14 crossings at West Camas Slough and Lawton Creek; SR-501 crossing of the rail lines in Vancouver, SR-503 crossings of Cedar Creek,

Salmon Creek, Chelatchie Creek and the Lewis River at Yale; the La Center Bridge and Heisson Bridge.

SAFETY DEFICIENCIES

Accidents, their number, location, and type, are monitored by WSDOT and local jurisdictions and if there is deemed to be a safety deficiency then remedial measures are considered and corrective action taken. The *MTP* supports regional system safety projects identified through the ISTEA-required Safety Management System (SMS) and local plans and programs to correct safety deficiencies on the regional transportation system.

Measures to improve the safety and security of the transit system for transit passengers and employees have been implemented by C-TRAN in keeping with Federal Transit Administration's Strategic Plan (see Chapter 3).

ECONOMIC DEVELOPMENT AND FREIGHT TRANSPORTATION

The prosperity of a region is dependent on the provision of transportation infrastructure to support economic development. Economic development emerged as the prime evaluation criteria for prioritizing MTP projects in the MTP Regional System Improvements and Prioritization Process. Economic development stimulus is also a significant focus in the update to the Comprehensive Growth Management Plan for Clark County now underway.

FREIGHT TRANSPORTATION

Highway freight transportation needs were addressed in a regional freight transportation study undertaken during 1993 to identify regional freight transportation issues and to investigate data availability and needs regarding freight transportation. The results of the study are documented in *Southwest Washington Regional Freight Transportation Study, Final Report* (December, 1993; RTC/JHK & Associates). The Study noted the shortage of data relating to freight transportation. The report also noted the need for improved access to the Port of Vancouver via the Mill Plain Extension. The Mill Plain Extension project was subsequently completed in 2000. There is need for data relating to transportation of freight through the region, freight delivery within the region and freight origins and destinations. The WSDOT-developed Intermodal Management System (IMS) provides input on regional intermodal needs. The community has noted a concern about the transportation of hazardous materials on the transportation system. WSDOT adopted a Statewide Freight and Goods Transportation System (FGTS) in 1995 that categorizes highways and local roads according to the tonnage of freight they carry. The FGTS was updated prior to the 1998 legislative session. Washington State also created the Freight Mobility Strategic Investment Board (FMSIB) with a mission to create a comprehensive and coordinated state program to facilitate freight movement between and among local, national and international markets which enhances trade opportunities. The Board is also charged with finding solutions that lessen the impact of the movement of freight on local communities. The Board will propose policies, projects, corridors and funding to the legislature to promote strategic investments in a statewide freight mobility transportation system.

FREIGHT RAIL

In 1990 the Washington State Legislature defined the purpose of the state's freight rail program and planning activities and established a comprehensive freight rail policy. They directed WSDOT to maintain and improve the freight rail system in the state through better freight rail planning, better cooperation to preserve rail lines, and increased financial assistance from the state. In 1995 the Legislature broadened the focus of the WSDOT Freight Rail Program to include not only light density lines and rail corridor preservation, but also mainline congestion and port access. The *Washington State Freight Rail Plan* provides detailed information about the state rail system, state freight rail programs and projects, rail line analysis, and funding priorities for the future.

A study, commissioned by the Port of Portland to support Metro's Region 2040 planning activities, suggests that freight rail transportation will increase significantly in the region during the MTP planning horizon. More recently freight rail needs in the Portland-Vancouver region were addressed as part of the I-5 Transportation and Trade Partnership. The Partnership concluded that several low-to-medium cost solutions can significantly improve existing rail capacity. One such "incremental improvement" is a proposed two-main track bypass around BNSF's Vancouver Yard. The Portland-Vancouver region "incremental improvements" are sufficient to address capacity needs for approximately 5 to 10 years given a growth rate of 1.625% to 3.25% per year. Beyond this additional improvements will be required that will require further study to fully identify. WSDOT has proposed the Vancouver Rail Project that would add new Vancouver Yard rail bypass tracks and improve or close the West 39th Street at-grade crossing. The intent of the Vancouver Rail Project would be to increase safety, reduce rail congestion, and improve the on-time performance of Amtrak's passenger rail service.

MARINE FREIGHT

Freight also travels to and from our region via the Columbia River. As noted in Chapter 3 (page 3-15) the primary marine port in Clark County is the Port of Vancouver, located on the Columbia River. The Port emphasizes the importance of channel depth to its activities. The current channel depth limits service from ocean-going vessels, making it difficult for shippers to transport goods cost-effectively, especially if the vessels cannot be loaded to maximum capacity to sail out of the Columbia River. A $188 million project involves deepening the 40-foot navigation channel to 43 feet for 106 miles between the mouth of the Columbia River to the Port of Vancouver. A deeper channel will allow larger ships to import and export cargo more efficiently that will benefit trade. Nearly 40 percent of the nation's wheat is exported down the Columbia River, affecting farmers in the region and across the nation.

AIR FREIGHT

As noted in Chapter 3 (page 3-16), the Clark County region relies on access to the Portland International Airport in Oregon for air freight needs.

NON-MOTORIZED MODES

The Regional Transportation Plan supports the development of pedestrian and bikeway facilities to access the transit system and for use as alternative transportation modes. Reduced reliance on automobiles is largely dependent on the development of adequate sidewalks and bikeways to access activity centers and to allow for intermodal connections in use of the transit system. The

development of non-motorized transportation modes is a strategy that will maximize the capacity of the existing transportation system. Sidewalk and bicycle path/lane projects are most appropriately identified at the local level and can be prioritized through the regional transportation programming program if in competition for regional funding. Local jurisdictions within Clark County are giving more emphasis than in previous programs to non-motorized projects in efforts to redress the balance in transportation system development from highway and auto dependence to provision of alternative modes.

BICYCLE TRANSPORTATION

Clark County has convened a Bicycle Advisory Committee to identify and prioritize needed bike projects. In addition, jurisdictions in Clark County have addressed the need for bicycle and pedestrian projects in their Comprehensive Growth Management Plans and in the *Clark County Trails and Bikeway System Plan* (December 1992; Clark County). Notable pedestrian and bicycle projects in Clark County include completion of the City of Vancouver's Columbia River Waterfront Trail, the Discovery Trail, the Columbia River/Evergreen Highway Trail, Hazel Dell Avenue bike lanes and SE 164th Avenue bike lanes. Also of regional significance is improvement bicycle facilities which will improve access to transit facilities. Bike racks are already provided on C-TRAN fixed-route buses and bike lockers are provided at C-TRAN Transit Centers and Park and Rides. Clark County produces a map showing bicycle facilities and routes throughout the County. The most recent version of "Cycling Clark County" was published in July 2000.

PEDESTRIAN TRANSPORTATION

Local jurisdictions program projects to provide for better connectivity in the pedestrian walkways throughout Clark County. The City of Vancouver has also embarked on a program to install curb cuts for better sidewalk accessibility. Pedestrian facilities are also important for access to transit.

Both bicycle and pedestrian facilities are integral design elements in highway projects. As roads are upgraded throughout the County then bicycle and sidewalks are added.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

The MTP supports TDM as a strategy to maximize the efficiency of the existing transportation system. Transportation demand management strategies to reduce vehicle trips on the regional transportation system can include use of transit, carpooling, vanpooling, working of flexi-hours and/or compressed work week, and working from home with use of communications technology, known as telecommuting. A list of many TDM strategies is outlined in Table 5-1. Such TDM strategies will become increasingly important as travel demand in the region continues to grow and transportation investments do not keep pace. TDM strategies can help to preserve transportation system capacity and RTC Board direction is to promote the use of such strategies throughout the Clark County region.

Local jurisdictions have implemented the Washington State **Commute Trip Reduction** law passed by the Washington State legislature in 1991 as a TDM tool. The law requires that local jurisdictions with major employers adopt a Commute Trip Reduction Ordinance and that employers who have 100 or more employees arriving at work between 6 a.m. and 9 a.m. should establish a commute trip reduction program for their employees. All affected Clark County jurisdictions have adopted CTR ordinances. The Law's established goals were amended by the 1997 state legislature. The defined

goals were to have major employers reduce commute trips from the 1993 base year by 15% by 1995 or two years after program implementation, 20% by 1997 or four years after program implementation, 25% by 1999 or six years after program implementation and to achieve 35% reduction by 2005 or twelve years after program implementation. When new employers are brought into the program, the goals are a reduction of 15% after two years, 20% after four years, 25% after 6 years, and 35% after twelve years. Currently, there are fifty affected employers in Clark County. Another seven employers participate voluntarily in the program. The 1999 statewide CTR survey indicates that the number of employees at participating worksites totaled 19,576 in 1993 and increased to 22,495 in 1999.

A list of potential strategies for implementation in Clark County is contained in Appendix A2 of the MTP; *"MTP Strategies: Projects to Preserve System Capacity, including Transportation Demand Management (TDM) Strategies"*. Monitoring of the effectiveness of TDM is necessary to provide input to the regional travel forecasting modeling process.

Table 5-1: Outline of Transportation Demand Management Strategies

Outline of Transportation Demand Management Strategies	
Type	**Description**
Education	Transport agencies, professionals and the public consider and understand TDM
TDM Marketing	Provide public information and encouragement programs
Commute Trip Reduction (CTR) Programs	Employee commute trip reduction programs
TMAs	Transportation Management Associations provide trip reduction services in a commercial or employment center
Manage Special Transport Activities	Manage special types of transport and special events for efficiency
Financial Planning	TDM competes against capacity expansion in terms of cost effectiveness
Transportation Allowance	Provide commuter with a transportation allowance rather than free parking
Transit Improvements	Improved public transit service
Park and Ride	Parking at urban-fringe transit stops
Vanpool Programs	Promotion/organization of vanpools
Rideshare Programs	Rideshare promotion and matching
HOV Preference	Transit and rideshare lanes and other priority measures
Free Transit Zones	Free transit in commercial centers
Bicycle Improvements	Improved bicycle planning and facilities
Intermodal Bike	Bike lockers at transit stops, bike racks on transit vehicles
Telecommuting	Working at home to avoid commute trips
Alternative Work Hours	Flex time and alternative work weeks (such as 4 10-hour days)
Guaranteed Ride Home	Provide a limited number of free rides home for transit and rideshare commuters
Security	Address security concerns of rideshare, transit, cycle and pedestrian commuters
Parking Pricing	Charge users directly for parking. Charge by the hour or day rather than the month
Full Cost Pricing	Pricing reforms to encourage efficient transport

Outline of Transportation Demand Management Strategies	
Type	**Description**
Road Pricing	Road tolls and congestion pricing
Mileage Fees	Per-mile charges for road use and/or distance-based vehicle insurance and registration fees
Fuel Taxes	Increase federal and state fuel taxes
Vehicle Restrictions	Prohibit vehicle use in specific areas
Cash Out Parking	Provide employees who do not drive the cash equivalent of parking subsidies
Reduce Parking Requirements	Reduce parking requirements in zoning laws
Preferential Parking	Preferential parking for rideshare vehicles
Vehicle Rentals	Encourage carshare cooperatives and neighborhood vehicle rentals
Land use Reforms	Higher density, mixed use, growth management
Neotraditional Planning	Develop neighborhoods that encourage walking bicycling and transit use
Traffic Calming	Use strategies to reduce vehicle traffic speeds when appropriate
Monitor TDM	Perform surveys and other monitoring of TDM program effectiveness

The I-5 Partnership in 2002 concluded that Transportation Demand Management (TDM) and Transportation System Management (TSM) are essential strategies for improving our mobility. TDM is about reducing auto trips, shortening some, eliminating others and making our transportation system more efficient. Costs and effectiveness for the most promising TDM/TSM actions were not quantified as part of the I-5 Partnership due to the interrelated nature of the activities. More planning for TDM implementation is likely to be carried out through 2002/2003.

A new TDM strategy was implemented in the region in 2002. CarpoolMatchNW.org provides a secure, online matching service that allows people in Clark County, Portland and Salem to find others who are interested in sharing a ride to work.

TRANSPORTATION SYSTEM MANAGEMENT (TSM)

TSM is also a strategy to maximize the efficiency of the existing transportation system. In 1993, a study to investigate the feasibility of various transportation system management strategies was conducted by ODOT. The ODOT Advanced Transportation Management System (ATMS) study was coordinated with WSDOT and included analysis of traffic surveillance, traffic control and traveler information needs in the I-5, I-205, SR-14 and SR-500 corridors. TSM measures include a wide range of strategies, most of which are ITS related to an intelligent transportation system. These include an incident response program, increased signage to alert motorists of travel conditions, ramp metering, improved communication means, Intelligent Vehicle/Highway System (IVHS) projects, and traffic signal interconnects to improve the efficiency of operation of the regional transportation system. Other TSM elements include minor capital upgrades such as channelization of traffic at intersections. The need for ramp metering on some of the interchange ramps, with greatest need in the I-5 corridor, has been identified in the WSDOT Systems Plan component of the *Statewide Multimodal Transportation Plan*.

Like TSM, ITS is also part of the transportation tool kit to better manage the transportation system. The key difference is the ITS uses real time information to integrate and manage conventional

transportation system components such as roads, transit, ramp meters, traffic signals, and managing incidents for more efficient operations and performance. ITS uses advanced technology and information to improve mobility and productivity and enhance safety on the transportation system.

The Vancouver Area Smart Trek program was initiated in 1999 and completed in January 2001. It was developed through a partnership of transportation agencies working together to plan, develop and implement an intelligent transportation system for the Clark County region to improve the operation, safety, and efficiency of the transportation system. This effort is being coordinated with the Oregon Department of Transportation to ensure that ITS strategies throughout the bi-state region are integrated and complementary. There is also a VAST Steering Committee made up of the Southwest Washington Regional Transportation Council, the City of Vancouver, the Washington State Department of Transportation, C-TRAN, Clark County, the City of Camas, and The Oregon Department Of Transportation to facilitate the coordination, planning, funding, and deployment of ITS projects. This committee will promote the integration of the projects, the communications system, and the operation of ITS system elements. The VAST Program contains the following seven initiatives that, together, are intended to improve the efficiency of the transportation system:

Communications Infrastructure - Communications infrastructure is the backbone for all ITS deployment.

Traveler Information - Traveler information provides travelers with the ability to make an intelligent choice regarding mode, route and travel time through a wide range of distribution methods. This includes, but is not limited to websites, variable message signs, kiosks, television, radio, phone, and highway advisory radio. It uses both static and real-time information.

Incident Management - The freeway and arterial incident management plan covers operation of any function, device or system that is dedicated to the response to or monitoring of incidents on arterials and freeways. Early detection and a coordinated effort to respond to and clear roadway incidents can greatly reduce their impact on congestion and delay.

Transportation Management - The freeway and arterial transportation management plan covers the operation of all functions, devices and systems installed or developed for managing freeways and arterials. It includes the implementation of transportation management centers for the freeway and arterial network for the coordinated management of the transportation system.

Transit Priority - Public transit plays an important role in passenger transportation in Clark County. The C-TRAN bus system carries over six million passengers per year on 29 routes. Giving priority for buses at traffic signals can make transit more attractive to travelers by helping make bus travel times shorter and more consistent.

Transit Operation and Management - The two key components of transit operation and management are: (1) transit traveler information systems and (2) transit agency operations and management. Transit traveler information systems can deliver real-time bus arrival information to transit patrons using changeable message signs, the internet and other communication devices. Transit operation and management tools use advanced technology to help transit providers increase efficiency and improve quality of service provided to the public.

The VAST Implementation Plan is a twenty-year project list developed around the initiatives above and is based on a regional ITS architecture, or blueprint, developed in cooperation with the ITS

stakeholders. The ITS architecture provides agencies with a high level physical representation of the important interfaces and major components of the system to ensure an integrated system. It provides a high-level structure around the processes, data flows, and connections between the ITS elements.

The Implementation Plan is consistent with the architecture and contains a description of each project, its priority, estimated costs and benefits and its relationship with other projects in the plan. There is also an Implementation Schedule for the plan that lists in general short, medium, and long-term time frames. The short-term projects include interconnected and adaptive signal control, freeway cameras and roadway detection, variable message signs, a traveler information system, and a traffic management center.

TRANSIT

Transit system improvements are supported in the MTP. The transit transportation mode can support the land use goals established in the GMA Plans that envision denser developments in growth centers and in primary transportation corridors. Transit is also important in meeting the mobility needs of the transit dependent; those unable to drive automobiles because of age, infirmity, disability or low income. C-TRAN outlines a program for development of the transit system in their publication *C-TRAN Transit Development Plan (TDP)* which the *MTP* supports. The latest version of C-TRAN TDP covers the years 2002 to 2008. Future development of the transit system will be shaped largely by funding capability. The transit system may also be shaped by future efforts to develop a light rail loop within Clark County as recommended by the I-5 Partnership in 2002 (see MTP Strategic Plan in the MTP Appendix. Land uses established in the Growth Management Plans of local jurisdictions will also influence the development of the transit system. Transit oriented development that allows for easy access to transit service can provide for the optimal transit development scenario to reinforce likelihood of success for transit service. C-TRAN relies on its Level of Service Indicators matrix (see figure 3-18, Chapter 3) in determining the feasibility of transit service expansion. C-TRAN also outlines plans for future transit service in its publication*, C-TRAN Model Transit Sub-Element and Capital Facilities Plan* (C-TRAN, May 1994, Revised). Over the MTP planning period a 30% increase in annual transit revenue service hours is forecast from 260,482 service hours in 2000 to about 339,000 service hours by 2023; a growth rate that averages 1.15% growth per year and does not keep up with the forecast population growth rate. With the loss of Motor Vehicle Excise Tax (MVET) as a revenue source for transit system operations beginning in 2000, expansion of service hours is jeopardized unless new revenues are forthcoming. Expansion of service hours can only take place with increase in funding.

JOBS ACCESS/REVERSE COMMUTE (JARC) AND WELFARE TO WORK

The RTC Board of Directors adopted the Area-Wide Jobs Access and Reverse Commute (JARC) Plan in August 2002. JARC grant funding will help C-TRAN to provide transportation to workers in the high tech industrial area of east county.

Transportation is one of the main challenges facing people making the transition from welfare to work. In support of that transition, the U.S. Department of Transportation in cooperation in other federal social service agencies is encouraging communities to plan and implement seamless and integrated transportation systems and services that address the numerous welfare to work transportation challenges.

C-TRAN has taken the lead among transportation providers in coordinating with the region's social service providers, including Washington Department of Social and Health Services and the Clark County Human Services Council, to develop a regional welfare to work transportation plan and pursue program grant funding. Program elements of the welfare to work transportation plan may include: supporting and developing services such as connector services to mass transit; vanpools; sharing buses with elderly and youth programs; coordinated human services and public transit transportation resources; employer provided transportation; Geographic Information System (GIS) based ride matching; guaranteed ride home programs; and public-private transportation partnerships. Some of these programs currently exist, and the outcome of the welfare to work plan will encourage coordinating the services into a seamless system to address the transportation problems for the region's welfare recipients and other low income persons.

HIGH CAPACITY TRANSPORTATION (HCT)

The development of HCT is supported in the MTP to increase the transit carrying capacity of principal transit routes as a strategy to avoid having to provide increased highway capacity (refer to Transportation Management Areas (TMA's) and Congestion Management System (CMS) section below). In the MTP segments of the I-5 corridor, the I-205 corridor and the SR-500 corridor are designated as High Capacity Transportation (HCT) Corridors.

The history of Light Rail Transit (LRT) planning in the region includes study of high capacity transit options advanced in the South/North High Capacity Transit Corridor Study. A *Tier I Recommendation Report*, published by Metro, September 14, 1994, recommended that Light Rail Transit be developed in the I-5 corridor to Clark County with Phase I terminating in the vicinity of NE 99th Street and Phase II terminating in the vicinity of NE 134th Street. On July 19, 1994, Metro released the *South North Transit Corridor Study, Draft Briefing Document, Tier I Technical Summary Report* to support the South/North HCT Corridor study recommendations. In 1995 the Clark County voters voted no to funding LRT development. A Draft Environmental Impact Statement (DEIS) was prepared through a coordinated process led by Metro, Portland with a northern terminus in the vicinity of Clark College. The purpose of the DEIS is to identify and disclose anticipated impacts of a potential light rail line from the Clackamas Town Center area to Clark County compared to a "No-build" alternative. Alternatives and options were described in detail in the *South/North Corridor Project Draft Environmental Impact Statement* (FTA/Metro, February 1998). FTA/Metro issued a South/North Corridor Project Supplemental Draft Environmental Impact Statement in April 1999. The construction of the I-5 MAX line to the Expo Center in Oregon is now underway.

The I-5 Partnership recommends the development of a LRT Loop within Clark County to provide for internal Clark County trips as well as cross-river trips (see MTP Strategic Plan, MTP Appendix).

COMMUTER RAIL/RAIL CAPACITY ISSUES

RTC completed the Commuter Rail Feasibility Study in May 1999. The purpose of the Study was to determine if commuter rail has the potential to serve as a low cost option to improve bi-state travel mobility by making more effective use of the existing Burlington Northern Santa Fe rail transportation corridor between Vancouver and Portland. Commuter rail provides passenger service by shared use of rail tracks with freight operators and other rail users. The Study examined critical issues in the implementation of commuter rail and included: schedule reliability, operations, the

impact of shared use with freight and inter city passenger needs, capital and operating costs, and ridership.

The Study concluded that, in a five year horizon, moderate levels of commuter rail service could be implemented between Vancouver and Portland with minor rail capacity improvements. By 2013, however, any level of commuter rail service would require a dedicated passenger track to accommodate the commuter service and the expected increases in freight and intercity passenger trains. The findings of this feasibility study indicate that a commuter rail system should not be pursued unless it is determined that a major rail investment necessary to support future intercity passenger and freight rail growth in the corridor is to be made. This rail corridor is severely constrained in terms of how much growth it can support without major capital investment. The commuter rail operations added a relatively small number of trips to the system but enough to trigger the requirement for a dedicated passenger alignment. Current plans for intercity passenger and freight growth could trigger the need for major capacity improvements before the 2018 horizon year. The results of this Study have created the awareness of the need to initiate regional discussion about long-term rail capacity issues affecting freight and passenger needs. The capacity constraints in this corridor need to be discussed further, not only in the context of the commuter rail system concept, but also as they relate to the rapid growth of rail freight traffic in the corridor and plans for greatly increased intercity passenger service.

In 2002 the question of commuter rail was again revisited as part of the I-5 Partnership. Findings included that commuter rail service cannot operate effectively on the freight rail network over the next 10 to 20 years, even with the identified incremental and additional network improvements commuter rail service could be instituted only on a separated passenger rail-only network. A separate passenger rail-only high speed rail system would improve intercity passenger rail service and could drive the feasibility of commuter rail. The cost of separated passenger network could be of the order of magnitude of $1.5 to $1.7 billion.

TRANSPORTATION MANAGEMENT AREAS (TMA'S)

The Clark County region has been designated as a Transportation Management Area under ISTEA and TEA-21 because the region has a population greater than 200,000. In addition to meeting all the specified metropolitan transportation planning process requirements, MPO's representing Transportation Management Areas must meet additional requirements. In TMAs, the MPO must have a **Congestion Management System** that provides for the effective management of new and existing facilities through the use of travel demand reduction and operational management strategies. In TMAs, such as the Clark County region, which have been classified as non-attainment for ozone and/or carbon monoxide, highway capacity expansion projects that result in a significant increase in single occupancy vehicles can only be programmed if consistent with the Congestion Management System. The CMS acts as the process for identifying deficient regional travel corridors, for evaluating non-SOV alternatives to address congestion, and for managing the performance of the system.

CONGESTION MANAGEMENT SYSTEM (CMS)

The Congestion Management System (CMS) for Clark County was developed and operational by the deadline of October 1, 1995. The CMS identifies projects and programs for consideration in the metropolitan planning process. In November 1993, RTC released the *Intermodal Surface*

Transportation Efficiency Act, Transportation Management Systems for: Traffic Congestion, Public Transportation Facilities and Equipment, Intermodal Transportation Facilities and System, Phase I, Final Report. In October 1994, the *CMS Phase I Compliance Statement and Work Plan* was issued. Elements of the CMS include the identified CMS network performance measures and data monitoring plan as described in the two reports mentioned above. The CMS network is a sub-set of the regional transportation system; a set of 21 transportation corridors to be monitored and evaluated on an ongoing basis as part of the CMS. The *RTC Board adopted the Southwest Washington ISTEA Transportation Management Systems, Phase II Final Report, which contains the CMS,* on May 2, 1995 (RTC Board Resolution 05-95-14).

The CMS is intended to be an evaluation tool for monitoring traffic congestion and for identifying improvement strategies. The CMS allows for the systematic monitoring of performance, identification of deficiencies, and the evaluation and recommendation of strategies. The evaluation becomes a part of MTP development. Performance of the CMS network is monitored on an annual basis as new traffic volume data is available.

The CMS identifies a set of strategies that address regional congestion problems for consideration within the MTP process. As part of this process, the CMS strategies are weighed against other MTP goals and objectives. The recommendation of a strategy within the CMS to manage traffic congestion does not mean automatic implementation and incorporation into the MTP. It is recognized that selecting project priorities involves the consideration of many factors, of which congestion relief is just one.

ENVIRONMENTAL ISSUES

AIR QUALITY

The Southwest Clean Air Agency (SWCAA) has developed, as supplements to the State Implementation Plan, two Maintenance Plans; 1) for Carbon Monoxide (CO), and 2) for Ozone (O_3). In October, 1996 the CO Maintenance Plan and in April 1997 the Environmental Protection Agency (EPA) approved the Ozone Maintenance Plan. Mobile source strategies contained in the Maintenance Plans were endorsed for implementation by the RTC Board of Directors (Resolution 02-96-04). Prior to this the Vancouver region was classified as a 'moderate' non-attainment area for carbon monoxide air pollutants and a 'marginal' non-attainment area for ozone. Mobile emissions are a significant source of the region's air quality problems. As a result, transportation planning and project programming cannot occur without consideration for air quality impacts.

Mobile source emissions can be minimized through increased use of non-motorized transportation modes, through increased transit use, through transportation systems management measures (such as inter-connecting traffic signals and enhanced timing of signals) and travel demand management techniques (such as work flex-time, parking charges, carpooling and vanpooling programs); all supported by the MTP. Mobile emissions can also be reduced through technology-based transportation command and control measures, such as enhanced emissions testing (I/M) programs, expansion of I/M and fuel requirements. These types of strategies are called transportation control measures (TCM's).

RTC worked with Washington State Department of Ecology (DOE) on development of methodology for mobile source emissions analysis and used the regional travel model data to develop mobile

source emissions inventories. Transportation strategies identified in the SIP for the Vancouver Air Quality Maintenance Area include:

- expanded transit service
- an emissions testing (I/M) program for the area of Clark County within the Air Quality Maintenance Area (AQMA).

These strategies are implemented in efforts to maintain National Ambient Air Quality Standards (NAAQS).

In the Maintenance Plans an emissions "budget" is established for all sources of emissions that are not to be exceeded. This budget has allocated allowable emissions from mobile, area, and point sources. In order to demonstrate that emissions stay within the budget during the maintenance period, the Maintenance Plans identify emission control measures for each of the three sources and these must be implemented during the ten-year period. The range of strategies in the Maintenance Plan includes transportation control measures to limit mobile source emissions. If the budget is exceeded, additional contingency control measures must be implemented to lessen the emissions.

Both the MTP and TIP undergo air quality conformity analysis to demonstrate that they are within the mobile emissions budget contained in the Maintenance Plans before they are adopted. Projects can only be programmed in the TIP if they come from a conforming *MTP*. A determination of conformity of the *Metropolitan Transportation Plan* with the federal Clean Air Act, as amended in 1990, and the Washington Clean Air Act can be found in Appendix A of this document. Conformity with the Clean Air Act is also addressed in the metropolitan Transportation Improvement Program for the Clark County region. At the project level, non-exempt transportation projects have to undergo conformity analysis to show they meet federal and state air quality standards before completion of the design phase.

WATER QUALITY

Transportation projects must be mindful of water quality impacts. Water quality is a significant issue in the Pacific Northwest. Transportation projects often include measures to mitigate for the construction of impervious surfaces. Bioswales and street trees are becoming part of the design for certain transportation projects. Another issue that relates to water quality is the listing of certain Pacific salmon species under the Endangered Species Act.

MTP REGIONAL SYSTEM IMPROVEMENTS AND PRIORITIZATION PROCESS

Federal and state legislation, together with citizen input, has prompted the identification and implementation of alternative transportation solutions. Alternative solutions provide a way to avoid increasing capacity of the highway system through road widening projects. The MTP provides for strategies and solutions to meet regional travel demand and to develop a balanced regional transportation system over the 20-year planning period. Figure 5-1 is a map showing identified capacity improvements on the regional transportation system. The map shows the location of highway capacity expansion projects identified as needed due to safety and/or level of service issues. Limited transit route expansion is marked on Figure 3-3, *Designated Regional Transportation System,* in Chapter 3. Appendix A provides a list of needed improvements, both on and off the regional transportation system, which have been assumed in the regional travel forecasting model

process for MTP development and its accompanying air quality conformity analysis. The list focuses on system expansion projects for it is these that are most readily incorporated into the regional travel forecasting model and their impacts measured. The MTP Appendix also outlines the wide array of transportation system improvements, which will contribute to the development of a balanced regional transportation system. Even with the extensive list of transportation improvements, increased congestion can be expected on Clark County's transportation system by the year 2023. In many of the transportation corridors, further system expansion through widening of existing highways will not be feasible. Therefore, it is imperative that this region continue to develop a more balanced transportation system to encourage use of alternative transportation modes to the Single Occupant Vehicle.

Following adoption of the MTP for Clark County in December 1997, a prioritization process was initiated as a result of concerns that funding for transportation "mobility" improvements is limited compared with growing needs. The 1997 process was described in the RTC technical report, *Metropolitan Transportation Plan for Clark County, Prioritization of MTP Projects (RTC, October, 1998. RTC Board Resolution 10-98-16).* A prioritization process helps the region to make most effective use of limited transportation funding to meet transportation system improvement needs.

In December 2001 the RTC Board again reviewed regional priorities. "Mobility" type improvements were again the prime focus of the prioritization process as these are the projects that the region finds increasingly difficult to fund after maintenance, preservation and safety needs are taken care of. In a rapidly growing, urbanizing region such as Clark County there is need for significant investment in "mobility" projects to complete the arterial street system and to improve the design standard of facilities to cope with urban traffic levels. It is recognized that Transportation System Management and Transportation Demand Management strategies can contribute toward system capacity preservation and are considered in the prioritization process (refer to Appendix A2 of the MTP; *"MTP Strategies: Projects to Preserve System Capacity, including Transportation Demand Management (TDM) Strategies"*. It is acknowledged that all of the projects evaluated in the MTP prioritization process are needed within the 20-year horizon of the Plan to attain reasonable transportation system performance. However, with limited funding availability, it is prudent to reach regional consensus on the highest priorities.

The prioritization process takes a strategic systems approach to determine transportation needs. Steps in the process for prioritization of regional transportation projects include: 1) Development of a shared understanding of transportation system needs through review of existing and future transportation system performance, 2) Review major transportation policies governing regional transportation system development, 3) Agree on key policy principles for project prioritization, 4) Establish criteria for project evaluation, 5) Initial evaluation of projects based on criteria (existing growth management land use plans, growth forecasts and results from the regional travel forecasting model are used as the basis for needs evaluation), 6) Re-evaluate projects (based on iterative performance analysis), 7) Consider project staging, finance and priority level, and 8) Recommendation of MTP regional priority transportation projects.

The following key policy issues again emerged in 2001 as the most important to emphasize in terms of project prioritization: 1) Economic Development, 2) Land Use and Transportation System Performance, 3) Transportation Demand Management (TDM), 4) Funding and 5) Bi-state Transportation Strategy. Economic development is the prime criteria for project prioritization. The results of the 2001 prioritization process is provided in Table A-3 in Appendix A-1.

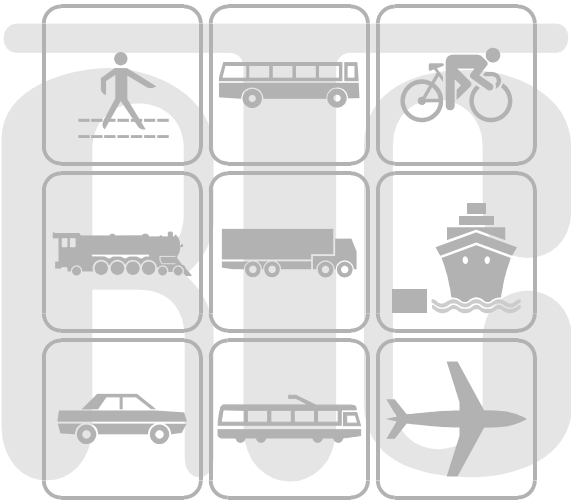
The project prioritization process is dynamic and project priorities will be reviewed periodically to consider emerging trends and results and recommendations from ongoing transportation studies. Recent and ongoing studies are listed at the back of the MTP. The list of highest priority projects will not constitute the final determination to actually fund the projects. The funding and phasing decisions are carried out during the Metropolitan Transportation Improvement Program (MTIP) development process. Transportation improvements require programming of funding which is carried out in the Metropolitan Transportation Improvement Program (MTIP) for the metropolitan area. It is in the regional MTIP that federal funds are programmed. Projects which use local funding are programmed in the local Transportation Improvement Programs, developed each year by individual local jurisdictions.

BI-STATE TRANSPORTATION

PORTLAND-VANCOUVER I-5 TRANSPORTATION AND TRADE PARTNERSHIP

The Portland-Vancouver I-5 Transportation and Trade Partnership study concluded in 2002. Key policy recommendations are incorporated into the planning process and projects are included in the MTP Strategic Plan (see Appendix B).

Figure 5-1: MTP Regional System Improvements



CHAPTER 6

PERFORMANCE MONITORING

The transportation planning process requires that monitoring of system performance take place. Several elements of system monitoring activities are described below.

GMA AND CONCURRENCY MANAGEMENT

Monitoring of the regional transportation system's performance is an ongoing activity for RTC. The GMA-required Concurrency Management System necessitates monitoring of transportation system performance to measure its performance against established Level of Service standards. Requests for future development have to be considered in light of the established Levels of Service for transportation facilities. If Level of Service standards cannot be met, then development can be halted or mitigation measures required. Concurrency management necessitates not only monitoring of transportation system performance but also requires tracking of development in the region and update of transportation modeling tools to ensure accuracy of data.

REGIONAL TRAVEL FORECASTING MODEL

RTC uses a regional travel forecast model to forecast future transportation needs. Performance measures, in terms of speed, vehicle miles traveled, lane miles of congestion and vehicle hours of delay are calculated within the model. The performance measures were reported on in Chapter 3 (Tables 3-13 through 3-16).

ISTEA CONGESTION MANAGEMENT SYSTEM

ISTEA required the development of a Congestion Management System (CMS) which is used as a tool for monitoring traffic congestion and for identifying improvement strategies to alleviate the congestion. The *Southwest Washington ISTEA Transportation Management Systems, Phase II Final Report* (May 1995), which contains the CMS, was adopted by the RTC Board on May 2, 1995 (RTC Board Resolution 05-95-14). The CMS network is a sub-set of the regional transportation system; a set of 21 transportation corridors to be monitored and evaluated on an ongoing basis as part of the CMS.

The Congestion Management Monitoring project focuses on delivering improved transportation system performance information to decision-makers who must identify the most cost-effective strategies for addressing transportation congestion and improving mobility. Each year additional transportation data is collected, transportation system performance is analyzed, and a System Performance Report is prepared. Congestion management report performance measures include a corridor congestion ratio, speed as percent of speed limit, auto vehicle occupancy, truck percentage, and transit seat capacity used.

In August 2002, the RTC Board adopted the *2001 Congestion Management Report*. As part of the ongoing monitoring process, the Corridor Congestion Ratio Index (CCRI) numbers were updated to reflect 2001 traffic counts collected as part of the Congestion Management Monitoring program. The following table (Table 6-1) reports Corridor Congestion Index results from the 2001 counts. In general, there was little change between the 2000 and 2001 counts. However, some of the more notable differences noted between the 2000 and 2001 reports were significant traffic growth in the I-205 corridor between SR-500 and Padden Parkway, a decrease

in speed in the PM peak for I-5 North, I-205, SR-503 South, Fourth Plain Central, Padden Parkway, Burton/28th Street, and 18th Street and increase in vehicle occupancy in the I-5 south corridor. The increase in vehicle occupancy could be a result of the implementation of the I-5 HOV lane opened to traffic in November 2001. Elsewhere there has been a vehicle occupancy decrease that may be reflective of the economic slowdown. Some of the corridors showing higher congestion have widening projects programmed in the next few years that could relieve some of the congestion e.g. Burton Road and Ward Road. Also, some of the corridors, such as Fourth Plain and Burton Road, had construction activity underway in 2001 that affected the speed reported in the 2001 Report.

Table 6-1: Corridor Congestion Index Report

CORRIDOR CONGESTION INDEX IN A.M. AND P.M. PEAK (2001 REPORT)					
Corridor Name	**Facility Name**	**Start Point**	**End Point**	**A.M. Corridor Congestion Index (CCI)**	**P.M. Corridor Congestion Index (CCI)**
Shaded Cells = Corridor Congestion 7.0 or Greater					
I-5 - North	I-5	County Line	I-205 Junction	0.49	0.57
I-5 - Central	I-5	I-205	Main St	**0.97**	**.99**
I-5 - Central	Hwy 99	134th St	Main St	0.36	0.60
I-5 - Central	Hazel Dell	117th St	Main St	0.35	0.63
I-5 - South	I-5	Main St	State Line	**.92**	**0.98**
I-5 - South	Main St	I-5	Fourth Plain Blvd	0.42	0.48
I-205 - Central	I-205	I-5	SR-500/4th Plain	**0.77**	**0.87**
I-205 - South	I-205	SR-500/4th Plain	State Line	**1.01**	**1.03**
I-205 - South	112/Chkalov/Gher	SR-500	Mill Plain	0.49	0.67
Grand/St. Johns	St. Johns/Ft. Vanc	NE 72nd Ave	Fourth Plain Blvd	0.53	0.53
Andresen Rd - North	Andresen/ 72nd	119th Street	SR-500	0.51	0.68
Andresen Rd - South	Andresen Rd	SR-500	Mill Plain	0.46	**0.70**
SR-503 - South	SR-503	119th Street	Fourth Plain	**0.75**	**0.91**
SR-503 - North	SR-503	SR-502	119th Street	0.66	0.61
Ward Road	Ward Road	119th Street	SR-500	**0.94**	**0.88**
162nd/164th - North	162nd Ave	Ward Road	Mill Plain	**0.53**	**0.57**
162nd/164th - South	164th Ave	Mill Plain	SR-14	**0.87**	**0.91**
SR-14 - West	SR-14	I-5	I-205	**0.85**	**0.85**
SR-14 - Central	SR-14	I-205	164th Ave	**1.09**	**0.96**
SR-14 - East	SR-14	164th Ave	County Line	**0.73**	0.73
Mill Plain - West	Mill Plain Blvd	I-5	I-205	0.44	0.58
Mill Plain - East	Mill Plain Blvd	I-205	164th Ave	0.68	**0.90**
Fourth Plain	Fourth Plain	I-5	TMA/Vanc Lake	0.34	0.45
Fourth Plain	SR-501/Mill Plain	I-5	Fourth Plain	0.52	0.48
Fourth Plain	Fourth Plain Blvd	I-5	Andresen	0.37	0.63
Fourth Plain	Fourth Plain Blvd	Andresen	SR-503	0.39	0.81
SR-500 - West	SR-500	I-5	Andresen	**0.82**	**0.85**
SR-500 - Central	SR-500	Andresen Rd	SR-503	**0.87**	**0.96**
SR-500 - East	SR-500	SR-503	162nd Ave	**0.84**	**1.00**

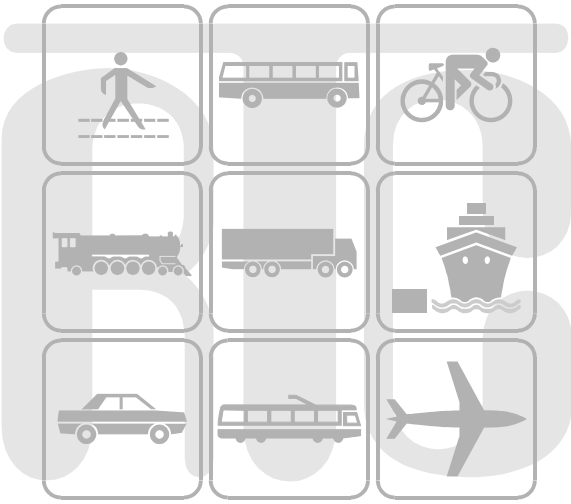
CORRIDOR CONGESTION INDEX IN A.M. AND P.M. PEAK (2001 REPORT)					
Corridor Name	**Facility Name**	**Start Point**	**End Point**	**A.M. Corridor Congestion Index (CCI)**	**P.M. Corridor Congestion Index (CCI)**
Shaded Cells = Corridor Congestion 7.0 or Greater					
78/76/Padden Pkwy	78th/76th	I-5	SR-503	0.51	**0.72**
78/76/Padden Pkwy	Padden Pkwy	Andresen Rd	SR-503	0.54	0.55
28th/18th Street	Burton/28th	Andresen Rd	164th Ave	**0.83**	**1.00**
28th/18th Street	18th Ave	112th Ave	164th Ave	0.59	0.64
134th/139th Street	134th/139th	NW 36th Ave	50th Ave	0.56	0.69
SR-502/219th St	SR-502	I-5	SR-503	**0.73**	**0.88**
SR-501	SR-501	I-5	9th Street	0.29	0.24
La Center Road	La Center Road	I-5	E. Fork Lewis R.	0.50	0.62

AIR QUALITY MONITORING

Monitoring of air quality standards is an ongoing activity in the Air Quality Maintenance Area (AQMA) for the region. This relates directly to the transportation system and its performance because mobile source emissions are a large contributor to air pollution. The Air Quality Maintenance Plans for carbon monoxide and ozone include emissions budgets which been developed, and must be met, to ensure that air quality standards continue to be maintained.

COMMUTE TRIP REDUCTION (CTR) LAW IMPLEMENTATION

All jurisdictions in Clark County with affected employers of over 100 employees who meet the set criteria have adopted CTR ordinances and employers have established commute trip reduction programs. Monitoring of the success of these programs is carried out to ensure that the goals are being met. Washington law established a goal of affected employers achieving 15% work trip reduction by the year 1995 or 2 years after program implementation, 20% reduction by the year 1997 or 4 years after program implementation, 25% reduction by the year 1999 or 6 years after program implementation and 35% by 2005 or 12 years after program implementation.



CHAPTER 7

PLAN DEVELOPMENT AND IMPLEMENTATION

PUBLIC INVOLVEMENT IN METROPOLITAN TRANSPORTATION PLANNING PROCESS

RTC has an adopted public involvement program, outlining the public involvement efforts in the development of regional transportation plans and programs. Copies of the public involvement program are available at the Fort Vancouver Library and at RTC offices for public review. All RTC Board meetings and technical committee meetings are open to the public. Public involvement efforts build from those carried out at the local level in development of local plans and programming of transportation projects. Since the last MTP amendment in December 2000, RTC has been represented at numerous public meetings regarding regional transportation issues. These meetings included the transit Special Services Advisory Committee (SSAC), representation at Clark County Transportation Improvement Program Involvement Team (TIPIT) Committee, Greater Vancouver Chamber of Commerce Transportation meetings, InterACT, the I-205 Citizens' Advisory Committee, the Portland-Vancouver I-5 Transportation and Trade Partnership Governors' Task Force and Community Forum and the Salmon Creek Moratorium Committee.

Through the coordinated efforts of RTC and local jurisdictions a public information booth on regional transportation issues is set up each year at the Clark County Fair. The Fair's attendance exceeds 260,000 people annually. Staff at the transportation booth solicit comments from Fair attendees and the public can fill in survey forms about the region's transportation system. Staff manned the booth to answer questions from the public and to receive comments on the MTIP and the MTP. Each year, prior to the adoption of the Metropolitan Transportation Improvement Program, a public meeting is held to give the public opportunity to comment on the program of regionally selected and prioritized projects to be presented for federal funding during the forthcoming three year period as well as opportunity to learn about MTP development. In 2001, RTC joined with WSDOT, City of Vancouver, and Clark County to provide several public outreach opportunities at Westfield Shoppingtown, Vancouver (formerly Vancouver Mall). Much of the region's public outreach activities relating to transportation in 2001/2002 focused on the I-5 Partnership study. In 2002 RTC hosted public meetings in March and two in October to inform the community about MTP and MTIP developments and to solicit comments. RTC staff also attended neighborhood association meetings to give presentations on the Plan and staffed an information table at the Vancouver Neighborhoods Fair held on November 16, 2002.

A public meeting is held before *MTP* adoption and, at a minimum, an annual public meeting is held to allow the public to review the status of *Plan* development. Updates and amendments to the MTP are presented to the RTC Board for the Board's consideration and adoption. All meetings of the RTC Board are open to the public. Transportation issues, studies, plans and programs are outlined and reported on at RTC's web site at http://www.rtc.wa.gov.

MTP IMPLEMENTATION

Implementation of regional transportation goals, policies and actions established by the *MTP* are carried forward through the regional decision-making process that takes place in development of the regional **METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAM (MTIP).** It is in the

MTIP that transportation needs identified in the *MTP* can be programmed for receipt of federal funding.

MTP UPDATE PROCESS

Under the GMA, the *MTP* is to be reviewed for currency every two years. Updates are required at least every three years by federal agencies and the Plan is required to have at least a twenty-year horizon. Should changing policies, financial conditions or growth patterns warrant, *Plan* amendments can take place, subject to findings of air quality conformity and subject to a public involvement process. A summary of Metropolitan Transportation Plan for Clark County adoption, update and amendment actions is provided in Table 7-1.

The 1998 MTP amendment focused on changes to Chapter 4 (Financial Plan) and Chapter 5 (System Improvement and Strategy Plan). The language in the Chapter 4 Financial Plan was amended to make clear that the Plan is fiscally constrained. Only projects from a fiscally constrained Plan can be included in the air quality conformity analysis. In turn, only projects from air quality conforming plans can be advanced for programming of funds in the Transportation Improvement Program. The description of funding programs in Chapter 4 was also updated to reflect the new funding levels in the federal Transportation Equity Act for the 21st Century (TEA-21) and recent funding history for state Transportation Improvement Board (TIB) programs. Chapter 5 was amended to include description and recommendations of the MTP Prioritization Process carried out during 1998. The 1998 amendments did not change the identified projects listed in Appendix A of the MTP. Therefore the air quality conformity analysis carried out on the December 1997 version of the MTP (documented in Appendix A of the Plan) remained valid.

A minor amendment in April, 1999 incorporated plans for a new interchange at I-5 and NE 219th Street into the MTP. The 1999 MTP update addressed the need to keep the MTP up-to-date with developments in the planning of transportation facilities and services. The focus of the 1999 MTP update was to extend the horizon year of the Plan to 2020, thereby meeting federal requirements to have a Plan with at least a twenty year horizon. Demographic data was updated to the 2020 horizon year, a revised regional travel forecasting model prepared, transportation deficiencies considered, the list of transportation needs and projects revised, the financial plan reviewed and updated and an update to the air quality conformity analysis prepared.

The issue of cross-Columbia travel continues to be the subject of bi-state transportation efforts. The feasibility and utility of High Occupancy Vehicle (HOV) treatments in Clark County was studied during 1998 which culminated in the publication of "Clark County High Occupancy Vehicle Study" (December, 1998). The 1998 Study defined HOV policies and objectives, identified HOV need and benefits and identified the location of possible HOV corridors and/or facilities. A study of the operational feasibility of an I-5 HOV lane was carried out in 2000. A report on commuter rail as a cross-river travel option was published in May, 1999. A Bi-State Transportation Committee was convened in 2000 to address transportation issues of bi-state concern and has continued to meet throughout 2001 and 2002.

The 2002 MTP update provides a new base year of 2000, incorporates newly-available 2000 Census data, extends the horizon year of the MTP to 2023, includes recommendations from recently completed corridor studies of I-5 North and I-205, and includes recommendations of the I-5 Partnership in the new Strategic MTP. The Plan update includes a revised list of proposed transportation improvements anticipated within the next twenty years and includes an update to the air quality conformity analysis.

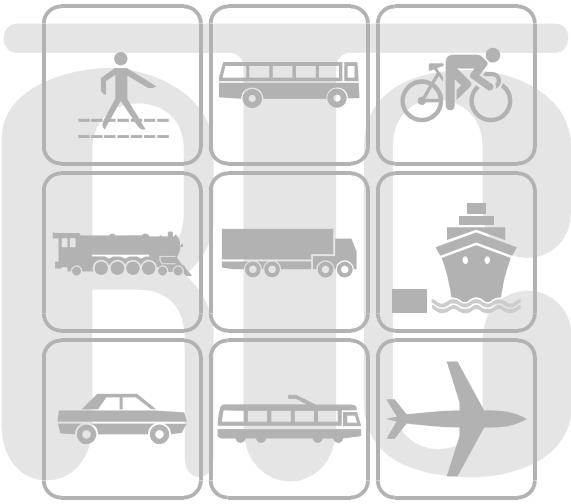
Results and recommendations from transportation studies underway will be incorporated into future MTP update or amendment. The next major update to the MTP is anticipated in coordination with update to the Comprehensive Growth Management Plan for Clark County due in late 2003. In 2003 a revised federal functional classification system, results of the Census Transportation Planning Package and update to the land use scenario following the Comprehensive Plan update are anticipated.

Table 7-1: Chronology of MTP Update and Amendment, 1994 to 2002

Chronology of MTP Update and Amendment, 1994 to 2002		
Date	**Action**	**Notes**
December, 1994	MTP Adoption RTC Board Resolution 12-94-30	This was the first MTP adopted following formation of RTC. The 1994 MTP met all requirements of the federal Intermodal Surface Transportation Efficiency Act passed in 1991. The Plan was fiscally constrained and met air quality standards. **Year** **Population** **Households** **Employment** Base 1990 238,053 88,438 86,500 Forecast 2015 380,425 152,170 157,200
1995	None	RTC staff reviewed the 1994 MTP and listed elements to change and enhance at the next MTP update. An RTAC memo, dated October 31, 1995, outlined the changes and enhancements identified for the next update.
December, 1996	MTP Update RTC Board Resolution 12-96-22	The update extended the horizon year from 2015 to 2017. Land use inputs consistent with the *Clark County 20 Year Comprehensive Growth Management Plan* and forecasts consistent with the population forecast supplied by Washington Office of Financial Management (OFM) were used in MTP process. Also updated was the designated regional transportation system, transportation system performance measures and list of identified transportation projects for the 20-year period. **Year** **Population** **Households** **Employment** Base 1990 238,053 88,438 86,500 Forecast 2017 437,167 171,842 206,211
December, 1997	MTP Amendment RTC Board Resolution 12-97-23	The amended MTP included changes to the designated regional transportation system, transportation system performance measures and list of identified transportation projects for the 20-year period. **Year** **Population** **Households** **Employment** Base 1990 238,053 88,438 86,500 Forecast 2017 437,167 175,577 206,211
October, 1998	MTP Prioritization Process RTC Board Resolution 10-98-16	The MTP Prioritization Process was adopted in October, 1998. This focussed on major mobility type projects. A Summary Report on the Prioritization Process was published including policy criteria, technical evaluation of projects and results. Economic development and existing commitments to business and industry were prime criteria for prioritization. Congestion Mitigation/Concurrency Deficiencies, project cost-effectiveness, completion of the transportation system, freight movement and bi-state movement were all considered. The significance of Transportation Demand Management (TDM) was noted.
December, 1998	MTP Amendment RTC Board Resolution 12-98-24	Incorporated into the Dec. 1998 MTP amendment were • Results from the prioritization process. • A matrix of potential TDM strategies. • Chapter 4 (finance) updated to show balance between estimated revenues and forecast expenditures on MTP transportation needs.

Chronology of MTP Update and Amendment, 1994 to 2002

Date	Action	Notes
		• Chapter 5 (system development) updated to include Prioritization Process, additional TDM detail and economic development description.. **Year** **Population** **Households** **Employment** Base 1990 238,053 88,438 86,500 Forecast 2017 437,167 175,577 206,211
April, 1999	MTP Amendment RTC Board Resolution 04-99-09	Phase I of the I-5/NE 219th Street; planning and design of a proposed new interchange was included in the MTP.
October, 1999	MTP Update RTC Board Resolution 10-99-26	The demographic forecast was extended to 2020. The MTP update includes the new federally-required planning factors, adds several arterial improvements and has an updated air quality conformity analysis. **Year** **Population** **Households** **Employment** Base 1996 303,500 120,312 138,884 Forecast 2020 473,898 192,716 227,910
December, 2000	MTP Amendment RTC Board Resolution 12-00-30	The amendment included the following elements: (i) I-5 AM peak period HOV lane project (ii) Base Year updated from 1996 to 1999 C-TRAN service description updated (July, 2000) (iii) Appendix A; projects under construction or fully funded noted. **Year** **Population** **Households** **Employment** Base 1999 337,000 137,974 148,102 Forecast 2020 473,898 192,716 227,910
December, 2002	MTP Update RTC Board Resolution 12-02-24	The update included the following elements: (i) Base year updated to year 2000 and horizon year extended to 2023. (ii) Update to Chapter 4 Finance Plan. (iii) Updated list of MTP "fiscally-constrained" recommended improvements. (iv) Strategic Plan element incorporated into MTP Appendix. **Year** **Population** **Households** **Employment** Base 2000 345,238 127,203 158,535 Forecast 2023 486,225 200,094 248,396



MTP APPENDIX A

TRANSPORTATION CAPACITY IMPROVEMENTS ASSUMED IN MTP NETWORK AND AIR QUALITY ANALYSIS

Between 2002 and 2023 Clark County jurisdictions have planned for transportation improvements in locations with existing or forecast future capacity problems. These anticipated improvements were taken into consideration in carrying out the Metropolitan Transportation Plan needs and **air quality analysis**.

The **MTP** transportation system is the existing transportation network with improvements made on those links where projects are programmed in the Transportation Improvement Program. In addition, improvement projects are included where regional need has been identified in the MTP development process and for which there is strong regional commitment. Projects included in the MTP transportation system may eventually be programmed for funding by federal, state, Transportation Improvement Account (TIA) and/or local sources.

Assignment of forecast future year trips onto the *MTP* transportation network in the regional travel forecasting model reveals where there are likely to be deficiencies in the transportation system over the longer term. Locations where future traffic volumes exceed MTP system capacity require an analysis of remedial measures to solve these anticipated deficiencies and an analysis of financial feasibility.

The list (overleaf) is of the major transportation improvements[1] which have been incorporated into the *MTP* transportation network for Clark County. These listed projects are identified in the Metropolitan Transportation Plan needs analysis and included in the air quality conformity analysis as required by the federal Clean Air Act Amendments and Washington Clean Air Act[2]. There will be consistency between the MTP list of projects and the projects programmed for funding in the *Metropolitan Transportation Improvement Program (MTIP) for Clark County*.

---

1 Additional highway lanes, additional or improved interchanges, construction of new highway segments, expanded transit service.

2 Chapter 70.94 RCW.

Table A-1: Metropolitan Transportation Plan (MTP) Update (2002)
Projects Assumed to be Completed by 2023

2023 MTP: LIST OF MTP AND LOCAL PROJECTS (projects are included in the Regional Air Quality Conformity Analysis)				
This list includes both MTP Designated Regional Transportation System projects and local projects. Projects in Italics are part of the local transportation system and not part of the MTP Designated Regional Transportation System				
Facility	**Cross Streets**	**Improvement**	**Existing Condition**	**Estimated Year of Completion**
76th Street	107th Avenue to 117th Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2002
87th Avenue Extn.	*Mill Plain Blvd to Fourth Plain*	*1 lane ea. direction, w/turn lane*	*None*	*2002*
Ellsworth	*SE 10th Street to SR-14*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2002*
Fourth Plain	102nd Avenue to SR-503	2 lanes ea. direction, w/turn lane	1 lane each direction	2002
Fourth Plain	F Street to RR Bridge	1 lane ea. direction, w/turn lane	2 lanes each direction	2002
Ft. Vancouver Way	*Fourth Plain to St. Johns Blvd.*	*1 lane ea. direction, w/turn lane*	*2 lanes each direction*	*2002*
I-5	78th Street Interchange	Urban Interchange	Diamond Interchange	2002
I-5	Main Street Interchange	Improved Interchange	Interchange	2002
I-5	63rd Street Overcrossing	1 lane ea. direction	Temporarily closed 2001	2002
NE 25th Avenue	*78th Street to 99th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2002*
NW 78th Street	Lakeshore to Hazel Dell Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2002
Padden Parkway	SR-503 to Ward Road	2 lanes ea. direction, w/turn pockets	None	2002
SR-14	192nd Avenue Interchange	Add Interchange/Brady realignment	None	2002
SR-500	Ward Road to 162nd Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2002
SR-500	Thurston Way Interchange	New Interchange	Intersection	2002
Ward Road	Fourth Plain to 162nd Avenue (88th St.)	2 lanes ea. direction, w/turn lane	1 lane each direction	2002
117/119th Street	Highway 99 Vicinity	1 lane ea. direction, w/turn lane	Off-Set Intersections	2003
192nd Avenue	SE 15th Street to SE 34th Street	2 lanes ea. direction, w/turn pockets	None	2003
192rd Avenue	SE 15th Street to SE 1st Street	2 lanes ea. direction, w/turn pockets	1 lane each direction	2003

2023 MTP: LIST OF MTP AND LOCAL PROJECTS
(projects are included in the Regional Air Quality Conformity Analysis)

This list includes both MTP Designated Regional Transportation System projects and local projects. Projects in Italics are part of the local transportation system and not part of the MTP Designated Regional Transportation System

Facility	Cross Streets	Improvement	Existing Condition	Estimated Year of Completion
Burton Road	86th Avenue to 112th Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2003
Burton Road	112th Avenue to 142nd Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2003
Padden Parkway	78th Street/53rd Av to Andresen	2 lanes ea. direction, w/turn pockets	None	2003
Padden Parkway	I-205 to 94th Avenue	2 lanes ea. direction w/turn pockets	1 lane each direction	2003
SE 1st Street	192nd Avenue to Parker Street	2 lanes ea. direction, w/turn lane	1 lane each direction	2003
SE 1st Street	Parker Street to Leadbetter Way	1 lane ea. direction, w/turn lane	1 lane each direction	2003
SR-502	Battle Ground WCL to SR-503	2 lanes ea. direction, w/turn lane	1 lane each direction	2003
134th Street	Rockwell to WSU	2 lanes ea. direction, w/turn lane	1 lane each direction	2004
192nd Avenue	SR-14 to SE 34th Street	2 lanes ea. direction, w/turn pockets	None	2004
199th Street	*SR-503 to 142nd Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2004*
76th Street	117th Avenue to 142nd Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2004
99th Street	*99th Street Park and Ride*	*Park and Ride*	*None*	*2004*
Covington Road	*102nd Avenue to 76th Street*	*2 lanes ea. direction, w/turn lane*	*1 lane each direction*	*2004*
Fruit Valley Rd	34th Street to Whitney	1 lane ea. direction, w/turn lane	1 lane each direction	2004
NE 76th Street	NE 94th Avenue to 107th Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2004
NW 11th Street	Amtrak Station	Renovation of Train Station	Train Station	2004
117/119th Street	*NW 7th Avenue to Hazel Dell Avenue*	*1 lane ea. direction, w/turn lane*	*None*	*2005*
117th Street	*Hazel Dell Avenue to Highway 99*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2005*
162nd Avenue	39th Street to Ward Road	2 lanes ea. direction, w/turn lane	1 lane each direction	2005
179th Street	I-5 to NW 5th Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2005
Mill Plain	164th Avenue to 172nd Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2005

2023 MTP: LIST OF MTP AND LOCAL PROJECTS
(projects are included in the Regional Air Quality Conformity Analysis)

This list includes both MTP Designated Regional Transportation System projects and local projects. Projects in Italics are part of the local transportation system and not part of the MTP Designated Regional Transportation System

Facility	Cross Streets	Improvement	Existing Condition	Estimated Year of Completion
St. John's Blvd.	NE 50th Avenue to 72nd Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2005
Ward/172nd Av.	*S. 99th Street to 119th St.*	*Realignment*	*Curved*	*2005*
Highway 99	Realignment with 20th Avenue near 134th St.	Realignment, 2 lanes ea. dir. w/tl	Existing Alignment	2006
72nd Avenue	S. of 99th Street to St. Johns	2 lane ea. direction, w/turn lane	1 lane each direction	2006
Mill Plain	172nd Avenue to SE 192nd Avenue	2 lanes ea. direction, w/turn lane	None	2006
SR-500	112th Avenue Interchange	New Interchange	Intersection	2006
137th Avenue	*Fourth Plain to 76th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2006*
138th Avenue	*18th Street to 28th Street*	*2 lanes ea. direction, w/turn lane*	*1 lane each direction*	*2007*
I-205	Off-Ramp from NB I-205 to 112th Avenue	New Ramp	None	2007
I-5	99th Street to I-205	3 lanes ea. direction	2 lanes each direction	2007
I-5	134th Street Interchange	Reconstruct Interchange	Interchange	2007
179th Street	NW 5th Avenue to NW 11th Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2008
49th Street	*112th Avenue to 122nd Avenue*	*2 lanes ea. direction, w/turn lane*	*1 lane each direction*	*2008*
NE 88th Street	*Highway 99 to St. Johns Road*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2008*
NE 88th Street	*St. Johns Road to Andresen Road*	*1 lane ea. direction, w/turn lane*	*l lane each direction*	*2008*
138th Avenue	*28th Street to 39th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2009-2013*
179th Street	NE 10th Avenue to NE 29th Avenue	2 lane ea. direction, w/turn lane	1 lane each direction	2009-2013
179th Street	NE 29th Avenue to NE 50th Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2009-2013
18th Street	97th Avenue to 138th Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2009-2013
18th Street	86th Avenue to 97th Avenue	1 lane ea. direction, w/turn lane	None	2009-2013
192nd Avenue	SE 1st Street to NE 18th Street	2 lanes ea. direction, w/turn pockets	1 lane each direction	2009-2013

2023 MTP: LIST OF MTP AND LOCAL PROJECTS
(projects are included in the Regional Air Quality Conformity Analysis)

This list includes both MTP Designated Regional Transportation System projects and local projects. Projects in Italics are part of the local transportation system and not part of the MTP Designated Regional Transportation System

Facility	Cross Streets	Improvement	Existing Condition	Estimated Year of Completion
Hazel Dell Av.	*99th Street to 114th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2009-2013*
Leadbetter Way	*Lake Road to Parker Street*	*1 lane ea. direction, w/turn lane*	*None*	*2009-2013*
NE 139th Street	NE 20th Avenue to NE 10th Avenue	1 lane ea. direction, w/turn lane	None	2009-2013
NE 15th Avenue	*179th Street to Union Road*	*1 lane ea. direction, w/turn lane*	*None*	*2009-2013*
NE 23rd Avenue	*NE 134th Street to NE 139th Street*	*1 lane ea. direction, w/turn lane*	*None*	*2009-2013*
NE 28th Street	142nd Avenue to 162nd Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2009-2013
Seventh Street	Seventh Street Mall and Parking Garage	Transit Mall Expansion and Garage	Transit Mall	2009-2013
SR-500	SR-503 Interchange	Fly-over Ramp	Intersection	2009-2013
SR-502	NE 10th Avenue to Battle Ground	2 lanes ea. direction, w/turn pockets	1 lane each direction	2009-2013
112th Avenue	Mill Plain to 28th Street	2 lanes ea. direction, w/turn lane	2 lanes each direction	2014-2023
119th Street	*Salmon Creek Av. to 72nd Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
119th Street	*72nd Avenue to SR-503*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
137th Avenue	*39th Street to 55th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
139th Street	NE 20th Avenue to NE 29th Avenue	1 lane ea. direction, w/turn lane	1 lane each direction	2014-2023
164th Avenue	SE 34th Street (Fisher Landing P&R)	Expand Current Transit Facility	Park & Ride	2014-2023
179th Street	NE 179th Street Park and Ride	Park and Ride	None	2014-2023
179th Street	NE 50th Avenue to Cramer Road	1 lane ea. direction, w/turn lane	1 lane each direction	2014-2023
179th Street	Cramer Road to SR-503	1 lane ea. direction, w/turn lane	None	2014-2023
18th Street	138th Avenue to 162nd Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2014-2023
18th Street	162nd Avenue to 192nd Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2014-2023
18th Street	138th Avenue	Expand Current Transit Facility	Park & Ride	2014-2023
26th Avenue	*Fourth Plain to Whitney Road*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*

2023 MTP: LIST OF MTP AND LOCAL PROJECTS
(projects are included in the Regional Air Quality Conformity Analysis)

This list includes both MTP Designated Regional Transportation System projects and local projects. Projects in Italics are part of the local transportation system and not part of the MTP Designated Regional Transportation System

Facility	Cross Streets	Improvement	Existing Condition	Estimated Year of Completion
29th Avenue	*NE 134th Street to NE 179th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
38th Avenue	*Bybee Road to Astor*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
39th Street	*At RR Tracks*	*Over-Crossing*	*At-Grade Crossing*	*2014-2023*
3rd Avenue	Crown Road to ECL Camas	2 lanes ea. direction, w/turn lane	2 lane each direction	2014-2023
49th Street	*122nd to 137th Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
63rd Street	*Andresen Road to I-205*	*2 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
63rd Street	*I-205 to Covington Road*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
78th Street	*Ward Road to 162nd Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
Columbia Shores	*S. of SR-14*	*Widen Portal*	*Under-Pass*	*2014-2023*
Esther Street	*At RR Tracks*	*Railroad Undercrossing*	*None*	*2014-2023*
Fruit Valley Rd	Whitney to 78th Street	1 lane ea. direction, w/turn lane	1 lane each direction	2014-2023
Highway 99	NE 99th Street to NE 117th Street	2 lane ea. direction, w/turn lane	2 lanes each direction	2014-2023
Highway 99	South RR Bridge to NE 63rd Street	2 lane ea. direction, w/turn lane	2 lanes each direction	2014-2023
I-205	SR-14 to Mill Plain	Ramp Separation	Interchanges	2014-2023
I-205	18th Street/Burton Road	18th Street Ramps/Frontage Road	Over-Pass	2014-2023
I-205	SR-500	WB SR-500 to SB I-205 Flyover	Interchange	2014-2023
I-205	Burton Road	Burton Road Ramps	Under-Pass	2014-2023
I-205	SR-500 to Padden Parkway	3 lanes ea. direction	2 lanes each direction	2014-2023
I-205	Padden Parkway to 134th Street	3 lanes ea. direction, 83rd Ramps	2 lanes each direction	2014-2023
I-5	179th Street Interchange	Reconstruct Interchange	Interchange	2014-2023
I-5	219th Street Interchange	New Interchange	None	2014-2023
I-5	I-205 to 179th Street	Auxiliary Lane	3 lanes each direction	2014-2023
I-5	179th Street to 219th Street	Auxiliary Lane	2 lanes each direction	2014-2023
I-5	269th Street Interchange	Improve Interchange	Interchange	2014-2023

2023 MTP: LIST OF MTP AND LOCAL PROJECTS
(projects are included in the Regional Air Quality Conformity Analysis)

This list includes both MTP Designated Regional Transportation System projects and local projects. Projects in Italics are part of the local transportation system and not part of the MTP Designated Regional Transportation System

Facility	Cross Streets	Improvement	Existing Condition	Estimated Year of Completion
I-5	319th Street Interchange	Improve Interchange	Interchange	2014-2023
I-5	NE 139th Street	Relocate 134th St. Park & Ride	None	2014-2023
I-5	219th Street	Park and Ride	None	2014-2023
Lakeshore Drive	NW 78th Street to McCann Road	1 lane ea. direction, w/turn lane	1 lane each direction	2014-2023
Main Street	6th Street to 15th Street (Mill Plain)	Convert to two-way street	One-way street	2014-2023
NE 107th Avenue	*Covington Road to NE 99th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
NE 10th Avenue	*134th Street to 154th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
NE 119th Street	*SR-503 to NE 152nd Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
NE 122nd Avenue	*NE 39th Street to NE 49th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
NE 137th Avenue	*Vancouver CL to Fourth Plain*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
NE 15th Avenue	*NE 179th Street to SR-502*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*
NE 20th/29th Ave.	*NE 154th Street to NE 179th Street*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*
NE 25th Avenue	*Minnehaha St. to NE 78th Street*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*
NE 87th Avenue	*Lieser Road to E. 5th Street*	*1 lane ea. direction, w/turn lane*	*86th Avenue*	*2014-2023*
NE 88th Street	*Hazel Dell Avenue to Highway 99*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*
NE 94th Avenue	*Padden Parkway to NE 119th Street*	*1 lane ea. direction, w/turn lane*	*1 lane/none*	*2014-2023*
NE 99th Street	*St. Johns Rd. to SR-503*	*1 lane ea. direction, w/turn lane*	*None/1 lane*	*2014-2023*
NE 99th Street	*SR-503 to NE 172nd Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
NW 11th Ave.	*NW 139th Street to 179th Street*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
NW 26th Ave.	*Fourth Plain to Whitney Road*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*
Padden Parkway	Central County Park and Ride	New Park and Ride	None	2014-2023
Padden Parkway	SR-503 Interchange	Add Interchange	None	2014-2023

2023 MTP: LIST OF MTP AND LOCAL PROJECTS
(projects are included in the Regional Air Quality Conformity Analysis)

This list includes both MTP Designated Regional Transportation System projects and local projects. Projects in Italics are part of the local transportation system and not part of the MTP Designated Regional Transportation System

Facility	Cross Streets	Improvement	Existing Condition	Estimated Year of Completion
Rosewood Avenue	*NE 102nd Avenue to SR-503*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
Salmon Creek Ave.	*WSU Entrance to NE 50th Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
SE 10th Street	*Ellsworth to I-205*	*2 lanes ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
SE 1st Street	164th Avenue to 192nd Avenue	2 lanes ea. direction, w/turn lane	1 lane each direction	2014-2023
SE 7th Street	*Chkalov to SE 136th Avenue*	*1 lane ea. direction, w/turn lane*	*1 lane each direction*	*2014-2023*
SR-14	NW 6th Av. to 32nd St.	2 lanes ea. direction	1 lane with Intersection	2014-2023
SR-14	I-205 to 164th Avenue	3 lanes ea. direction	2 lanes each direction	2014-2023
SR-14	32nd Street/27th Street Vicinity	Interchange	Intersection	2014-2023
SR-14	SR-500 (Camas)	Interchange	Intersection	2014-2023
SR-14	Washougal	New Park and Ride	None	2014-2023
SR-500	42nd Avenue	Grade Separation	Intersection	2014-2023
SR-500	54th Avenue	Grade Separation	Intersection	2014-2023
SR-500	St. Johns Interchange	New Interchange	Intersection	2014-2023
SR-500	Thurston Way (Mall)	Expand Current Transit Facility	Transit Center	2014-2023
Vancouver Mall Dr.	*Andresen Road to 66th Avenue*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*
Ward Road	*NE 137th Avenue to Fourth Plain*	*1 lane ea. direction, w/turn lane*	*None*	*2014-2023*
Various	County Wide	Walkway & Bicycle Programs	None	Continuous
Various	County Wide	Demand Management	None	Continuous
Various	System Wide	Add Transit Service	Transit System	Continuous
Various	System Wide	Add ITS	None	Continuous

Projects listed above include both projects **on** the regional transportation system as well as projects **off** the regional system. Both types of project have been included in the regional travel forecasting model network and have therefore been included in the regional air emissions analysis to meet the requirements of the federal Clean Air Act Amendments and Washington Clean Air Act.

In addition to the listed projects, the RTP is supportive of any other project for which a need has been demonstrated through the regional transportation planning process that will serve to enhance the efficiency and operation of the regional transportation system. These project include **MAINTENANCE, PRESERVATION, SAFETY, PEDESTRIAN, BICYCLE, ENHANCEMENT, TRANSPORTATION SYSTEM MANAGEMENT (TSM), TRANSPORTATION DEMAND MANAGEMENT (TDM).**

Table A-2: Other Transportation System Development Elements

MAINTENANCE	
	Maintenance work ensures a safe, reliable and efficient transportation system on a day to day basis with such activities as pothole filling, repair of damaged bridges, incident response, maximizing operational efficiency by signal timing, snow clearing, vegetation planting and clearing, drainage and fence maintenance and litter removal. The MTP supports regional system maintenance work identified by WSDOT and local agencies.
PRESERVATION	
	Preservation projects ensure that investment in the regional transportation system is protected. Specific projects include repaving of highways, refurbishing rest areas and bridge rehabilitation. Needs and projects are identified by local agencies and WSDOT through such programs as the Highway Performance Monitoring System (HPMS), ISTEA-required Pavement Management System (PMS) and Bridge Management System (BMS).
SAFETY	
	Needs identified through the ISTEA-required Safety Management System (SMS) and local analysis.
PEDESTRIAN AND BICYCLE MODE (SEE CHAPTER 5)	
	Needs identified through state and local planning programs including recommendations from the Clark County Bicycle Advisory Committee, GMA plans and the *Clark County Trails and Bikeway System Plan* (December 1992; Clark County). Notable pedestrian and bicycle projects in Clark County include completion of the City of Vancouver's Columbia River Waterfront Trail, the Discovery Trail, the Columbia River/Evergreen Highway Trail, Hazel Dell Avenue bike lanes and SE 164th Avenue bike lanes. Also of regional significance is improvement of pedestrian and bicycle facilities that will improve access to transit facilities. Bike racks are already provided on C-TRAN fixed-route buses and bike lockers are provided at C-TRAN Transit Centers and Park and Rides. The bike rack and locker program will continue. Look at specific examples once again (refer to WSP list put tog. By Jennifer Campos)
TRANSIT	
Fixed-route System Expansion	Service Hours (both expansion of route system and frequency of service on certain routes) [per C-TRAN's current *Service and Financial Plan*] 2000 Annual Service Hours: 260,482 2023 Forecast Annual Service Hours: 339,000+/- (average 1.15% growth per year)
Capital Equipment Needs	Bus Purchases to support service hours and replace older fleet.
HIGH CAPACITY TRANSPORTATION CORRIDORS	
	• The I-5 corridor from the Oregon state line north to the I-205 interchange, the I-205 corridor and the SR-500 corridor from I-5 to Orchards are designated as MTP High Capacity Transportation Corridors. • Frequent bi-state bus service. • LRT constructed to Expo Center.

REGIONAL TRANSPORTATION PLANNING STUDIES	
	CURRENTLY UNDERWAY: • 18th Street Corridor Study (City of Vancouver)
TRANSPORTATION SYSTEM MANAGEMENT (TSM)	
	Potential TSM solutions are outlined in the State's *Statewide Multimodal Transportation Plan, System Plan Component* as well as local Growth Management plans. A key strategy of transportation system management is the implementation of an intelligent transportation system (ITS) for the Clark County region. The Vancouver Area Smart Trek Program (VAST) is the ITS initiative for the region developed as a cooperative effort by public transportation agencies in Clark County. It is made up pf seven initiatives to improve the management and operation of the system: 1) Communications infrastructure, 2) Traveler information, 3) incident management, 4) transportation management, 5) advanced traffic control, 6) transit priority, and 7) transit operation and management. The VAST Implementation Plan is a twenty-year project list developed around the initiatives above. It contains a description of each project, its priority, estimated costs and benefits and its relationship with other projects in the plan. There is also an Implementation Schedule for the plan that, in general, lists short, medium, and long-term time frames. Short term projects include interconnected and adaptive signal control, freeway cameras and roadway detection, variable message signs, a traveler information system, and a traffic management center.
TRANSPORTATION DEMAND MANAGEMENT (TDM)	
	Demand management activities are determined through the **Commute Trip Reduction** program ongoing in the Clark County region. The Portland-Vancouver I-5 Transportation and Trade Partnership (2002) also included a set of TDM recommendations relevant to the I-5 corridor. Short term recommendations include: • Additional Education and Outreach about work destination based, peak hour travel options. The first phase would be a survey to document existing origin and destination travel patterns. • Promote business subsidy of transit passes for employers. • Promote carpoolmatchNW.org to assist in carpool formation. • Offer guaranteed rides home at work sites. • Explore methods to better integrate C-Tran and Tri-Met printed and real-time customer information to expedite Bi-State travel using both systems (e.g. C-TRAN service information on Tri-Met Real Time Kiosks and expand the number of kiosks). • Explore business and community interest for additional and/or expanded Transportation Management Associations in the I-5 Corridor between the Columbia River and Lloyd District, including Swan Island, Rivergate and the Interstate Avenue. A study to determine the most beneficial and effective TDM measures is also recommended.

Should projects in the categories listed above require state or federal funding, they are brought forward to RTC as the region's MPO to carry out a coordinated decision-making process whereby projects are prioritized and selected for funding. Regional level air quality conformity analysis is prepared by RTC and project level conformity analysis, where required, is also prepared by RTC for local projects and by WSDOT for State projects.

APPENDIX A-1

Table A-3: 2020 MTP+ Regional Prioritization of Corridors and Projects
Adopted by RTC Board of Directors (December 2001)

2020 MTP+ Regional Prioritization of Corridors and Projects					
Estimated Timeline	**Corridor**	**Location**	**Improvements**	**Cost Estimate (in $ '000s) as of June 2001**	**Plan/Design Process (as of December 2001)**
MTP = Metropolitan Transportation Plan; WTP = Washington Transportation Plan; TIP = Transportation Improvement Program, EIS = Environmental Impact Statement, FHWA = Federal Highway Administration					
INTERSTATE SYSTEM					
0-6 years	I-5 South	Salmon Creek to I-205	Construction project to widen, 3 lanes each direction	$33,520	Construct widening project. EIS is complete and Record of Decision (ROD) issued
0-6 years	I-5 South	Columbia River to Main Street	EIS (Environmental Impact Statement) for interstate river crossing and collector/distributor system from interstate bridge to Main Street	$5-$10,000	Awaiting completion of I-5 Partnership Study. EIS will be required to move recommendations forward.
0-6 years	I-5 North	219th Street Interchange	EIS for new interchange	$1-$3,000	Access Point Decision Report to be submitted to FHWA in fall 2001. If FHWA accepts the Report, an EIS will be required as the next step. Some funding is already available for the EIS.
0-6 years	I-205	Columbia River to Padden Parkway (NE 83rd St.)	EIS for I-205 corridor	$3-$5,000	Access Point Decision Report to be submitted to FHWA in fall 2001. If FHWA accepts the Report, an EIS will be required as the next step.
0-6 years	I-5 South	at 134th Street	EIS for new diamond interchange and park and ride	$1-$3,000	Access Point Decision Report to be submitted to FHWA in fall 2001. If FHWA accepts the Report, an EIS will be required as the next step.
0-6 years	I-205	Mill Plain Interchange vicinity	Direct connection from I-205 ramp to 112th Av, Add RT lane (Phase 1)	$16,000	I-205 Access Point Decision Report to be submitted in fall 2001 (Phase 1). Environmental review will be required (could be part of I-205 corridor EIS or Environmental Assessment specific to this location).
6-10 years[3]					

[3] *Constructible projects will need to be prioritized following FHWA acceptance of Access Decision Reports and completion of EIS's. Also, the update of GMA plans, may impact project priorities in this timeline.*

2020 MTP+ Regional Prioritization of Corridors and Projects					
Estimated Timeline	**Corridor**	**Location**	**Improvements**	**Cost Estimate (in $ '000s) as of June 2001**	**Plan/Design Process (as of December 2001)**
MTP = Metropolitan Transportation Plan; WTP = Washington Transportation Plan; TIP = Transportation Improvement Program, EIS = Environmental Impact Statement, FHWA = Federal Highway Administration					
10+ years[4]					
10+ years	I-205	SR-500 to 83rd Street	Widen to 6 lanes (Phase 6)	$22,993	I-205 Access Point Decision Report to be submitted in fall 2001.
10+ years	I-205	SR-14 to Mill Plain	SR-14 and Mill Plain Ramp Separation (Phase 2)	$48,000	I-205 Access Point Decision Report to be submitted in fall 2001 (Phase 2).
10+ years	I-205	NE 18th St/Burton Rd	18th Street Ramps and frontage roads to Burton (Phase 3)	$84,000	I-205 Access Point Decision Report to be submitted in fall 2001 (Phase 3).
10+ years	I-205	SR-500	WB SR-500 to SB I-205 Flyover Ramp (Phase 4)	$27,000	I-205 Access Point Decision Report to be submitted in fall 2001 (Phase 4).
10+ years	I-205	Burton Rd.	Burton Road Ramps (Phase 5)	$20,000	I-205 Access Point Decision Report to be submitted in fall 2001 (Phase 5).
10+ years	I-205	SR-14 Interchange vicinity	Add Southbound on-ramp from Ellsworth	$15,000	MTP.
10+ years	I-205	83rd St. to 134th St.	Widen to 6 lanes, widen 83rd St. Ramps	$45,240	WTP. I-5/I-205 Route Development Plan.
10+ years	NE 112th Av (I-205 corridor)	Mill Plain/Chkalov to NE 49th St	Mill Pl. to NE 49th St.: widen, 2 lanes each direction with center left turn lane and intersection improvements NE 49th St.: intersection improvement	$7,700	MTIP. Vancouver 202-2007 TIP.
10+ years	I-5 South	Columbia River	New interstate river crossing	$228,500	Awaiting completion of I-5 Partnership Study. EIS required (see above).
10+ years	I-5 South	Interstate Br. to Main St.	Collector/distributor system	$80,720	Awaiting completion of I-5 Partnership Study. EIS required (see above).
10+ years	I-5 North	I-205 to 179th Street	Capacity Improvement (8 lanes assumed in model)	$36,140	I-5/I-205 North Route Development Plan.
10+ years	I-5 North	179th St. to 219th St.	Capacity Improvement (8 lanes assumed in model) and modify NE 179th St. interchange.	$63,080	I-5/I-205 North Route Development Plan. New 219th Interchange: Access Point Decision Report to be

[4] *Projects listed below in the 10+ year timeframe follow in the order of interstate corridor technical ranking: (1) I-205, (2) I-5 South, (3) I-5 North. Prioritization is subject to decisions subsequent to Access Decision Report acceptance, EIS completion and GMA Plan update*

2020 MTP+ Regional Prioritization of Corridors and Projects

Estimated Timeline	Corridor	Location	Improvements	Cost Estimate (in $ '000s) as of June 2001	Plan/Design Process (as of December 2001)
MTP = Metropolitan Transportation Plan; WTP = Washington Transportation Plan; TIP = Transportation Improvement Program, EIS = Environmental Impact Statement, FHWA = Federal Highway Administration					
			New 219th St. interchange w/connection to Hillhurst Rd.		submitted in fall 2001 Environmental review required (see above).
10+ years	I-5 North	NE 269th St. to 319th St.	Improve interchanges and crossing at 259th St.	$21,250	I-5/I-205 North Route Development Plan.
STATE SYSTEM					
0-6 years	SR-502	Battle Ground (west city limits) to SR-503	Widen, 2 lanes each direction with center left turn lane	$7,123	Design complete. 72% funded. MTP.
0-6 years	SR-500	112th Av to SR-503	Construct interchange at 112th Av, left-turn flyover ramp for W-bound SR-500 at SR-503	$35,127	112th Interchange: design and permitting complete. SR-500/SR-503/Fourth Plain: MTP/WTP. Intersection Improvements: currently underway.
0-6 years	SR-14	I-205 to 164th Av	Widen to 6 lanes	$28,800	WTP. MTP will need amendment to include this project.
0-6 years	SR-500	St John's Blvd to 54th Av	Construct Interchange at St John's, grade separation at 42nd Av, grade separation and ramps at 54th Av	$40,000	SR-500 Safety Enhancement Project. Environmental Assessment complete with Preferred Design Alternative. MTP/WTP.
6-10 years	SR-14	NW 6th Av (Camas) to 32nd St (Washougal)	Widen to 4 lanes, new interchange at SR-500, new partial interchange at 15th St., new interchange at 32nd St. Vic.	$54,440	MTP/WTP.
6-10 years	SR-14	164th Av. to NW 6th Av.	Widen to 6 lanes	$20,820	WTP
6-10 years	SR-502	Duluth to Battle Ground (W. City Limits)	Widen, 2 lanes each direction with left turn lanes at intersections	$13,934	MTP/WTP. WSDOT is working on access and right of way purchase. The corridor may need an intermediate project to first provide for turn lanes at intersections.
6-10 years	SR-503	at Padden Parkway (NE 83rd St.)	Eliminate at-grade intersection with interchange construction.	$13,046	This is a project proposed by Clark County.
10+ years	SR-503	Lewisville Park to N. County Line	Climbing lane and safety improvements. 2 projects	$3,425	MTP.

2020 MTP+ Regional Prioritization of Corridors and Projects

Estimated Timeline	Corridor	Location	Improvements	Cost Estimate (in $ '000s) as of June 2001	Plan/Design Process (as of December 2001)
MTP = Metropolitan Transportation Plan; WTP = Washington Transportation Plan; TIP = Transportation Improvement Program, EIS = Environmental Impact Statement, FHWA = Federal Highway Administration					
0-6 years	Padden Parkway	Andresen Rd. to NE 94th Av.	Widen to 4 lanes with bike and pedestrian path, grade-separated at 94th Av.	$6,230	Widening: Clark County 2001-2006 TIP. Awaiting environmental permitting approval. Construction programmed 2003-2005.
0-6 years	162nd Av.	39th St. to Ward Rd.		$11,754	Clark County 2001 - 2006 TIP. City of Vancouver 2002-07 TIP. Construction programmed in 2005-2006.
0-6 years	St John's	NE 50th Av to NE 72nd Av	Widen, 2 lanes each direction with center left turn; bike lanes; sidewalks	$12,367	Clark County 2001-2006 TIP. Construction programmed 2006 to post-2006.
0-6 years	NE 72nd Av	St. John's to south of NE 99th St	Widen from existing 2 lanes to accommodate I-205 traffic using the corridor	$6,892	Clark Co. 2001 - 2006 TIP. Construction programmed 2006.
0-6 years	Mill Plain Blvd.	SE 164th Av to 192nd Av	Widen 164th to 172nd Av and construct 172nd to 192nd Av., 2 lanes each direction with center left turn. Bike lanes and sidewalks.	$12,670	NE 162nd to 168th Av: facility designed and final Mitigated Determination of Non-Significance (MDNS) issued. 172nd to 192nd Av: City of Vancouver 2002-2007 TIP project in progress.
LOCAL SYSTEM					
0-6 years	SE 1st St/NW Lake Rd	SE 192nd Av to Leadbetter Pkwy.	Widen, 2 lanes each direction with center left turn, bike lanes and sidewalks.	$9,645	Funding partially secured for construction.
6-10 years	18th Street	NE 87th Av to NE 162nd Av	87th to 97th: construct on new alignment (1 lane each direction with center left turn lane, bike lanes and sidewalks). 97th to 162nd: widen to 5 lanes, 2 lanes each direction with center left turn lane, intersection improvements, bike lanes and sidewalks.	$30,425	City of Vancouver 2002-2007 TIP. NE 18th Street Planning Study is funded (2002-04).
6-10 years	NE 134th St.	I-5 to I205	Widen 134th Street (coordinate with I-5/I-205/134th Street interchange modifications), construct parallel arterials at NE	$38,500	Integrated with the I-5/134th Street Interchange Access Point Decision Report to be submitted fall 2001.

2020 MTP+ Regional Prioritization of Corridors and Projects					
Estimated Timeline	**Corridor**	**Location**	**Improvements**	**Cost Estimate (in $ '000s) as of June 2001**	**Plan/Design Process (as of December 2001)**
MTP = Metropolitan Transportation Plan; WTP = Washington Transportation Plan; TIP = Transportation Improvement Program, EIS = Environmental Impact Statement, FHWA = Federal Highway Administration					
			139th and 154th Streets		
6-10 years	192nd Av.	SE 1st St. to NE 18th St.	Widen to 4 lanes, with turn lanes, bike lanes and sidewalks.	$5,048	Clark County 2001-2006 TIP.
6-10 years	SE 1st Street	SE 164th Av to 192nd Av	Widen, 2 lanes each direction with center left turn, bike lanes and sidewalks.	$10,648	City of Vancouver 2002-2007 TIP.
10+ years	Lakeshore Av/ NW 36th Av	NW 78th St to Bliss Rd	Widen; add center left turn lane, bike lanes, sidewalks.	$20,644	Clark County 2001-2006 TIP. Construction post-2006.
10+ years	Fruit Valley Rd	Whitney Rd. to NW 78th St.	Widen to add center left turn lane; bike lanes; sidewalks	$12,000	Phase II of Fruit Valley Rd. project: preliminary design and identification of environmental issues is proceeding currently.
10+ years	179th Street	I-5 to NW 11th Av.	Widen, 2 lanes each direction (I-5 to NW 5th Av); 1 lane each direction (NW 5th to NW 11th Av); bike lanes; sidewalks	$13,115	MTP. Improvements in the immediate interchange area would be done in conjunction with interchange project. Awaiting results of I-5/219th Street Access Point Decision Report.
10+ years	179th Street	NE 10th Av to NE 50th Av	Widen, 2 lanes each direction	$16,877	Clark County 2001-2006 TIP. Construction post-2006.
10+ years	179th Street	NE 50th Av to Cramer Rd	Widen to add center left turn lane; bike lanes; sidewalks	$10,718	Clark County 2001-2006 TIP. Construction post-2006.

NOTE: Projects listed above were considered by the RTC Board and the Prioritization lists adopted in December 2001. Priorities will be re-examined periodically.
Estimated project costs are subject to change as projects become more clearly defined through Preliminary Engineering (PE) and Right of Way (RW) phases.

APPENDIX A-2

Table A-4: Measures to Implement TDM and TSM

MEASURES TO IMPLEMENT TRANSPORTATION DEMAND MANAGEMENT (TDM) AND TRANSPORTATION SYSTEM MANAGEMENT (TSM)		
Facility/ Strategy	**Project**	**Description**
Transit	Increase Transit Service	Improve transit service per C-TRAN/s Transit Development Plan (TDP)
Pedestrian	Improve Pedestrian Access to Transit	Pedestrian improvements provided through highway building projects (improved design standards), Transportation Improvement Program of local jurisdictions.
TDM	Vanpool Program	Increase subsidy for vanpool program participants. 120 vanpools operated during the I-5 span closure in September 1997.
TDM	Carpool Program	To provide for incentives. Further promote carpoolmatchNW.org
TDM	Telecommuting/ Teleworking	Fund employer outreach program
TDM	Flexible Work Hours	Fund employer outreach program
TSM	Vancouver Area Smart Trek (VAST): Traffic Management Centers and freeway and arterial management	Coordinated state and local Traffic Management Centers within Clark County with links to Oregon Department of Transportation Traffic Management Center for the management of bi-state transportation facilities. Expand communications network and expand freeway and arterial camera and detection coverage to manage facilities and deploy interconnected and adaptive signal control. Full deployment of the VAST Plan, including incident management, is estimated at $45 million, some costs overlap with system maintenance cost estimates provided in MTP Chapter 4.

CLEAN AIR CONFORMITY DETERMINATION

AIR QUALITY CONFORMITY STATEMENT

The Metropolitan Transportation Plan for Clark County is found to contribute to emission reductions and is **found to be in conformity with the Federal Clean Air Act as amended in 1990 and the Washington Clean Air Act** (chapter 70.94 RCW). The MTP does not adversely impact the existing SIP and is in conformity with it. All regionally significant transportation improvement projects are included in the regional travel forecasting model for purposes of air quality conformity analysis. A list of the projects included in the estimate of mobile emissions is contained in MTP Appendix Table A-1. Air quality conformity results are outlined in Table A-5 and a brief description of air quality conformity analysis methodology follows with key assumptions presented in Table A-6.

AIR QUALITY CONFORMITY METHODOLOGY AND RESULTS

The Southwest Clean Air Agency (SWCAA) has developed, as supplements to the State Implementation Plan, two Maintenance Plans; 1) for Carbon Monoxide (CO), and 2) for Ozone (O_3). In October, 1996 the CO Maintenance Plan and in April 1997 the Ozone Maintenance Plan were approved by the Environmental Protection Agency (EPA). Mobile source strategies contained in the Maintenance Plans were endorsed for implementation by the RTC Board of Directors (Resolution 02-96-04).

The MTP must comply with the mobile emissions budgets specified in the Maintenance Plans. The test is designed to prevent violation of the National Ambient Air Quality Standards (NAAQS); transportation emissions are not allowed to exceed levels relied upon in the Maintenance Plan demonstration. To ensure consistent assumptions, the same methodology used to develop mobile emissions budgets for the Maintenance Plans is used in the MTP air quality conformity process.

The modeling methodology used inputs from Mobile 5ah to generate emission rates and function curves by pollutant for each analysis year. All the inputs, for Mobile 5ah, including I/M program definition, RVP values, temperatures and vehicle age distribution, are based on guidance and inputs from the Washington State Department of Ecology, the Southwest Clean Air Agency and parameters contained on the Co and Ozone Maintenance Plans. Input assumptions for Mobile 5ah are available from RTC.

The air quality conformity analysis relies on travel data for three time periods (the AM 1-hour, the PM 2-hour, and the rest-of-the-day) and is based on use of *emme/2,* regional travel model software, and on use of Mobile 5ah to determine emissions rates as part of the emissions calculations. Input assumptions for Mobile 5ah were received from the Southwest Clean Air Agency (SWCAA) and the Oregon State Department of Environmental Quality (ODEQ). Hot stabilized emissions are calculated for each link in the system. The relationship between land use, the travel forecasting model and the air quality modeling needed for conformity analysis is shown in Figure A-1.

Each of the emitted gases (Carbon Monoxide (CO), Hydrocarbons (HC) and Nitrogen Oxides (NOx), has several categories of emission that make up the all-day total; hot starts, cold starts, and hot stabilized emissions. In addition, HC emissions also include hot soaks (which occur at the end of a trip in the destination zone), and diurnal emissions (those which occur during the day as rising temperatures cause vehicles to produce emissions through evaporation). CO is calculated for winter conditions, and HC and NOx are computed for summer conditions. The emissions calculations includes emissions caused by intra-zonal trips (trips which begin and end in the same Transportation Analysis Zone (TAZ). All outputs were seasonally adjusted based on EPA/SWAPCA guidance. Although the Clark County region is actively implementing Commute Trip Reduction (CTR) and Clean Air Action Days (public education together with free transit service on poor air quality days), these programs are not required by the Maintenance Plan and the emissions estimates reported overleaf did not include taking credit for these clean air programs.

Table A-5: 2023 Metropolitan Transportation Plan: Air Quality Conformity Results

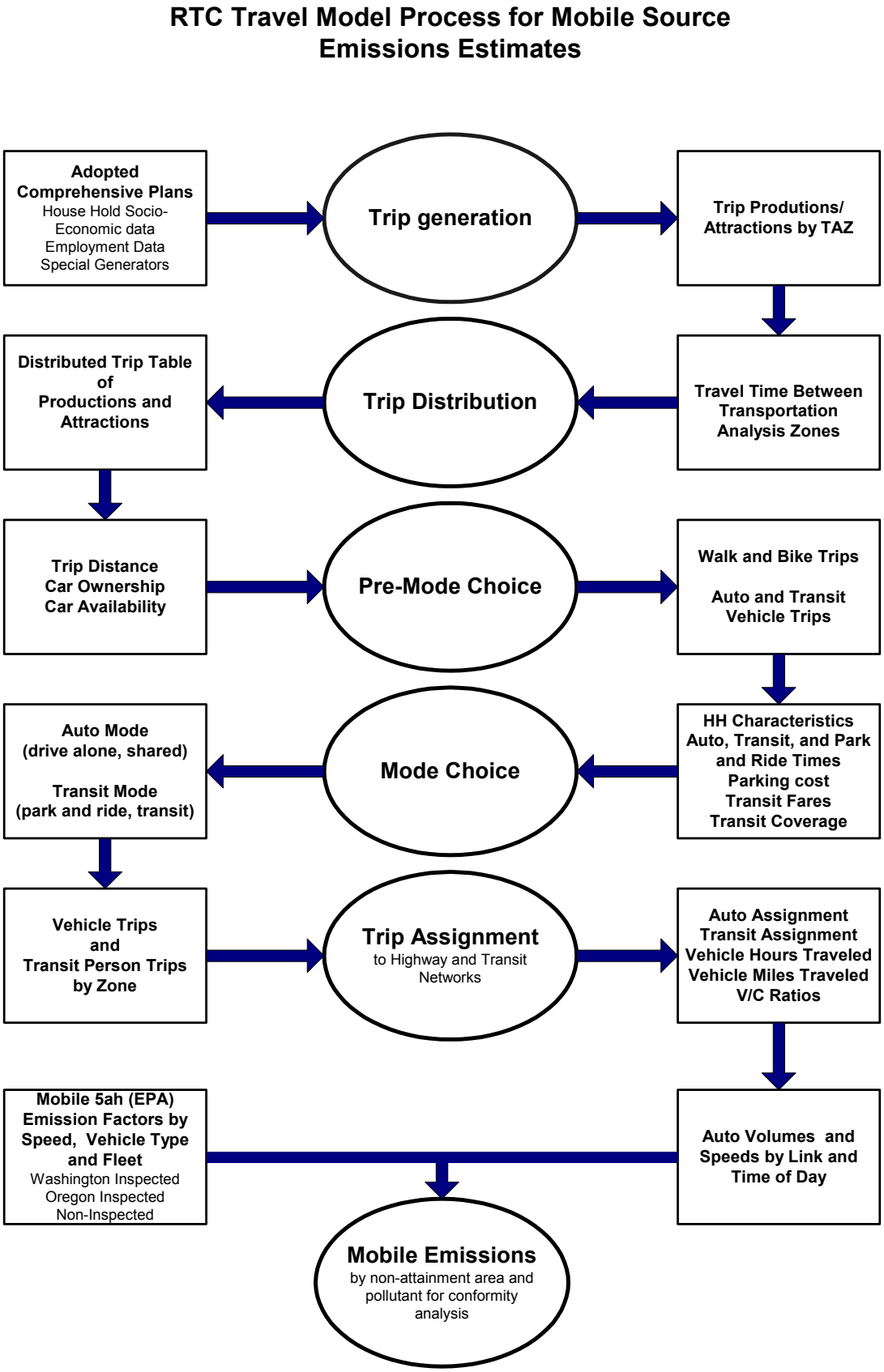
Year		Winter Carbon Monoxide *(in pounds per day)*	Hydrocarbons (HC) *(in tons per day)*	Nitrous Oxides (Nox) *(in tons per day)*
2000	MTP Emissions Estimate *Transportation Budget*	248,000 *300,000*	8 *11*	13 *14*
2006	MTP Emissions Estimate *Transportation Budget*	210,000 *260,000*	7 *9*	11 *11*
2013	MTP Emissions Estimate *Transportation Budget*	212,000 *260,000*	6 *11*	11 *13*
2023	MTP Emissions Estimate *Transportation Budget*	240,000 *260,000*	7 *12*	12 *14*

Table A-6: Air Quality Conformity: Key Assumptions

Key Assumptions In MTP Regional Air Quality Conformity		
Assumptions	**Notes**	**MTP**
Land Use: Population and Employment	Based on most up-to-date version of the Comprehensive Growth Management Plan for Clark County (adopted 1994, revised 1996)	Described in Chapter 2 of MTP. Summary demographics tables on page 2-11
Regional Travel Forecast Model: used to determine future travel need and congestion levels.	Based on Portland metropolitan region regional travel forecast model but with finer Transportation Analysis Zone system in Clark County for more specificity.	Model described in Chapter 3 MTP, page 3-20 to 3-25 See summary tables relating to system performance in MTP Chapter 3, pages 3-23 through 3-24 (congestion).
Highway Network	Coded in regional travel forecast model	Listed projects found in MTP Appendix A, pages A-2 through A-10. Relationship to air quality analysis described in MTP Appendix A, page A-1 and A-17.
Transit Network and Service Levels	Consistent with C-TRAN's Transit Development Plan and 20-year planning	See description of assumed transit hours of service in MTP Appendix A, page A-9. Transit fare assumptions are consistent with assumed inflation rate. Transit fares are an input within the mode-split process of the regional travel forecast model. Parking costs are assumed to increase as a Transportation Demand Management (TDM) measure between existing and future models. This results in an increase in the percentage of trips by transit and influences transit

Key Assumptions In MTP Regional Air Quality Conformity		
Assumptions	**Notes**	**MTP**
		ridership numbers.
TCMs	TCMs are not required in Clark County region. However, transportation strategies are included in the SIP.	See MTP Chapter 5, page 5-11.
Technical Analysis Procedures for Mobile Emissions	The process for estimating regional emissions for the regional conformity analysis involves the integration of land use and travel demand modeling with EPA Mobile 5ah emission factor model.	See Appendix A, page A-20
Consultation Process	The last major consultation process occurred on 6/14/00. It included representatives of RTC, FHWA, EPA, DOE and WSDOT. There has also been ongoing consultation with these partner agencies as specific conformity issues arise.	Among the items discussed were status of emissions models, latest emissions model used, regional travel forecast model used and mobile emissions estimation process. Discussion included the mobile emissions input model assumptions. Air quality analysis process and methodology is consistent throughout the Portland-Vancouver region.
RTC Board approval		RTC Board provides policy direction regarding regional travel model inputs and also adopts the MTP which describes the policies and demographic assumptions that are the foundation for future transportation needs analysis.

Figure A-1: RTC Travel Model Process for Mobile Source Emissions Estimates



APPENDIX B

THE STRATEGIC METROPOLITAN TRANSPORTATION PLAN (MTP)

RTC Board approval is required for projects and concepts to be listed in the Strategic Plan. The Strategic Plan projects and planning concepts may be identified through study recommendations outside of the MTP but must have been the result of a public planning process. RTC action on the Strategic MTP can occur as part of action on the full MTP or as a separate action on only the Strategic MTP Appendix.

The Strategic Plan is included as an Appendix to the MTP to provide a description of projects whose scale, financial structure and economic importance are beyond the 20-year list of projects contained in the "financially constrained" MTP. It also provides an outline of concepts that have recently emerged in the planning process that may have significant land use, economic development and transportation system impacts if they were to be implemented and developed in the future. While projects that are outlined in the Strategic Plan are outside of the financially constrained MTP, their inclusion in the Strategic Plan provides a way to better define the project's purpose/need and feasibility while still within the context of the 20-year approved MTP.

The MTP Strategic Plan outlines four projects and/or planning concepts described in two sections. The first section describes potential projects that are the result of recommendations from the recent I-5 Transportation and Trade Partnership Study completed in June 2002. The second section of the Strategic MTP allows for a description of planning concepts and issues that have surfaced in recent planning efforts that could have major land use and transportation implications. They are concepts that require further investigation and analysis but are included in the MTP Strategic Plan to raise awareness in the community regarding emerging land use and transportation issues. The second section includes a potential set of regional transportation improvements to accompany one of the GMA land use concepts and a potential transportation project to improve accessibility to the Port of Vancouver. These are titled as follows: A) a supplemental or replacement river crossing to the Interstate 5 Columbia River Bridge, B) the I-5/I-205/SR-500 light rail transit loop, C) the I-5 North Discovery Corridor between Salmon Creek and La Center and D) Port of Vancouver Industrial Lands Access from the North.

PROJECT RECOMMENDATIONS

The region's adopted long-range Metropolitan Transportation Plan must include a financial plan that shows how projects are to be implemented. The financial plan includes revenue from public and private sources and additional funding strategies in order for the region to be eligible for federal transportation revenues. The current federal transportation bill, TEA-21, allows for "illustrative projects" to be identified in the regional transportation planning process outside of the requirements for financial feasibility and transportation air quality conformity. The concept behind this first section of the Strategic MTP is to set into place a regionally coordinated and analytically sound transportation planning process upon which to initiate an analysis of project feasibility.

A) INTERSTATE 5 COLUMBIA RIVER BRIDGE

- **Project Description** – Replace or supplement the Interstate 5 Bridge with 3 through travel lanes and up to 2 supplemental or auxiliary lanes for a total of five lanes in each direction.

  For transit there should be 2 light rail tracks. Additional freeway improvements would be needed between Columbia Boulevard in Oregon and SR-500 in Vancouver to balance the volume of on and off traffic consistent with the 3 through lanes in the corridor.

- **Project Need and Purpose** – Due to highway capacity limitations and the three-lane bottleneck at the Interstate Bridge, traffic congestion is causing businesses and individuals to experience long delays. Without improvements, congestion will increase to unacceptable levels having a significant impact on the economy and potentially limiting the attraction and retention of business and industry. A set of multi-modal improvements including highway, transit, freight rail and demand management are needed in the corridor.

- **Land Use/Economic Development Impacts** – The bi-state transportation and land use systems are integrally related, each impacts and influences the other. Bi-state coordination among jurisdictions and agencies in pursuing economic development is a key part of maintaining a strong economy. Additional capacity across the Columbia River will improve the flow of freight and goods throughout the corridor. Specifically it will improve access to/from industrial destinations such as the Port of Vancouver, Rivergate and the Columbia Corridor. Access would also be improved to and from major employment centers such as downtown Vancouver, downtown Portland, Lloyd Center, Swan Island and the Columbia Corridor.

- **Financial Impacts** – Financing the highway and transit improvements will be expensive. Capital projects of such magnitude are likely to require a variety of funding and financing mechanisms. There are promising federal, state and local revenue sources that when combined could provide the ability to bond the capital cost of the projects. Developing the financial package will be complicated and will involve working together across a range of diverse entities.

- **Next Steps** – The process for moving the analysis forward involves incorporating the package of I-5 Partnership study recommendations into Metro's and RTC's long-range regional transportation plans and specifically initiating an EIS process to determine the feasibility of a new Columbia River crossing.

B) I-5/I-205/SR-500 LIGHT RAIL LOOP

- **Project Description** – The light rail transit loop would extend from the Interstate Max station at the Expo Center across the Columbia River through downtown Vancouver to the SR-500 or Fourth Plain corridor to Van Mall up to the future 83rd Street transit center and down I-205 across the Columbia River to connect with the Airport Max extension. Additional bus transit and sufficient park and ride spaces, necessary to adequately support Light Rail Transit (LRT), are also required.

- **Project Need and Purpose** – The high demand for travel between the Vancouver and Portland metropolitan area and across the limited capacity of the existing I-5 and I-205 bridges has created a transportation system bottleneck between the two regions that dramatically increases delay for commuters, business and industry. Both corridors are built out and provide only marginal room for freeway expansion. Additional high capacity transit, such as LRT, can significantly add person-moving capacity for commuters and allow for improved business and economic development capacity. The proposed light rail loop significantly increases the level and capacity of transit service within Clark County and connects to transit-served destinations in the Portland region.

- **Land Use and Economic Impacts** – Additional person-moving capacity in both of the interstate corridors will help to improve the business and freight moving capacity of the corridors. The expansion in the level of transit service will help to achieve the Comprehensive Growth Management Plan's vision for compact urban growth and the preservation of forestland and open space. The access to LRT can provide further economic development opportunities in downtown Vancouver and redevelopment opportunities along Fourth Plain. The LRT station areas can provide for the opportunity for high activity level economic development.

- **Financial Impacts** – Financing any or all parts of the proposed light rail loop will be expensive and will likely depend on additional local revenues approved through a public vote. In addition to the increase in local revenue, considerable federal support will be needed. The financial plan for the proposed project will need to be completed by the time the project completes the environmental and design phase.

- **Next Steps** – The process for moving the light rail loop forward includes a number of related but separate facets. The land use element associated with the LRT loop concept is being considered by the City of Vancouver via their Growth Management Comprehensive Plan land use scenario that would focus growth toward activity centers many of which are within the LRT loop corridors. In order to move the project forward for federal project funding eligibility, the Federal Transit Administration requires the official initiation of a "New Start" process. The New Start process begins with alternatives analysis and moves through an environmental/preliminary engineering process and ends with a final design and federal "full funding" agreement. This process includes many individual steps and approvals along the way. One of the most significant

decisions to be made in the near future would be the decision to initiate the New Start process for the light rail loop.

LAND USE AND TRANSPORTATION CONCEPTS

This second section includes emergent land use/economic development/transportation concepts that are incorporated into the Strategic Plan for community awareness purposes. If pursued they may have significant transportation implications that would need to be addressed in a future update to the MTP.

C) I-5 NORTH DISCOVERY CORRIDOR

- In May 2002 the Columbia River Economic Development Council (CREDC) released and adopted the Economic Development Strategy for Clark County. The Strategy promotes the concept of the I-5 North Discovery Corridor extending from the I-5/I-205 junction to the 319th Street La Center interchange. The Discovery Corridor development concept aims to increase the number of business and family-wage jobs located near Interstate 5. The "Discovery Corridor" land use concept is currently being examined and analyzed as one of the alternatives in Clark County's GMA Comprehensive Plan update process. Following fall 2002 public meetings on the Comprehensive Plan update, and analysis that will include measurement of transportation capital facility needs, alternatives or elements of several alternatives will be carried into the environmental impact study process.

- In 2001, the I-5/I-205 North Route Development Plan and Strategy Report addressed transportation needs relating to access to Interstate-5 in this vicinity but this Plan preceded the "Discovery Corridor" land use concept. In the 2001 Corridor Plan and subsequent Access Point Decision Reports, a series of improvements were identified that include the following: a new interstate access point (interchange) at 219th Street and several other improvements to the interchanges at 134th Street, 179th Street, 269th Street and 319th Street. As yet, the transportation impacts of the changed land uses in the "Discovery Corridor" concept have not been measured nor have transportation projects to support the development been proposed[5]. If pursued, the proposed Discovery Corridor land use change may result in significantly different travel patterns and travel volumes. These changes may have impacts on both I-5 as well as the surrounding network of arterial roadways that connect to the interstate system. One of the important tradeoffs to be examined will be the need for additional access to/from the freeway compared with the need to provide capacity to move goods and services longer distances through the region.

D) PORT OF VANCOUVER INDUSTRIAL LANDS ACCESS FROM THE NORTH

- The Port of Vancouver is a major industrial and business district that has a substantial inventory of undeveloped land on which to locate business and industry that would result

[5] This will be looked at in the ongoing Comprehensive Plan update process in late 2002/early 2003.

in jobs growth. Access from I-5 to the Port's land is currently limited to Mill Plain (SR 501) and Fourth Plain through Vancouver. A route along Fruit Valley Road and NE 78th Street currently provides indirect access to I-5 from the north. Adequate access is essential for optimum development and use of Port industrial lands. Economic benefits to the community from Port development, including light and heavy industrial, marine uses, distribution and international shipping are substantial.

- An extension of SR-501 north from its current terminus at Mile Post 12.61 along existing right-of-way, crossing over Lake River and the BNSF railroad tracks on new right-of-way then continuing along one of several alternative alignments to connect to I-5 could provide a secondary access to the Port of Vancouver and another vital link to the I-5 corridor.

- The SR 501 Extension concept was last addressed in the Intergovernmental Resource Center's 1988 report, *SR-501 Corridor Planning Study.* If the concept is to be re-evaluated the planning process would need to include a review of transportation demand for SR-501 extension, a feasibility analysis that reconsiders the transportation demand for the facility, alignment recommendation in light of changes in land use, environmental considerations, benefits/cost analysis and community input.

- It is recognized that extending SR 501 will have impacts on the natural environment in the Vancouver Lake lowlands area that would need to be reduced and mitigated. The new section of state highway would travel through rural and urban areas with benefits and impacts in each case. An alternative route analysis can address potential impacts and benefits to land use and the economy more specifically. No funds are yet allocated to the study of this concept.

METROPOLITAN TRANSPORTATION PLAN: GLOSSARY

ABBREVIATION	DESCRIPTION
AA	Alternatives Analysis
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AAWDT	Annual Average Weekday Traffic
ACCT	Agency Council on Coordinated Transportation
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AIP	Urban Arterial Trust Account Improvement Program
APC	Automatic Passenger Counter
APTA	American Public Transit Association
APTS	Advanced Public Transportation System
AQMA	Air Quality Maintenance Area
ATMS	Advanced Transportation Management System
AVL	Automated Vehicle Location
AVO	Average Vehicle Occupancy
AWDT	Average Weekday Traffic
BEA	Bureau of Economic Analysis (federal)
BMS	Bridge Management System
BNSF	Burlington Northern Santa Fe
BRAC	Bridge Replacement Advisory Committee
BRCT	Blue Ribbon Commission on Transportation
BRRP	Bridge Replacement and Rehabilitation Program
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAC	Citizens' Advisory Committee
CAPP	County Arterial Preservation Program
CBD	Central Business District
CBI	Coordinated Border Infrastructure Program
CCI	Corridor Congestion Index
CCP	City and County Congested Corridor Program
CCRI	Corridor Congestion Ratio Index
CCRP	Corridor Congestion Relief Program
CDBG	Community Development Block Grant
CDMP	Corridor Development and Management Plan
CERB	Community Economic Revitalization Board
CFP	Community Framework Plan
CFP	Capital Facilities Plan
CHAP	City Hardship Assistance Program
CIT	Community Involvement Team
CM/AQ	Congestion Mitigation/Air Quality
CMM	Congestion Management Monitoring
CMS	Congestion Management System
CO	Carbon Monoxide
CORBOR	Corridors and Borders Program (federal)
CRAB	County Road Administration Board
CRAG	Columbia Regional Association of Governments
CREDC	Columbia River Economic Development Council
CTPP	Census Transportation Planning Package
CTR	Commute Trip Reduction
C-TRAN	Clark County Public Transportation Benefit Area Authority
DCTED	Washington State Department of Community, Trade and Economic Development
DEIS	Draft Environmental Impact Statement
DEQ	Oregon State Department of Environmental Quality
DLCD	Oregon Department of Land Conservation and Development

METROPOLITAN TRANSPORTATION PLAN: GLOSSARY

ABBREVIATION	DESCRIPTION
DNS	Determination of Non-Significance
DOE	Washington State Department of Ecology
DOL	Washington State Department of Licensing
DOT	Department of Transportation
DS	Determination of Significance
DSHS	Washington Department of Social and Health Services
EA	Environmental Assessment
EAC	Enhancement Advisory Committee
ECO	Employee Commute Options
EIS	Environmental Impact Statement
EJ	Environmental Justice
EMME/2	EMME/2 is an interactive graphic transportation planning computer software package distributed by INRO Consultants, Montreal, Canada.
EPA	Environmental Protection Agency
ETRP	Employer Trip Reduction Program
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FFY	Federal Fiscal Year
FGTS	Freight and Goods Transportation System
FHWA	Federal Highway Administration
FMSIB	Freight Mobility Strategic Investment Board
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
FY	Fiscal Year
GIS	Geographic Information System
GMA	Growth Management Act
GTF	Governors' Task Force
HB	House Bill
HC	Hydrocarbons
HCM	Highway Capacity Manual
HCT	High Capacity Transportation
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
HSP	Highway System Plan
HSS	Highways of Statewide Significance
HUD	Department of Housing and Urban Development
I/M	Inspection/Maintenance
IM	Interstate Maintenance
IMS	Intermodal Management System
IPG	Intermodal Planning Group
IRC	Intergovernmental Resource Center
ISTEA	Intermodal Surface Transportation Efficiency Act (1991)
ITS	Intelligent Transportation System
IV/HS	Intelligent Vehicle/Highway System
IVHS	Intelligent Vehicle/Highway System
JARC	Job Access and Reverse Commute
JPACT	Joint Policy Advisory Committee on Transportation
LAS	Labor Area Summary
LCDC	Oregon Land Conservation and Development Commission
LCP	Least Cost Planning
LMC	Lane Miles of Congestion
LOS	Level of Service
LPG	Long Range Planning Group
LRT	Light Rail Transit
MAB	Metropolitan Area Boundary

METROPOLITAN TRANSPORTATION PLAN: GLOSSARY

ABBREVIATION	DESCRIPTION
MDNS	Mitigated Determination of Non-Significance
MIA	Major Investment Analysis
MOU	Memorandum of Understanding
MP	Maintenance Plan (air quality)
MPO	Metropolitan Planning Organization
MTIP	Metropolitan Transportation Improvement Program
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices
MVET	Motor Vehicle Excise Tax
NAAQS	National Ambient Air Quality Standards
NCPD	National Corridor Planning and Development Program
NEPA	National Environmental Policy Act
NHS	National Highway System
NOX	Nitrogen Oxides
O/D	Origin/Destination
ODOT	Oregon Department of Transportation
OFM	Washington Office of Financial Management
OTP	Oregon Transportation Plan
P&R	Park and Ride
PAG	Project Advisory Group
PCE	Passenger Car Equivalents
PE	Preliminary Engineering
PE/DEIS	Preliminary Engineering/Draft Environmental Impact Statement
PHF	Peak Hour Factor
PIA	Portland International Airport
PM10	Fine Particulates
PMG	Project Management Group
PMS	Pavement Management System
PMT	Project Management Team
POD	Pedestrian Oriented Development
Pre-AA	Preliminary Alternatives Analysis
PSMP	Pedestrian, Safety & Mobility Program
PTBA	Public Transportation Benefit Area
PTMS	Public Transportation Management System
PTSP	Public Transportation Systems Program
PVMATS	Portland-Vancouver Metropolitan Area Transportation Study
PWTF	Public Works Trust Fund
RACM's	Reasonable Available Control Measures
RACT	Reasonable Available Control Technology
RAP	Rural Arterial Program
RID	Road Improvement District
RJT	Route Jurisdiction Transfer
ROD	Record of Decision
ROW	Right of Way
RPC	Regional Planning Council
RTAC	Regional Transportation Advisory Committee
RTC	Southwest Washington Regional Transportation Council
RTFM	Regional Travel Forecasting Model
RTP	Regional Transportation Plan
RTPO	Regional Transportation Planning Organization
RUGGO	Regional Urban Growth Goals and Objectives
RW	Right of Way
SCP	Small City Program
SEIS	Supplemental Environmental Impact Statement
SEPA	State Environmental Policy Act

METROPOLITAN TRANSPORTATION PLAN: GLOSSARY

ABBREVIATION	DESCRIPTION
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SMS	Safety Management System
SOV	Single Occupant Vehicle
SPG	Strategic Planning Group
SR-	State Route
SSAC	Special Services Advisory Committee
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
SWAPCA	Southwest Washington Air Pollution Control Authority (now renamed SWCAA)
SWCAA	Southwest Clean Air Agency
SWCAA	Southwest Clean Air Agency
TAZ	Transportation Analysis Zone
TC	Transit Center
TCM's	Transportation Control Measures
TCSP	Transportation and Community and System Preservation Pilot Program
TDM	Transportation Demand Management
TDP	Transit Development Program
TEA-21	Transportation Equity Act for the 21st Century
TIA	Transportation Improvement Account
TIB	Transportation Improvement Board
TIMACS	Transportation Information, Management, and Control System
TIP	Transportation Improvement Program
TIPIT	Transportation Improvement Program Involvement Team
TMA	Transportation Management Area
TMC	Traffic Management Center
TMS	Transportation Management Systems
TMUG	Transportation Model Users' Group
TMZ	Transportation Management Zone
TOD	Transit Oriented Development
TPAC	Transportation Policy Advisory Committee
TPP	Transportation Partnership Program
TPR	Transportation Planning Rule
Tri-Met	Tri-county Metropolitan Transportation District
TRO	Traffic Relief Options
TSM	Transportation System Management
TSP	Transportation System Plan
UAB	Urban Area Boundary
UATA	Urban Arterial Trust Account
UGA	Urban Growth Area
UGB	Urban Growth Boundary
UPWP	Unified Planning Work Program
USDOT	United States Department of Transportation
V/C	Volume to Capacity
VAST	Vancouver Area Smart Trek
VHD	Vehicle Hours of Delay
VISSIM	Traffic/Transit Simulation Software (a product of PTV AG of Karlsruhe, Germany)
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
WTP	Washington's Transportation Plan