

# Chapter 5 Transportation

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## Introduction

This Transportation Element (TE) is prepared in accordance with the GMA. Contained within the TE are projects and implementation measures necessary to effectively serve planned land use throughout unincorporated Clark County. Importantly, this element provides guidance for the design, construction and operation of transportation facilities and services through the year 2035.

## Purpose and Background

The purpose of the TE is to present a plan for transportation facilities and services needed to support the county's 2015-2035 future land use map. The TE recommends specific arterial roadway projects for the unincorporated county in order to meet roadway safety and capacity needs. However, it also recommends various implementation strategies to guide the county in its participation in regional transportation planning. Implementation strategies provide guidance on such issues as:

- land use-transportation concurrency;
- arterial, highway and transit level-of-service;
- transit emphasis corridors;
- access management;
- transportation demand management (TDM);
- non-motorized transportation;
- air quality conformance; and
- freight and goods mobility.

The county's TE provides an estimate of expenditures and revenues associated with implementing various recommended transportation improvements. It also recommends a financial strategy that would ensure needed transportation improvements are funded. It should be noted that the transportation element can be amended and supplemented by special studies that later provide more detailed policy direction and project recommendations. These special studies would maintain consistency with the countywide transportation element, while also qualifying and refining its recommendations.

## Description of Historical Growth and Development

Clark County's population was estimated at 448,500 in 2015 making it the 5th most populous county in Washington State. The county was the fastest-growing in the state in the 1990s and was second-fastest over the past decade. Growth was spurred by in-migration of new residents, although in 2010, more people moved out of the county than moved in for the first time since 1984. Even with this decline of in-migration between 2000 and 2010 Clark County still experienced a 28.3% increase in population from 2000 to 2010 which is above the state increase of 18.2%.

The Washington State Office of Financial Management (OFM) provides counties and cities in the State of Washington with county-level growth forecasts to accommodate their planning processes under GMA. OFM's 2012 GMA population projections have a high, medium and low growth series for each county. The projections of 2035 total population for Clark County are:

- High – 681,135
- Medium – 562,207

- Low – 459,617

OFM considers the medium series to be the most likely projection. The Clark County Council used the medium series — 2035 countywide population of 562,207 — when adopting 2035 initial population targets. The land use assumptions used to estimate future travel demand for this Transportation Element use a 2035 forecast of 577,431 for countywide population.

The Clark County Council adopted a 2035 initial employment target for Clark County of 91,200 jobs. The land use assumptions used to estimate future travel demand for this Transportation Element use a 2035 forecast of 232,500 for countywide employment. Much of the employment growth is expected to occur within the incorporated cities; however, the county will plan for its share of job growth that will occur in unincorporated UGAs.

### **Growth Management Act Requirements and Policy Foundation**

The GMA provides a substantial amount of legal and policy guidance to the county regarding preparation of TEs. The GMA requires a TE that implements and is consistent with, the land use element of the comprehensive plan RCW 36.70A.070 (6). A TE must specifically present:

- land use assumptions used in estimating and forecasting travel;
- estimated traffic impacts to state-owned transportation facilities;
- an inventory of air, water and ground transportation facilities and services;
- level-of-service (LOS) standards for all locally owned arterial and transit routes;
- specific actions and requirements for bringing into compliance locally owned facilities and services that do not meet the LOS standards;
- LOS standards for state highways to gauge system performance;
- forecasts of traffic for at least ten years based on the adopted land use plan
- identification of state and local transportation system needs to meet current and future travel demand;
- an analysis of funding capability to judge identified system needs against probable funding resources;
- a multi-year finance plan that balances needs against available funding;
- intergovernmental coordination and impact assessment;
- strategies for reducing travel demand;
- if probable funding falls short of meeting identified needs, a discussion of how additional funding will be raised, or how land use assumptions will be reassessed to ensure that level-of-service standards will be met; and
- pedestrian and bicycle component.

Consistency between the land use and transportation elements of the comprehensive plan is of particular importance. Planned land use must be reflected in the travel forecasts that are prepared to evaluate the impacts of development. The transportation improvements and implementation measures within the transportation element must adequately support planned land use at adopted level-of-service (LOS) standards. In addition, consistency between the county’s overall transportation element, the cities’ comprehensive plans, the state’s highway plan and transit development programs needs to be ensured through intergovernmental coordination.

The transportation part of these planning policies are prepared to specifically address the requirements of RCW 36.70A.210 (3) (d) and apply to countywide transportation facilities and services. The applicable facilities and services are those that serve travel needs and have impacts

beyond the particular jurisdiction(s) within which they are located. The Countywide Planning Policies are to provide procedural guidance to the county and cities to help ensure consistent transportation planning and implementation.

By law, the Transportation Element must implement and be consistent with other elements of the 20-Year Plan and must include the county's plan to finance identified local system improvements. The policies and performance standards contained within this element complement the Land Use Element by providing for transportation needs and infrastructure in urban centers, addressing the needs of neighborhoods and adapting the rural transportation system in support of those policies. This element also integrates the goals and policies of the Housing (Chapter 2) and Economic Development (Chapter 9) Elements as well as minimizing the environmental impact of transportation systems.

### **Process**

The *Community Framework Plan* provides countywide transportation policies to guide the county and its municipalities with the development of their comprehensive plans and transportation elements. The Transportation Element is based on the *Community Framework Plan* and was developed from a number of cooperative transportation planning efforts in the county that included monthly city/county planner coordination meetings and participation in monthly Regional Transportation Advisory Committee meetings. The Regional Transportation Plan for Clark County (Dec.2014), prepared by the Southwest Washington Regional Transportation Council (RTC), provides the regional framework consistent with transportation planning in the Portland metropolitan region. RTC conducts transportation modeling for Clark County. The Washington State Highway System Plan is an element of the Washington Transportation Plan (WTP) that addresses current and forecasted state highway needs based on the investment options identified in the WTP. Policies from other planning documents have been incorporated into this element. In addition, the county has worked with each city in a partnership planning process to develop a coordinated transportation and land use plan for each urban area. The process of forming this element was as follows:

- Determine existing deficiencies and their cost.
- Determine the community's vision of the desired transportation system. Set level-of-service standards to implement the vision.
- Use proposed land use patterns to forecast future travel demand.
- Identify future projects needed to maintain adopted levels of service.
- Identify a financial plan to develop future projects.

The Transportation Element consists of the following sections:

1. **Transportation Facilities:** This section contains an overall review of transportation facilities such as roads, transit, bikeway, aviation, etc. The review included the existing condition of the facilities and future expectations.
2. **Level-of-Service:** Performance standards for arterials set goals for the maximum amount of congestion tolerated on the roadway. Performance standards are used to identify existing and future deficiencies.
3. **Regional Programs:** Development of a balanced Regional Transportation System.
4. **Concurrency:** This section outlines the process the county will use to ensure sufficient infrastructure is in place within six years of development as required by the GMA.
5. **Policies and Strategies:** A comprehensive set of policies to guide the implementation of this element is identified in this section.

- 6. **Financial Analysis:** A multi-year analysis of funding capability balancing the needs identified in this chapter against likely resources and implementing/financial strategies to accommodate future growth. The final analysis outlines how the transportation element will be implemented once adopted and provide a system for ensuring concurrency.

**1. Transportation Facilities**

**Regional Transportation Facilities**

An inventory of Clark County’s transportation system establishes baseline conditions to serve as a starting point for the identification of future system needs. State law requires an inventory of air, water and ground transportation facilities. The inventory includes Clark County facilities, C-Tran system and general aviation airport facilities. It also includes state-owned transportation facilities within Clark County’s boundaries. The regional transportation system includes all state transportation facilities and services (including highways, state-owned park-and-ride lots, etc.), local freeways, expressways, principal arterials, high-capacity transit systems and other transportation facilities and services like airports, rail facilities and marine facilities.

**Functional Classification**

Functional classification is the grouping of highways, roads and streets by the character of service they provide and was developed for transportation planning purposes. Basic to this process is the recognition that individual routes do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. Comprehensive transportation planning, an integral part of total economic and social development, uses functional classification to determine how travel can be channelized within the network in a logical and efficient manner. Functional classification defines the part that any particular route should play in serving the flow of trips through a highway network. Table 5.1 shows the Federal Functional Classification inventory for each classified roadway type and its proportional share of the entire roadway system in Clark County.

**Table 5.1 | Federal Functional Mileage Classification, Clark County’s Classified and Local Roads, 2015**

Facility Type	Urban Area	Total Clark County	Percent of Total
MINOR ARTERIALS*	56.74	82.87	3.6%
URBAN COLLECTORS & RURAL MAJOR COLLECTORS	308.10	622.27	27.1%
RURAL MINOR COLLECTORS	0.0	206.20	9.0%
LOCAL ROADS	821.41	1382.53	60.3%
<b>TOTAL</b>	<b>1186.25</b>	<b>2293.87</b>	<b>100.0%</b>

\*Includes Principal Arterials Source: Clark County Public Works Road Log 2015

In Clark County, interstate and state highway facilities are I-5, I-205, SR-14, SR-500, SR-502 and SR-503 and a WSDOT park and ride lot at I-5/Ridgefield Junction as shown in Table 5.2.

Table 5.2 | State Route Mileage in Clark County (2014)

Facility	Begins	Ends	Route Mileage
I-5	Oregon State Line, Interstate Bridge	Cowlitz Co. Line	20.47
I-205	Oregon State Line, Glenn Jackson Bridge	I-5 Interchange	10.57
SR-14	Interchange with I-5, Vancouver	Skamania Co. Line	21.52
SR-500	Interchange with I-5	SR-14 Intersection, Camas	22.64
SR-501 S. Section	Interchange with I-5	Terminus of south segment	10.99
SR-501 Couplet	Interchange with I-5	Franklin Street, Vancouver	0.55
SR-501 N. Section	City of Ridgefield	Interchange, I-5 at Pioneer	2.97
SR-502	Intersection with I-5, at N.E. 219 <sup>th</sup> St.	Intersection with SR-503	6.12
SR-503	Intersection with SR-500	Cowlitz Co. line	26.58

Source: WSDOT STATE Highway Log

Highway System Segments: Interstates and State Routes. Interstate highways are designed to provide for the highest degree of mobility serving large volumes of long-distance traffic; they are not designed to provide access to land uses. State Routes (SR) serve large volumes of traffic between counties or regions.

**I-5** provides 20.47 miles in Clark County providing for north-south travel from Mexico to Canada. Within Clark County, I-5 has three primary lanes of travel in each direction from the Interstate Bridge north to NE 134<sup>th</sup> Street. North of the I-5/I-205 interchange there are three travel lanes in each direction.

**I-205** is a 10.57 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 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 north to its terminus as a two lane facility in each direction.

**SR-14** provides the main east-west access from the City of Vancouver east to I-82 running along the north bank of the Columbia River. The facility extends 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 entirely within Clark County and allows for east-west cross-county travel. It crosses I-205, provides access to the Orchards area, and then traverses rural Clark County until it reaches the Camas urban area. SR-500 intersects with 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. The segment of SR-500 / Fourth Plain Blvd between SR-503 and NE 162<sup>nd</sup> Avenue was transferred to local jurisdiction in 2006. It was replaced by designating Padden Parkway between SR-503 and NE 162<sup>nd</sup> Avenue at Ward Rd as the new SR-500 alignment.

**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/15<sup>th</sup> 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 west side 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. 219<sup>th</sup> Street Interchange to Battle Ground.

### **National Highway System (NHS)**

In Clark County, the National Highway System includes the Interstate Highway System as well as other roads important to the nation's economy, defense and mobility. It is designated to focus federal investment on a set of high priority routes. Initially, ISTEA required that roads be designated as National Highway System (NHS) facilities and Congress approved the initial NHS System with passage of the National Highway System Designation Act of 1995 (NHS Act). Under Section 1104 of MAP-21 (2012), update and expansion of the NHS was required to additionally include urban and rural principal arterials that were not included in the NHS before October 1, 2012. This resulted in increasing the NHS in Clark County from about 78.5 centerline road miles to about 148.5 centerline road miles. Maps of the 2012 expanded NHS system, a sub-set of the MTP's designated regional transportation system, are available on FHWA's website.

### **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.

The county's arterial functional classification system and the cross-sections for non-local roadways in the county's jurisdiction are provided in the adopted Arterial Atlas. The information provided in that document for the county arterial roadways represents the county's adopted policy with respect to how the individual roadways are classified into the system described in this section of the Comprehensive Plan.

**Principal Arterial Parkways** such as the Padden Parkway is the highest classification within the county's functional system. Their purpose is to move high volumes of relatively long distance traffic speedily across the county or region. Direct land access is prohibited or minimal and then only to major activity centers of regional impact. The level of fixed route transit service is high; bicycle and pedestrian activity is on a parallel trail facility.

**Principal Arterials:** Urban principal arterials (such as NE 78th Street or NE Fourth Plain Road) permit traffic flow through the urban area and between major elements of the urban area. Principal arterials connect major traffic generators to other major activity centers and carry a high proportion of the total urban area travel on a minimum of roadway mileage. They move high volumes of traffic speedily across the county or region, but with volumes and speeds below those of the principal arterial parkway classification. Access is generally limited to intersections with other arterials and collectors. Direct land access is minimal and controlled, but less restrictive as compared to principal arterial parkway. Frequently principal arterials carry important intra-urban as well as intercity bus routes.

**Minor Arterials:** Urban minor arterials (such as Hazel Dell Avenue or NE 99<sup>th</sup> Street) collect and distribute traffic from principal arterials to streets of lower classifications or allow for traffic to directly access destinations. Access to land use activities is generally permitted. They are

primarily designed to accommodate through-traffic but may provide direct access for more intensely developed properties. Fixed route transit, bicycle and pedestrian activity is moderate.

**Collectors:** Urban collectors (such as NE 88<sup>th</sup> Street) provide for land access and traffic circulation within and between residential neighborhoods and commercial and industrial areas. Collectors do not handle long through trips and are not continuous for any great length. Fixed route transit service is low while bicycling and pedestrian activity ranges from moderate to high.

**Local Streets:** Urban 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 Major Collectors:** Rural major collectors are usually extensions of urban principal arterials and some urban minor arterials into the rural area. Their primary purpose is to link rural activity centers with larger towns nearby and to connect them to state arterial routes. Mostly, they serve intra-county travel. Land access remains subordinate to traffic movement. The level of fixed route transit, bicycle and pedestrian activity is low.

**Rural Minor Collectors:** Rural minor collectors (e.g. NE Kelly Road) are rural extensions of urban collectors and some urban minor arterials. They connect rural areas to major collectors and state routes.

## Public Transportation Options

### Clark County Public Transit Benefit Area Authority (C-TRAN)

C-TRAN is the primary provider of public transit services in Clark County. The agency was formed by a public vote in 1980 and currently serves the municipalities of Vancouver, Camas, Washougal, Battle Ground and Ridgefield, La Center, the town of Yacolt and areas of unincorporated Vancouver. C-TRAN is governed by a nine member board of directors that includes two Clark County Councilors, three Council members from the City of Vancouver and one member each from Camas, Washougal, Battle Ground and one member representing Ridgefield, La Center and Yacolt.

C-TRAN's system includes three transit centers at 1) Fisher's Landing, 2) 99th Street at Stockford Village and 3) Vancouver Mall as well as nine park and ride lots. Some are operated under a site use agreement. The nine C-TRAN park and ride facilities provide more than 2,200 parking spaces at 1) Andresen, 2) BPA Ross complex, 3) Camas/Washougal, 4) Evergreen, 5) Fisher's Landing Transit Center, 6) La Center, 7) 99th Street Transit Center at Stockford Village, 8) Ridgefield and 9) Salmon Creek. In addition to the three transit centers, C-TRAN manages seven park-and-ride lots providing over 1,600 parking spaces with direct access to express commuter services and local routes.

**Fixed Route Services** - C-TRAN provides fixed route service on 18 local, 7 commuter and 4 limited routes in addition to dial-a-ride based service known as the Connector, in Camas, Ridgefield and La Center. C-TRAN also operates C-VAN to provide ADA complementary paratransit service for persons who are unable to use regular C-TRAN buses. The C-TRAN fleet currently has 171 vehicles to carry out these services.

C-TRAN operates seven days a week and on holidays serving the greater Vancouver area. Operating hours are generally 4:30 a.m. to 9:30 p.m. on weekdays (with key urban routes operating until midnight), 7:00 a.m. to 8:00 p.m. on Saturdays and 8:00 a.m. to 7:00 p.m. on

Sundays/holidays. C-TRAN provided 280,922 total vehicle hours and 254,632 revenue hours of fixed route service in 2013, with ridership totaling 6,193,249 in 2013.

C-TRAN also provides commuter service into TriMet's downtown Portland transit mall and connecting service to the MAX light rail system at the Parkrose/Sumner Transit Center and the Delta Park/Vanport Light Rail Station. These access points allow C-TRAN passengers to reach destinations in the Portland metropolitan area, including Portland International Airport. Over 6.9 million fixed route passenger trips were provided in 2008, with passengers traveling nearly 37 million miles. All C-TRAN routes meet Americans with Disabilities Act (ADA) accessibility requirements.

**Connectors** – C-TRAN's Connector provides the cities of Camas, La Center and Ridgefield with fully accessible dial-a-ride (reservation based service) and scheduled stop service (no reservation required) at designated stops within the service areas. Rides are provided on a first-come, first-served basis.

**Shopping Shuttle** - C-TRAN's Shopping Shuttle provides residents of Smith Tower, Lewis & Clark and Columbia House apartments direct access to major shopping destinations, twice monthly.

**Paratransit** - C-TRAN's paratransit service, known as C-VAN, meets ADA requirements for complementary paratransit service. C-VAN provides wheelchair accessible, curb-to-curb services for elderly and disabled persons who cannot use fixed route services. C-VAN currently operates within the Vancouver urban growth area (UGA) and within 3/4 mile of fixed routes operating outside the Vancouver UGA.

### **Human Services Council Transportation Brokerage**

The Human Services Council Transportation Brokerage arranges rides for elderly, low income and people with medical needs and disabilities through contracts and arrangements with a variety of transportation providers. This service is highly valued in the community by people that have no access to C-TRAN or C-VAN services or for people for whom regular transit service does not work. Between January 1, 2010 and June 30, 2010 HSC brokered over 35,500 employment transportation trips and served 960 unique individuals. Continuation of the Brokerage services is dependent on grant funding.

### **Inter-City Bus**

Inter-city bus service to cities throughout the northwest and nation-wide, provided by Greyhound Bus Lines, is no longer available from Vancouver. The Greyhound bus service stop in Vancouver, Washington closed on January 1, 2009. Access to Greyhound and Bolt Bus service is now only available in Portland, Oregon. Northwest Trailways which had service in the region in 2007, no longer operates out of Washington or Oregon.

### **Rail**

There are two mainline rail lines, both owned by Burlington Northern Santa Fe (BNSF), that run through Clark County. The mainlines carry both freight and passengers. In addition, the Lewis and Clark Railroad is a 33-mile short line railroad owned by Clark County.

BNSF Seattle/Vancouver line is in excellent condition and has 70 to 80 trains operating in the corridor each day. The BNSF Vancouver/Eastern Washington line is also in excellent condition and handles about 40 trains daily. Union Pacific Railroad operates some freight trains to Tacoma and Seattle on BNSF's lines.

Amtrak has an agreement with BNSF to operate passenger service on the freight carrier's rail lines. Amtrak trains serve Vancouver daily. During the 1990s 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 2011, service has grown to four daily Amtrak Cascades roundtrips operating between Seattle and Portland, with two extending to Eugene and Vancouver BC, Canada. Between 1993 and 2013, ridership increased by 758% from 94,061 annual riders in 1993 to 807,349 riders in 2013. 72,500 passengers boarded or deboarded at the Vancouver Amtrak station in 2013.

The Coast Starlight, with service between Seattle and Los Angeles, via Vancouver and Portland, also provides once a day, daily service. The Empire Builder also provides one train a day, on a daily basis, between Chicago and Spokane from where one part of the train continues to Seattle and the other part continues, via Pasco and Bingen-White Salmon, to Vancouver with service terminating in Portland.

The Pacific Northwest Rail Corridor is one of eleven designated high-speed corridors in the nation. Its designation 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 of rail corridor improvements began in 1998. Custom-built Talgo trains are now in service on Amtrak's Pacific Northwest Rail Corridor service. The Vancouver Amtrak station facility was upgraded as part of the Eugene to Vancouver B.C. passenger rail service improvements. In the early 2010's, the Vancouver Rail Project improved safety, reduced rail congestion and improved on-time performance of Amtrak's passenger rail service. The project added a new rail bypass track and a grade separated crossing of the rail lines for vehicles using west 39th Street in Vancouver was opened in 2010.

Clark County Railroad is a 33-mile short line located in Clark County, Washington. It is southwest Washington's only operating short line, with connections to the BNSF. The line is owned by Clark County government and operated by the Portland Vancouver Junction Railroad Company, a private operator.

The line diverges from the main BNSF northern line around NW 78th Street and traverses the County via Rye Yard off St Johns Road and Battle Ground to its terminus at Chelatchie Prairie. This short line railroad is also known as the Lewis and Clark Railroad or the Clark County Railroad. The operating and maintenance responsibilities for the line are leased out under long-term operating contracts to two different railroad operators. On the line segment from Heisson to the south, the Portland Vancouver Junction Railroad (PVJR) is responsible for freight operations. At present, this line segment serves the only active freight shippers on the railroad's main freight corridor. On the line north of Heisson, the Battle Ground, Yacolt and Chelatchie Prairie Railroad Association (BYCX), a volunteer group, is operating a passenger excursion program originating in Yacolt. On the lower 14 miles from Rye Junction to Battle Ground, it is anticipated that considerable freight growth will continue through the freight operator to help support the economic development vision for Clark County. The upper 19 miles is anticipated for some possible freight operations and tourism. In 2007, the County was awarded \$1.1 million from the WSDOT Rail Emergent Fund for rehabilitation to the lower 14 miles of track. Clark County will continue to pursue state and federal grants to upgrade the track to Class 1 status for safer operation and increased freight on both the upper and lower lines. A new trans-load facility has been created between 78th and 88th Streets.

## **Port Districts**

Clark County has three port districts: the Port of Vancouver, the Port of Camas-Washougal and the Port of Ridgefield. Only the Port of Vancouver provides commercial waterborne shipping facilities.

**Port of Vancouver**, USA, 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. It is the third-largest port in the state of Washington. It has five marine terminals, provides 13 deep-draft vessel berths and has two 140-metric ton mobile harbor cranes to enable heavy lift cargo.

The Port is located within 2 miles of I-5 and is served by the Burlington Northern Santa Fe and Union Pacific Railroads, the Canadian National and the Canadian Pacific railroads. The Port has 800 acres of developed industrial and marine property with over 50 industrial tenants. Over 2,300 people are directly employed by these businesses and nearly 17,000 jobs are connected to port activities. The Port has over 500 additional acres of land for future development. Work began in 2004 on the National Environmental Policy Act (NEPA) process for this additional land's development as part of the Port's Economic Development & Conservation Plan. The Port's future development includes the Columbia Gateway area. The Port focused attention on rail access improvement with a Simulation and Access Study. The Port is phasing the implementation of the West Vancouver Freight Access Project.

**Port of Camas/Washougal** provides facilities and services for land, air, water based commerce and to enhance employment and recreational opportunities, contributing to the quality of life in the community. The 430-acre industrial park, located south of SR-14 by Index and 27th to 32nd Streets, was created in 1966 when the U.S. Army Corps of Engineers created a 5.5-mile levee along the Columbia River. It is home to an average of 48 businesses with approximately 1,000 employees and an annual payroll exceeding \$30 million. Steigerwald Commerce Center, the 120+ acres east of the Industrial Park, is the site of future development. The marina has moorage to accommodate 350-plus boats and a 4-lane launch ramp. The Port district also operates Grove Field Airport (described in a later section).

**Port of Ridgefield** is located about 15 miles north of the City of Vancouver. The Port's taxing district extends over 57 square miles and the district is bisected by the I-5 corridor. The Port adopted the Port of Ridgefield Comprehensive Plan in 2008. Port owned assets include a 41-acre site on Lake River, 3 miles from I-5, with a programmed bridge project over the BNSF rail lines which will enhance access to the site and 3 parcels (18 acres) of land in the 78-acre Ridgefield Industrial Park located at the southwest quadrant of I-5 and Pioneer Street. The Port-developed Ridgefield Industrial Park is now home to over twenty businesses providing some 800 jobs.

### **Aviation**

Airports and air transportation services are provided in the context of a complex set of federal, state and local governmental regulations and each level of government has a certain degree of control over parts of the air transportation system. The Federal Aviation Administration (FAA) deals primarily with issues of safety and air traffic control. The Washington State Department of Transportation's Aeronautics Division currently focuses primarily on general aviation airports and has some direct involvement with major passenger airports. Local jurisdictions (city, county, or port district) influence land use and usually are the airport operating authorities.

There are three publicly-owned and seventeen privately-owned airfields operating in Clark County. The publicly owned fields are Pearson, Grove and Woodland. The privately-owned fields which are available for public use are Cedars North Airpark Airport, Goheen and Fly for Fun.

The National Plan of Integrated Airport Systems (NPIAS) and the State Aeronautics Division in the Washington State Airport System Plan (WSASP) categorize these airports as general aviation airports. Amphibian aircraft are allowed in the Columbia River and several area lakes. The Resource Document contains a description of each of the airfields in Clark County. Portland International Airport (PDX) is 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 (cargo) service. Passenger airlines serving PDX include Air Canada, Alaska Airlines, America West, American, Condor, Delta, Frontier, Hawaiian, Icelandair, Jet Blue, Pen Air, Sea Port Airlines, Southwest, Spirit Airlines, United, Virgin America and Volaris. Cargo carriers serving PDX include American Airlines, AmeriFlight, DHL, Empire, Federal Express, Frontier, Hawaiian, United UPS and Western Air Express.

An important example of an economic benefit that can be derived from airports is the ability to attract compatible land use developments (e.g., commercial or industrial) on or near airport property. In many instances, land immediately on or adjacent to an airport is flat, easily developed and relatively inexpensive when compared to more centrally located business district sites.

One of the several requirements of the GMA is that the comprehensive plan of each jurisdiction should include a process for identifying and siting essential public facilities, including airports and state and regional transportation facilities, per RCW 36.70A.200.

The local planning authority and the airport sponsor should work together to ensure that the needs of both the local and aviation communities are met and compatible land uses are planned for the future. It is important for the 20-Year Plan to include the general aviation airports when planning long-term transportation improvements.

## **Regional Transportation System Performance**

### **Existing Traffic Volumes**

Clark County has seen significant growth in traffic volumes in recent years as a result of socio-economic and demographic changes. RTC compiles traffic count data from local jurisdictions and other sources and makes the [compiled data available](#) their website. 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 5.3, with comparisons between the traffic count in 1985 and the most recent traffic counts available. The economic downturn beginning in 2008 appeared to have had an effect on traffic counts with some count locations reporting slightly lower counts years 2008 and 2009 compared with 2006 and 2007 counts.

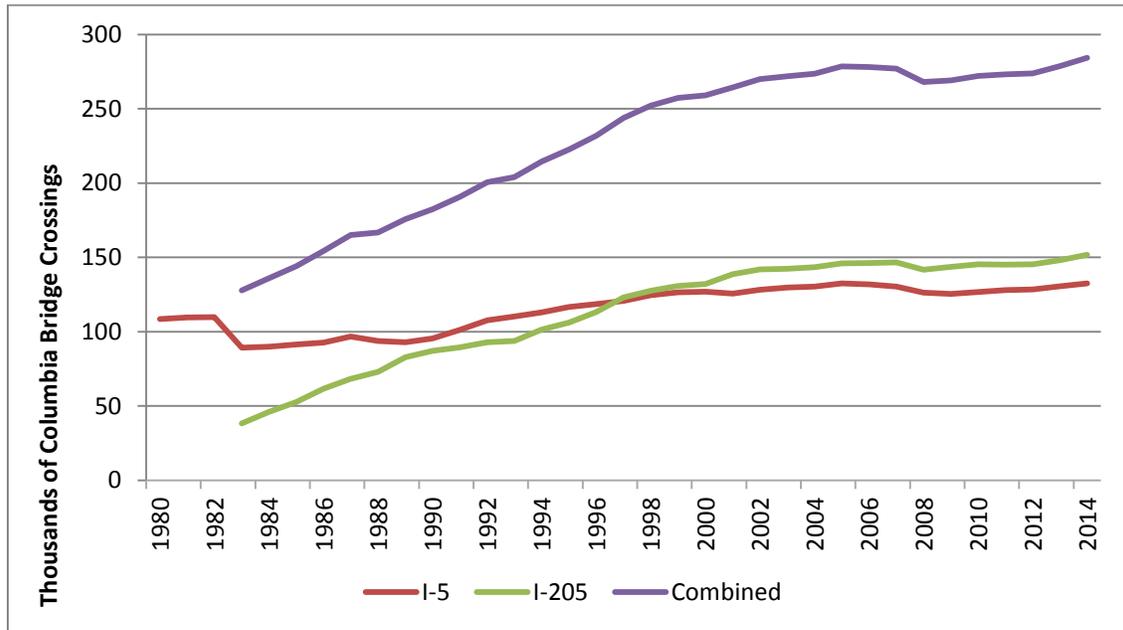
Table 5.3 | Traffic Volumes; 1985 to Current Years

Location	1985 Volumes	Current Volumes	Last Counted	% Increase	Annual % Increase
I-5 Bridge	92,301	130,511	2013	41%	1.5%
I-5, South of SR-500	54,400	130,992	2007	141%	6.4%
I-5, South of NE 78th St	52,784	94,982	2007	80%	3.6%
I-5, South of Woodland	33,748	66,906	2013	98%	4.5%
Hwy 99, South of NE 99th St	19,653	17,873	2010	-9%	-0.4%
I-205 Bridge	52,568	149,724	2013	185%	6.6%
I-205, South of SR-500	40,440	122,292	2010	202%	8.1%
78th St, West of Hwy 99	23,646	37,051	2012	57%	2.1%
164th Ave, South of SE 34th St	7,052	36,937	2013	424%	15.1%
Fourth Plain Blvd, West of NE Andresen	16,060	25,536	2012	59%	1.6%
Fourth Plain Blvd., West of 137 <sup>th</sup> Ave	14,671	27,483	2011	87%	3.4%
Mill Plain, East of NE Andresen Rd	21,021	20,558	2012	-2%	-0.1%
Mill Plain, East of NE Chkalov	18,220	45,916	2011	152%	5.8%
SR-14, West of SE 164th Ave	22,600	80,771	2007	257%	11.7%
SR-14, West of NW 6th Ave	17,600	42,567	2013	142%	5.1%
Padden Parkway, west of NE 94 <sup>th</sup> Ave.	3,952	25,584	2014	547%	20.3%
SR-500, West of NE Andresen Rd	20,054	55,277	2012	176%	6.5%
SR-503, South of NE 76th St	17,460	35,269	2009	102%	4.2%
SR-503, South of SR-502	7,360	22,211	2012	202%	5.5%
139 <sup>th</sup> St., West of NE 10 <sup>th</sup> Ave	11,218	20,816	2010	86%	3.4%

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

Permanent traffic recorders are in place on the I-5 and on the I-205 bridges. RTC compiles the Columbia crossing traffic counts provided by Oregon Department of Transportation from these recorders or from estimates provided by ODOT. In March 1995 RTC published the *Columbia River Bridge Traffic, 1961 - 1994* report and continues to report on [river crossing data](#) online. Figure 5.1 shows the average weekday traffic volumes crossing the Columbia River bridges, 1980 to 2013. In 2013 the estimated average weekday traffic (AWDT) volumes on the I-5 Interstate Bridge were 130,511 and on the I-205 Glenn Jackson Bridge were 148,152. In 2013, the average northbound weekday evening peak hour crossings of the I-5 Interstate Bridge were 4,572 and 7,411 on the I-205 Glenn Jackson Bridge. In the southbound direction, average weekday morning peak hour crossings were 5,646 on the I-5 Interstate Bridge and were 7,424 on the I-205 Glenn Jackson Bridge.

Figure 5.1 | Average Weekday Columbia River Bridge Crossings, 1980-2014



Source: Oregon Department of Transportation

The highest daily traffic ever recorded on the I-5 Interstate Bridge was on Friday July 2, 2004 when 157,301 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. 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 March 31, 2004 when 6,119 bridge crossings were made.

The I-205 Glenn Jackson Bridge’s highest daily number of crossings recorded was on Friday, July 25, 2014 with 172,683 crossings. The highest evening peak hour traffic recorded on the I-205 Glenn Jackson Bridge was on Thursday, August 3, 2006 when 13,284 bridge crossings were made. The highest northbound evening peak hour traffic recorded on the Bridge is the 8,426 crossings made on Friday May 24, 1996. For the southbound direction, the highest morning peak hour traffic was recorded on Tuesday, October 7, 2003 when 8,247 bridge crossings were made. The highest all-day total river crossings were recorded on Friday, July 2, 2004 when 325,095 trips crossed the Columbia river on the I-5 Interstate and I-205 Glenn Jackson bridges.

Regional transportation system intersections with the highest traffic volumes measured in terms of number of vehicles entering an intersection on an average weekday and are approximate due to the variability from year to year, month to month and day to day, are listed in Table 5.4.

Table 5.4 | Highest Volume Intersections in Clark County, 2014

Rank	East-West	North-South	Approx. Volumes	Count Year
1	Mill Plain Blvd.	Chkalov Drive	79,000	2014
2	State Route 500/Fourth Plain	State Route 503	72,000	2012
3	State Route 500	NE 54 <sup>th</sup> Avenue	62,000	2009
4	Mill Plain Blvd.	136 <sup>th</sup> Avenue	62,000	2012
5	State Route 500	NE 42 <sup>nd</sup> Avenue	58,000	2009
6	Padden Parkway	State Route 503	57,000	2012
7	NE 78 <sup>th</sup> Street	Highway 99	54,000	2012
8	Fourth Plain Blvd.	Andresen Road	53,000	2012
9	Padden Parkway	Andresen Road	53,000	2012
10	Mill Plain Blvd.	NE 120 <sup>th</sup> Avenue	51,000	2011
11	Mill Plain Blvd.	SE 164 <sup>th</sup> Ave.	51,000	2013
12	NE 134 <sup>th</sup> Street	NE 20 <sup>th</sup> Ave./Hwy. 99	51,000	2014
13	Mill Plain Blvd.	NE 123 <sup>rd</sup> /124 <sup>th</sup> Avenue	48,000	2011
14	State Route 502	State Route 503	47,000	2012

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 is used as a tool to analyze existing and future transportation system performance. It is specifically used to forecast future traffic volumes on the regional transportation system. The regional travel forecast model uses demographic data as a basis for travel forecasts with the basis for the 2035 travel demand forecast model being the underlying forecast 2035 land uses. The travel model process involves trip generation, trip distribution, mode split and trip assignment to the regional transportation system.

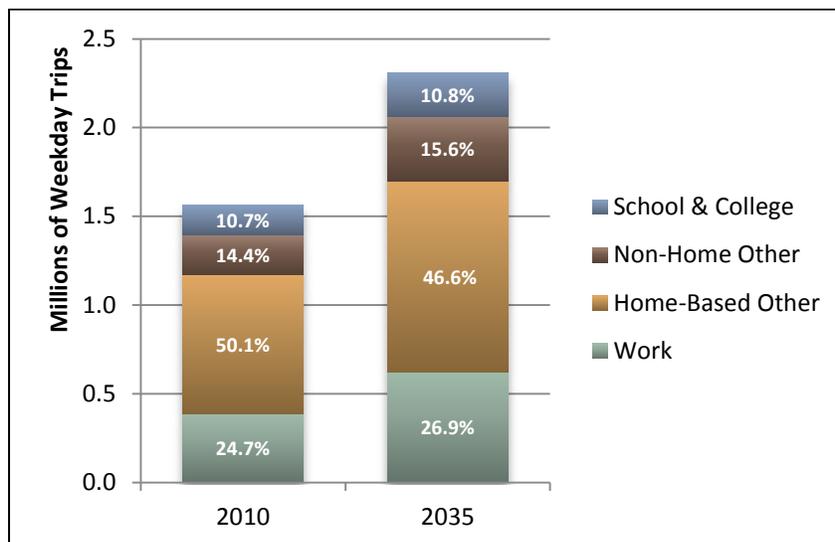
In the modeling process, a base year of 2010 was used with forecasting to the year 2035. As described in Chapter 2, the RTP update must be based on adopted land use plans of local jurisdictions. 2035 land uses are based on the adopted Comprehensive Growth Management Plan for Clark County (Clark County, September 2007) which has a horizon year of 2024, extended out to the RTP's 2035 horizon. Appendix A details the transportation analysis used to determine future transportation projects. That analysis used land uses based on the Preferred Alternative selected by the Board of County Councilors on February 23, 2016. Prior to adoption of the Comprehensive Growth Management Plans, alternative land use scenarios and their effect on regional transportation needs, are tested and measured as part of the Growth Management planning process. The 2035 land use allocation to 665 Clark County Transportation Analysis Zones (TAZ's) was developed by local jurisdictions and RTC's partner agencies using their adopted comprehensive land use plans, as well as current zoning, as the basis for forecasting the future location of population, housing and employment within Clark County. Household and employment data allocated to the TAZs are the input to the regional travel forecast model. After trip generation, trip distribution, mode split and trip assignment onto the assumed regional transportation network, output from the regional travel forecast model is used as a tool to identify specific transportation system needs and future transportation solutions.

From 2010 to 2035 there is forecast to be a 48% increase in all-day person trips from around 1.56 million trips per day in 2010 to over 2.31 million trips in 2035. 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 several categories including Home-Based Work, Home-Based Shopping, Home-

Based Other, Home-Based Recreation, Non-Home-Based Work, Non-Home-Based Other and School and College trips. Figure 3-9 summarizes this information to show the proportion of trips in four categories for average weekday Clark County-produced person trips.

Figure 5.2 shows that in the 2010 base year the largest proportion of trips during a 24-hour period are home-based-other trips (50%). 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 and non-home-based work trips (25%). Non-home-based-other trips make up 14% 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. School and college trips make up 11% of trips made on a daily basis. The proportions for the year 2035 are forecast to be 47% home-based-other trips, 27% home-based and non-home-based work trips, 16% non-home-based-other trips and 11% school/college trips.

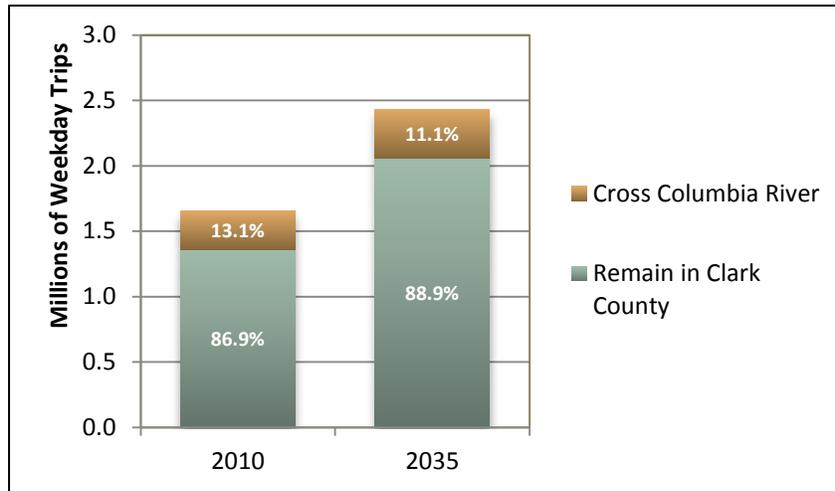
Figure 5.2 | Average Weekday Person Trips by Trip Purpose for Clark County



Source: RTC Regional Travel Forecast Model

Trips can also be categorized according to where the trips begin and end. Figure 5.3 shows the proportions of trips that use the Clark County highway system; trips that remain in Clark County (87% of trips in 2010, 89% in 2035) and trips that cross the Columbia River (13% in 2010, 11% in 2035).

Figure 5.3 | Distribution of Average Weekday Person Trips for Clark County



Source: RTC Regional Travel Forecast Model

Needs analysis was then carried out to determine what impact the 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 the following three scenarios:

Base - Year

2010 traffic volumes on 2035 highway network.

Committed System

Forecast 2035 traffic volumes on “committed” highway network. The “committed” network has improvement projects for which funds are already committed in the Transportation Improvement Program (TIP).

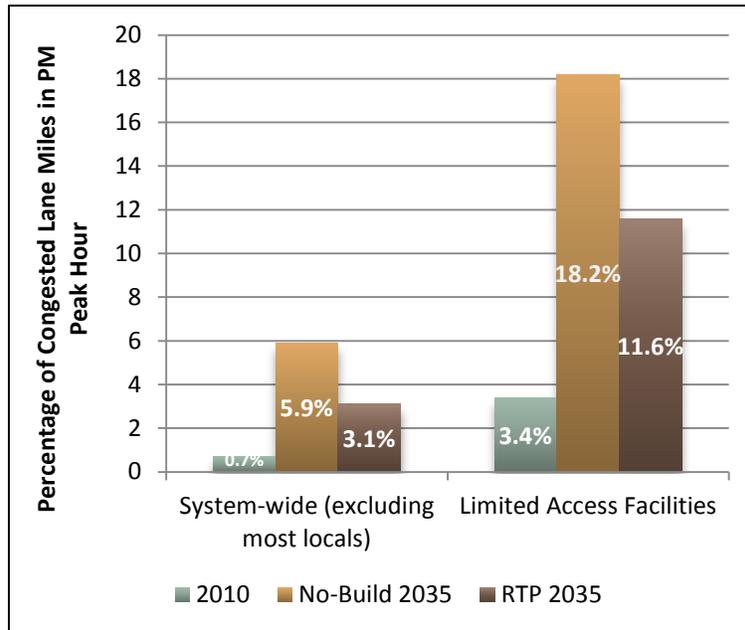
RTP - Year 2035

Forecast 2035 traffic volumes on 2035 highway network with RTP improvements are listed in Appendix B of the 2014 RTP. RTP improvements are projects for which funds are already programmed and committed in the current Transportation Improvement Program, together with projects for which there is an identified regional need, regional support and a reasonable expectation that funds will be available within the twenty-plus year horizon to construct and/or implement them.

### Regional Travel Forecasting Model Analysis

Analysis of the Regional Travel Forecasting Model can yield data for forecast speed on a transportation facility, vehicle miles traveled, lane miles of congestion and vehicle hours of delay. RTC staff uses forecast model data to inform the project identification process. Figure 5.4 shows some of the forecast results.

Figure 5.4 | Percentage of Congested Lane Miles within Clark County during the PM Peak Hour



Source: RTC Regional Travel Forecast Model

In summary, between 2013 and 2035, the region’s population is forecast to grow by 29% and the region’s employment is forecast to grow by 75%. The regional travel forecast model, using a base year of 2010, projects a resulting increase in trips per day of 48% with a 5.5% increase in regional transportation system highway lane miles and an 18% increase in fixed-route transit service hours.

## 2. Level-of-Service (LOS)

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. The GMA states that "level-of-service standards shall be established for all arterials and transit routes to serve as a gauge to judge the performance of the system." The GMA directs that these standards should be established locally and coordinated regionally for local arterials and for highways of regional significance. The standards are used to identify deficient facilities and services in the existing transportation system. Highways of statewide significance (RCW 47.06.140) have a level-of-service set by the state.

### LOS Definitions

Level-of-Service standards can be based on performance along a segment of a roadway or at an intersection. The Highway Capacity Manual includes different level-of-service definitions and descriptions of operating characteristics for freeways, highways, urban streets and signalized intersections, because driver expectations and the measures of effective performance are different for each type of facility.

For freeways and highways, LOS is described in terms of the relationship of actual travel speeds to free flow speeds, the freedom to maneuver within the traffic stream and the effects of minor incidents or breakdowns on the traffic stream. The descriptions of each LOS for highways are listed below for illustrative purposes.

**Level-of-Service A:** describes completely free flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles and operations are constrained only by the geometric features of the highway and by driver preferences. Maneuverability within the traffic stream is good. Minor disruptions to flow are easily absorbed without a change in travel speed.

**Level-of-Service B:** also indicates free flow, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver. Minor disruptions are still easily absorbed, although local deterioration in LOS will be more obvious.

**Level-of-Service C:** the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles. On multilane highways with a free flow speed above 50 miles per hour, the travel speeds reduce somewhat. Minor disruptions can cause serious local deterioration in service and queues will form behind any significant traffic disruption.

**Level-of-Service D:** the ability to maneuver is severely restricted due to traffic congestion. Travel speed is reduced by the increasing volume. Only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.

**Level-of-Service E:** represents operations at or near capacity, an unstable level. The densities vary, depending on the free flow speed (FFS). Vehicles are operating with the minimum spacing for maintaining uniform flow. Disruptions cannot be dissipated readily, often causing queues to form and service to deteriorate to LOS F. For the majority of multilane highways with free flow speeds between 45 and 60 miles per hour, passenger-car mean speeds at capacity range from 42 to 55 miles per hour, but are highly variable and unpredictable.

**Level-of-Service F:** represents forced or breakdown flow. It occurs either when vehicles arrive at a rate greater than the rate at which they are discharged or when the forecast demand exceeds the computed capacity of a planned facility. Although operations at these points – and on sections immediately downstream – appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods followed by stoppages. Travel speeds within queues are generally less than 30 miles per hour.

For reference purposes, Table 5.5 on the following page shows Level-of-Service definitions for urban arterials and signalized intersections as defined by the current Highway Capacity Manual.

**Table 5.5 |Level-of-service Definitions (HCM)**

Classification	Level-of-Service					
	A	B	C	D	E	F
Type I Urban Arterials Roadway Segment: Avg. Travel Speed (mph)	>42	>34 - 42	>27 - 34	≥21 - 27	≥16 - 21	< 16
Type II Urban Arterials Roadway Segment: Avg. Travel Speed (mph)	≥35	≥28 - 35	≥22 - 28	≥17 - 22	≥13 - 17	< 13
Signalized Intersections Delay per Vehicle (seconds)	≤10	> 10 - 20	> 20 - 35	> 35 - 55	> 55 - 80	> 80
Unsignalized Intersections Delay per Vehicle (seconds)	0 - 10	> 10 - 15	> 15 - 25	> 25 - 35	> 35 - 50	> 50

Source: Highway Capacity Manual, Transportation Research Board

### **Clark County Level-of-Service Standards**

Clark County LOS standards are applied at both the corridor and intersection level of analysis. The concurrency ordinance identifies level-of-service of a segment or intersection of any county roadway with a comprehensive plan functional classification of arterial or collector or any state highway of regional significance. LOS standards on these corridors are defined in the concurrency ordinance in terms of volume to capacity ratio for each segment during the peak period traffic conditions.

Individual movements at signalized intersections of regional significance in unincorporated county shall not exceed an average of two (2) cycle lengths or two hundred forty (240) seconds of delay (whichever is less). All unsignalized intersections of regional significance in the unincorporated county shall achieve LOS E standards or better (if warrants are not met). If warrants are met, unsignalized intersections of regional significance shall achieve LOS D standards or better. The signalization of unsignalized intersections shall be at the discretion of the Public Works director and the County is not obligated to meet this LOS standard. However, proposed developments shall not be required to mitigate their impacts in order to obtain concurrency unless specified criteria meet requirements of the ordinance.

The level-of-service on highways of statewide significance (HSS) has been set by the Washington State Department of Transportation at LOS C for rural facilities and D for urban facilities in Clark County. Levels-of-service for Highways of Regional Significance have been set by RTC at LOS C for or better on non-HSS rural facilities and LOS E or better for non-HSS urban state facilities in Clark County.

The GMA requires that each jurisdiction demonstrate that it can pay for proposed improvement projects from reasonably available funding sources. Deficient roadways are defined as those links or intersections that exceed the adopted LOS standard. Therefore, the adopted LOS standard will determine the current and future improvements projects in the transportation plan. The roadway LOS standard must reflect a reasonable balance between the amount of improvements the county and its cities can afford and the amount of congestion the public can tolerate. The capital facilities plan is comprised of projects necessary to maintain the defined standards through 20 years of growth. Level-of-service standards for transit are also required as part of the GMA planning process. The recommended LOS indicators for transit service are shown in Table 5.6. These indicators were approved in 2013 as C-TRAN service standards.

Table 5.6 | C-TRAN LOS Indicators

Planning Indicators							Supporting Factors	
SERVICE CLASSIFICATION	PASSENGERS PER REVENUE HOUR TARGET	PEAK/ NON-PEAK HEADWAYS	BUS STOP SPACING	ACCESSIBILITY (within service boundary)	MAXIMUM LOAD FACTOR (of seating capacity)	SERVICE SPAN (hours/day, days/week)	DENSITY	SUPPORTING FACTORS
COMMUTER EXPRESS SERVICE	27	10–15 minutes, peak only	Park & ride locations	Within 5 miles of 80% of population and employment	100%	M–F, peak only	High density employment district as destination	Near full cost recovery, parking mgmt., sufficient park & ride spaces/ transit connections
LOCAL URBAN AND LIMITED SERVICE	22-28	15-30 minutes, peak; 30-60 minutes non-peak	1/8 – 1/4 mile	Within 1/3 mile of 60% of population and 70% of employment within service area	125%	7 days, up to 19-hour span of service	8–15 residential dwelling units per acre, 80 or more employees per acre	Land use/zoning and development that supports transit use; trip generators/ destinations along corridor; pedestrian and bicycle facilities
INNOVATIVE TRANSIT SERVICE	6	Varies by area	Designated locations	Accessible to all households within Connector service area	100%	M–F, limited hour span of service	Lower density areas not supportive of fixed route	Pedestrian and bicycle facilities; connection to fixed route network
PARATRANSIT	3	N/A	N/A	Vancouver UGA and 3/4 mile of fixed route service outside the Vancouver UGA	100%	7 days, up to 19-hour span of service	N/A	Clear eligibility criteria for service; coordination with human services transportation providers; travel training
VANPOOL	5-12	N/A	N/A	Service available for commute trips that begin or end in Clark County	100%	Based on individual needs	N/A	Parking mgmt.; employer subsidies/tax credits; CTR program

Source: C-TRAN

### Existing Deficiencies

Southwest Washington Regional Transportation Council (RTC) is the federally designated Metropolitan Planning Organization (MPO) for the Clark County/Vancouver region. One of RTC’s duties is conducting a continuing Congestion Management Process (CMP) as defined in federal regulation. The CMP serves as a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system. RTC’s CMP is collaboratively developed and implemented as an integral part of the metropolitan planning process. The CMP provides a wide range of transportation system data to help guide the investment of transportation funds toward addressing congestion.

The monitoring element of the CMP is designed as an informational tool to be used within the decision-making process. It is also intended to provide an understanding of the transportation system’s operating conditions and deficiencies and to assess the impacts of improvement strategies.

The annual Congestion Monitoring Report provides a comprehensive set of data for monitoring the performance of the transportation system. The Congestion Monitoring Report provides profiles on

the travel characteristics of the regional transportation corridors. The data is translated into Tables and maps that help identify deficiencies.

### **Travel Demand Forecasting**

RTC uses a computerized model to project future traffic volumes based on the proposed land use patterns. The study year for analysis of future conditions is 2035. Base conditions for the 2024 analysis scenarios consist of funded or committed transportation projects, 2035 population and employment forecasts. Details of the land use assumptions and the allocation of jobs and households are provided in **Appendix A**.

Travel demand has also grown as the number of registered passenger cars in Clark County has increased dramatically over the last three decades. Between 1990 and 2000, there was a 67.2 percent increase in both registered passenger cars and light trucks (which includes SUVs).

### **Future Deficiencies**

Future deficiencies in the transportation system are identified based on the Comprehensive Plan Preferred Alternative urban growth boundary map. The assumed transportation network included the existing network plus improvements identified in the Regional Transportation Plan (RTP). The RTP includes the transportation improvement programs of the various jurisdictions and projects for which there is an identified regional need, strong regional commitment and probable funding available. Clark County's 6-year Transportation Improvement Plan (TIP) identifies needed system improvements and is updated and adopted on an annual basis. Appendix A details transportation issues that are forecasted to exceed the level-of-service standards in the next 20 years. An extensive list of capital improvements has been included in the RTP (Appendix B: RTP Solutions, Projects, Strategies and Programs) to address the wide array of transportation needs for the Clark County region as expressed through the comprehensive planning efforts of its jurisdictions. The projects include roadway improvements, traffic signals, road widenings, overlays, intersection reconstruction, access ramps, bicycle lanes and sidewalks, school crossings, guard rails, culvert replacements and storm drainage improvements. As reported in the December 2014 RTP, the regional transportation infrastructure needed to accommodate growth over the next 20 years will require an investment of over \$1.8 billion (the approximate total cost of projects identified in the 2007 RTP was \$1.4 billion).

### **Regional Programs and Projects**

This section summarizes the range of transportation programs and transportation projects needed to meet the transportation needs of people and freight in the twenty-plus year future.

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, plans to make for a safer regional transportation system for mobility of people and freight. All transportation modes are to be addressed with transportation options and choices made available to our diverse community's residents and businesses.

### **Bicycle and Pedestrian System**

The continuous development and growth of the non-motorized network in Clark County will reduce impacts to the environment (reduce greenhouse gases and vehicle demand), encourage enhanced community access and promote healthy lifestyles and exercise. A countywide network of bicycle and pedestrian facilities is needed to allow bicycling and walking for people of all ages and incomes as a practical alternative to automobile travel in some cases. It will also make the broader community more accessible, enjoyable and safer.

Integrated within the public highway, street and road system are non-motorized facilities, including bicycle and pedestrian facilities. The Cycling Vancouver & Clark County map includes separated multi-use paths such as the NE Padden Parkway, Burnt Bridge Creek and SR-503 trails; designated on-street bicycle lanes on some state highways and county and city roads; designated routes on widened county road shoulders; and streets and roads with shared roadway use that do not include special markings or signs.

Clark County and other local jurisdictions have included bicycle and pedestrian elements in their comprehensive plans or other plans. In 2010, the Board of County Commissioners adopted the *Bicycle and Pedestrian Master Plan*. The *Bicycle and Pedestrian Master Plan* provides a vision and implementation strategy for how Clark County can improve conditions for bicycling and walking over the next twenty years. The Plan envisions an interconnected bicycle and pedestrian network that provides routes to city centers, schools, transit, parks and recreational facilities. Once achieved, this Plan will improve Clark County residents' health, enhance their quality of life, help improve and protect the County's natural resources and be a source of pride to the community.

Transportation policies are an extremely important component of the bicycle and pedestrian plan. For example, roadway project policies can provide the support and direction to plan and build pedestrian and bicycle facilities because these facilities are more cost effective to incorporate the time of initial roadway construction. The County currently has a Bicycle and Pedestrian Advisory Committee to provide advice on bicycle and pedestrian facilities, mobility and safety issues.

In addition to the *Bicycle and Pedestrian Master Plan*, C-TRAN accommodates bikes on the bus. Bicycling and riding the bus also cuts down on pollution, traffic congestion and driving costs. All C-TRAN buses are equipped with bike racks. You can start your trip with an invigorating ride to a C-TRAN bus stop or park and ride and place your bike on the easy-to-use bike rack on any C-TRAN bus. Bike lockers are also available at transit centers.

### **Transportation Demand Management (TDM)**

TDM is a mandated requirement. It is about reducing auto trips, shortening some, eliminating others and making our transportation system more efficient. Clark County 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. There are numerous TDM strategies included in the 2014 RTP that can be put into place to increase transportation system efficiencies. Clark County strategies include Commute Trip Reduction, Parking and Transportation System Management.

### **Commute Trip Reduction (CTR)**

A Commute Trip Reduction (CTR) law was first passed by the state legislature in 1991 followed by an updated law, the CTR Efficiency Act (RCW 70.94.527), in 2006. The CTR Efficiency Act of 2006 modified the scope of the CTR program to ensure that CTR plans and employer goals are coordinated with transportation and growth plans and focus on urban growth areas with the most congested state highways. Under the CTR Efficiency Act, local jurisdictions were allowed to create Growth and Transportation Efficiency Centers (GTECs) to obtain funding and flexibility in implementing programs. The Act also expanded the role of WSDOT and Regional Transportation Planning Organizations (RTPOs) in CTR planning.

The overall statewide goals of the Commute Trip Reduction program are to: 1) improve transportation system efficiency; 2) conserve energy; and, 3) improve air quality. The program requires participation by the state's largest employers; those with over 100 employees arriving at work between 6 a.m. and 9 a.m. year-round and located in areas of Washington State most affected by traffic congestion. In Clark County there are currently four CTR affected jurisdictions:

1. Vancouver
2. Camas
3. Washougal
4. Unincorporated Clark County (UGA)

In October 2007, the RTC Board approved CTR Plans for each of these four jurisdictions. Since then, status reports have been submitted to the CTR Board in 2008, 2009, 2010 and 2011 and in 2013 summary CTR Plan updates were submitted to address how the CTR program is being implemented by local jurisdictions and the region. The implementation process requires that local jurisdictions, Regional Transportation Planning Organizations (RTPOs), major employers, transit agencies, WSDOT and the CTR Board work collaboratively. In 2015, local and regional CTR Plans were updated and submitted to the CTR Board with a specific focus on setting the future Plan's CTR goals and targets. In compliance with the Washington State Commute Trip Reduction Law, Clark County offers several elements in our Commute Trip Reduction (CTR) program:

- An on-site Employee Transportation Coordinator (ETC)
- Guaranteed/Emergency Ride Home
- Promotion of the Clark County Commute Trip Reduction website and online ride-matching service
- Promotion of CTR campaign events

The Clark County Commute Trip Reduction Website, [www.ClarkCommute.org](http://www.ClarkCommute.org), is loaded with information on travel options for commuting to work. It offers a commute tracker tool that enables you to track your work commute and calculate your savings when you choose an alternative commute to work.

### Transportation System Management

The term Transportation System Management (TSM) is applied to a wide range of transportation system improvements that tend to have low or no capital cost but address impediments to efficient operation of the transportation system. TSM measures can be applied on a spot or corridor basis. Clark County currently employs TSM measures to gain additional operational capacity on major arterial corridors. Active TSM measures in place include:

- corridor access management;
- channelization of traffic at intersections;
- traffic signal coordination; and,
- Intelligent Transportation System (ITS).

One of the most effective TSM measures is a program to address inappropriate land use access to arterial roadways. While new development is required to comply with the county transportation standards (CCC Chapter 40.350), existing land use on county arterials may have permitted inappropriate access to those arterial roadways. The most efficacious approach to corridor-level access management is to address access issues when arterial capacity is expanded.

Another TSM approach involves the identification of small capital improvements that can be demonstrated to add significantly to the capacity of an arterial. For example, at an intersection having a shared through and left-turn lane, the traffic signal must be timed to separate that approach from the approach facing it (to allow for free flow of the left-turning traffic). The necessity of splitting that phase of the traffic signal timing creates an inefficiency, which could be removed if a separate left-turn lane is constructed.

A third approach, which is most applicable to high-volume roadways (e.g., Interstates and parkway arterials), is to provide incident management services in a single or series of corridors to address traffic management during incidents (e.g., vehicle collisions, breakdowns) so that such incidents are cleared quickly. Washington State Department of Transportation has a program to provide incident management patrols for the higher-volume state highways (I-5, I-205, SR-14). Clark County uses traffic signal coordination systems to improve the operational efficiency of the regional transportation system in the following corridors:

- NE 134<sup>th</sup> Street (Salmon Creek Avenue/ NE 134<sup>th</sup> St to NW 2<sup>nd</sup> Avenue) NE 139<sup>th</sup> St from NE 20<sup>th</sup> Avenue to Tenney Road
- NE 99<sup>th</sup> Street (NW 21<sup>st</sup> Avenue to NE 32<sup>nd</sup> Avenue)
- NE 78<sup>th</sup> Street (NW 9<sup>th</sup> Avenue to NE 94<sup>th</sup> Avenue)
- Padden Parkway (NE Ward Road/NE 162<sup>nd</sup> intersection to NE 137<sup>th</sup> Avenue – part of WSDOT SR-500)
- NE Ward Road (NE 78<sup>th</sup> Street to NE 76<sup>th</sup> Street)
- NE Fourth Plain Road (NE 102<sup>nd</sup> Avenue to the shopping center entrance signal at approximately NE 114<sup>th</sup> Avenue)
- NE Highway 99 (several separate systems – NE 129<sup>th</sup> Street to NE 134<sup>th</sup> Street, NE 117<sup>th</sup> Street to NE 88<sup>th</sup> Street, NE 78<sup>th</sup> Street to NE Ross Road in the City of Vancouver)
- NE 20<sup>th</sup> Avenue (NE 134<sup>th</sup> Street to NE 139<sup>th</sup> Street)
- NE Andresen Road (NR 58<sup>th</sup> Street to NE 88<sup>th</sup> Street)

The unsignalized intersection LOS methodology is not used as a criterion to install signals. Underutilized intersections must meet legal signal warrants (volume, safety and operating criteria) before a signal can be installed. Indiscriminate installation of traffic signals can actually increase accidents as well as add unnecessary expense.

Traffic signal coordination is part of a broader regionally coordinated Transportation System Management and Operations (TSMO)/Intelligent Transportation System (ITS) program called Vancouver Area Smart Trek (VAST). The VAST program was initiated in 1999 through a partnership of transportation agencies including the Southwest Washington Regional Transportation Council, Clark County, the cities of Vancouver and Camas, ODOT, WSDOT and C-TRAN to coordinate, plan and fund TSMO/ITS projects. ITS uses real time information to integrate and manage road traffic, transit, ramp meters, traffic signals and to manage incidents for more efficient performance. The components of the VAST Program include communications infrastructure, traveler information, incident management, transportation management, transit priority, transit operation and management. The VAST Implementation Plan is a twenty-year prioritized project list. 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. A Clark County transportation data warehouse is established to provide the transportation data needed to monitor the TSMO improvements and system performance. As part of the operations program, RTC, Clark County and the VAST agencies have partnered with Portland State University and Portland area

transportation agencies to maintain and improve the [Portal Data](#) hosted by the ITS Lab at PSU. It contains historical and real-time transportation data from agencies in the Vancouver Portland region in a single location. This transportation information warehouse can be used by researchers, planners, traffic engineers and the public to look at transportation performance.

### **Congestion Management Process**

RTC is the federally designated Metropolitan Planning Organization (MPO) for the Vancouver/Clark County region, it is required by federal law to maintain a Congestion Management Process (CMP), which is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies to alleviate congestion and enhance the mobility of persons and goods.

Quality of life and economic prosperity in the region depends on efficient mobility for both people and goods. There is recognition that strategic expansion of capacity is needed at key bottlenecks. Capacity expansion should take place after lower cost efforts have been made to improve the operations of existing facilities. The CMP is intended to identify and manage congestion using performance measures to direct funding towards strategies that most effectively address congestion. The CMP is implemented as part of the overall metropolitan planning process.

The Clark County region was designated as a Transportation Management Area under the federal Transportation Act, ISTEA, in 1991. The region is designated as a TMA because it has a population greater than 200,000. In addition to meeting all the specified metropolitan transportation planning process requirements, MPOs representing Transportation Management Areas must meet additional requirements. In TMAs, the MPO must have a Congestion Management Process as described above. The CMP provides for the effective management of new and existing facilities through the use of travel demand reduction and operational management strategies. In addition, in air-quality non-attainment TMAs, highway capacity expansion projects that result in a significant increase in single occupancy vehicles can only be programmed if consistent with the Congestion Management Process. The CMP serves as the process for identifying deficient regional travel corridors, for evaluating alternatives to address congestion and for managing the performance of the system.

### **Preservation and Maintenance**

Preservation and maintenance of the existing transportation system is a high priority. Preservation can prolong the life of transportation system elements and maintenance addresses the day-to-day activities needed to keep the transportation system in good working order. Clark County Public Works maintains approximately 2,665 lane miles in unincorporated Clark County. As Clark County's population continues to grow, the wear and tear on our roads also increases.

### **Summer Road Preservation Program**

Starting in April of each year, Public Works begins annual road surface treatments. The county uses several different methods to preserve roads and to protect the public's investment in its transportation infrastructure. Road surface preservation treatments may include asphalt overlay, slurry seal, rubberized asphalt cape seal, chip seal, micro seal, full-depth reclamation and/or full-depth reclamation.

### **Bridges**

With the many rivers and streams in the region, bridge crossings are a vital part of the transportation infrastructure. Bridges on the Clark County highway system include: I-5 bridge crossings of the Columbia River, Salmon Creek, NE 129th Street, NE 134th Street, East Fork Lewis River and North Fork

of the 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. Bridge needs can include deck preservation, steel bridge painting, seismic retrofits, movable bridge repair and scour protection. The I-5 Bridge crossing the East Fork of the Lewis River is currently on the list of structurally-deficient bridges. This bridge has a weight restriction that affects heavy trucks. Clark County maintains a list of bridges with height and weight restrictions in the County and publishes these in the County's Bridge Report.

### **Transit**

Every year, state law requires the 32 public transit agencies statewide to produce six-year Transit Development Plans (TDP). C-TRAN is Clark County's public transit agency. The 2015-2020 TDP reviewed 2014 operating performance and facilities development. It highlights six-year initiatives and activities that include State of Good Repair, Mobility, Safety, Economic Vitality, Environmental Quality and Health and Service Equity. Washington State Transportation Plan 2035 cites C-TRAN preservation and maintenance costs over a 24-year period are expected to total \$2.24 billion.

### **High Capacity Transit (HCT)**

Prior to adoption of C-TRAN 2030 (C-TRAN, June 2010), the RTC Board adopted the Clark County High Capacity Transit System Study in December 2008 following a two-year planning process. The HCT Plan provides a blueprint for C-TRAN and the Clark County region to move High Capacity Transit improvements forward in identified HCT corridors. The HCT System Study is based on the assumption that traffic volumes will increase over time as planned growth and economic development continue in the Clark County region. The constrained ability to expand highway capacity in a number of key regional transportation corridors is expected to cause traffic congestion to worsen thus increasing the need to develop a transportation alternative. The first regional HCT improvement is Bus Rapid Transit (BRT) beginning operation in 2016 that will create a Fourth Plain Corridor Hybrid BRT between downtown Vancouver and Vancouver Mall.

Washington State Rail Plan 2013-2035 shows two projects completed by 2025 in Clark County; 1) Columbia River Bridge in Clark County. WSDOT's Long Range Plan for Amtrak Cascades from Rail milepost 9.61 to 10.14. The Portland - Spokane route junction at the north end of the Columbia River Bridge has a 10 mph speed restriction. Construction of an additional bridge and modification of the existing bridge would provide better movement of traffic and reduce the effect of bridge openings on rail traffic, and 2) Felida to MP 114 Third Man Track. This project is from rail milepost 130.45 to 112.2 and will include a new eighteen mile-long main line for Amtrak Cascades (traveling at 110 mph) will be build adjacent to the existing double track.

### **Freight**

Clark County's local, regional and state economy is highly dependent upon the efficient transport of goods to and from markets. Without investments to maintain and improve freight mobility in key highway and rail corridors and at intermodal freight connections (rail-road-water-air) the region's economy and its jobs' sustainability is at risk.

### **Freight Issues**

RTC initiated the Clark County Freight Mobility Study in 2009 to provide an understanding of the key elements of freight movement and to explain why freight and goods movement is important to Clark County's economy and employment. The study inventoried existing freight and goods movement and identified current deficiencies and future action items to be addressed as part of ongoing regional and local planning processes. The study began to identify corridor investment needs in

order to sustain jobs and economic development for existing and future industrial and employment centers. The study was conducted to supplement the Clark County RTP.

The key issues for truckers are congestion, travel-time reliability and a need for additional capacity. Key issues for rail are congestion, port access and mainline capacity limitations. All three ports in Clark County are expanding their portfolios of commercial/industrial lands. Private developers are also positioning their properties for the economic upturn. Improvements in truck and rail access are required to make these efforts successful, particularly improved freeway access. Barge operators need improvements in the Columbia River navigation channel and will also benefit from road and highway improvements.

### **State Initiatives**

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 first 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 is updated periodically with the most recent 2015 update published in March 2016. 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 in order to enhance trade opportunities. The Board is also charged with finding solutions that lessen the impact of the movement of freight on local communities. The Board proposes policies, projects, corridors and funding to the legislature to promote strategic investments in a statewide freight mobility transportation system.

### **Truck Routes**

Clark County has designated all roadways classified as arterials or above and located within urban areas as truck routes. In rural areas, the county has designated all of its collector facilities and above as truck routes. The county has placed restrictions on selected sections of the county system where pavement conditions require weight limits. The inventory of restricted sections is updated annually and restrictions are removed from the list once the surface has been upgraded.

WSDOT has designated all of its state roadways as truck routes and has few weight or height restrictions on these facilities. Freight mobility on Interstate 5 and Interstate 205 is especially important for through freight movements and are a critical link in north-south freight movements on the entire West Coast between Canada and Mexico. In addition, I-5 provides truck access to the Port of Vancouver and nearby industrial facilities. I-205 provides access for the high tech industries in East County for air shipments from Portland International Airport and SeaTac.

Most of the freight truck activity occurs between 6:00 AM and 4:00 PM with the highest truck traffic volumes found near midday. During the morning peak traffic period (AM peak) trucks account for approximately 5 to 10 percent of the total traffic volume on primary truck routes. During the evening peak traffic period (PM peak) the volume of truck traffic generally decreases and accounts for less than 5 percent of the total traffic.

### **Future Conditions**

An adequate level of mobility should be maintained for freight and goods movement in Clark County and in the Vancouver-Portland metropolitan area as a whole to sustain the economic activity of the metropolitan region and the States of Washington and Oregon. As traffic congestion continues to

increase in more locations and for longer periods, the freight industry will experience longer shipping schedules and delays. This will likely increase the cost of transporting the goods. Of particular concern is the I-5 Bridge over the Columbia River, which is already operating at capacity. In addition, the long queues of traffic resulting from congestion on I-5 could block truck access to downtown Vancouver and the Port of Vancouver. The budget constraints at the federal, state and local levels of government will limit the amount of funding for roadway improvements including those for upgrading pavement conditions on restricted truck routes. This will place more of a burden on the remaining truck route system.

There are short and long-term planning measures that can be implemented for preserving an adequate level of freight mobility as identified in the RTC freight transportation study and the I-5 Trade and Transportation Partnership Strategic Plan.

### **Parking**

Parking policy, codes and pricing have the most direct effect on commuting behavior and choice of modes for travel. Parking policy through the 1970s and into the 2000s concentrated on providing abundant off-street parking (both private and public) and closely monitoring available low cost on-street metered parking to attract business and encourage economic growth. While the parking programs today are much the same as they were 20 years ago in terms of attracting businesses, the means to this end are slightly different. Today, visions of mixed-use centers, higher density housing developments and a pedestrian-friendly environment are being incorporated into the 20-Year Plan elements. Although parking has always been a hotly contested issue, especially for those individuals desiring to drive to their destination, parking policies of the past are at odds with current goals.

Livable neighborhoods and pedestrian friendly environments are critical to the success of alternative transportation opportunities such as transit, carpooling, bicycling, walking and even high capacity transit. Where walkable and transit-friendly environments exist, the need for parking can actually decrease. The larger (in actual area) the transit friendly and walkable environment, the greater the potential decrease in parking demand. A decrease in parking can be realized only with a supporting and usable transit system, as well as pedestrian amenities. In the absence of such an environment, the demand for available parking will remain.

### **Transportation Security**

In compliance with RTC's Certification checklist, this TE references Appendix F: Transportation Security in the Vancouver/Clark County Region.

### **3. Concurrency**

#### **Concurrency Requirements**

The concurrency requirement of the GMA mandates that local jurisdictions adopt and enforce ordinances that prohibit development approval if the development causes the LOS on certain transportation facilities to decline below the standards adopted under the comprehensive plan, unless transportation improvements or strategies to accommodate impacts of the development are made concurrent with the development. Concurrent with development means that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years. Clark County will meet these requirements through implementation of the adopted concurrency ordinance.

Concurrency policies are applied to local arterials identified in the capital facilities plan. Highways of statewide significance are exempt from local policies. The concurrency requirements of the GMA closely match the State Environmental Policy Act (SEPA) short-term impact analysis requirements as

they both evaluate transportation impacts (namely the roadway, corridor and intersection LOS) at the year of opening of the development or a specified short-term analysis year. A State Environmental Policy Act (SEPA) transportation impact analysis would specify a study area. Concurrency requires an evaluation of area-wide impacts and specific mitigation of those impacts concurrent with the development opening.

### Concurrency Management System

The concurrency management system must address concurrency monitoring and concurrency regulation for new development. The county and its cities are responsible for concurrency monitoring and the project applicant is responsible for demonstrating concurrency of the proposed development. The concurrency management system will include all designated corridors along identified arterials and their intersections on the regional system, except for facilities of statewide significance or intersections with facilities of statewide significance. In addition, all intersections of regional significance will also be subject to concurrency testing. Implementation of concurrency monitoring in the county and with local jurisdictions consists of the following strategies:

- LOS is monitored in an established database that includes all intersections within the concurrency management system;
- The regional model and other traffic simulation models are used to estimate LOS for roadway segments. A traffic data collection program has been established for roadway segments;
- A tracking system is in place to monitor development applications for "used capacity;" and reserved capacity for new development is based on approved applications.

## 4. Policies and Strategies

Transportation policies that seek to provide for the mobility of people and goods must consider increases in travel demand caused by growth in population and employment. The transportation system must be 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 in conjunction with supportive land use plans.

### Community Framework Plan

The *Community Framework Plan* and the comprehensive plans of the county and its cities envision a shift in emphasis from a transportation system primarily based on private, single-occupant vehicles to one based increasingly on alternative, higher-occupancy travel modes such as ridesharing, public transit and non-polluting alternatives such as walking, bicycling and telecommuting. This shift in emphasis is due funding constraints at the federal and state level as well as consideration of the thirteen GMA planning goals contained in RCW 36.70A.020.

Regional policies are applicable countywide. Urban policies only apply to areas within adopted urban growth areas (UGAs) and are supplemental to any city policies. Rural policies apply to all areas outside adopted UGAs.

## Goals and Policies

### 5.0 Countywide Planning Policies

- 5.0.1 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:

- 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;
  - encourages energy efficiency;
  - recognizes financial constraints; and,
  - minimizes environmental impacts of the transportation systems development, operation and maintenance.
- 5.0.2 Regional and bi-state transportation facilities shall be planned for within the context of countywide and bi-state air, land and water resources.
- 5.0.3 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.
- 5.0.4 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.
- 5.0.5 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.
- 5.0.6 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.
- 5.0.7 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.
- 5.0.8 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.
- 5.0.9 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 of goods and people.
- 5.0.10 State or regional facilities that generate substantial travel demand should be sited along or near major transportation and/or public transit corridors.

## County 20-Year Plan Policies

In addition to the policies adopted by all local jurisdictions, the County has adopted transportation goals policies specific to areas within County jurisdiction.

**Goal: Develop a regionally-coordinated transportation system that supports and is consistent with the adopted land use plan.**

### 5.1 System Development Policies

- 5.1.1 The capital facilities plans, within each UGA should be jointly undertaken with the city and reviewed for regional consistency by the Southwest Washington Regional Transportation Council.
- 5.1.2 County Road Projects and transportation improvements are proposed through development shall be consistent with the current adopted Clark County Road Standards, Arterial Atlas, 2010 Clark County Bicycle and Pedestrian Master Plan, Concurrency Management System, RTC's Regional Transportation Plan and the Washington Transportation Plan.
- 5.1.3 Performance standards for the regional arterial system and transit routes shall direct growth to urban centers.
- 5.1.4 The county shall provide opportunity for full and fair participation by all communities in the transportation decision-making process.

### Implementation Strategies

- Prepare interagency agreements that allow for intergovernmental development review.
- Prepare interagency agreements that provide for the transfer of transportation project management and funding during annexation.
- Coordinate with local municipalities, the Washington State Department of Transportation, adjacent counties and C-TRAN to ensure that minimum roadway and multimodal design standards are consistent and that the design standards provide for all modes and are compatible with adjacent land uses.
- Establish and promote scenic highway corridors.

**Goal: Develop a multi-modal transportation system.**

### 5.2 Multi-modal System Policies

- 5.2.1 Roadway improvements which provide for additional capacity for the automobile shall also accommodate alternative travel modes.
- 5.2.2 Transit related options, including high capacity transit, shall be encouraged in order to reduce congestion and to improve and maintain air quality.
- 5.2.3 The regional public transportation system shall serve the needs of those with transportation disadvantages in accordance with adopted service standards. The county, C-TRAN and local agencies shall maintain specialized transportation services and facilities to meet the requirements of the Americans with Disabilities Act.

- 5.2.4 The county shall support new and improved passenger rail transportation services between Clark County and the Portland metropolitan area and along the I-5 corridor from Vancouver, BC to Eugene, Oregon.
- 5.2.5 Regional airport planning shall include all affected jurisdictions to provide compatibility with surrounding land uses and to support adequate ground transportation to move people and goods to and from airports.
- 5.2.6 The 2010 Clark County Bicycle and Pedestrian Master Plan and its policies are included by reference in the Comprehensive Plan.
- 5.2.7 The county supports the development of its bicycle and pedestrian network identified in the 2010 Clark County Bicycle and Pedestrian Master Plan.
- 5.2.8 The county supports coordination among the jurisdictions and agencies in the development of bikeway and pedestrian facilities.
- 5.2.9 Supports efforts to fund construction of bicycle and pedestrian improvements in the Clark County Bicycle and Pedestrian Master Plan without the loss of streets and/or highway vehicular lane capacity.
- 5.2.10 Long range land use and transportation plans shall be coordinated with high capacity transit plans.
- 5.2.11 Promote bicycle and pedestrian safety and increased bicycling and walking through safety and encouragement activities.

### **Implementation Strategies**

- Integrate the regional public transit system with other modes of transportation including auto, rideshare, bicycle and pedestrian travel.
- Develop infrastructure to interface with inter-city bus, rail and airline facilities.
- Coordinate with C-TRAN to integrate transit facilities such as transfer centers, bus pullouts, bus shelters, transit information centers and pedestrian connections into the design of all types of development.
- Provide rural collector level connections from rural centers to major multimodal transportation corridors and park-and-ride facilities.
- Support public transportation connections to the rural centers and encourage efficient service between rural cities, towns and centers and urban centers.
- Ensure that alternative transportation modes such as pathways, sidewalks, bus stops and bike lanes are provided for in subdivisions and other land developments.
- Incorporate adequate checklists into the development and project review process to ensure that accessibility for the elderly and physically challenged is provided, through the construction of curb cuts and ramps, designation of parking spaces, etc.
- Participate in any new airport site selection process led by the Ports, Washington State Department of Transportation Aviation Division or other governmental entity.
- Implement the 2010 Clark County Bicycle and Pedestrian Master Plan to expand travel opportunities for transportation and recreation.
- Increase bicycle and pedestrian safety through education and enforcement activities.
- Increase the number of people walking and cycling through education and promotional events.

- Coordinate with local jurisdictions to ensure a seamless bicycle and pedestrian transportation system between the unincorporated County and neighboring cities.
- Establish an East Clark County Scenic Bicycle Route.

**Goal: Optimize and preserve the investment in the transportation system.**

### **5.3 System Preservation Policies**

- 5.3.1 Development projects shall adhere to minimum driveway access spacing standards along arterial and collector streets to preserve the capacity of the transportation system. The county shall also work with Washington State Department of Transportation to ensure that minimum access spacing standards for state highways are maintained.
- 5.3.2 The efficiency of the county's transportation system shall be optimized through the use of Transportation System Management & Operations (TSMO) strategies such as signal interconnection coordination and synchronization.
- 5.3.3 The county shall extend the life of existing roadways through a timely maintenance and preservation program.
- 5.3.4 The county shall support and promote a Transportation Demand Management program to reduce the peak hour travel demand from single occupant motor vehicles.
- 5.3.5 The local street system shall be interconnected to eliminate the need to use collector or arterial streets for internal local traffic.
- 5.3.6 The county shall protect the public's investments in existing and planned freeway and separated grade interchanges.
- 5.3.7 The county shall provide seamless arterial corridor operations between agencies and use common TSMO technology for signal coordination along multi-agency arterial corridors.

### **Implementation Strategies**

- Install medians where feasible on arterial roadways that have inappropriate levels of land access as defined in the County Transportation Standards.
- Discourage the construction of cul-de-sacs and other forms of dead-end streets especially those without pedestrian and bicycle linkages. Require new development to provide for street/pedestrian connectivity where practicable considering environmental and other constraints. Existing unconnected streets should be retrofitted to provide bicycle and pedestrian linkages.
- Preservation program priorities will be established using the Pavement Management System.
- Truck access shall be restricted where gross weight will adversely impact the structural integrity of streets.
- Incorporate Intelligent Transportation System (ITS) where possible within urban growth areas when it is cost-efficient and will result in achieving county transportation goals.
- Require private developments to access collector and local access streets, versus direct access to the arterials. Encourage consolidation of access in developing commercial and high

density residential areas through shared use driveways, interconnected parking lots and local access streets that intersect with arterials.

- Use transportation, land use and other measures to maintain or reduce vehicle miles traveled and peak hour trips by single occupant vehicles.
- Maintain the county railroad right-of-way as an industrial-commercial-tourist-recreational resource.
- Evaluate the impacts of significant land use changes on existing or planned freeway and separated grade interchanges. Coordinate with the state on mitigating impacts.

**Goal: Ensure mobility throughout the transportation system.**

#### **5.4 System Mobility Policies**

- 5.4.1 The county arterial system shall be planned in general conformance with nationally-accepted arterial spacing standards.
- 5.4.2 Congestion performance standards shall be maintained by the appropriate jurisdictions on major freight mobility corridors and in the vicinity of major intermodal facilities to ensure the economic vitality of the region.
- 5.4.3 Transportation System Management strategies should be analyzed and employed before adding a general purpose lane to any regional roadway.
- 5.4.4 County roadways and intersections shall be designed when practical to achieve safety and accessibility for all modes. Arterial streets shall provide facilities for automobile, bike and pedestrian mobility as defined in the Arterial Atlas and shall include landscaping.
- 5.4.5 Improve mobility and access for the movement of goods and services on the short line railroad to enhance and promote economic opportunity throughout the county.

#### **Implementation Strategies**

- Complete regional corridors and address corridor bottlenecks.
- Allocate or reserve corridor capacity for land uses likely to produce family wage jobs.
- Reduce corridor speed and intersection delay standards where transit is available at 15 minute headways during peak hours.
- Provide for reduced trip rate calculations for transit supportive development.
- Emphasize transit and ridesharing in the design and construction of all transportation facilities through the implementation of transportation system management techniques (signal timing, signal prioritization) and transit-only and high occupancy vehicle lanes.
- Continually test for changes in concurrency due to major development projects.
- Incorporate a “no-build” analysis into the design process for all transportation projects that would add general purpose lanes.
- Ensure that freight corridors are designed, maintained, and operated to provide efficient movement of truck and rail traffic.
- Use intelligent transportation system technology to alert motorists, bicyclists, and pedestrians to the presence and anticipated length of closures due to train crossings.

- Evaluate the feasibility of grade separation in locations where train crossings result in significant delays and safety issues for other traffic, and improve the safety and operational conditions at rail crossings of streets.
- Work with freight stakeholders and the Port of Vancouver to maintain and improve intermodal freight connections involving Port terminals, rail yards, industrial areas, interchange tracks and regional highways.
- Support efficient and safe movement of goods by rail where appropriate, and promote efficient operation of freight rail lines.
- Identify and minimize impacts that freight movements have on adjacent residential neighborhoods and on resource uses.
- Work with local jurisdictions and railroads to coordinate land use plans and policies to preserve and protect rail corridors, and take into account community needs in relation to the rail system.

**Goal: Provide a safe transportation system**

**5.5 System Safety Policies**

- 5.5.1 Clark County supports the development and design of capital improvements that achieve the vision of the Washington State’s Strategic Highway Safety Plan, Target Zero, which establishes a statewide policy of zero fatalities and zero disabling injury collisions by 2030.
- 5.5.2 Pedestrian and bicycle safety shall be given consideration in the design and capital facilities planning process.
- 5.5.3 Interim safety improvements shall be implemented where a significant safety problem has been identified and the funding is not yet available for full improvements in conformance with adopted design standards.
- 5.5.4 Intersections between rail and other transportation modes shall be grade separated where possible, except at intermodal transfer points.
- 5.5.5 Clark County supports strong education and enforcement that helps reduce the number of fatalities and serious injuries due to distracted drivers.

**Implementation Strategies**

- A street maintenance program shall be developed by the county for non-motorized transportation.
- Develop interagency agreements on sharing services to ensure that all shoulders and/or designated bike lanes are maintained in a safe condition.
- Priority shall be given to sidewalk construction projects in transit corridors, near school facilities and major activity centers.

**Goal: Develop a balanced finance program, which ensures that new development pays the costs of its impacts and that adequate public financing is pursued and available.**

## 5.6 System Funding Policies

- 5.6.1 Priorities for programming and financing transportation improvements that reflect adopted transportation policies shall be adopted in coordination with other jurisdictions and agencies.
- 5.6.2 The prioritization process shall be flexible to allow staff to maximize use of outside funding sources.
- 5.6.3 A high priority shall be given to transportation improvements supporting economic development, particularly in high-ranking Focused Public Investment Areas.
- 5.6.4 A portion of available transportation funds shall be dedicated to sidewalk and bicycle facilities consistent with state law.
- 5.6.5 A proportionate share of funding for growth related roadway projects shall be obtained from Traffic Impact Fees.

### Implementation Strategies

- Develop and implement a process that ensures efficient management of transportation resources through cooperation in community planning and project development by federal, state, regional and local jurisdictions.
- Consider implementation of a rural traffic impact fee to offset impacts to urban corridors.
- Cooperatively work with local municipalities and the Regional Transportation Council to develop an integrated Transportation Improvement Program process to maximize the resources for the region.
- Establish funding guidelines and priorities for distribution of transportation funding among competing needs (e.g. economic development, Focused Public Investment Areas, maintenance, preservation, pedestrian safety, mobility, etc.).
- Pursue acquiring advance right-of-way for planned transportation improvements.
- Leverage local funding with innovative and aggressive finance strategies including public/private partnerships, grant development, efficient debt and fee-based funding sources including tolls, congestion pricing and other local options.

## 5. Financial Analysis

A financial analysis was prepared for the Transportation Element to demonstrate the ability of the county to fund planned roadway improvements. The GMA requires that there be a balance between proposed land use, resulting traffic forecasts and transportation improvements directed by the LOS standards and available revenues. The GMA requires that public facilities and infrastructure either be in place or included in a six-year improvement program before new development can be approved. The GMA also enables the imposition of impact fees, which are used to finance the shortfall between revenue and the cost of the transportation plan. Clark County adopted an impact fee ordinance in September 1990 and has amended that program in 1994, 2001 and 2010 to address increasing improvement costs. In 2010, in the wake of the Great Recession and the severe spike in unemployment that followed, the Board of County Commissioners began experimenting with fee waiver programs in an effort to stimulate job growth in unincorporated Clark County. As of April 2016, the fee waiver program remains in effect and the BOCC is continuing to evaluate the program effectiveness. The Corrected Job Creation Program, enacted in June 2013 was the latest iteration in a series of fee waiver programs, whose main purposes were to: Waive certain fees for a temporary

period to help reduce business costs and thereby stimulate development in industrial, mixed use, business park, commercial retail and zones within County; and Spur private sector jobs-producing economic development. The Clark County Fee Waiver Programs consist of Resolution No. 2010-10-04, Resolution No. 2012-02-01 and Resolution No. 2013-06-06.

A substantial traffic impact fee program update is expected to be completed in 2016-17. The financial analysis consists of four parts:

- Review existing transportation funding sources and forecast revenues through 2021 (six-year horizon), based on existing trends;
- Review annual expenditures for streets and project expenditures through 2021, based on existing trends;
- Prepare estimated costs for transportation improvement projects; and,
- Compare revenue and expenditure projections, estimated capital improvement costs and identify potential shortfalls in funding the capital improvement program.

### Existing Revenue Sources

Revenues available for financing roadway activities in the county and its cities can be highly variable, from year to year depending on the amount of development activity occurring in the county, the number of successful grant applications and other local economic factors. Funds for roadway-related activities come from five general sources:

- County Road Fund revenue from property tax;
- Public Works Trust Fund loans;
- Local improvement district bonds;
- Traffic Impact Fees adopted by the BOCC; and,
- Distribution of funds from state and federal sources (e.g., state gas tax allocations).

Funds allocated from general county and city revenues are distributed through the budgetary process. Though these funds are highly dependent on general economic conditions, the budgetary process can soften the impact of fluctuation in the economy and stabilize the year-to-year variation in funds allocated to roadways.

Revenues derived from roadway-related activities and from outside sources usually do not have the benefit of the budgetary process. Budgetary decisions cannot smooth out fluctuations when these revenues are dedicated solely to public works activities by the nature of the fee or by the state and federal government. Impact fees are contingent upon project and development activity and subject to return to the developer if not spent within 6 years. Clark County's fee waiver program waives permit application and traffic impact fees (TIF) for non-residential construction. Application fees are used to cover the costs associated with permitting. Similarly, TIF fees pay for the infrastructure improvements necessary to support residential and commercial growth. Although TIF fees represent a small portion of funding for these improvements, as private dollars they enhance the County's ability to obtain related federal funding. Approximately \$7.8 million in fee waivers, (\$1.4 million in application fees and \$6.4 million in TIF fees), were awarded to 153 projects from June 2013 through August 2014. For additional information see Clark County Auditor's Office Report #14-02 November 25, 2014.

Funds from state and federal sources are restricted by their own budgetary limitation of those jurisdictions. Funds for individual modes have traditionally been allocated by individual agencies;

however federal funding sources now allows some flexibility in funds between roadways, transit and non-motorized modes.

The federal gas tax and other transportation fees and taxes are the major federal revenue sources for transportation funding. On December 4, 2015, the President signed into law the Fixing America’s Surface Transportation Act (FAST) officially replacing MAP-21. It is important to note there are no programmatic changes in the FAST act. FAST is a five year surface transportation authorization bill which will provide spending levels for FY2016–FY2020. The former bill, Moving Ahead for Progress in the 21st Century Act (MAP-21) provided funding for fiscal years 2013, 2014 and 2015. MAP-21 incorporated performance measures to provide a more efficient investment of federal transportation funds and restructured core transportation programs.

The variability of the budgetary process, local economic conditions and federal and state funding sources often cause individual revenue sources to fluctuate widely from year to year. This creates difficulty in tracking definable trends in revenue growth from these sources. Total revenue dedicated to road activities rises and falls with the fluctuation of individual sources, though the amplitude is buffered as some sources fall and others rise, absorbing some of the impact of each. Loans from the Public Works Trust Fund can be used to balance or buffer variations in grant funding.

### Projected Expenditures

Long-range capital improvements to the county's transportation system and their estimated costs are included in the Capital Facilities Plan. These projects would likely be funded through a combination of state sources, the Transportation Improvement Board and a local match. Local contributions can raise the likelihood of project funding and typical (although not average) local matches are 20 percent. Note that in order to meet LOS standards and build new roadways consistent with the plan, many of the local streets must be built entirely by developer contributions.

### Comparison of Need and Revenues

#### 6-Year Transportation Program

The Growth Management Act (36.70A) requires “a multi-year financing plan based on the needs identified in the comprehensive plan.” The 2016-2021 Transportation Improvements Program (TIP) serve as the short term implementation mechanism of this plan. The TIP is financially constrained, balancing revenues with expenditures. The TIP uses objective criteria to evaluate and prioritize road improvement projects and assigns available revenues to projects to achieve those goals. State law requires Clark County to prepare and update annually the six-year comprehensive transportation program. The 2016-2021 TIP was adopted on November 10, 2015 by the Board of County Councilors. Table 5.7 and figure 5.5 summarize the TIP’s financial balance.

Table 5.7 | Transportation Improvement Program Financial Comparison

Revenue	\$163,818,000
Expenditure	\$163,818,000
<b>Balance*</b>	<b>\$0</b>

Source: Appendix A

Figure 5.5 | Six Year Transportation Needs and Projected Funding Capacities



Source: Appendix A

### 20-Year Planning Period

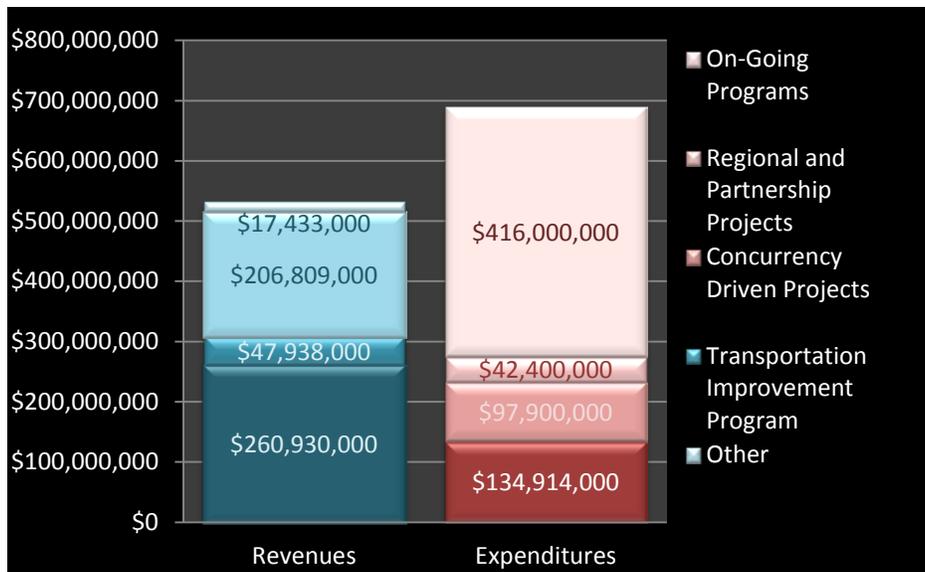
The Growth Management Hearings Boards have consistently read the GMA [RCW 36.70A.070(3)(e)] to require that estimates for revenues meet the estimated expenses for the 20-year planning period. Improvements to highways of regional significance are addressed in the Regional Transportation Improvement Program reviewed biannually by the Regional Transportation Council and are financially constrained. Improvements to highways of statewide significance are detailed in the Washington State Department of Transportation Highway System Plan which includes a description of both financially constrained and unconstrained planned improvements. Both the regional RTP and the Washington State Highway System Plan are incorporated by reference. The needs identified on the local system are consistent with the financially constrained portions of both the state and regional plans, as identified in the Capital Facilities Plan. Table 5.8 and Figure 5.6 show the estimated funding and expenses projected for Unincorporated Clark County.

Table 5.8 | Capital Revenues and Expenditures 20-Year Projection

Revenue	\$533,110,000
Expenditure	\$691,214,000
<b>Balance</b>	<b>-\$158,104,000</b>

Source: Appendix A

Figure 5.6 | Twenty Year Transportation Needs and Projected Funding Capacities



Source: Appendix A

### Strategies to Balance the CFP

The Growth Management Act requires the 6-year transportation improvement plan to be financially constrained and balanced. The 20-year transportation capital facilities plan is more speculative and is not required to be balanced. The projected revenue shortfall of \$158.1 million represents about 23% of the total projected capital cost, which could be considered significant in the absence of any strategies to close the gap.

There are a variety of strategies and policy actions available to the Board of County Commissioners to balance the 20-Year CFP. Options for increasing revenues include updating Traffic Impact Fees, adopting a motor vehicle excise tax of up to \$20 per vehicle and increasing the local option fuel tax to the statutory limit. Based on recent policy decisions and preliminary work on the Traffic Impact Fee update, it is realistic to assume that an additional \$40 to 50 million could be raised from these fees. Grant revenue estimates are also very conservative.

Reductions in the capital projects list are also likely. Several projects on the list would not contribute substantially to mobility on the transportation network in proportion to their estimated cost. Other listed projects are in areas that are likely to be annexed before county financing is available and would then become the responsibility of the annexing city.

The Transportation Capital Facilities Plan will be reviewed on a regular basis, not to exceed every five years, to ensure that the projected gap between costs and revenues is declining. If the potential shortfall increases and becomes critical, the potential courses of action in addition to those identified above would include reduction in the level-of-service standards and reassessment of the land use plan.

The transportation needs identified to serve growth in the next 20 years were evaluated by analyzing high volume corridors in the county. Local streets may experience greater volumes of “cut-through” traffic as a result of congestion on the major corridors. The county may rely on the local streets to serve a greater amount of traffic volume when needed projects cannot be funded.

