INTRODUCTION
The Transportation Element of the Comprehensive Plan describes the existing condition of the transportation network, and sets forth policies and objectives, which integrate the network functionally with the Land Use Map of the Comprehensive Plan. The Chapter also sets forth performance standards (levels of service) for county roads which play a major role within the transportation network.

This Element includes those items required under R.C.W. 36.70A.070 (6), which describes a Transportation Element as one of six required elements in a GMA Comprehensive Plan for a county.

Transportation systems in Benton County form a multi-modal network that provides for the movement of people and goods locally. The systems connect to regional, national and international systems. Transportation systems which comprise the local network are: road, rail, air, water-borne, transit, and non-motorized (bicycle, pedestrian).

Efficient transportation links to regional, national, and global markets are essential to the maintenance and growth of the county’s economic base. Additionally, the ease with which people can move throughout the county is an important factor in its desirability as a place to live.

GMA Planning Goals
RCW 36.70A.020 provides goals to guide local governments in the preparation and adoption of comprehensive plans. Below are two of those goals which relate directly to the Transportation Element:

Transportation - Encourage an efficient multi-modal transportation network that is based on regional priorities and coordinated with county and city comprehensive plans.

Public Facilities and Services - Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

Minimum GMA Requirements for the Transportation Element
RCW 36.70A.070 (6) states that planning jurisdictions must have a transportation element that implements and is consistent with the land use element. The transportation element shall include the following sub-elements:

a) Land use assumptions used in estimating travel (county land uses are primarily rural and agricultural, such uses generate new traffic
demands only gradually; major increases in traffic generators from new localized sources are unknown; future volume estimates are accomplished by projecting percentage increases over time -see LOS Table 8-1 in the appendix).

b) Facilities and service needs, including:

(i) Inventory of air, water and land transportation facilities and services, including transit alignments, to define existing capital facilities and travel levels as a basis for future planning.

(ii) Regionally coordinated level of service standards for all arterial and transit routes to serve as a gauge to judge performance of the system.

(iii) Identification of specific actions and requirements for bringing into compliance any facilities and services that are below an established level of service standard (currently all roadways with designated Levels Of Service are operating within that level).

(iv) Forecast of traffic for a least ten years based on the adopted land use plan to provide information on the location, timing, and capacity needs of future growth (see a above).

(v) Identification of system expansion needs and transportation system management needs to meet current and future demands (see Transportation Plan Maps for each Planning Region, this chapter);

c) Finance -

(i) Analysis of funding capability to judge needs against probable funding resources (see current Six Year Road Program);

(ii) Multi-year financing plan based on the needs identified in the comprehensive plan; the appropriate parts of which shall serve as the basis for the six-year street, road or transit program required by RCW 35.77.010 for cities, and RCW 35.81.121 for counties and RCW 35.58.2795 for public transportation systems;

(iii) 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;

d) Intergovernmental coordination efforts, including an assessment of the impacts of the transportation plan and land use assumptions on the transportation systems of adjacent jurisdictions (see Benton Franklin Regional Council Metropolitan Transportation Plan).

e) Demand management strategies (not applicable to the County Plan).

f) State Transportation Level of Service Mandates -

(i) Estimate traffic impacts to state owned transportation facilities resulting from land use assumptions in order to assist the Washington State Department of Transportation (WSDOT) in monitoring the performance of state facilities, planning for improvements, and assessing the impact of local land use decisions on state-owned facilities.

(ii) State-owned transportation
facilities (highways of statewide significance) inventory must be included in the plan.

**REGIONAL TRANSPORTATION PLANS**

The Benton-Franklin Council of Governments (BFCG) is the lead agency for both the Tri-Cities Metropolitan Planning Organization (MPO) and the Benton Franklin-Walla Walla Regional Transportation Planning Organization (RTPO). As lead agency for the RTPO, the BFCG reviews each local jurisdiction's land use and transportation elements of their comprehensive plans to certify each plan is in conformity with the transportation provisions of the GMA and consistent with the regional transportation plan, in accordance with GMA transportation planning requirements.

The **Regional Transportation Plan (RTP) 2006-2025**, was adopted in November 2006. The RTP is a comprehensive transportation plan that combines the review of urban and rural areas; provides a comprehensive vision of the entire region; and meets both the planning requirements of the Growth Management Act (GMA) and the federal requirements of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and other state and federal programs. The RTP coordinates the region's diverse transportation systems to support anticipated growth; identify and document system deficiencies and provide regional strategies for the maintenance and preservation of those systems; and prioritizes and identifies funding for existing and future projects and needs.

The RTP guides multi-modal transportation planning and programming decisions for the future of the region. The Plan establishes consistency with jurisdictional six-year Transportation Improvement Programs (TIPs) and the MPO/RTPO six year TIP; the land use and transportation elements of city and county comprehensive plans; and the Washington Transportation Plan. The RTP includes a 20-year list of projected improvements to the county road system and a financial analysis based on county road revenues over the past ten-year period.

The **“Regional Bicycle and Pedestrian Transportation Plan for Benton, Franklin, and Walla Walla Counties and the Tri-Cities Urban Area”** was adopted by the BFRC in November 2005. This document contains bicycle and pedestrian policies and regulations, system maps with preferred routes, facility design and standards, state, federal, and local funding sources, jurisdiction project lists, and a discussion of bicycle and pedestrian safety.

In addition to these regional plans the Benton County Comprehensive Plan includes goals, policies, and actions relevant to the development of bicycle and pedestrian facilities within the County in Chapter Three, Plan
Goals and Policies and Chapter Six, the Parks and Recreation Element. These goals and polices endorse the development of bicycle and pedestrian facilities and provide a public participation program for public involvement in the process. Chapter Six, the Parks and Recreation Element also contains a map of existing and proposed trails.

**Levels Of Service (LOS)**

"LOS" is the standard of operating efficiency which the local government identifies as appropriate for a service system. As a tool, "LOS" standards can be applied to all public service systems; e.g., municipal water systems, sewer collection and processing systems, students per classroom, acres of park land per unit of population, etc. GMA requires the use of LOS only for road transportation systems. In Benton County, LOSs are applied to roadways designated as "major collectors, and arterials".

The county can apply Levels of Service for its public roads ranging from "A" (free-flow traffic without delays), through "F" (congestion and gridlock). Level "C" represents an efficient flow of traffic without delays related to volume and congestion.

**Determinants Of The LOS At Which A Roadway Is Operating**

On any section of roadway, the actual volume of traffic measured against the roadway's capacity to carry that volume (i.e., volume over capacity, or V/C) at a defined level of efficiency (rate of flow), is its LOS.

Traffic volume is measured as "Average Daily Traffic" (ADT) and "Peak Hour Traffic" (PHT). PHT is measured during the "peak (volume) hours" of each daily commuter period, which occur between 7:00 and 8:00 a.m. and 4:30 to 6:00 p.m.). PHT is usually about 10 percent of ADT, except during the Christmas shopping season, or special events (e.g., the Columbia Cup Boat Race) when the LOS of a roadway is typically exceeded.

There are numerous ways to measure the efficiency of a roadway's rate of flow. On urban roadways, which carry heavy traffic volumes, the rate of flow may be measured by the jurisdiction as the "travel time" between points on a roadway; or the standard of measurement may be related to "delay times" at signalized intersection; or simply whether or not traffic actually moves at the posted rate of speed.

For any volume of traffic, the LOS is invariably a function of roadway geometrics including the width and number of travel lanes; the nature of road shoulders; the quality of the roadway surface; the number of stops and two and four way inter-sections, and access entry points onto the roadway, whether passing is allowed (i.e., solid or dashed median line) etc.

On rural roads with relatively light traffic volumes, where flow is
uncomplicated by frequent entry points and signalized intersections, sophisticated methodologies to measure LOS are not necessary.

Available Roadway Capacity
The difference between the current volume of traffic on a roadway and its capacity at the designated LOS is the remaining or available capacity for that section of roadway. When new demands on the service system "use up" the available capacity, new capacity must be created in order to maintain the designated LOS. Typically this is done by modifying the geometrics of the roadway. Examples of modifications are: adding a new traffic lane, turning lanes at intersections, widening shoulders, reducing the linear mileage of "no passing" zones, or eliminating points along the roadway that interrupt what would normally be good traffic flow.

Transportation Demand Management (TDM)
New capital projects are not the only way to expand the capacity of a system. Additional capacity can be obtained through "transportation demand management" strategies. Such strategies often, but not always, include incentives and/or disincentives.

Examples of TDM strategies include:
- staggered work shifts which diffuse peak traffic volume over a longer time period, which "decongests" the peak hour;
- the addition of a new bus route, which may entice some commuters to leave their car at home or at a park and ride lot;
- designating strategically located parking their commute, or, area as "park and ride" lots;
- paying commuters to carry co-workers on their commute; or,
- charging for parking at the work site.

All these serve to either "spread" peak traffic demand over a greater number of hours, or increase the overall "vehicle occupancy rate." Both outcomes improve the V/C ratio.

LOS on State-owned Facilities
The LOS for regional highways will be set through a coordinated process through the County’s RTPO, along with state, regional, and local input. The LOS for state highways of statewide significance will be set by the state in consultation with local jurisdictions, with the state having final authority to establish LOS.

In determining impacts to state owned facilities the impact portion is a calculation by the county of the future Annual Average Daily Trips or AADT's based on the land use assumptions through the build-out of the 1998 Comprehensive Plan. The State Highway Inventory Matrix shown in the Chapter 8 Appendix 8-1a, provides an inventory of state owned facilities and the 2018 AADT calculations using the land use assumptions in the Plan.

Concurrency - Pay As We Go
Under GMA, service capacity for a
new project is supposed to be available “concurrent” with the approval of a new project, or when the project is occupied. This requirement for concurrency is intended to prevent past situations statewide, where existing residents of communities were saddled with expensive new capital projects necessary to serve new development, but where significant portions of the expense were actually used to erase long deferred existing deficits in a service capacity. Too often, where this occurred, adverse public reaction jeopardized both the service upgrade and the proposed development.

Concurrency is supposed to prevent large deficits in capacity, thereby enabling the costs of providing new public service capacity for new development to be incremental, smaller, more precisely identified, and easier to pay for. This also enables the costs of serving new development to be borne equitably between the community and the developer according to an accounting of the benefits accruing to each from the development.

Under GMA, if the county were to designate an LOS which is actually higher (better) than that which exists under the current volume of traffic, the county would have to arrange for the completion of the capital improvement projects necessary to bring the roadway up to the designated LOS before it approves other land uses which would add to the traffic volumes on that section of roadway. The costs of undertaking capital projects in order to erase existing deficits are not supposed to be charged against a new development; rather the existing revenue stream pays for existing service capacity deficits, while sponsors of new developments must contribute only to capital projects necessary to meet their project demands.

Concurrency Management System
The principal mechanism for review of new development impacts on designated LOS is the County’s SEPA process review ordinance. Under the Benton County Code, Chapter 6.35, those projects that are not “categorically exempt" from SEPA review will address traffic generation in the SEPA Checklist, wherein project related trip generation is identified. Under the ordinance, projects that are categorically exempt are generally diminimus relative to traffic generation.

In order for the county to insure that there is available road capacity for new developments, it must coordinate with adjacent jurisdictions to make sure that traffic demands of all Land Use Maps are accurately projected, and it must design and implement a "monitoring program" which provides an ongoing assessment of the volume over capacity (V/C) conditions on individual sections of road. In this way, planning and funding of capital projects necessary to meet projected
demands can occur in advance, or "concurrently" with the demands.

The County Public Works Department and the Benton-Franklin Regional Council (BFRC) cooperatively conduct traffic counts on the road network to record traffic volumes over time. The data from these recordings is factored into the annual update of the Six Year Road Program, which identifies capital projects to be carried out in the near term.

The "condition" of roadways is also monitored to assess their surface and bed condition, and to indicate where the condition of a road is not sufficient to carry existing and projected volumes, as well as the volumes that would occur at the designated LOS. This data is also factored into the Six Year Road Program.

The LOS For A Roadway Should Reflect The Projected Demands Of The Land Use Map
GMA requires that LOS for circulation systems be adopted within the Transportation Element, and that the traffic volumes and flows generated from the aggregate of the land uses and densities of the Land Use Map be supported within that LOS.

Planning jurisdictions must show in the Transportation Element how they intend to fund and construct the capital projects necessary to maintain the LOS as the land uses and densities on the Land Use Map become a reality on the ground.

If LOS Cannot Be Maintained, The Land Use Map Should Be Amended To Affect Lower Transportation Demands
If the LOS cannot be maintained in the face of increasing demands, the land uses and densities on the Land Use Map of the comprehensive plan must be revisited to assess whether they are realistic in light of the ability to capitalize the construction of improvements needed to serve them at the designated LOS. An alternative to amending land uses or densities would be to lower the LOS.

There Are Consequences Associated With the Selected LOS
Designating appropriate LOS(s) is of fundamental importance for numerous reasons, including the following:

• Inherent within the selection of an LOS is the establishment of qualitative values; i.e., when the LOS on a particular section of roadway is reached, the conditions along that roadway will be tangible and observable. For example, there will be a rate of flow and level of convenience experienced by the driver, who depending upon how efficiently he/she moves along the road, will be either pleased or irritated. For residents or businesses occupying the lands adjacent to the roadway, there will be a quality of living and/or working environment influenced in large measure by the traffic volume and its rate of flow;
• Inherent within the selection of an LOS are quantitative commitments; e.g., designating a section of roadway which serves a growth area with a LOS of "A" for qualitative reasons (e.g., to protect a residential environment), will require a greater expenditure of capital funds over time, than would a LOS of "C."

• Selecting and maintaining a LOS requires citizens and decision-makers to deliberate over density, land use, and design considerations. For example, selecting a LOS of "C" on a travel corridor intended as a major arterial requires considerations such as frequency of intersection, use of frontage roads, maximum densities, and types of land uses.

On Major Collectors And Minor Arterials Outside of The UGA, The County Designates A LOS "C" At A specified "Average Rate Of Speed" (C/xxmph)

Only "major collectors" and "minor arterials" in unincorporated Benton County have designated LOSs.

The designated LOS is "C." LOS "C" is defined as: a condition where the "average rate of speed" between any two points on the roadway which are one mile apart, is equal to the posted speed limit. The intent of this standard is that the streams of traffic flow remain uninterrupted, even at peak hours, by congestion or delays related to traffic volume and road configuration.

Unless specified otherwise in Table 8-1 of the Appendix, the average rate of speed for LOS "C" on major collectors is a minimum of 50 miles per hour (mph).

LOS "C" must be maintained except where the following circumstances occur:
• special events temporarily raise traffic levels to levels exceeding the designated LOS.
• wherever a major collector is a travel corridor through an Urban Growth Area or City Boundary, or connects with a state Arterial, and the LOS of the travel corridor (on the urban side), or the Arterial is lower than "C", then the LOS on the Collector for a distance of one mile in any direction is the same as the lower LOS.
• within Urban Growth Areas which are not unincorporated islands, the LOS of the appropriate municipality prevails, if it is lower than level "C."
• in unincorporated islands the LOS(s) is that of the surrounding jurisdiction.

Current LOS On County Roads

Outside of unincorporated islands the current LOS on major collectors is higher than "C." This being the case, all major collectors currently have available capacity.

Table 8-1, in the Appendix, shows the current volumes of traffic over major
collectors, the designated LOS, and the ten-year projected traffic volumes for each collector.

**Roads: Existing Conditions**

Within and around its Metropolitan Planning Area (Kennewick, Richland, West Richland), the road system within Benton County is well developed with interstates, state highways, collectors, and local access routes. The system “thins out” and may be considered to provide less than convenient access to some of the outlying rural areas, such as Finley and in areas in the south county. However in large measure, road access for rural and agricultural areas is good and improving.

Peak hour congestion problems do exist within the urban areas, notably on routes such as SR-240 and George Washington Way used by Hanford Site commuters, and on Columbia Center Boulevard related to the Columbia Center Commercial Retail complex in Kennewick.

However congestion problems are absent on county roads serving rural or agricultural areas; existing LOS is “B” or higher. Generally, principle road concerns in rural areas are “all weather” access for agricultural product transport, and more direct “farm to market” routes for agricultural products.

**Functional Classifications For The Road System Of Benton County**

At its beginning and end, the essential function of any road system is to serve land uses: people or goods use the system to go from one land use to another. Within the local system, roads can generally be classified as having one of three principle functions, depending upon their location and design. These functional systems are described below. Combined, the three functional classifications constitute a complete road system.

**Functional Level 3 (local access roads)**

**Local roads** - Their primary function is to provide direct access to individual land holdings and uses, whether they be residential, industrial or agricultural. Local roads generally lead to collectors which collect or merge the traffic from the local roads. Local roads do not have designated Levels of Service.

**Minor Collectors** - Their primary function is to conduct traffic “intra-county” from local roads to the major collectors and arterials. This function is often divided between movement and access to land uses. Minor collectors do not handle long thru-trips and are not continuous for any great length. Minor collectors do not have a designated LOS.

**Major Collectors** - Their primary function is to provide service to any county seat not on an arterial, or to towns or rural centers not served by an arterial, or to other traffic generators such as schools, shipping points, parks, important agricultural areas, etc. They...
collect large volumes of traffic from access roads and minor collectors and move it to major and minor arterials and between major activity centers and traffic generators.

Access to individual holdings along the right-of-way is a secondary function to the primary purpose, and to the extent that significant access is provided, the primary function of movement is compromised. Design speed is generally 50-60 mph with a 50-mph average travelling speeds intended. Major collectors serve the volumes of traffic within areas that are not served by arterials. Major Collectors have a designated LOS of "C" in the unincorporated county outside of UGAs.

Functional Level 2 (Arterials)  
State Highways/Routes and a few local routes - are minor arterials. Their primary function is as major carriers. They are woven through and fully integrated with local collectors and roads that reach beyond the local network to act as regional links, and to bridge the distances between interstate corridors, to which they provide major connections for interstate travel. They are typically all weather two lane roads with travel speeds ranging from 45 to 55mph in rural areas, but as low as 25mph through developed areas.

Depending upon circumstances, access is provided in various configurations including at-grade intersections to local access roads and even private ingress and egress (with state granted encroachment permits). Levels Of Service (LOS) are designated by the State Department of Transportation.

Functional Level 1 (Interstate Highways)  
Interstate Highways - Their primary function is to serve large volumes of high-speed traffic for long distances, often of an interstate nature. They typically have design speeds of 80 miles per hour, with enforced speed limits of 70 mph in Washington State. Access is generally provided only at spaced, grade-separated interchanges. Freeways are usually multi-lane, divided highways. They are the component of the road system which connects the regions of the nation e.g., the interstate gets a traveler or product from the local collector street in Prosser, Washington, to a residential, business, or industrial land use on a local collector street in Lincoln, Nebraska.

Map 8.0, depicts the major collectors, arterials and interstate highways in Benton County. Maps 8.1 thru 8.4 present the road and rail systems, including local public roads in each Planning Region.

Current Trends  
Under conditions of economic growth of the local farm and non-farm economies, the current trend to convert raw land for agriculture, residential, commercial and industrial land uses will continue. These
conversions engender new land uses which drive maintenance and expansion of road capacity for commuter, “farm to market,” leisure, recreation, business and other vehicle trips. Transportation related land use demands ultimately manifest themselves as capital projects in the County's Six Year Road Program. Notable current projects are a good example of how and where such demands occur, e.g., safety and capacity demands require a project to replace the Twin Bridges crossing over the Yakima River just north of West Richland, and the construction of a new rural arterial connecting the South Finley industrial area to SR-395; and to accommodate increased agricultural production a new “farm to market” connection is necessary in the southwest Horse Heaven Hills Planning Region.

An additional trend, perhaps given added impetus by population/demographic changes in the Tri-Cities and the county over the past 6-8 years, is a growing interest in non-motorized travel routes for both commuting and recreation. There is growing citizen interest in bicycle, running and equestrian trails which connect activity centers.

**Future Considerations**

Future considerations regarding the maintenance and expansion of the road circulation system within the county are numerous. They range from the relatively immediate need to accomplish the projects outlined in the County's Six Year Road Program, to the need for consistent application of transportation policy, to addressing specific needs which can be seen emerging, or have been identified by Planning Advisory Committees involved in The Plan preparation.

**County Six Year Road Program**

The Six-Year Road Program is the county's principal directive for "near term" capital expenditures to carry out the adopted Transportation Element as it relates to the construction of new facilities. The Program is updated annually by the County Public Works Department with each update approved by the Board of Commissioners. The purpose of the Six Year Road Program is to correlate funding sources to needed improvements and identify projects for dedicated revenues. It enables long range decision-making and helps assure the continuity of Commissioner goals and objectives, it helps to identify the impacts in future years of decisions made currently. It also identifies existing and future revenues, revenue sources, maintenance and operating costs, expenditure categories and improvements for the transportation system. The Program is coordinated with the transportation project planning of other jurisdictions through the Benton Franklin Regional Council, which is responsible for coordinating and preparing the Regional Transportation Plan.

The Benton County Public Works Department is responsible for
accomplishing the projects in its Six Year Road Program. Many projects are accomplished in phases including planning, right-of-way acquisition, and new construction of roads, trails, parking etc., and maintenance or improvement of existing facilities.

Projects included within the Six Year Program must have identified sources of funding. Under GMA, projects necessary to maintain designated LOS are a priority.

Because the Six Year Program is amended annually, it is not included as a part of this document, but it is incorporated by reference. A direct link from the Transportation Element to the Six Year Program is that any project for the construction of a new road or trail alignment which appears in the Six Year Program must be in the adopted Transportation Element.

Coordinating Land & Use Transportation At The Planning And Project Level

Policy need - as a matter of policy, capital project planning, design and construction for roads should be consistent with, and driven by, the land use designations on the 20 year Land Use Map and community design preferences as expressed in the Rural Element (e.g., in rural southwest Finley, where low density residential and agriculture are likely to be long term uses, citizens want “rural” roads with trails alongside).

However, acquisition of right-of-way should look beyond the 20 year horizon in areas where it is logical that the long term outlook for land uses and densities is one of greater intensity than is shown on the current Land Use Map (e.g., to the south of Kennewick in the Locust Grove interchange area and in northeast Finley north of SR-397 where the attractions of the river for residential and recreation use encourage intensification of land uses).

Considerations - GMA recognizes that in order to "sustain" development and community, the land use designations over the entire landscape emanating out from an urban area have to be more than just "interim" designations awaiting conversion to low density residential and other related more intense uses. Rather, an underlying principle is that certain land use designations on the Land Use Map, e.g., Rural, Agricultural, Recreation, and Open space/Wildlife, have enduring importance and value to the local and regional socio-economic fabric. Accordingly, public projects, such as road planning and construction, should deliberately consider, protect and nurture those values in order to minimize the tensions which exist between them.

Actions - There is a need for the Planning, Public Works, and where appropriate, Facilities Departments within the county to become cooperatively pro-active and "target," for the Board of Commissioners a selection of capital projects to serve the community. Where appropriate,
port districts should be involved in planning and funding of projects. Potential targets include:

- construction and improvement of “farm to market” roads as agriculture continues to expand within the county;
- anticipation and/or promotion of increased industrialization in specific Planning Areas, with transportation facilities planned to accommodate-facilitate;
- development of the Horn Rapids Park Master Plan, beginning with basic transportation related infrastructure such as access/parking, trails, boat launch, power, water, and sanitary improvements (park should first be surveyed for historical and archaeological constraints);
- participation in acquisitions and construction of Tappet Greenway project elements as well as trails planning and construction as per the Bikeway/trails system as adopted herein as part of the Element;
- initiation of discussions with federal and state agencies regarding increased recreational access on public lands and waters including the Hanford Site;
- exploration of the need and potential sites for a county land fill or transfer station to reduce illegal dumping along county roads;
- refinement of the transportation plan (including all modes of transport) for the Finley Rural community as an adjunct to the current “intertie” project planning, and including trail/bike path and rail line considerations;

**Regional Rail System**

**Existing conditions**
Freight rail service to the Tri-Cities and Benton County, as well as surrounding counties is provided by Union Pacific and Burlington Northern & Santa Fe Railroads as shown on Map 8-0.

The Tri-Cities area is one of the few areas between the Rockies and the Cascade Range to be linked by as many carriers. Through this area moves vast tonnages of export and import products associated with seaports on both the Pacific and Atlantic coasts. Major quantities of agricultural products from the midwest and the Pacific Northwest are transported to the Puget Sound and Portland area for transhipment to Pacific Rim countries.

**Passenger Rail Service**: Rail passenger service is at Amtrak facilities at Pasco in Franklin County. Connections from Pasco are Spokane and Portland.

**Hanford Rail Line**: A short rail line operated by the U.S. Department of Energy runs off the Union Pacific tracks southeast of the Richland “Wye” and
extends into the Hanford Site, where it services the various Hanford facilities spread across the site. Portions of this line are no longer in service, nor are they maintained. However, the old right-of-way does extend through the site to exit at its northwest corner.

Current Trends
The current trend is for the expansion of rail transport service through the Tri-Cities and Benton County area. There is a proposal from Burlington Northern & Santa Fe to add a new line into the Finley area where an expanding light and heavy industrial base exists.

The expansion of rail service and capacity is in response to major changes including technical innovations relating to the amount of freight which can be carried on rail (double decker cars), changes in the economics of truck versus rail transport as well as transcontinental shipments overland versus by ship through the Panama canal; and major expansions of the export and import markets in response to trade agreements and emerging national economies in Asia.

Future Considerations
Expansions of rail traffic and facilities are a mixed blessing, and will challenge the local jurisdictions’ ability to land use plan and maintain the often delicately balanced operating efficiencies of their transportation systems. On the plus side, such expansion is an adjunct to the expansion of regional, national and global economic conditions, which foster local and regional economic growth.

On the minus side, expanding rail facilities/use causes adverse land use, transportation and aesthetic impacts. Land use and aesthetic impacts derive from the impacts of noise, dust, and vibration, on lands along rail lines, the need for new rail related industrial sites may arise to the detriment of values on adjacent lands. Transportation impacts derive from interference with the operation of the urban and suburban road system as increased train crossings of major urban commuter and arterial routes cause delay and congestion, whereupon drivers begin to alter travel patterns, creating unanticipated demands elsewhere in the circulation system.

There is little that local jurisdictions can do to alter the flow of globally and nationally driven commerce over existing transportation systems. The effort must be to factor such expansions into land use planning and local transportation planning. New road projects must anticipate auto/rail conflicts.

Relative to the potential conflicts between rail and local auto traffic in the Tri-Cities area, there is a potential alternative route through the Hanford site upon which regional freight traffic could move, thereby avoiding potential adverse impacts to the efficiency of the road transportation
system in the Tri-Cities area. Transportation Policies in Chapter Three, Goal 27-1, policies A, B, and E, page 3-8, enable this alternative.

**Air Transportation**

**Existing Conditions**

Benton County (and the Tri-Cities) is served by four public airports as shown in TABLE 8.0.

**TABLE 8.0 PUBLIC AIRPORTS SERVING BENTON COUNTY AND THE TRI-CITIES**

<table>
<thead>
<tr>
<th>NAME OF AIRPORT</th>
<th>LOCATION</th>
<th>CLASSIFICATION (FAA)</th>
<th>OWNER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tri-Cities Airport</td>
<td>City of Pasco</td>
<td>&quot;Air Carrier&quot; (regional)</td>
<td>Port of Pasco</td>
</tr>
<tr>
<td>Richland Airport</td>
<td>City of Richland</td>
<td>&quot;Commuter Service&quot;</td>
<td>Port of Benton</td>
</tr>
<tr>
<td>Vista Field</td>
<td>City of Kennewick</td>
<td>&quot;General Aviation&quot;</td>
<td>Port of Kennewick</td>
</tr>
<tr>
<td>Prosser Airport</td>
<td>City of Prosser</td>
<td>&quot;General Aviation&quot;</td>
<td>Port of Benton</td>
</tr>
</tbody>
</table>

The **Tri-Cities Airport** in Pasco serves as the major air carrier airport for both Benton and Franklin Counties and is in fact a regional air facility-serving portions of seven counties in Washington and Oregon. It is one of four air carrier airports in the state, the other three being Seattle-Tacoma International Airport, Spokane International Airport and Yakima Air Terminal.

The total annual commercial passenger boardings at the Tri-Cities Airport since 1985 have fluctuated significantly from year to year, however, the trend is for steady growth. In 1985 there were 142,911 boardings, a number which has been exceeded in every subsequent year. There were 168,245 boardings in 1995, and over 240,000 boardings in 2006. The **Richland Airport** has provided most general aviation activities including recreation flying, flight training, charter flights, air taxi service, business flying, glider operations, and skydiving activities. Activities at **Vista Field** include recreational flying, flight training, and charter service. Activities at the **Prosser Airport** included recreational flying, flight training, air charter, and agricultural application operations.

**Current Trends**

The current trend is for expansion of service at all four public airports as population and economic growth continues in the area.

**Future Considerations**

Since all four public airports are within municipal boundaries, there are few future considerations which can be directly influenced by county planning. However, if the county
pursues the realization of a major resort destination land use in the unincorporated area, the adequacy of air passenger service will be a relevant planning consideration. Cities may be first to the issue for projects such as conference centers, which are currently being discussed.

New sites for airports and heliports must be appropriately planned to assure that areas impacted by airport/heliport operations are compatible and the regulations to protect life and property, and to prevent the establishment of airspace obstructions and other hazards which may interfere with safe airport operations.

Water Transportation/The Columbia-Snake System
Existing Conditions
The Columbia and Snake Rivers provide an inland commercial waterway consisting of navigational locks in eight dams over a length of 465 miles, extending from Astoria, Oregon, at the mouth to Lewiston, Idaho. Within the system a navigational channel of 14 feet deep (minimum) is maintained for bulk commodity transportation by ocean-going barge. This inland waterway which links the Pacific Ocean with the state’s agricultural “Inland Empire” forms Benton County’s eastern and southern boundaries. In addition to the Port of Benton facilities at Richland, barges can be loaded and unloaded at facilities in Kennewick and Finley. This capability is especially important to the industrial land use designations in the South Finley area, where rail and overland road access complete a true “multi-modal” freight transportation resource.

Commodities Shipped: the principal commodities shipped out of Benton County by barge are wheat and fertilizer products. Wheat moving downstream comprised 5.15 million tons (171,482,550 bushels) or seventy-seven percent of the overall downstream tonnage. Wheat is not alone on the river. Over 25,000 containers of goods move on the river including “refrigerated” moves, of value added, processed agricultural products.

Agricultural products are shipped from privately owned docking facilities located at grain storage and industrial sites. The principal commodity brought into the County by barge is anhydrous ammonia, which is used in the manufacture of fertilizer. Occasionally, special shipments of items used for the construction projects at Hanford are barged to the Port of Benton dock at Richland.

Amount of Tonnage: U.S. Corps of Engineers tonnage figures show 9.05 million tons (short tons) of freight moved through the John Day lock (both up stream and downstream) in 1996, including a wide array of products from food and manufactured goods to numerous wood related products. Bonneville Dam had 9.7 million tons traverse its
lock. A recent publication by the Merchants Exchange in Portland pegged total volume of all cargo moved on the entire river system at 54 million tons in 2004, with an import/export value of waterborne trade of Columbia River Ports totaling over $13.9 billion.

**Efficiency of Movement:** For perspective on the relative efficiency of barge transport: 5.15 million tons of wheat moved by 1,715 barges on the river would require 514,500 farm trucks, or 147,069 semi-trucks (based on 1,100 bushels per truck), or 51,964 rail cars or 1,000 (fifty-two-car) unit trains. Overland transport of this magnitude would further congest road and rail systems and have significantly higher energy costs with proportional emissions of air pollutants.

The efficiency of barge use can be shown by comparing barge transport to alternative forms of transportation. One barge can transport one ton of commodity 514 miles on one gallon of fuel. By comparison, rail transport can move the same ton only 202 miles and trucks move the ton just 59.2 miles on a gallon of fuel.

**Port Districts:** the Port of Kennewick owns properties along a twelve mile stretch of the Columbia River at various locations south of Kennewick, and also a site at Plymouth. The Port of Benton is currently in the process of acquiring land immediately west of Plymouth, with the intention of locating a docking facility in the area once the land is acquired. All of the Port of Kennewick lands on the Columbia have the potential for development of facilities to accommodate barge traffic.

**Current Trends**

A mainstay of commerce: the demand for waterborne transport fluctuates with markets, commodity supply and in relationship to the economics of transport by rail and overland truck. However, over the long term, because of its inherent efficiencies, waterborne transport will likely remain an integral part of the Inland Empire transportation system and will continue to play a vital and expanding role as global trade expands.

**Salmon issues:** potential threats to the viability of this transport mode do arise from federal efforts to manage Columbia and Snake River system flows in response to salmon preservation efforts. Draw-downs of water levels in the system to improve salmonid survival rates could adversely impact the water-borne transport system. At this point, whether or not drawdowns of the pools behind dams will occur in order to enhance salmonid survival is an open question. The county must assure that deliberations on this matter include the importance of the existing flow management regime for hydroelectric power generation, farm irrigation, and barge transportation.

**North Richland barge access:** the Port
of Benton operates a barge landing facility on its property in north Richland. Principal use of the facility is the transport of spent U.S. Naval reactors to the 200 Plateau Areas of the Hanford Site for disposal by burial.

Recent construction of buildings and other facilities on the Port property are rendering the barge landing, in its current location on the river, potentially in conflict with newer land uses. Full development of the Port property to conventional land uses is hindered by the presence of the barge site. The Port would like to move the landing further up-river onto the Hanford Site north of the 300 Area.

Future Considerations
Shoreland sites suitable for barge facilities and with access to rail and overland road transport infrastructure should be reviewed for their growth potential and ramifications to on-site and off-site transportation/land use needs.

The South Finley industrial area: is a good example of this consideration. Significant expansion of heavy industrial uses and freight transport facilities here is a certainty. The area may also be suitable for agricultural storage and processing facilities inland of the shoreland sites. The success of the area for these uses may in significant part be dependent upon the development of an efficient circulation system, including as a component barge/water borne transport facilities.

Pipeline Transport
Existing Conditions
Benton County has within it two interstate natural gas pipelines: Pacific Gas and Transmission Company (PGT) and Northwest Pipeline Company. The PGT line crosses the southeast corner of the county as it extends from Walla Walla County, into Oregon.

The Northwest Pipeline Corporation line runs up the Columbia River Gorge from Vancouver Washington, to Plymouth. There it branches into two lines, one to the Yakima Valley and Wenatchee, the other serves the Tri-Cities and Spokane. The system distributes natural gas to Washington’s seven utility companies. The maximum pipe size is 30 inches.

Future Considerations
Gas energy from this distribution system directly serves the Plymouth and south Finley area industrial land use designations. Substantial undeveloped industrial designated lands exist within these two areas. The presence of large acreages with gas energy, and road, rail and barge transport opportunities provides economic opportunities which should not be prejudiced by piece-meal developments. Proactive advanced planning should occur in these areas to preserve their future industrial/commerce values.

Public Transit Service, Park and Ride Lots, Bicycle Transport
Existing Conditions
Ben Franklin Transit (BFT) operates over
20 fixed routes throughout the Tri-Cities urban area. The routes are within the Transit District’s Public Transit Benefit Area (PTBA), which is a taxing district.

In the fall of 1997, the PTBA was expanded to include areas of Prosser and Benton City, establishing a transit route that links the two areas to the Tri Cities. Item 8-2 in the Appendix, shows the recently approved boundaries of the PTBA.

**Rideshare/Vanpool Program:** BFT currently has one hundred and ten passenger vans (each carrying 15 passengers) operating throughout the region. About 80 of these commute to the Hanford Site daily from the cities of Pasco, Richland and Kennewick, to the 3000, 1100, 300 and 400 areas, and the Washington Public Power Supply System (WNP) Site. The Headstart Program (pre-school) uses 17 vans.

**Prosser Rural Transit:** Since the recent inclusion of the Prosser Rural Transit (PRT) into the PTBA of Ben Franklin Transit, the City of Prosser has entered into an interim agreement with BFT to provide both administrative and transit services. The PRT currently serves the area within the City of Prosser with scheduled routes, dial-a-ride service, and medical transportation through the People for People program.

**Park and Ride Lots:** there are currently nine park and ride lots in the Tri-Cities area including one at the intersection of SR- 225 and I-82 at Benton City. An additional lot is located at Prosser. WSDOT is owner and/or operator of several of the lots, BFT operates others, and the City of Kennewick has two lots. BFT buses serve six of the sites in the urban area.

**Bicycle System/Plans:** at the present time, with the exception of a bike path in Columbia Park, which is essentially an urban park, and a short section north of Prosser, there are no bicycle facilities available in unincorporated Benton County, though the cities of Richland and Pasco have in recent years begun to construct paths and support facilities along the Columbia River.

There are several bicycle plans prepared by various jurisdictions in the County:

- The Benton-Franklin Regional Bikeway System Plan includes proposed bicycle routes for MPO in the two-county area.
- The Cities of Kennewick and Richland have adopted Bikeway Plans.
- The Tapteal Greenway Foundation has prepared a Greenway Plan which includes a multi-modal "non-motorized" trail system extending up the lower Yakima River from Columbia Point in Richland to the bridge crossing of the Yakima River at Benton City.

**Current Bikeway Projects:** Benton County has purchased a two-mile section of abandoned railroad right-
of-way which it intends to convert to a bikeway connecting Prosser to the City of Grandview in Yakima County to the west. The state has constructed a bicycle lane on SR-225 from its intersection with I-82 into Benton City.

**Demand and Usage:** within both the cities and the unincorporated areas of the county, bicycling as means of recreation and commute has increased in popularity over the past decade. Residents have discovered the area as especially favorable to recreational bicycling. There are many bicycle commuters to Hanford from Richland. Out of town visitors are attracted for the specific purpose of recreational bicycling. However, local governing bodies in general have not met the increase in bicycle use with planning and capital expenditures to serve the use.

**Funding Sources:** R.C.W. 47.30 requires cities and counties to allocate one-half of one percent of the amount of funds received from the motor vehicle fund for trails and paths. In order to spend these funds on the construction of a trail or path, the trail or path must be included in a comprehensive trail plan adopted by the governing body.

Additional planning and construction funds are available through various grants, most notably from the Federal Intermodal Surface Transportation Enhancement Act (ISTEA).

**Current Trends**
The significant increase in population growth, commercial transport and farming activities in eastern Washington generally and within Benton County over the past decade will continue into the near and medium term. This has and will continue to drive the need to expand all system components of the transportation network, i.e., roads, transit, rail, water borne, air, non-motorized and motorized support facilities. At all levels, i.e., commerce, daily commuter, rural planning area and neighborhood, the demands for expansion and increasingly, cost effectiveness, will require integration of relevant transportation system components.

**Intermodal Connections:** the increasing interdependence of rail, overland road and water borne transport systems for interstate and global commerce has been identified as a major planning issue within this document.

At the very local level, outside the context of commerce, continued population growth and demographic changes as a result of the improving economy and diversifying life styles within the Tri-Cities area and the county are changing residents' demands and expectations of the local transportation network. There is an emerging demand for a local network that offers more "modal" options than the current automobile dedicated system, and more utility than for just business, shopping and commuter trips (see pie charts and recreational survey results in Chapter
Demands for public transit, for increased opportunities to integrate the auto, transit, and non-motorized modes, and for the provision of interconnecting non-motorized routes which double as recreational and commuter facilities will likely increase. Such demands should grow at a pace related to that of the successful diversification of the local non-farm economy, and the local farm economy’s cultivation of tourism attractions (vineyards, farmers markets, and specialty crops). Planning decisions under the GMA which effect the concentration of a significant portion of new population growth into the Urban Growth Areas of the Metropolitan area as well as the small cities such as Benton City and Prosser, should increase the demand, viability and usage of public transit as well as other non-motorized modes.

Emerging Opportunities: opportunities to provide connecting non-motorized transportation links between activity centers within the county do occur. In 1993, Washington Central Railroad (WCRR) abandoned 60 miles of rail track and right-of-way, which connected Columbia Center in Kennewick to the Yakima County line. This section of rail provided "off-road" connectivity between Kennewick, Richland, West Richland, Benton City, and Prosser along what is essentially the Yakima River corridor. However only minor disconnected sections of the rail right-of-way were acquired by local governments. The concept of a connecting trail was not of interest at the time, the major pieces of the right-of-way were sold to various interests.

Opportunities similar to the WCRR example in using existing public or quasi-public rights-of-way for augmentation of bikeway/trail network will likely occur in the future. As an example, irrigation districts throughout the Yakima Valley are converting open canal rights-of-way to piped systems buried beneath the old canal right-of-way, which could function as trail sections.

Future Considerations

Improve The Utility Of The Transportation Network: the utility and adaptability of an area’s transportation network is one of the primary characteristics upon which the “quality of life” is based.

By in large, the road transportation network within the county and the Tri-Cities is an excellent and efficient one, consisting of interstate highways, state routes and local arterials, collectors and local access routes; it has a well defined and institutionalized mechanisms for eliminating its deficiencies and maintaining its high level of performance.

However, the existing transportation network is almost singularly dedicated to the personal automobile. This is not a fault, but rather a limitation to the larger community’s realization of other land uses, commercial enterprises, human activity and socioeconomic
diversity.

A truly multi-modal transportation system invites increased personal mobility (via pedestrian, bicycle, equestrian and transit modes); it energizes existing, and fosters the creation of new activity centers; it melds business, casual, tourism, and recreational activities into a richer and more resilient community fabric.

**policy needs** - there should be a bicycle/pedestrian, equestrian trail(s) which connects the major urban and rural activity centers of the county.

**action** - the county should initiate a cooperative effort with adjacent jurisdictions, relevant state agencies, business and private interest groups, and citizens, to pull together the various bikeway and trails plans of each jurisdiction, into an integrated plan.

The plan should use open space corridors, public lands, special district rights-of-way, existing public roads, and new acquisitions, to connect urban and rural residential, business, governmental, visitor, and recreational activity centers and amenities via a network of non-motorized travel corridors. The Plan should integrate with existing transit and automobile system components.

Agreement should be sought from participating jurisdictions to annually fund, either jointly or unilaterally, depending upon the nature of the project component, the construction of a component of the plan. Where feasible, the funding should be targeted so that it integrates functionally with other parks and recreational facilities or trails construction projects in the County, or in other jurisdictions.

**Capital Facilities and Regional transportation Planning**

For Benton, Franklin and Walla Walla Counties, the Benton Franklin Regional Council functions as the Regional Transportation Planning Organization (RTPO) that melds the Transportation Elements of local government’s Comprehensive Plans into an integrated and internally consistent Regional Transportation Plan for certification as consistent with the State Transportation Plan and system requirements. One tool that the Regional Council and the local jurisdictions use for transportation planning is to operate a feedback loop wherein the regional transportation system for the Metropolitan Planning Area is divided into Transportation Analysis Zones (TAZs). Within each of their jurisdictions local land use planners supply current and future density and growth information for the TAZs. The Regional Council enters the information into a predictive Transportation Model that produces forecasted traffic...
demand/capacity analyses from which future transportation improvement planning and projects are identified for planning and funding. Local governments use the model results to assess LOS impacts/needs, to inform their six year road programs, and where practical, to plan municipal infrastructure extensions and upgrades in conjunction with transportation projects.

**Richland Urban Growth Area Expansion**

In 2006 the Board of County Commissioners approved the “Badger Mountain UGA Addition” expanding the City of Richland’s UGA by approximately 2100 acres on the south flank of Badger Mountain and northeast of the I-82 travel corridor. The addition of this area to the Richland UGA means that over the next 20 years, the area will develop to urban uses, most likely residential, general and highway commercial, and light industrial. Also approved as a part of the UGA expansion was a Capital Facilities Plan titled the Badger Mountain Valley View Urban Growth Area Expansion Capability Analysis that includes, in Chapters II, III, IV, V, VI, and VII respectively, an inventory and analysis of the existing transportation service levels in the UGA expansion area (Chapters II and III); a projection of land use demands from build-out of the UGA expansion area to urban uses; identification of the improvements to the transportation system that would be needed to service build-out at specific Levels of Service over time; and projections of the costs of making those improvements and an identification of the various funding sources that would be available for accomplishing the improvements.

The Badger Mountain Valley View Urban Growth Area Expansion Capability Analysis is not included in this document but is incorporated by reference. The transportation and road projects identified in Chapter V of the Badger Mountain Valley View Urban Growth Area Expansion Capability Analysis that will be necessary to serve the Badger Mountain area, both as a consequence of the UGA expansion and of the general population and traffic growth within the larger area, and that are the responsibility of the County in whole or part, will appear first in the County’s annual update of its Six Year Road Plan (page 8-9) which is the principal directive for “near term” capital expenditures for road projects by the County.
Figure 8-1

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BENTON COUNTY
STATE OF WASHINGTON
RATTLESNAKE MT PLANNING REGION
TRANSPORTATION PLAN

Legend

Urban Area
County Roads
City Roads
State Highway/Interstate
Railroads
Major Collectors
Proposed County Roads

Figure 8-4

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