

TRANSPORTATION APPENDIX

PURPOSE

The Transportation Element must, among other things, contain travel forecasts, a level of service standard, be regionally coordinated, and meet concurrency requirements. This transportation element for the City of Orting meets the requirements of the GMA and has been certified by the Puget Sound Regional Council. This element contains a description of existing transportation conditions, travel forecasts, service standards and analysis, and transportation recommendations, all of which have been coordinated with the county and the state. The following analysis and conclusions have been taken from the *City of Orting Transportation Plan, August 2004 and transportation analysis and planning since then*. That report contains further, more detailed information.

Overview - The City of Orting has a unique configuration with respect to transportation. The community lies in the Orting Valley between the Carbon and Puyallup Rivers. SR 162 runs between the two rivers and links Orting with Sumner and Buckley. Orting is a small rural community of 4,500 – double the 1990 population. Many of the local city streets are quiet, tree lined, with low traffic volumes. The older portion of the City is laid out on a traditional grid system (Figure T-1), and some recent developments feature a circulation curvilinear pattern.

EXISTING CONDITIONS

State Route (SR) 162 runs north/south through the center of Orting and carries the highest traffic volumes in the area. Another significant arterial in the City is Calistoga Avenue. This provides an east/west link, crossing the Puyallup River and connecting to the Orting-Kapowsin Highway. The Orting-Kapowsin Highway provides indirect access to other east/west routes, such as SR 702 in south Pierce County. Other than Calistoga Avenue, no direct east/west access to Orting currently exists. All those traveling east or west must head north to SR 410 or south to the more indirect route on the Orting-Kapowsin Highway. Pierce County is studying corridors for future development of needed east-west arterials. As Orting grows, the internal street network is being developed. The Comprehensive Plan provides the basis for City/County/State coordination in planning major arterial improvements as well as the continued development of the local street network.

Functional Classification

Classification of streets and highways in the State of Washington is based upon guidelines prepared by the Federal Highway Administration (FHWA) and administered by the Washington State Department of Transportation (WSDOT).

Streets are classified based on the degree to which they provide through movement and land access functions. The City of Orting uses four different functional classifications. Based upon the street function, certain land use policies and street standards apply. The design of roads depends upon their functional classification and usage.

- ***Principal Arterials*** are streets and highways which carry the greatest portion of through or long-distance travel. Such facilities serve the high-volume travel corridors that connect major generators of traffic. The selected routes provide an integrated system for complete circulation of traffic, including ties to the major rural highways entering urban areas. Principal arterials in the City of Orting are SR 162, Pioneer Way, Washington Avenue, Harman Way, and Calistoga Avenue.
- ***Minor Arterials*** are streets and highways that connect with remaining arterial and collector roads that extend into the urban area. Minor arterial streets and highways serve less concentrated traffic-generating areas, serve as boundaries to neighborhoods and collect traffic from collector streets. Although the predominant function of minor streets is the movement of through traffic, they also provide for considerable local traffic that originates or is destined for points along the corridor. Minor arterials within the City include Kansas Avenue and portions of Corrin Avenue.
- ***Collectors*** are streets that provide direct services to residential areas, local parks, churches and areas with similar uses of the land. To preserve the amenities of neighborhoods, they are usually spaced at about half-mile intervals in order to collect traffic from local access streets and convey it to major and minor arterial streets and highways. Collector streets are typically one- to two-miles in length. Direct access to abutting land is essential. Collectors in the City include Bridge Street, Varner Avenue, Van Scoyoc Street, Eldredge Avenue, Train Avenue, Whitesell Street, and portions of Leber Street and Washington Avenue.
- ***Local Access Roads*** are the remaining streets that allow access to individual homes, shops, and similar destinations. They provide direct access to abutting land and to the higher classification of roadways. Through traffic is discouraged.

Figure 1 illustrates the functional classification of the major streets and highways within the City.

State-owned Transportation Facilities and Highways of Statewide Significance - In 1998, the Washington State Legislature enacted the “Level of Service Bill” (House Bill 1487) which amended the Growth Management Act to include additional detail regarding state-owned transportation facilities in the transportation element of comprehensive plans. The Puget Sound Regional Council, in 2003, adopted level of service standards for regionally significant state highways. Regionally significant state highways are state transportation facilities that are not designated as being of statewide significance. Within Orting, no roadways have been designated as a Highway of

Statewide Significance (HSS) in WSDOT's Highway System Plan. SR 162, which links Orting with Sumner and Buckley, is the only state-owned facility within the planning area and is designated as a Regionally Significant State Highway.

Local Roadways - State Route 162 runs generally north/south through the center of Orting and carries the highest traffic volumes in the area. Calistoga Street is the other main route in the city, running generally east-west and connecting SR 162 to the Orting-Kapowsin Highway. The Orting-Kapowsin Highway runs in a north-south direction, providing indirect connections to SR 161 (Meridian) and SR 7 (Mountain Highway). Other than Calistoga Avenue, no direct east-west access to Orting currently exists.

Roadway Inventory

State Routes - SR-162 (Pioneer Way) runs generally north-south through the City of Orting, providing the primary connection to SR 512 and Interstate 5. Within the city limits, SR 162 is a two-lane principal arterial with a narrow painted median and paved shoulders. The posted speed limit is 35 mph, reduced to 25 mph in the vicinity of Orting High School. The roadway is known as Washington Avenue within the city limits.

Pierce County Roadways - Orting-Kapowsin Highway is a two-lane major arterial, with a posted speed limit of 35 mph along most of its length. Shoulders are gravel, with a walking path along the east side of the road in areas. It runs adjacent to the city limit line for a short distance south of the Puyallup River before turning into Calistoga St. W.

Local Transportation System - SR 162 (Pioneer Way) becomes Washington Avenue as it passes through the downtown area of Orting. South of Whitesell Street, this is a two-lane major arterial with paved shoulders, interrupted sidewalks, and street lighting on the north side of the roadway. Pioneer Way has a posted speed limit of 50 mph. At Whitehawk Blvd., the posted speed is reduced to 35 mph, and again reduced to 25 mph as the roadway becomes Washington Avenue. Between Calistoga St. W and Bridge St., Washington Street has parking on both sides of the road.

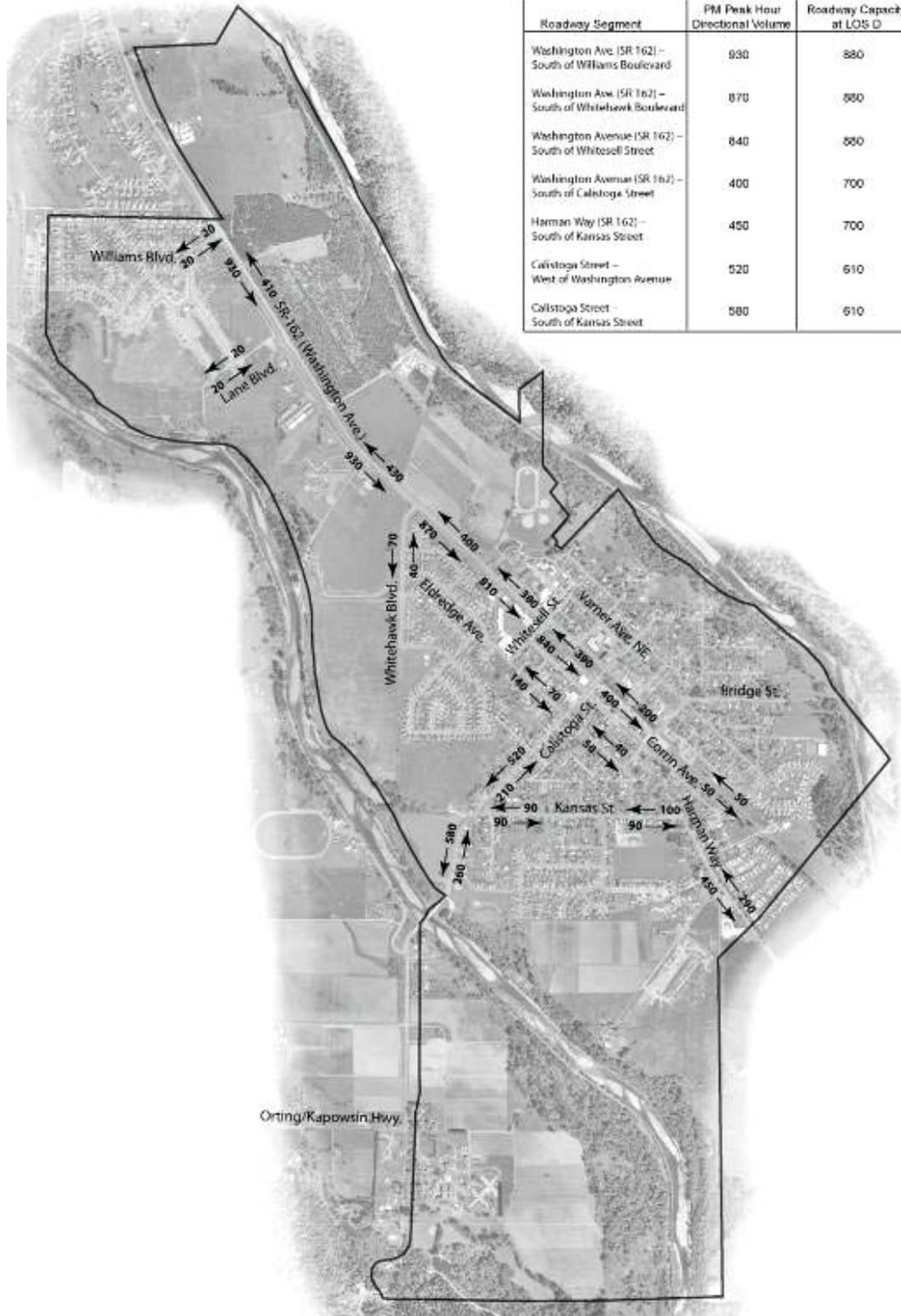
Table TA-1 includes an existing conditions inventory of all the roadways in the area, including functional classification, pavement width, shoulder type and width, parking, sidewalks, bicycle lanes, and posted speed limits.

**Table TA-1
Roadway Inventory – Existing Conditions**

Roadway	Functional Classification	Shoulder	Parking	Sidewalks	Bicycle Lane)	Speed Limit (mph)
SR-162 / Pioneer Way.	Principal arterial	Paved	No	Interrupted	No	50/35/25
Washington Avenue	Major arterial	Paved	Yes	Both	No	25
Orting-Kapowsin Highway	Major arterial	Gravel	No	No	No	35
Varner Avenue NE	Collector	Gravel/grass	Yes	Both	No	Not posted
Calistoga Street	Principal arterial	Paved/gravel	No	Both	No	25 mph
Whitehawk Blvd	Proposed Minor Arterial	Paved	Yes	Both	No	25 mph
Eldredge Avenue	Collector	Gravel/grass	Yes	Whitesell north – both sides; Safeway south – one side	No	None posted
Whitesell Street	Collector	None	No	One side	No	None posted
Corrin Avenue	Minor arterial	Paved	Yes (angle parking downtown)	Both	No	Non posted
Bridge Street	Collector	Gravel/grass	Yes	Both	No	None posted
Kansas Street SW	Minor arterial	Paved	Yes	Both	No	Not posted
Harman Way	Principal arterial	Paved	Yes	Yes	No	None posted

2004 Roadway Segment Levels of Service

Roadway Segment	PM Peak Hour Directional Volume	Roadway Capacity at LOS D	Existing LOS (Peak Direction)
Washington Ave (SR 162) - South of Williams Boulevard	930	880	F
Washington Ave (SR 162) - South of Whitehawk Boulevard	870	880	D
Washington Avenue (SR 162) - South of Whitesell Street	840	880	D
Washington Avenue (SR 162) - South of Callstoga Street	400	700	B
Herman Way (SR 162) - South of Kansas Street	450	700	B
Callstoga Street - West of Washington Avenue	520	610	D
Callstoga Street - South of Kansas Street	580	610	D



metrix **EXISTING 2004 PM PEAK HOUR TRAFFIC VOLUMES** Figure 2

Traffic Volumes

A comprehensive set of street and intersection traffic counts was collected in February, 2004. Average P.M. Peak Hour weekday traffic volumes are summarized in **Figure 2**.

P.M. peak hour traffic volumes represent the highest hourly volume of vehicles passing through an intersection during the 4:00-6:00 P.M. peak period. Since the P.M. peak period volumes typically represent the highest volumes of the average day, these traffic volumes were used for our base year operations analysis, and as the basis for future year traffic volume projections.

Intersection Level of Service

Capacity analysis results are described in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). Level of Service D is the concurrency standard adopted by the City of Orting.

Level of service calculations for intersections determine the amount of ‘control delay’ (in seconds) that drivers will experience while proceeding through an intersection. For intersections under minor street stop-sign control, the LOS of the most difficult movement (typically, the minor street left-turn) represents the intersection level of service. The LOS/delay criteria for stop-sign controlled intersections are different than for signalized intersections because driver expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay. For signalized intersections the LOS ranges from “A” with a delay of less than 10 seconds to “F” with a delay of more than 80 seconds. For stop-sign controlled intersections, LOS A also has a delay less than 10 seconds, while LOS F has a delay of more than 50 seconds.

Table TA-2 shows a summary of the operations analysis results for the unsignalized intersections. The 2004 LOS is the LOS of the most difficult movement

Table TA-2

2004 Intersection Levels of Service

Unsignalized Intersection	2004 LOS
Washington Avenue/Calistoga Street	B
Whitesell Street/Washington Avenue	D
High School – Shopping Center Access /Washington Avenue (SR 162)	F
Bridge Street/River Avenue/Varner Avenue	A*
Calistoga Street West/Kansas Street	C
Williams Boulevard/Pioneer Way (SR 162)	E
Lane Boulevard/Pioneer Way (SR 162)	C
Old Pioneer Way/Pioneer Way (SR 162)	C
Whitehawk Boulevard/Washington Avenue (SR 162)	C
Calistoga Street/Corrin Avenue	C
Calistoga Street/Eldredge Avenue	C
Whitesell Street/Eldredge Avenue	A
Bridge Street/Corrin Avenue/Harman Way	A*
Kansas Street/Harman Way (SR 162)	B
Bridge Street /Washington Avenue	A*

* Not available – The intersection configuration not allowed in HCM analysis. The ICU level of service (Described later in this report) is provided.

Roadway Segment Level of Service

An additional means of identifying capacity deficiencies is roadway capacity analysis. Each roadway in the city has a theoretical maximum vehicle carrying capacity for a given time frame. The functional classification, number of lanes, presence of traffic signals or turn-lanes are examples of features that affect the volume of traffic a particular roadway segment can handle. For this analysis, the evening peak hour directional volumes were used as the basis for the LOS assessment as shown in **Table TA-3**.

Table TA-3

Generalized Level of Service Criteria - Peak Hour Directional Volumes

Interrupted Flow Arterials - Class I (0 to 1.99 traffic signals per mile)

Number of Lanes	Maximum Traffic Volume at Level of Service			
	B	C	D	E*
Two, Undivided without left-turn lanes	460	660	700	700
Two, Undivided with left-turn lanes	570	820	880	880
Four, Undivided without left-turn lanes	930	1,310	1,390	1,390
Four, Undivided with left-turn lanes	1,180	1,660	1,760	1,760
Four, Divided with left-turn lanes	1,240	1,750	1,850	1,850
Two, Single direction	1,488	2,100	2,220	2,220

Major City/County Roadways

Number of Lanes	Maximum Traffic Volume at Level of Service			
	B**	C	D	E
Two, Undivided without left-turn lanes	N/A	350	610	660
Two, Undivided with left-turn lanes	N/A	440	760	830

* Volumes are comparable because intersection capacities have been reached.

** Cannot be achieved

The roadway segment levels of service for key roadways in the area are shown in **Table TA-4**.

Table TA-4
2004 Roadway Segment Levels of Service

Roadway Segment	PM Peak Hour Peak Directional Volume	Roadway Capacity at LOS D	Existing LOS (Peak Direction)
Washington Avenue N (SR 162) – South of Williams Boulevard	930	880	F
Washington Avenue N (SR 162) – South of Whitehawk Boulevard	870	880	D
Washington Avenue (SR 162) – South of Whitesell Street	840	880	D
Washington Avenue (SR 162) – South of Calistoga Street	400	700	B
Harman Way (SR 162) – South of Kansas Street	450	700	B
Calistoga Street – West of Washington Avenue	520	610	D
Calistoga Street – South of Kansas Street	580	610	D

Summary of Existing Operations

Based on the described criteria, most roadways and intersections in the City of Orting have sufficient capacity for current transportation needs. The following roadways and intersections which have potential capacity problems identified are listed and described below.

Washington Avenue N (SR 162) from north city limits to Calistoga Street - This section of roadway has a single lane in each direction with turn lanes at major intersections. The current traffic volumes along this roadway are at or above the upper limit of what can typically be accommodated by a single travel lane. During peak traffic periods vehicles turning onto and off of the major street flow can cause periodic congestion and backups. Two study intersections that were experiencing levels of service below the LOS D threshold - Williams Boulevard/SR 162 and High School – Shopping Center Entrance/SR 162 have been signalized.

If an isolated stop sign-controlled intersection experiences excessive delay or congestion, it may be appropriate to construct turn lanes or to improve the traffic control. Traffic control improvements could include implementing all-way stop control or constructing a traffic signal system. These types of isolated improvements

are based on site-specific need and are not measures of the overall function of the transportation system. The implementation of intersection improvements is typically addressed in the 6-year planning efforts by the city and in Traffic Impact Analyses prepared for larger developments.

In addition to intersection improvements, there are other improvements that can be constructed to improve the overall safety of county roadways. Potential safety improvements include the following:

- Widening the existing travel lanes
- Improving horizontal and vertical curves
- Constructing or widening shoulders
- Removing obstructions to improve sight distances
- Road surface maintenance
- Constructing turn lanes at intersections
- Constructing sidewalks or bike lanes
- Adding street lighting

Collision Records

The Washington State Department of Transportation provided a history of reported collisions that occurred on State Route 162 within the city limits of Orting for the period January 1, 1999 through December 31, 2002. Total accidents averaged just over 21 per year. Sixty percent of the accidents involved property damage only and the other forty percent were injury accidents. Most accidents were not at intersections.

OTHER MODES

Air and Rail Service

There are no public or private airports or rail lines within the City of Orting or the surrounding area.

Freight Mobility

Heavy vehicles, defined as those vehicles which equal or exceed 20,000 pounds gross vehicle weight, normally follow main arterial roads and State Routes. WSDOT uses the County Road Freight and Goods Transportation System (FGTS) to classify state highways, county roads and city streets according to the tons of freight that are carried on them each year. SR 162 is classified as T-2, a roadway carrying 4 million to 10 million tons per year. In 2003, SR 162 carried 4,339,500 tons between SR 410 and the

City of Orting.

Non-Motorized Facilities

A completed paved section of the Foothills Trail runs parallel to SR 162 through Orting. This is a 12-foot wide non-motorized asphalt trail suitable for bicycles, walking, skating and wheel chairs. It also has a soft shoulder path for horses. When completed, the Foothills Trail will extend 26 miles from McMillin through Orting to Buckley. Future plans include continuing the trail to Sumner and Puyallup. From Sumner, the trail will connect with the Interurban Trail that now extends through Kent and Auburn. The Puyallup connection will extend west through Puyallup and into Tacoma.

Public Transportation

Pierce Transit provides a free dial-a-ride service “The Orting Loop” to connect Orting to South Hill Mall, the YMCA, and the Pierce County transit system. It operates on Tuesday, Thursday and Saturday by reservation, running every two hours beginning at 9:00 AM. The Orting Loop service is provided by one of four agencies: Pierce Transit, Transpro, Paratransit, and Laidlaw. The vans operate on a schedule to connect with Pierce Transit bus service at South Hill Mall. Sound Transit offers commuter rail service between Tacoma and downtown Seattle with stops in Puyallup, Sumner, Auburn, Kent, and Tukwila.

PLANNED TRANSPORTATION IMPROVEMENTS

Pierce County Transportation Plan

The Pierce County Transportation Plan was adopted in December, 1992 and amended in 1997 to include the *Pierce County Nonmotorized Transportation Plan*. The Transportation Plan Technical Appendix lists recommended roadway and nonmotorized transportation projects, prioritized as Premier, High, Medium, or Low, and depicts the system expansion needs to the year 2010. The projects that impact Orting are listed below.

Premier Priority

- Shaw Road E – 122nd Avenue E. Corridor: Construct new arterial from SR 410 to Orting-Kapowsin Hwy
- SR 162 Improvements: Widen from 2 to 4 lanes; geometric and intersection improvements – Orting City limits to SR 410.
- SR 161: Turn lanes, shoulders, alignment, channelization – SR 512 to 224th Street.

Medium Priority

- South Hill Connector (Military Road East - 128th Street East corridor): Upgrade to major arterial standards, SR-162 to SR 161.

Pierce County Six-Year Transportation Improvement Program (TIP)

The prioritization process for transportation projects in unincorporated Pierce County is implemented through the Pierce County Transportation Improvement Program (TIP). The projects identified in their 2009-2014 TIP that impact the study area are summarized below:

- 176th Street East Extension: Construct new roadway 130th Avenue. East to Calistoga Street West.
- Military Rd E: Engineering study to evaluate feasibility of widening to increase shoulder width, horizontal alignment, and guardrail.
- Rhodes Lake Road East: Reconstruct roadway from Falling Water Blvd. E to 198th Ave. E
- 128th Street E / Cascadia Blvd E / Falling Water Blvd E: Construct a new roadway arterial from SR 162 to Falling Water Blvd. E..

Orting Six-Year Transportation Improvement Program (TIP)

The City of Orting's Six-Year Transportation Improvement Program (TIP) (2004-2009) includes regrading, paving, parking, curb/gutter, sidewalks, and water, sewer, and storm improvements to several local streets, including Bridge Street, River Avenue, Train Street, Calistoga Street, and Eldredge Avenue. The City is required to update its TIP annually, and a copy of the current plan can be obtained from the City's Public Works Department. The TIP is adopted by reference as a part of the Transportation Element of the Comprehensive Plan.

Washington State Department of Transportation Improvement Program

The following project, funded by the "Nickel Funding Package" enacted for transportation by the 2003 Washington State Legislature, was completed in October 2005:

- SR 161 (Meridian) Corridor Improvements: 176th to 234th: Provided additional capacity and safety improvements along four miles of SR 161. There were two lanes and there are currently five lanes now that this project is completed.

Route Development Plan – State Route 162

WSDOT completed a Route Development Plan for SR 162 in 1997. The plan makes the following recommendations in the Orting area:

- Pioneer Way to 144th near Orting: Widen to a four-lane highway with median barrier. Selected intersections in this segment would remain accessible to left turns and possibly u-turns.

- 144th to Whitesell Street: Widen to four or five lanes. Either a center two-way left-turn lane (if warranted) or raised median islands should be used.
- Orting Business District: Construct one-way couplet systems with minimal impacts to the surrounding developments and businesses. This concept would use the existing highway for two lanes of northbound travel, while Corrin Avenue could serve two lanes of travel southbound.
- Corrin Avenue to Orville Road: Widen to a four or five lane facility.
- Sidewalks are planned as part of highway improvements in the Orting vicinity.

Since 1997, Orting has grown substantially and the community’s transportation needs have changed. New residential and school development along Washington between Whitehawk Boulevard and the north City limits have provided turn and merge lanes at new intersections. Pending development of the Town Center North area is expected to result in frontage improvements including an urban configuration of curbs, gutters, sidewalks, and on-street parking along with pedestrian amenities. The proposed Bridge for Kids will create a new pedestrian focus on Washington that will contribute to recreational trail use connections across the Carbon River. The planned Southwest Connector will use a new traffic signal at the Whitehawk Boulevard intersection to direct through traffic around downtown Orting to the Calistoga Bridge. The Orting School District’s new middle school and stadium will stimulate increased pedestrian connections across Washington to the high school campus.

The Downtown Vision Plan anticipates that Washington Avenue from Bridge Street to Whitehawk Boulevard will serve as Orting’s “main street” providing a highly pedestrian-oriented street with lighting, signage, plantings, and other design features that are reflect the historic heritage of the community and promote economic development and tourism.

CONCURRENCY

The City of Orting requires that the capacity of public facilities and services is equal to or greater than the capacity required to maintain the level of service standards established by the City. The test for concurrency is not passed and a proposed project may be denied if the capacity of the public services or facilities is less than the capacity required to maintain the adopted level of service standards (LOS D) after the impacts associated with the requested permit are added to the existing capacity utilization. The City will prohibit approval of any development that causes the level of service to fall below adopted standards, unless necessary improvements are made concurrently with the development. Concurrent shall mean at the same time as the development impacts or planned and funded for construction within six years.

Methods for the City to monitor these commitments include:

- Annual monitoring of transportation facilities within updates to the Six-Year Transportation Improvement Program (TIP);
- Assessing level of service;

- Reviewing the comprehensive transportation plan and other related studies for necessary improvements;
- Making appropriate revisions to the Six-Year TIP.

TRAFFIC FORECAST

Traffic forecasting is a means of estimating future traffic volumes based on the expected growth in population and employment within an area. To estimate future traffic volumes resulting from growth, forecasts were prepared using current traffic counts, the Pierce County travel demand forecasting computer model, and estimates of population and employment developed for the City's Comprehensive Land Use Plan. The model is calibrated to a 2002 base and has a future horizon year of 2030.

The projected 2030 PM peak hour traffic volumes with planned improvements only is provided on **Figure 3**. The Level of Service results for the study intersections and roadways are provided using the methods described previously in this report. In addition the LOS calculation called Intersection Capacity Utilization (described below) is provided.

Intersection Capacity Utilization (ICU) - Most intersections within the city are under stop-sign control. As traffic on the major streets in the City of Orting increase, turning onto the major streets from a side street will become increasingly difficult. As described earlier, the level of service criteria for stop-sign controlled intersections is typically determined by the minor street left-turn movement. Constructing a traffic signal is a common method for improving the level of service at a stop-sign controlled intersection. However, traffic signals should not be constructed unless certain factors are present such as sufficient traffic volumes over long periods of the day, high levels of pedestrian traffic or preventable accident history.

In a long range plan it is difficult to determine which specific intersections within the City of Orting grid might eventually require traffic signals. The Intersection Capacity Utilization (ICU) is a valuable method for determining the long-term needs of intersections. The ICU method assumes the implementation of a traffic signal system and provides a general means of determining if the given lane configuration can accommodate the projected traffic demand. Use of the ICU is not to say that every intersection will ultimately be signalized, but an indication that a traffic solution exists within the available lanes.

The ICU LOS reports on the amount of reserve capacity or capacity deficit, whereas the delay-based LOS reports on the average delay experienced by motorists. A brief description of the conditions expected for each ICU LOS is as follows:

- **LOS A, $ICU \leq 55\%$:** The intersection has no congestion. This intersection can accommodate up to 40% more traffic on all movements.

- **LOS B**, >55% to 64%: The intersection has very little congestion and can accommodate up to 30% more traffic on all movements.
- **LOS C**, >64% to 73%: The intersection has no major congestion and can accommodate up to 20% more traffic on all movements.
- **LOS D**, >73% to 82%: The intersection normally has no congestion and can accommodate up to 10% more traffic on all movements.
- **LOS E**, >82% to 91%: The intersection is right on the verge of congested conditions. This intersection has less than 10% reserve capacity available.
- **LOS F**, >91% to 100%: The intersection is over capacity and likely experiences congestion periods of 15 to 60 consecutive minutes. Sub-optimal signal timings can cause increased congestion.

Figure 3 shows projected PM Peak Hour traffic volumes for 2030, with planned improvements. Table 5 below shows the projected intersection level of service for 2030.

Table TA-5

2030 Intersection Levels of Service

Intersection	HCM LOS	ICU LOS
Signalized Intersections		
Calistoga Street/Washington Avenue (SR 162)	D	B
Williams Boulevard/Washington Avenue (SR 162)	E	F
High School – Shopping Center Access /Washington Avenue (SR 162)	B	C
Unsignalized Intersections		
Whitesell Street/Washington Avenue (SR 162)	F	C
Bridge Street/River Avenue/Varner Avenue	N/A*	A
Calistoga Street/Kansas Street (SR 162)	F	D
Lane Boulevard/Pioneer Way (SR 162)	F	E
Old Pioneer Way/Pioneer Way (SR 162)	E	E
Whitehawk Boulevard/Washington Avenue (SR 162)	D	C
Calistoga Street/Corrin Avenue	F	C
Calistoga Street/Eldredge Avenue	F	B
Whitesell Street/Eldredge Avenue	A	A
Bridge Street/Corrin Avenue/Harman Way	N/A	B
Kansas Street/Harman Way (SR 162)	C	C
Bridge Street/Washington Avenue	N/A	B
* Not available – The intersection configuration not allowed in HCM analysis		

The roadway segment level of service for the 2030 horizon with no additional planned improvements is shown in the table below.

Table TA-6

2030 Roadway Segment Levels of Service

Roadway Segment	PM Peak Hour Peak Directional Volume	Roadway Capacity at LOS D	Existing LOS (Peak Direction)
Washington Avenue (SR 162) – South of Williams Boulevard	1,600	880	F
Washington Avenue (SR 162) – South of Whitehawk Boulevard	1,090	880	F
Washington Avenue (SR 162) – South of Whitesell Street	950	880	F
Washington Avenue (SR 162) – South of Calistoga Street	560	700	C
Harman Way (SR 162) – South of Kansas Street	620	700	C
Calistoga Street – West of Kansas Street	900	610	F
Calistoga Street – West of Eldridge Avenue	750	610	F

Future Traffic Conditions Summary - Based on the traffic volume projections and the analysis described above, even with the planned roadway and intersection improvements many deficiencies are likely to develop by the 2030 horizon. The following is a description of the identified deficiencies and strategies to improve the traffic system so that the future traffic loads can be adequately accommodated.

Washington Avenue (SR 162) This portion of SR 162 is expected to experience a very high level of traffic growth over the next 25 years. Much of the increase is due to development occurring within the north end of the City of Orting. Also, increased traffic cutting through Orting is anticipated – primarily to/from the southwest via Calistoga Street. The roadway segment analysis and intersection analysis indicates that SR 162 is currently operating at or near capacity and will not be able to adequately handle the traffic increases expected. The Recommended Transportation Plan includes strategies to improve the traffic operations on SR 162 primarily focused on:

- Additional turn lanes
- Median barrier or other access restrictions
- New roadways to provide alternative routes to SR 162

These strategies will be discussed more fully in the following section of this report. As described previously, the Washington State Department of Transportation has already determined that SR 162 will eventually need to be four lanes from SR 410 in Sumner through the City of Orting to Orville Road, south of Orting. However, the traffic volume projections prepared for this Transportation Plan indicate that SR 162 may not require widening south of Calistoga Street.

Calistoga Street West of Washington Avenue (SR 162) The roadway segment analysis indicates that Calistoga Street will require improvement to accommodate the anticipated increase in traffic demand. Based on the marginal level of service failure it is likely that Calistoga Street will not require additional through-lanes, but will need the addition of auxiliary turn lanes at intersections, and possibly a center two-way-left-turn-lane (twl tl). This improvement could increase the efficiency and safety of the roadway with minimal right-of-way and construction impacts.

Individual intersections along Calistoga Street (Kansas Street, Eldredge Avenue and Corrin Avenue) are expected to fail under stop sign-control. The intersections could be improved by implementing turn lanes, but some or all may also require construction of a traffic signal system. The ICU level of service indicates that each of the intersections could accommodate the 2030 traffic loading under traffic signal control.

RECOMMENDED TRANSPORTATION PLAN

As a result of the transportation analysis, a listing of major transportation system improvements necessary to address identified deficiencies in the 2030 analysis year has been established. The Growth Management Act requires an assessment of how well a recommended transportation plan meets the requirements of the Act and how well the level of service goals are met. The City of Orting has a level of service goal of LOS D for intersections and arterials.

Based on the traffic volumes and comparative analysis described previously the following list of projects has been selected to address the City of Orting's long term transportation needs. The recommended improvements are summarized below (see also **Table TA-7** and **Figure 3**).

Roadway Improvements

The following roadway *capacity improvements* are recommended to maintain an acceptable level-of-service (Note that recommended improvements to SR 162 will be dependent upon state funding):

- R1: Whitehawk Boulevard Extension** – Construct a two/three-lane minor arterial roadway extending Whitehawk Boulevard from the current terminus at Orting Circle south to Calistoga Street near Kansas Street. The existing portion of Whitehawk Boulevard may need upgrading to

minor arterial status.

- R2:** *SR 162* – Widen to two lanes in each direction between the north city limits and Whitehawk Boulevard with turn lanes at major intersections.
- R3:** *SR 162* –Add southbound right turn lane extending from Cardinal Lane to Whitehawk Blvd.
- R4:** *Calistoga Street* –Implement recommendations for capacity and safety improvements to Calistoga Street.

The following roadway improvements are recommended in order to provide acceptable *safety and circulation* within the City of Orting:

- R5A:** *Northeast Connector* – Construct a two/three lane collector roadway roughly parallel to SR 162 between the proposed Village Crest development and Whitehawk Boulevard.
- R5B:** *Northeast Connector* – Construct driveway access to Orting High School near Ammons Lane.
- R6:** *South Orting Access* – Construct new collector roadway to provide access to developable lands adjacent to Orting/Kapowsin Highway/Calistoga intersection.

Recommended Intersection Improvements

The following intersection improvements are recommended:

- I1:** *Whitehawk Boulevard/SR 162* – Construct traffic signal (this project would be required as part of construction of the Whitehawk Boulevard Extension)
- I2:** *Whitehawk Boulevard Extension* – Kansas Street/Calistoga Street – Construct traffic signal (this project would be required as part of construction of the Whitehawk Boulevard Extension)
- I3:** *Orting/Kapowsin Highway/Calistoga Street Intersection* – Construct four-way intersection in order to provide east-west access to vacant developable land.

Several intersections that are currently under stop sign control are expected to experience excessive delay for the minor street movements. As noted previously, construction of a traffic signal can be an appropriate solution to congestion at an unsignalized intersection; however, traffic signals are not necessarily warranted at each location. The following is a *list of intersections that should be monitored* to determine if traffic conditions develop that warrant constructing a traffic signal. Some of the intersections listed are also listed as part of roadway projects. It is possible that the intersections might require upgrade prior to completion of the roadway projects.

- Whitehawk Boulevard/SR 162 (also included as part of the Whitehawk Boulevard Extension project)
- Kansas Street/Calistoga Street (also included as part of the Whitehawk Boulevard Extension project)
- Old Pioneer Way/SR 162 – The through volumes at this intersection will make minor street movements difficult. The intersection would be particularly sensitive to the level of development that occurs. The proposed connection of Old Pioneer Way to Whitehawk Boulevard will allow additional routes to the area and would improve the Old Pioneer Way/SR 162 intersection.

2030 Intersection Levels of Service with Recommended Improvements

The 2030 levels of service at key intersections are shown in Tables 5 and 6. The levels of service are based on traffic volumes generated by growth in the area and implementation of the improvements listed in the recommended plan. The capacity analysis shows that the planned improvements will allow each of the study intersections to operate at an acceptable LOS D or better.

CAPITAL COSTS FOR RECOMMENDED IMPROVEMENTS

**Table TA-7
2030 Improvement Program**

Project #	Roadway	Improvement		Planning Level Cost Estimate (\$000)	Funding Source
		Type	Description		
R1	Whitehawk Extension	Circulation	Construct 2/3 lane arterial Whitehawk-Calistoga at Kansas	\$1,200	City Private
R2	Washington Avenue (SR 162) – North city limits – Whitehawk Blvd.	Capacity	Widen to four lanes, add left turn lane	Unfunded/WSDOT	WSDOT
R3	Washington Avenue (SR 162) – Whitehawk-Cardinal Ln	Capacity	Construct Southbound Right Turn lane	Unfunded/WSDOT	WSDOT
R4	Calistoga Street	Capacity	Construct two way left turn lane	Unfunded	City Private
R5A	Northeast Connector	Safety & Circulation	New Roadway (2/3 lanes)	\$1,300	City Private
R5B	Northeast Connector	Safety & Circulation	Driveway Access to High School	\$750	City Private
R6	Washington Avenue (SR 162) – Bridge Street to south city limits	Safety & Circulation	Widen to four lanes, add left turn lane	Unfunded/WSDOT	WSDOT
R7	South Orting Access	Circulation/ Access	Construct new collector roadway to provide access	\$650	City Private
Project #	Intersection				
I1	Whitehawk/SR 162	Capacity	Construct signal as part of R1	\$250	City Private
I2	Whitehawk Extension/Calistoga	Capacity	Construct signal as part of R1	\$250	City Private
I3	Orting-Kapowsin Hwy/Calistoga	Safety/ Access	Re-align to four-way	\$250	City Private

OTHER IMPROVEMENTS AND STRATEGIES

Transportation Demand Management (TDM)

TDM strategies implemented by the City of Orting will result in fewer vehicles needed for commuters during peak periods, postponing or even eliminating the need to make costly expansions in roadway capacity. Viable travel alternatives help mitigate impacts of growth in vehicular traffic and provide feasible options for more people.

TDM strategies include:

- Providing effective public transportation services to help reduce car dependence in the region and serve the needs of people who rely on public transportation;
- Encouraging bicycle and pedestrian travel by providing inviting, safe, convenient and connected routes, education and incentive programs, and support services such as bike racks, showers and lockers;
- Maintaining and improving a network of highways, streets and roads that moves people, goods and services safely and efficiently, minimizes social and environmental impacts, and supports various modes of travel.
- Providing adequate connections and access among all transportation modes

Land-Use Changes - The traffic volume projections used for this analysis are based on the 2030 employment and housing projections for the City of Orting area. The location, type and amount of development has a direct effect on the level of traffic flows and congestion that can occur within the area. Changes to the zoning and development densities allowed within the city can be adjusted to influence the future traffic loadings on the street system. The following land-use strategies may be considered:

- Consider future land use changes in the City and in future urban growth areas within the context of the transportation system capacity.
- Use mixed-use zoning with housing, shopping and employment within localized areas to encourage short vehicle trips and/or use of other non-motorized modes of travel.

Access Control - The carrying capacity of a roadway is reduced by conflict points that require drivers to adjust to the influence of other vehicles, pedestrians or other distractions. For certain roadways it is appropriate to limit the number or type of accesses allowed along the facility. Access control strategies include:

- Not allowing individual driveway approaches (consolidating the access points for adjacent properties)
- Limiting the number or spacing of minor intersection points
- Increasing separation between vehicle traffic and non-motorized traffic along the roadway
- Separating the opposite directions of flow on the roadway by constructing a raised median barrier
- Limiting minor roadway or driveway intersections to right-turn-only access

In Orting, some access control strategies have already been implemented along SR 162 between the north city limits and Whitesell Street. The roadway has limited numbers of cross-street intersection points and a pedestrian/non-motorized trail separated from the roadway.

Accepting Lower Levels of Service - Within the City of Orting the level of service is a measure of the operation of the street system during the highest traffic volume hour of the day, which typically occurs during the evening commute period. If a roadway or intersection experiences a poor level of service during the highest traffic hour it may still function well throughout the majority of the day. An agency can determine that the expense required to solve a short-term congestion problem might not be the most efficient use of transportation funds.

In some situations when a roadway or intersection falls below acceptable service levels and improvement strategies are not deemed feasible or funds are not available to construct improvements, an option is to lower the accepted level of service standard. By lowering the level of service standard an agency can continue to allow new development traffic while planning toward improvements that will improve the traffic congestion. If an improvement is eventually constructed that improves the roadway level of service, the LOS standard can be changed back to a higher standard.

If an agency adopts a lower LOS standard, it does not limit the ability to require construction of 'spot' improvements to maintain safe traffic flow. These types of safety improvements could include turn lanes or construction of a traffic signal.

LEVEL OF SERVICE COMPLIANCE

The 1998 legislation House Bill 1487, known as the "Level of Service" Bill, amended the Growth Management Act, Priority Programming for Highways, Statewide Transportation Planning, and Regional Planning Organizations. The combined amendments to these RCWs were provided to enhance the identification of, and coordinated planning for, "transportation facilities and services of statewide significance (TFSSS)". HB 1487 recognizes the importance of these transportation facilities from a state planning and programming perspective. It requires that local jurisdictions reflect these facilities and services within their comprehensive plan. To assist in local compliance with HB 1487, the Washington State Department of Transportation (WSDOT), Transportation Planning Office, and the Washington State Department of Community, Trade and Economic Development promulgated implementation guidelines in the form of a publication entitled "Coordinating Transportation and Growth Management Planning".

In 2003, the Puget Sound Regional Council adopted level of service standards for regionally significant state highways in the central Puget Sound region. Regionally

significant state highways (also called non-HSS) are state transportation facilities that are not designated as being of statewide significance. Together with these entities, the City of Orting has worked to compile the best available information to include in the comprehensive plan amendment process.

- ***Inventory of state-owned transportation facilities within the City of Orting:*** SR 162 runs through the City of Orting and provides the primary connection to SR 161, SR 167, SR 512 and Interstate 5.
- ***Estimates of traffic impacts to state facilities resulting from local land use assumptions:*** **Figure 3** provides 20-year traffic volumes for SR 162, which is the only state facility within Orting. The volumes were generated by the Puget Sound Regional Council model, which includes land use assumptions for 2030 for the City of Orting.
- ***Transportation facilities and services of statewide significance (TFSSS) within Orting:*** There are no transportation facilities or services of statewide significance within the City included on the proposed list of TFSSS.
- ***Highways of statewide significance within Orting:*** The Transportation Commission List of Highways of Statewide Significance doesn't list any facilities within the City of Orting or its growth area.
- ***Highways of regional significance within Orting:*** SR 162 is designated as a Regionally Significant State Highway, Tier 3.

The City of Orting asserts that proposed improvements to state-owned facilities will be consistent with the Regional Transportation Plan, Destination 2030, and the State Highway System Plan. The City of Orting affirms the establishment of LOS C for SR 162, a Highway of Regional Significance.

FINANCE AND CONCURRENCY

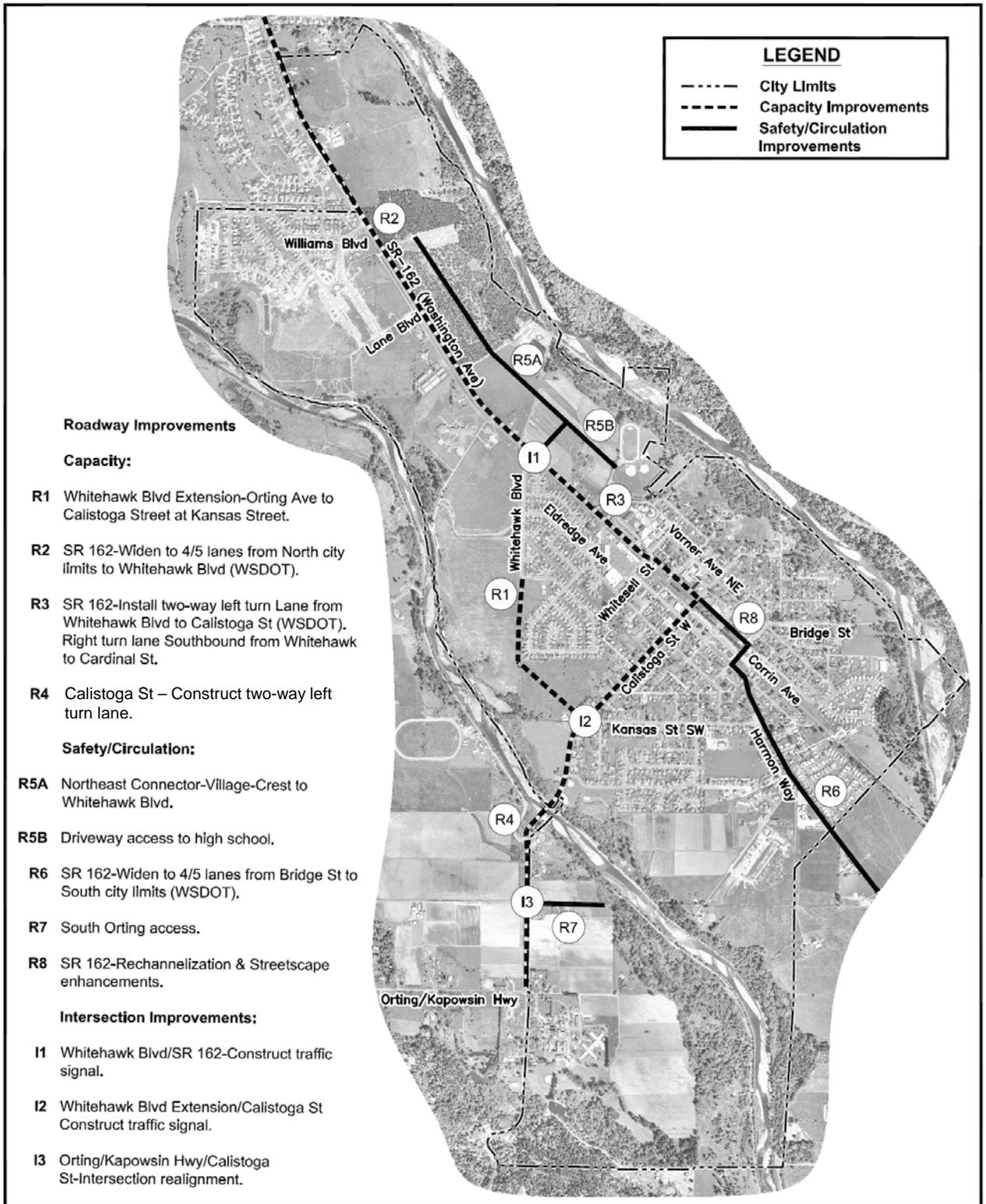
The GMA requires that a jurisdiction's transportation plan contain a funding analysis of the transportation projects it recommends. The analysis should cover funding needs and funding resources, and it should include a multi-year financing plan. The purpose of this requirement is to ensure that each jurisdiction's transportation plan is affordable or achievable. If a funding analysis reveals that a plan is not affordable or achievable, the plan must discuss how additional funds will be raised, or how land use assumptions will be reassessed.

Federal Sources - The 1991 Federal Intermodal Surface Transportation Efficiency Act (ISTEA) reshaped transportation funding by integrating what had been a hodgepodge of mode- and category-specific programs into a more flexible system of multi-modal transportation financing. For highways, ISTEA combined the former four-part Federal Aid highway system (Interstate, Primary, Secondary, and Urban) into a two-part system consisting of the National Highway System (NHS) and the Interstate System. The National Highway System includes all roadways not functionally classified as local or rural minor collector. In 1998, the Transportation Efficiency Act for the 21st

Century (TEA-21) continued this integrated approach, although specific grants for operating subsidies for transit systems were reduced.

To receive TEA-21 funds, cities must submit competing projects to their designated Regional Transportation Planning Organization (RTPO) or to the state DOT. Projects which best meet the specified criteria are most likely to receive funds. Projects which fund improvements for two or more transportation modes receive the highest priority for funding.

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Figure 3 Planned Transportation Improvement Projects