

# Transportation Element



## **I. Introduction**

The City of Leavenworth, located just east of the crest of the Cascade Mountains, in the upper reaches of the Wenatchee River Valley, is primarily accessed by US Highway 2 (US 2). The City's transportation network is nestled within the confines of the adjoining steep mountain topography and the National Forest lands that abut the City limits. The Wenatchee River runs through the City and the Burlington Northern Railroad passes by to the northeast. The City is home to approximately 1,980 people, with another several thousand residing in the surrounding, unincorporated areas of Chelan County. The most prominent appeal of the City is the scenic background and the Old-World Bavarian Theme that the City has created to promote tourism and economic development. Tourists travel from across the State, Nation, and World to visit, shop, relax, and recreate within the City. This tourist theme, along with the vast recreational opportunities, beautiful scenery, and distinct seasons, has resulted in the area becoming a desirable place to live and visit.

Continuing growth and an increase in tourism has created the need to systematically address future transportation needs within the City. The growing population and changing nature of the regional economy have required the City to reconfirm the transportation projects to serve both current and projected land use growth. Growth in the City of Leavenworth includes residential housing, seasonal vacation housing, and new retail and tourist-based employment. This forecast growth continues to add pressure to the transportation system serving the City.

The Transportation Element builds off of prior planning efforts by the City, County, Washington State Department of Transportation (WSDOT), Chelan-Douglas Transportation Council (CDTC) / North-Central Regional Transportation Organization (RTPO), and LINK Transit. All modes of transportation have been addressed, including motor vehicle, non-motorized, rail, transit, aviation, and waterborne. As required by the Washington State Growth Management Act (GMA), a prioritized transportation project list, financing strategies, and implementation measures have been included in the Transportation Element.

This Transportation Element has been developed in accordance with Section 36.70A.070 of the Growth Management Act (GMA).

### **Background**

The Transportation Element was last updated in 2008. This update was a thorough and systematic analysis of the transportation needs within and surrounding the City. The City has aligned transportation and land use and identified or reconfirmed improvements to the City's transportation facilities. In addition, Chelan County recently completed an update of its Transportation Element. Since much of the growth in Leavenworth is targeted for the UGA, the County and City have jointly updated their respective Transportation Element's to be consistent and complimentary of each other. This approach allows for shared project

lists, similar funding strategies, and an evaluation of the entire regional transportation system.

The Transportation Element establishes a vital link between land use and City transportation facilities and services needed to meet current system deficiencies and to support future growth, economic development, recreation, tourism, livability, and the full range of activities anticipated in the City. The anticipated types, intensity, and timing of land development in the City, and its UGA, will help determine the mode of transportation people choose to use. In addition, land use decisions outside of the City impact the transportation system, and attention must be paid to the anticipated development in the UGA and surrounding unincorporated County areas.

The Transportation Element is a key component to the City's Comprehensive Plan. It identifies the City's goals and policies for transportation as well as the City's transportation priorities, level-of-service (LOS) standards, long-term projects, and financial strategies. The Transportation Element was developed in accordance with the GMA.

### **Growth Management Act**

The link between land use and transportation is a focus of the GMA. The purpose of the Transportation Element is to provide the City with a guide for transportation system improvements to meet existing and future travel needs, and a means for integrating these improvements with the State, County, and regional transportation system.

**The State's Growth Management Act of 1990 requires communities to prepare a transportation plan that ties directly to the City's land use decisions and financial planning. This Transportation Element Update fulfills the mandate.** Public Involvement

The City prepared its Public Participation Plan (Appendix ??) which included three (3) subcommittee meetings, two workshops, and a public hearing on the Transportation Element update

## II. Goals and Policies

### **Goal 1: Provide a balanced, multi-modal transportation system for the community that supports the safe, efficient movement of people and goods.**

Goal Rationale: The Growth Management Act requires that the comprehensive plan be internally consistent. The transportation element and the land use element will be consistent because the transportation element is prepared based upon assumptions developed in the land use element.

*Policy 1: The provision of transportation facilities and services shall reflect and support the land use designations and development patterns identified in the Land Use Element of the Leavenworth Comprehensive Plan. The design and implementation of transportation facilities and services shall be based on serving current and future travel demand – both short-term and long-term planned uses.*

Rationale: This policy will insure that there is consistency between transportation systems and land use densities.

*Policy 2: The construction of transportation facilities in the Leavenworth planning area shall be timed to coincide with community needs, and shall be implemented so as to minimize impacts on existing development. Prioritization of improvements should consider the City's level of service standards, concurrency policies, and financial constraints.*

Rationale: Project priorities may change over time, depending on the intensity and location of development, performance of the transportation system, and the available funding.

*Policy 3: The City of Leavenworth shall implement its Level of Service (LOS) standard and performance measures as follows:*

- *Concurrency shall be measured for the average vehicle traffic volume for a typical weekday during the PM peak hour;*
- *State Environmental Policy Act (SEPA) shall be evaluated consistent with concurrency but could include additional analysis for other time periods based on the discretion of the City Public Works Director;*
- *Intersection (delay) and street segment (volume/capacity) analysis will use one-hour LOS as a screening tool to determine capacity deficiencies;*
- *Concurrency requirements do not apply to facilities and services of statewide significance per RCW 36.70A.070(6). Facilities of statewide significance such as*

*US 2 are to be consistent with the Washington State Highway Plan, designated as LOS D; and,*

- *City and Urban Growth Area – LOS D will be acceptable.*

Rationale: Identifies how and when LOS, concurrency, and State Environmental Policy Act (SEPA) are applied and the standard by which the City will plan under.

*Policy 4: Off-site improvements to streets or the provision of enhanced pedestrian and bicycle facilities in the Leavenworth planning area may be required as a condition of approval for land divisions or other development permits based on the State Environmental Policy Act (SEPA) or the City's adopted development regulations.*

Rationale: State Environmental Policy Act (SEPA) and development code requirements will help implement needed transportation improvements.

*Policy 5: Transportation improvements which are identified in the Transportation Element shall be implemented concurrently with new development. Concurrent with development means that improvements or strategies will be in place at the time of development, or that a financial commitment will be in place to complete the improvements or strategies within six years.*

Rationale: Concurrency is required for transportation under the GMA.

*Policy.6: Substandard streets and future public right-of-way needs will be addressed concurrently at the time of development unless there is a system-wide benefit, in which case the City Council may authorize the City to participate in the improvement.*

Rationale: Improvements that have system wide benefits will be a higher priority than infill projects or frontage improvements that primarily benefit one property owner or developer.

*Policy 7: Support the mobility needs of local businesses and industry, the Leavenworth transportation system shall consist of the infrastructure necessary for the safe and efficient movement of goods, services, and people throughout the Leavenworth area.*

Rationale: The transportation system contributes to the overall economic vitality of the community.

*Policy 8: Transportation facilities in the Leavenworth planning area shall be designed and constructed to mitigate noise, neighborhood disruption, economic losses to the private or public economy, and social, environmental, or institutional disruptions.*

Rationale: Community impacts are an important consideration when implementing projects.

*Policy 9: Transportation facilities and system improvements shall be designed to minimize energy consumption and to encourage the use of public transportation, bikeways, sidewalks, and walkways.*

Rationale: Context sensitive solutions and alternative design strategies will help the City achieve sustainable practices and promote non-motorized travel.

*Policy 10: The City of Leavenworth shall coordinate its transportation planning and construction efforts with those of the Chelan-Douglas Transportation Council (CDTC), the Washington State Department of Transportation (WSDOT), LINK Transit, Chelan County, and other agencies. Leavenworth's Transportation Element will be consistent with those developed at the regional and state level.*

Rationale: The City transportation system is part of a larger regional system.

*Policy 11: Encourage transportation solutions that are cooperatively developed and support an integrated system of public transportation services, street facilities, transportation system management (TSM)/demand management programs, and land use policy.*

Rationale: An integrated system should enhance mobility by providing a range of transportation choices for the public.

*Policy 12: The Transportation Element should facilitate the development of circulation streets within the urban growth area.*

Rationale: A circulation system will facilitate all modes in and out of the urban growth area. In addition, a network of circulation streets provides an efficient means for snow plowing and movement of other service vehicles, such as garbage trucks.

**Goal 2: Encourage plans and design standards that consider all transportation system user needs.**

Goal Rationale: The GMA requires communities to consider urban planning approaches that promote physical activity and require that a bicycle and pedestrian component be included in the transportation element of a comprehensive plan.

*Policy 1: The safety and convenience of all users of the transportation system, including motor and freight vehicle drivers, bicyclists, pedestrians, and public transportation users, shall be accommodated and balanced in all types of transportation and development projects, and through all phases of a project.*

*Policy 1a: Continue and support the City's Complete Streets Ordinance.*

Rationale: Through the GMA, the State suggests that agencies review local regulations to ensure that bicyclists and pedestrians are adequately planned for in street and subdivision development standards, parking standards, and parking lot design. Also, local governments should comply with the Americans with Disabilities Act not only to provide access for the disabled, but also for people with strollers and walkers.

*Policy 2: The bicycle, pedestrian, equestrian, and cross-country ski trails identified in the Recreation Element and the Upper Valley Regional Trails Plan should be recognized and supported for their value as part of the local transportation system.*

Rationale: To help complete a network of non-motorized facilities that link rural and urban sidewalks, bicycle lanes, paths, and trails.

*Policy 3: Continue and support the application of modified street standards along existing collector and local streets while considering multi-modal needs and the costs and impacts of improvements associated with acquiring additional right-of-way and the reconstruction of existing facilities while maintaining a minimum road width to accommodate expected traffic volumes and emergency vehicles, per the adopted Street Design Standards.*

Rationale: To improve existing streets and public rights-of-way without significantly impacting adjoining property owners or the environment and to provide the necessary facilities that are appropriate for the level of development planned for the area.

*Policy 4: Include provisions to address snow removal and storage in the design of streets and other transportation facilities.*

Rationale: Designs need to work for all the seasons of the year, especially during the winter when heavy snow fall may impact the area.

**Goal 3: Maintain and improve the safety and mobility of the arterial and collector street system.**

Goal Rationale: Increased development is projected for the planning area. The safe and efficient movement of people and goods primarily rely on the City's arterial and collector street system.

*Policy 1: Identify clear mobility and safety objectives as to the purpose of a street improvement project at the outset of the project or when updating the City's six-year Transportation Improvement Program.*

Rationale: Clear objectives assist in building public support and understanding of why the City is investing or supporting a particular street improvement project and may also influence the final design features being considered.

*Policy 2: Washington State Department of Transportation should recognize the priorities, constraints, and concerns expressed in the Transportation Element.*

Rationale: State agencies are required to comply with the GMA.

*Policy 3: Access to and from US 2 should be along existing local side streets, to the maximum extent possible, to avoid unnecessary traffic hazards and to maintain safety and adequate mobility along this route.*

Rationale: Preserve capacity along US 2 and provide for a more complete system of local roadways.

*Policy 4: Generally, restrict the creation of new driveways along arterials and collectors if access can be accommodated by a local access street.*



Rationale: Enhance traffic flow, improve overall circulation, and increase safety.

*Policy 5: Support construction of new local and collector streets, along with an additional access point to US 2 east of Safeway to improve circulation for both non-motorized and motorized travel.*

Rationale: Desirable to provide additional access within the area.

*Policy 6: Work with WSDOT and Chelan County to discourage diversion of traffic from US 2 and Chumstick Highway onto local streets.*

Rationale: New or upgraded collector streets should serve adjoining land uses, not act as alternative routes to bypass a major arterial.

*Policy 7: Recognize US 2 as not only a regional highway, but also as the City's "main street" by improving intersection operations and safety for the minor street approaches at unsignalized locations.*

Rationale: Several intersections along US 2 are projected to operate poorly in the future.

*Policy 7a: Encourage signal and crosswalk control integration to allow safe crossing and efficient vehicle mobility and/or reduce conflicts.*

Rationale: As pedestrian crossing increase, safe signalized crosswalks (warning beacons) and connection with controlled intersections are necessary to prevent impediment to vehicle flow and pedestrian safety.

*Policy 8: Seek to establish or maintain a reasonable interval between local access streets and collector streets in residential areas to promote improved circulation and access for all modes of travel.*

Rationale: Creating a pattern of continuous and reasonably spaced streets provides for the long-term economic, social, and recreation benefits to the community.

**Goal 4: Encourage the development of public transportation options.**

Goal Rationale: Public transportation could provide an increasingly more valuable service, reduce downtown parking needs, help support tourist business, and save energy.

*Policy 1: Continue scheduled passenger rail service to the Leavenworth Amtrak Platform and Shelter.*

Rationale: Rail service helps to mitigate automobile impacts in the area, and enhance tourist access and economic development.

*Policy 2: Support additional and maintain existing public transit service and construction of new park & rides to provide local residents improved travel choices.*

Rationale: Additional public transit in the Leavenworth area would help to mitigate traffic impacts and provide residents with improved travel choices.

*Policy 3: Require transit facilities and services as mitigation, where appropriate, for new developments.*

Rationale: Bus pullouts, ADA accessible transit stops, or new transit shelters should be considered as part of new development or redevelopment.

**GOAL 5: Provide a transportation system for the Leavenworth planning area that is funded adequately to meet current and future capital, maintenance and operational needs.**

Goal Rationale: Funding strategies should be in place to implement the Transportation Element.

*Policy 1: Use a portion of Motor Vehicle Fuel Tax funds to finance capital improvements to the transportation system.*

Rationale: Not all tax revenues should be entirely focused on maintenance.

*Policy 2: Seek federal funding for capital improvements through participation in the Chelan-Douglas Transportation Council (CDTC).*

Rationale: Federal dollars are distributed to local communities through the Chelan-Douglas Transportation Council (CDTC).

*Policy 3: Aggressively pursue the awarding of federal, state, and private grants individually or through partnerships with other agencies to augment street and non-motorized capital improvements.*

Rationale: There are less grant dollars available, and the grants that are available are becoming more and more competitive.

*Policy 4: Continue to fund street and sidewalk maintenance and operations through the use of Motor Vehicle Fuel Tax and Property Tax revenues and the Transportation Benefit District.*

Rationale: Preservation of the existing transportation system is a high priority.

*Policy 5: Seek additional funding sources to meet the long term financial requirements of sustaining a perpetual life street maintenance program.*

Rationale: Repairing streets and sidewalks before they fail will avoid costly capital improvements.

*Policy 6: Require new development to complete a traffic study that identifies the impacts to the transportation system.*

Rationale: Consistent guidelines for the review of transportation impacts will assist the City in evaluating development applications and identifying possible mitigation.

*Policy 7: Require those responsible for new development to mitigate their development's impacts to the transportation system, as required by the Growth Management Act and State administrative rules (, concurrent with the development of the property.*

Rationale: The City is required to plan under state laws.

*Policy 8: Establish and implement a development review process for transportation that addresses concurrency, State Environmental Policy Act (SEPA), Street Development Standards, and other mitigation requirements. Review the cumulative transportation impacts of new development and implement methods of sharing mitigation costs.*

Rationale: A development review process should be established to assist in implementing projects concurrent with new development.

*Policy 9: Require new development to provide full or partial street improvements to expand or improve access to areas with existing or future development potential, consistent with adopted Street Design Standards.*

Rationale: New development should fund improvements primarily benefiting themselves while also providing the necessary street facilities that are appropriate for the level of development planned for the area.

*Policy 10: Continue and support the Transportation Benefit District and/or adoption of a transportation impact fee (TIF) program to help fund transportation improvement projects.*

Rationale: New local funding for capital improvements is necessary to provide matching funds for grants and address the City's share of project related costs.

*Policy 11: Explore and implement other public/private funding options, such as Local Improvement Districts (LID) and Parking and Business Improvement Areas (PBIA).*

Rationale: Projects that benefit a particular area should be partly financed by the property owners who receive the benefits of the improvements.

**GOAL 6: Encourage and support parking strategies.** Goal Rationale: Improving parking reduces congestion as users seek parking, and increases overall traffic flows.

### III. Inventory of Transportation Facilities

The transportation system in the City of Leavenworth consists of state highways, arterials, local streets, transit facilities and services, pedestrian and bicycle facilities, and rail lines. The inventory of existing transportation facilities and services was updated as part of the Transportation Element. Major elements of the existing transportation system are summarized in this section. The inventory covers the street system characteristics, traffic volumes, traffic operations, traffic safety, transit service, pedestrian, bicycle, and equestrian facilities, and freight facilities.

#### Roadway System

Functional classification is the grouping of roadways by function. Based on the 2003 Transportation Element, the City has established four types of street classifications: major arterials, secondary arterials, collectors, and local streets.

#### *State Highways*

**US Highway 2** (US 2) links Leavenworth and Wenatchee to the east with Monroe and Everett to the west. It is classified as a Highway of Statewide Significance. Within the City, it is a three-lane arterial with 12-foot travel lanes, 5-foot bicycle lanes, and curbs/gutters and sidewalks on both sides. The right-of-way width is approximately 60 feet along the corridor. The center lane is a two-way left-turn lane. The posted speed limit is 30 mph within City limits. There are three traffic signals at the intersections of Evans Street/Ninth Street, Chumstick Highway, and Riverbend Drive. Right-turn lanes are provided at the intersections of Evans Street/Ninth Street, Chumstick Highway, and Riverbend Drive.

#### *Major Arterials*

**Chumstick Highway** (formerly known as SR 209) is a County rural major collector connecting Leavenworth to Plain and Lake Wenatchee. This north-south arterial has two 11-foot travel lanes with 2-foot paved shoulders, and approximately 60 feet of right-of-way. Within the City, the posted speed limit is 25 mph. A sidewalk is available on the northwest side of the road from US 2 to Cascade High School.

#### *Secondary Arterials*

**Ski Hill Drive** is a two-lane north-south secondary arterial connecting US 2 to the south to Titus Road to the north. Shoulders are provided outside of City limits, but not within the City limits. Within the City, the right-of-way width is 70 feet between Whitman Street and US 2, and 45 feet on other sections south of Pine Street. The posted speed limit on Ski Hill Drive is 25 mph.

**Titus Road** is a two-lane secondary arterial connecting Pine Street to the south with Ski Hill Drive to the north via a loop road connection. South of the middle school, the street has 8 to 10 foot paved shoulders on both sides and a 5-foot concrete sidewalk on the east side. Titus Road has a posted speed limit of 35 mph north of the school zone.

**Pine Street** is a two-lane east-west secondary arterial connecting Ski Hill Drive to the west with Titus Road and Fir Street to the east. It has 10 to 11 foot travel lanes, no shoulders, and minimal turning radii (15 to 20 feet) at the intersection with Fir Street. The posted speed limit is 25 mph.

**Fir Street** is a secondary arterial, which is only one block in length, connecting Pine Street to the north with Cedar Street to the south. To the north, it is a through street connecting with Pine Street at a 90-degree turning intersection. To the south, Fir Street terminates as a stop-controlled “T” intersection with Cedar Street. It has 27-foot pavement width with no striping or pedestrian facilities provided. The posted speed limit is 25 mph.

**Icicle Road** is a two-lane secondary arterial connecting with US 2 at the western City limit. This road serves the south part of the City and the rural unincorporated County. It also provides access to US Forest Service recreational areas up the Icicle Creek valley. The right-of-way width can range between 25 to 60 feet along the corridor.

**East Leavenworth Road** is a two-lane rural major collector connecting Icicle Road to the south and US 2 to the north. The section just south of US 2 is located within the City’s UGA. This road also serves mostly rural unincorporated portions of the County. The right-of-way width is approximately 60 feet along the corridor.

### *Collectors*

The following streets within the downtown commercial core are identified as collectors:

**Front Street, Commercial Street, W. Commercial Street, and Ninth Street.** Other collectors serve residential and commercial areas north of US 2: **Mill Street, Mine Street, and Evans Street.** The connection between Pine Street and Evans Street, along **Burke Avenue, Birch Street, Price Avenue, and Sherbourne Street** is also classified as a collector. These collectors have two lanes and a 25 mph speed limit. **Table 1 identifies** the main characteristics of each classified street, including a range of existing right-of-way width.

**Table 1. Summary of Arterial/Collector System Main Characteristics**

<b>Classification</b>	<b>Name</b>	<b># Lanes</b>	<b>Posted Speed</b>	<b>Current ROW<sup>1</sup></b>	<b>Sidewalks</b>	<b>Bike Lanes</b>
State Highway	US 2	3	30	60	Yes	Yes
Major Arterial	Chumstick Highway	2/3	25	~60	Partly	No
Sec. Arterial	Titus Road	2	35	25 to 60	Partly	No
Sec. Arterial	Icicle Road	2	35	25 to 60	At junction	No
Sec. Arterial	E. Leavenworth Road	2	35	~60	No	No
Sec. Arterial	Pine Street	2	25	20 to 60	No	No
Sec. Arterial	Fir Street	2	25	40	No	No
Sec. Arterial	Ski Hill Drive	2	25	45 to 70	Partly	No
Collector	Evans Street	2	25	~50	Yes	No
Collector	Front Street	2	25	25 to 60	No	No
Collector	Commercial Street	2	20	20 to 70	Partly	No
Collector	Mill Street	2	25	~50	No	No
Collector	Mine Street	2	25	~50	No	No
Collector	Burke Avenue	2	25	50	No	No
Collector	Birch Street (from Burke to Price)	2	20	40 to 80	Yes	No
Collector	Price Avenue (Birch to Sherbourne)	2	20	~60	Yes	No
Collector	Sherbourne Street (Price to Evans)	2	25	~60	Yes	No
Collector	W. Commercial Street	2	25	25 to 60	No	No
Collector	9th Street (US 2 to Commercial)	2	25	60	Yes	No

Source: Transpo Group 2009

1. Base on City's GIS database.

### *Local Access Streets*

Roadways not mentioned previously are considered local streets. Within the City, the legal speed limit is 25 mph, unless otherwise posted. In the County, the legal speed limit is 35 mph, unless otherwise posted. Generally, local streets are two-lane roadways providing direct access to adjacent properties.

### *Street Design Standards*

Applicable roadway design parameters are shown on **Table 2.**

<b>Type</b>	<b>ROW Width</b>	<b>Purpose</b>
Urban collector	60'	Collects traffic from a region and/or the primary road to which local access roads from neighborhoods/commercial/industrial areas connect
Urban local access	50'	Provides access and circulation within commercial areas and single/multi-family neighborhoods
Industrial local	44'	Provides access and circulation within industrial areas
Fire apparatus (private)	20'	Serves two to three single family residential lots or the equivalent ADT producer for other land uses
Driveway (private)	20'/10'	Serves one single-family residential lot or the equivalent ADT producer for other land uses

The City has adopted standard details for street construction.

County collectors also have a minimum right-of-way design standard of 60 feet.

### *Right-of-Way*

The right-of-way analysis indicates that a number of streets designated as arterials or collectors currently do not meet the right-of-way minimum standard of 60 feet. Examples of collector street sections that have substandard right-of-way include:

- Ski Hill Drive between Whitman Street and Pine Street;
- Evans Street between Orchard Street and Summit Avenue;
- Fir Street between Pine Street and Chumstick Highway.



Other right-of-way deficiencies include Pine, Commercial, and Poplar, as well as County roads and private roads within the UGA.

### *Pavement Conditions*

Many of the City and County roads were built with little or no subsurface or base material. As a result, many City streets are in poor condition regarding pavement condition. In recent years, the City has made improvements to a number of streets with the limited funding that is available, with most of the effort going towards the downtown commercial area. However, there is still a substantial amount of deferred maintenance of streets with poor pavement conditions. It is likely that some of the roadways are beyond a chip seal or overlay treatment, and instead require a significant capital investment to repair the roadway and supporting sub grade material.

## **Traffic Volumes**

### *Weekday Traffic Volumes*

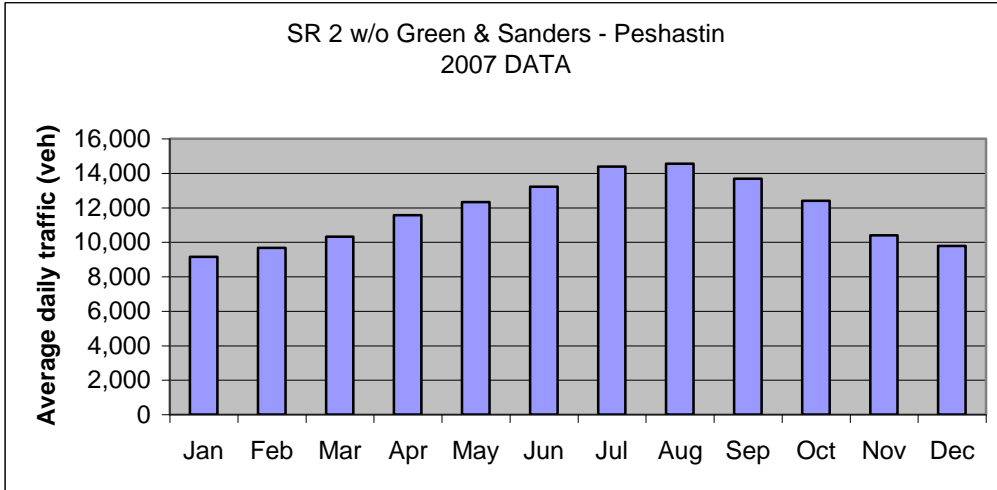
Daily traffic volumes along US 2 were obtained from WSDOT for 2007. Average daily volumes along US 2 range from 5,000 vehicles per day (vpd) west of Icicle Road to 14,000 vpd just east of Chumstick Highway. Historical counts in Peshastin show an average annual growth rate of 1.9 percent since 1998, which means a total increase of approximately 2,000 vpd over the last 10 years.

Tube counts collected in 2008 provided information on daily volumes on other roads and streets. **Figure 4** illustrates the daily volumes at various locations throughout the city. The highest daily volumes off of US 2 are experienced on Chumstick Highway (5,100 vpd), Icicle Road (4,300 vpd), Ski Hill Drive (1,800 vpd), Titus Road (1,800 vpd), and East Leavenworth Road (1,500 vpd).

### *Seasonal Variations*

The segment of US 2 through Leavenworth experiences extreme seasonal changes in traffic, as well as high volumes of weekend travel. Summer traffic in Leavenworth typically is significantly higher than other times of the year: This is primarily due to the tourism and recreational activities occurring in and around Leavenworth that bring more traffic during the summer, both with travelers coming into town or just passing through.

**Figure 3** illustrates monthly variations of average daily traffic volumes along US 2 in Peshastin (the nearest permanent automatic data collection station). This data is assumed to be similar to what would be observed in the City of Leavenworth.

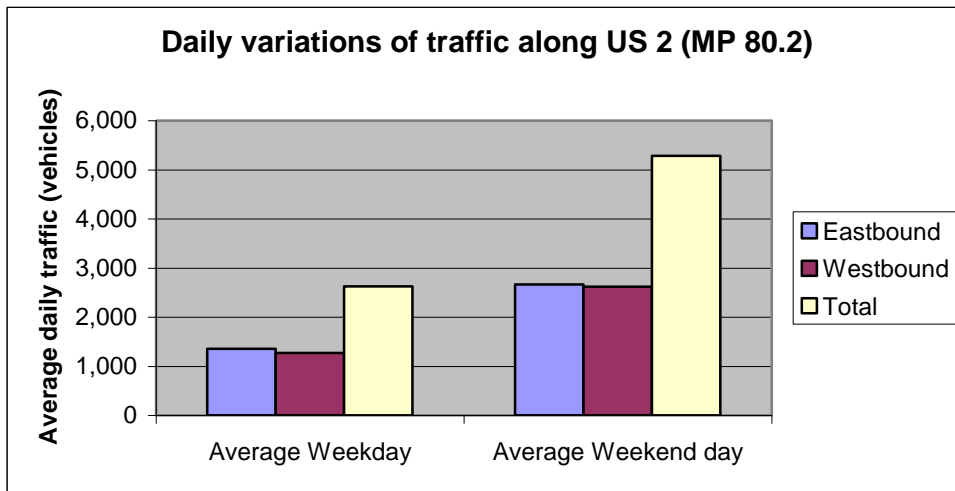


**Figure 1. Monthly Traffic Variations along US Highway 2**

The WSDOT traffic station in Peshastin indicates that on average, traffic in July and August is 20 percent higher than the annual average (14,500 daily vehicles in July-August compared to 12,300 for the annual average).

**Figure 2. 2008 Average Weekday Daily Traffic Volumes**

Daily volume variations are illustrated on **Figure 5**. The station at Nason Creek (20 miles west of Leavenworth) shows that the average weekend traffic volumes in 2007, along US 2, were twice as high as weekday traffic volumes. This is also due to the tourism and recreational activities generating more traffic during the weekend days. The City of Leavenworth is a major tourist attraction and is surrounded by many recreational opportunities.



**Figure 3. Weekday and Weekend Traffic Variations along US Highway 2**

*PM Peak Hour Traffic Volumes*

PM peak hour traffic volumes were collected in April 2008. In addition, recent PM peak hour traffic volumes were obtained from WSDOT. The WSDOT counts are from 2006 and 2007. **Figure 6** shows the PM peak hour directional traffic volumes at several locations throughout the City.

Directional PM peak hour traffic volumes range between 200 and 560 vehicles along US 2, between 100 and 250 on Chumstick Highway, and between 50 and 220 on other City arterials and collectors.

**Traffic Operations**

*Level of Service (LOS) Standards*

Level of service (LOS) is a quantitative measure of roadway operations that is determined by analyzing how well a transportation system performs. Level of service, as established by the *Highway Capacity Manual (HCM)* (Transportation Research Board, 2000), provides a range from LOS A (free flowing, minimal delay) to LOS F (extreme congestion, long delays). The operation of roadways, signalized intersections, and unsignalized intersections are each based on a specific LOS definition.

LOS standards are established by the different agencies having jurisdiction over the various facilities. US 2 is a Highway of Statewide Significance, and as such, the level of service standard is set by WSDOT. In urban areas, the LOS standard is D.

For unincorporated areas within a UGA, LOS D is the adopted standard for County roads. LOS within the County is measured by the volume-to-capacity (v/c) ratio.

The City has adopted LOS D as the standard for all collectors and arterials. For the purposes of the existing conditions analysis, intersection operations were evaluated.

**Figure 4. 2008 Weekday PM Peak Hour Traffic Volumes**

### Existing 2008 Intersection LOS Results

Based on recent turning movement counts, the existing LOS was measured at a number of major intersections in the City and the UGA. The analysis was performed for the PM peak hour on a typical average weekday (April) and for summer (August) weekday conditions. Results are shown on [Table 3 and Figure 7](#).

**Table 3. Existing 2008 Intersection LOS Results**

Intersection	Average Weekday PM Peak Hour			Summer Weekday PM Peak Hour		
	LOS <sup>1</sup>	Delay <sup>2</sup>	V/C or WM <sup>3</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	V/C or WM <sup>3</sup>
<b>Signalized</b>						
US 2/ Evans Street	C	21.4	0.41	C	23.0	0.49
US 2/ Chumstick Highway	C	27.4	0.47	C	30.4	0.56
US 2/ Riverbend Drive	B	10.2	0.42	B	11.1	0.49
<b>Unsignalized</b>						
US 2/ Icicle Road	C	18.1	NBL	C	22.7	NBL
US 2/ Mill Street	B	13.6	SB	C	15.9	NB
US 2/ Ski Hill Drive	C	17.1	SB	C	22.0	SB
US 2/ Front Street	A	8.3	WBL	A	8.6	WBL
US 2/ E. Leavenworth Road	C	24.9	SB	D	31.3	NB
Chumstick Highway / Cedar Street	B	12.3	EB	B	13.9	EB
Chumstick Highway / North Road	A	9.9	WB	B	10.2	WB
Pine Street / Titus Road	A	7.6	-	A	7.8	-
Icicle Road / E. Leavenworth Road	A	8.9	WB	A	9.0	WB

1. Level of Service, based on 2000 Highway Capacity Manual methodology.
2. Average delay in seconds per vehicle.
3. Volume-to-capacity ratio reported for signalized intersections. Worst movement is reported for unsignalized intersections. This is not applicable (NA) to all-way stop controlled intersections.

The LOS analysis shows that under existing conditions, all intersections operate at LOS D or better, even during the summer peak conditions. However, it is recognized that

congestion conditions occur at times, with large back-ups experienced by drivers along US 2 and side streets. The level of service analysis does not account for all factors influencing traffic conditions, such as high pedestrian activities and closely spaced intersections. Pedestrian volumes can be very high during the winter and summer tourist seasons. Weather can also influence traffic operations, with heavy snow and icy conditions contributing to delays.



**Figure 5. 2008 Weekday PM Peak Hour Intersection Levels of Service**

## **Traffic Safety**

### *City Street Collisions*

Accident reports for the period of 2005 to 2007 were obtained and analyzed. During the three year period, 43 collisions were reported on US 2 and 35 collisions were reported on City streets. A total of 23 collisions resulted in injuries (14 on US 2 and 9 on City streets). All accident reports on City streets provide the “primary trafficway” for the collision location. The City streets where collisions have occurred during the three year period are shown in Table 4.

Front Street, Ski Hill Drive, and Commercial Street are the locations with the highest number of collisions based on accidents reported between 2005 and 2007. The collisions on Front Street and Commercial Street are likely due to on-street parking.

**Table 4. Location of Collisions on City Streets (2005 to 2007)**

<b>Street Name</b>	<b>Number of Collisions</b>
Alley	2
Ash St	1
Beaver Valley Rd	1
Benton St	1
Birch St	1
Burke Ave	1
Cedar St	1
Center St	1
Cherry St	2
Chumstick Hwy	2
Commercial St	3
Division St	1
Eighth St	2
Evans St	2
Front St	5
Mine St	1
Parks St	1
Pioneer Ave	1
Ski Hill Dr	4
West St	1
Woodward St	1
<b>2005-2007 Total</b>	<b>35</b>

Source: WSDOT – Collision Data & Analysis

*State Highway Collisions*

On US 2, an analysis of all reported collisions between 2003 and 2007 within the City limits is summarized in Table 5.

**Table 5. Location and Severity of Collisions on US 2 (2003 to 2007)**

	MP	Total Collision s	Prop Damage Collision s	Total Injury Collision s	Fatal Collision s	# of Injuries	# of Vehicles
<b>Major Intersections</b>							
Icicle	99.05	2	2	0	0	0	3
Mill St	99.26	0	0	0	0	0	0
Ski Hill/3rd St	99.51	6	4	2	0	6	13
Front St	99.65	1	1	0	0	0	2
Evans/9th	99.89	6	3	3	0	5	13
Chumstick/Front	100.29	11	8	3	0	4	24
E. Leavenworth	100.52	3	3	0	0	0	6
Riverbend	100.67	5	3	2	0	3	9
Duncan Rd	100.71	0	0	0	0	0	0
	<b>Sub Total</b>	<b>34</b>	<b>24</b>	<b>10</b>	<b>0</b>	<b>18</b>	<b>70</b>
<b>Between Major Intersections</b>							
Icicle	Mill St	2	1	1	0	3	4
Mill St	Ski Hill/3rd St	2	1	1	0	2	5
Ski Hill/3rd St	Front St	2	2	0	0	0	5
Front St	Evans/9th	15	7	8	0	9	31
Evans/9th	Chumstick/Front	18	14	4	0	6	35
Chumstick/Front	E. Leavenworth	7	5	2	0	5	14
E. Leavenworth	Riverbend	2	1	1	0	1	4
Riverbend	Duncan Rd	0	0	0	0	0	0
	<b>Sub Total</b>	<b>48</b>	<b>31</b>	<b>17</b>	<b>0</b>	<b>26</b>	<b>98</b>
	<b>TOTAL</b>	<b>82</b>	<b>55</b>	<b>27</b>	<b>0</b>	<b>44</b>	<b>168</b>

Source: WSDOT – Collision Data &amp; Analysis

A total of 82 collisions were reported on US 2 during the 5-year period. Based on an average daily traffic of 10,600 vehicles, this section of US 2 experienced a collision rate of 2.55 collisions per million vehicle miles of travel. This is similar to the statewide average in 2006 for principal arterials in urban areas (the statewide average reported by WSDOT is 2.54). No fatalities were reported on US 2 within Leavenworth between 2003 and 2007.

A total of 34 collisions (over 40 percent) occurred at US 2 intersections, with the highest collision occurrences reported at the Chumstick Highway intersection (11 accidents), Ski Hill Drive (6), Evans Street (6), and Riverbend Drive (5). These four intersections have the highest number of mainline and side-street turning movements along the corridor. The predominant collision types at unsignalized intersections were left-turn and right-angle collisions, while the predominant collision types for signalized intersections were left-turn and rear-end collisions.

Collisions not occurring at intersections are referred to as mid-block collision and are summarized on the bottom half of Table 5. Most mid-block collisions occur between Front Street and Chumstick Highway along US 2. Approximately 33 collisions have been reported along this segment of US 2.

### **Transit Services**

Transit Services Inventory: LINK is the Chelan-Douglas Public Transportation Benefit Area (PTBA) public transportation provider for Leavenworth. LINK Transit provides transit services in Leavenworth. A “DART” (Dial-A-Ride) service is also offered. LINK has pick-up/drop-off points located across from the Forest Service, the DOT lot, Senior Center, Ski Hill at Kristall’s Restaurant, and at the City Hall. The location of the pick-up/drop-off points are approximately 600 to 800 feet apart for commercial areas and 1,200 to 1,500 feet apart for non-commercial areas.

Route 22 offers transit service to Peshastin, Dryden, Cashmere, Monitor, Olds Station, and North Wenatchee.

The Greater Leavenworth Area is now served by a Dial-A-Ride (DART) service. This service is available to anyone, regardless of age, disability, trip origin, or destination. The general public may use it for all trips that are not served by the Leavenworth trolley or Route 22. All trips must begin and end within the defined service boundaries. A reservation is required to ride DART. These must be made one day in advance, and can be made up to five days in advance.

A park and ride lot is located on the north side of US 2, across from the Forest Service offices. It has a capacity of approximately 42 parking spaces. It serves Route 22. Under agreement with WSDOT, Link Transit has maintenance responsibilities for the lot.

### **Train Service**

BNSF and Amtrak built a new Amtrak station located on North Road, approximately one mile from town. This Leavenworth "Icicle" Station (LWA) is a station stop for Amtrak's Empire Builder in Leavenworth. The station started service on September 25, 2009. The station and parking are owned by the City of Leavenworth. The track and platforms are owned by BNSF Railway. In conjunction with the new station, there is a need to improve pedestrian and bicycle connections between downtown and the Amtrak station.

Level of Service: LINK is committed to providing sufficient service to meet travel demand between Leavenworth and Wenatchee.

**Figure 6.** Future Needs: Chelan Douglas Public Transportation Benefit Area d.b.a. Link Transit prepared a Transit Development Plan (2011) that is herein adopted by reference.

**Figure 6. Transit and Rail Facilities**



## *Train Service*

### **Pedestrian and Bicycle System**

#### *Sidewalks and Other Pedestrian Facilities*

US 2 has sidewalks on both sides within the City limits. Chumstick Highway has sidewalks on the northwest side of the road from US 2 to Cascade High School.

In the downtown commercial core, sidewalks are present along most streets. The City has identified the need to reconstruct portions of the downtown sidewalks and construct new sidewalks to reduce safety hazards. Deteriorated areas are being replaced with concrete pavers, such as the project on 9<sup>th</sup> Street between Front Street and Main Street.

Elsewhere in the City, sidewalks are not generally present in a comprehensive pattern or system. Installation of sidewalks is required on all streets based on adopted street standards. New projects shall provide curbs, gutters, and sidewalks in conformance with the standards contained in Title 14, Development Standards of the Leavenworth Municipal Code.

During the winter season, it is the responsibility of property owners within the commercial and tourist district to clear the sidewalks from snow and ice. However, many of the existing sidewalks within the neighborhoods are typically buried under snow several months during the winter, which forces pedestrians onto the roadway, resulting in safety concerns.

There are three signalized intersections along US 2 (at Evans Street/9<sup>th</sup> Street, Chumstick Highway, and Riverbend Drive). These signals allow for opportunities for pedestrians to safely cross the highway. **New crosswalks and “hawk system”**

A further summary of existing pedestrian amenities within the City is provided in the Upper Valley Regional Trails Plan.

#### *Bike Routes*

Bicycle lanes (5 feet wide) are provided on each side of US 2 almost continuously between Mill Street and Chumstick Highway. East of Riverbend Drive, there are no bike lanes, however a 4-foot paved shoulder is available on both sides of US 2. There are no other bicycle routes currently designated within the City.

A further summary of existing bicycle routes and amenities within the City is provided in the Upper Valley Regional Trails Plan.

## **Freight**

US 2 is classified as T3 in the FGTS (Freight and Goods Transportation System) which is a ranking of Washington State roads by average gross annual truck tonnage carried. The yearly truck tonnage is estimated to be about 3.5 million tons. Trucks represent about 6 percent of the annual average daily traffic, or approximately 700 daily trucks.

Chumstick Highway, Icicle Road (north of E. Leavenworth Road), and Titus Road (north of Pine Street) were also classified as T3 in 2005 (meaning that the annual tonnage was between 300,000 and 4 million tons). North Road was classified as T4 (between 100,000 and 300,000 tons per year) and Ski Hill Drive (north of Pine Street) was classified as T5 (at least 20,000 tons in 60 days). Both North Road and Ski Hill Drive have seasonal weight restrictions.

## **River Access**

Access to the Wenatchee River within Leavenworth is provided at a number of City parks. Enchantment Park (natural area) has trails and a raft launching area. The Waterfront Park/Blackbird Island has trails along the river. As part of the Downtown Master Plan and the Upper Valley Regional Trails Plan, there are plans to improve access to the river and Waterfront Park, and create a new multi-purpose path running along both sides of the river.

## Land Use and Travel Forecasts

The foundation of the Transportation Element is based on the evaluation of the existing transportation system. This analysis identifies locations that may have deficiencies in street standards, traffic operations or safety, and areas with inadequate non-motorized facilities.

However, to provide a framework for future transportation system needs, the Transportation Element also considers the transportation projects necessary to serve future growth. The City of Leavenworth has selected 2028 as the analysis horizon year, which provides a 12-year look at needed transportation facilities. Travel forecasts have been identified and analysis has been conducted for both average and summer weekday conditions during the PM peak hour. The weekday PM peak hour generally has the highest overall traffic volumes in the community and thus provides the basis for identifying improvement needs.

The following summarizes the land use and traffic growth assumptions, development of the travel forecasts, and the alternatives and operational analysis that was used to assist in identifying future projects.

### Land Use and Traffic Growth Assumptions

Future transportation improvements recommended in the Transportation Element have been defined to support existing and anticipated future land use and expected increases in regional traffic. The projects must not only address future local and regional growth, they also need to promote the overall livability and economic development of this largely seasonal and tourist community.

According to the Washington State Office of Financial Management (OFM), the population of the City of Leavenworth has stabilized over the last 10 years. **2016 Population date.**

Source: State Office of Financial Management

### Figure 7. Historical Population Growth for City of Leavenworth

#### *Residential Land Use Forecasts*

The Housing and Capital Facilities Elements provide detailed residential land use forecasts

#### *Commercial Land Use Forecasts*

The Capital Facilities and Economic Development Elements provide detailed commercial land use forecasts.

#### *State Highway Traffic Growth*

Traffic data from WSDOT were reviewed to determine historical trends in traffic growth on US 2.

WSDOT provided data on historical and expected traffic volume growth rates on US 2. The information relied primarily on WSDOT's Highway Segment Data (HSD) last revised in 2006. The HSD growth rates are based on historical traffic counts over the last 10 to 20

years. For the Leavenworth area, traffic growth rates are based on a specific trend line analysis of historical traffic volumes. **Table 8 summarizes annual** growth rates within and in the vicinity of Leavenworth.

**Table 6. State Highway Traffic Growth by Location**

<b>Location</b>	<b>Annual Growth Rate</b>	<b>Source</b>
Peshastin/Dryden	2.2%	HSD growth rate for US 2
Leavenworth	1.5%	Trend line analysis for US 2

SOURCE: Highway Segment Data (WSDOT)

Along US 2 in Leavenworth, daily traffic volumes have had an average yearly growth rate of approximately 1.5 percent. This annual growth rate is consistent with the growth observed in the population, which has averaged at one percent a year over the last 10 years. If regional growth and tourism is also accounted for, a 1.5 percent growth rate appears reasonable and logical for US 2 within the City limits. East of the City, near Peshastin, the data indicates a slightly higher annual growth rate of 2.2 percent. While this is based in part on historical traffic volumes, it is a growth rate WSDOT uses when programming projects and defining priorities along this section of US 2. The traffic count growth rates shown in **Table 8 were noted when** determining the final annual growth rates used in developing the 20-year travel forecasts.

**Travel Forecasts**

*Traffic Growth Rates*

The population and housing forecasts, along with the historical WSDOT traffic growth estimates were used to develop the 2028 travel forecasts for the study area. The final growth rates reflect the fact that traffic growth rates are primarily driven by population growth rates; however, the final growth rate was also further adjusted to account for growth in the Peshastin UGA and documented historical traffic growth rates along US 2. A listing of the growth rates are **shown in Table 9.**

**Table 7. Annual Growth Rates**

<b>Location</b>	<b>State Highway Historical Traffic Count Annual Growth Rate</b>	<b>Annual Land Use Growth Rate (2008 to 2028)</b>	<b>Final Annual Traffic Growth Rate</b>
US 2	1.5%	3.3%	<b>3.1%</b>

SOURCE: Transpo Group 2009

The final annual growth rate is a combination of the land use growth rates and historical traffic count growth rates. The final annual growth rate of 3.1 percent was used as a basis for estimating Year 2028 traffic volumes within the study area..

Although the annual growth rate of 3.1 percent was primarily used to estimate Year 2028 daily and PM peak hour traffic volumes, specific growth rates along US 2 were adjusted to better account for intersection turning movements and driveway volumes. These forecast traffic volume adjustments were primarily made to the segment of highway west of Chumstick Highway. As a result, the annual average growth rate along segments of US 2 ranged between 2.0 and 3.1 percent. The resulting growth rates are significantly higher than historical traffic volume growth rates along the US 2 corridor and are considered a conservative assumption, especially when applied to summer weekday averages.

### *Baseline Travel Forecasts and Alternatives Analysis*

The existing traffic counts were increased using the final growth rates described above to develop baseline traffic forecasts for Year 2028. The baseline PM peak hour traffic forecasts were used in identifying and evaluating the long-term improvement projects. The 2028 baseline traffic forecasts assumed the roadway network remained unchanged from the existing year. However, new collector street connections are anticipated in the future to support new development. As new connections are made, traffic volumes can be assumed to shift slightly to account for improved circulation. As part of the development of the traffic forecasts, the Titus-Chumstick Road connection was evaluated to better identify possible shifts in traffic. The new collector roadway will provide improved access and circulation within the northern UGA and connect both Chumstick Highway and Titus Road.

The Titus-Chumstick Road connection would change the 2028 baseline traffic forecasts by producing a redistribution of traffic patterns in the area. The redistribution is due to the assumption that local traffic will use the new connector to enter and exit the northern Leavenworth UGA.

The local traffic was redistributed from the Cedar/Fir/Pine Street route to the new connector based on the analysis of potential future development. It was estimated that about 70 percent of the local traffic that would otherwise use the Cedar/Fir/Pine Street route to access the northern UGA would divert to the new connector route. This ratio is based on the land use capacity analysis.

Based on this redistribution assumption, the analysis resulted in a traffic forecast of about 160 vehicles per hour (100 westbound and 60 eastbound) travelling on the proposed connector during the PM peak hour in 2028. It is generally assumed that the PM peak hour traffic represents about 10 percent of the daily volume. Therefore, the predicted average daily volume of the proposed connection for 2028 is about 1,600 vehicles. This level of traffic is less than the traffic observed along Titus Road north of Pine Street in 2008.

Other proposed connections that would shift future traffic volumes include (1) a new access intersection from US 2 to the Riverbend area, (2) Mine Street extension to Wheeler Avenue, (3) a new north-south collector street in the UGA between Village View Drive and Titus Road, and (4) the extension of Pine Street to Chumstick Highway. Other than the

new intersection along US 2, in the Riverbend area, the other connections are not expected to result in a significant shift in travel patterns outside the immediate area of the project, but will primarily serve local properties along the corridors.

### *Year 2028 Travel Forecasts With New Connections*

The baseline travel forecasts were updated to account for the new roadway connections described above to develop the final traffic forecasts for Year 2028. These resulting 2028 PM peak hour traffic forecasts are shown in **Figure 11**. Also included in the figure are the existing base year traffic counts for comparison purposes.

The PM peak hour traffic along US 2 is estimated to have the highest overall growth in number of vehicles. PM peak hour volumes for an average weekday in the City are expected to range between 320 vehicles per hour (vph) heading westbound out of the City to approximately 1,070 vph heading eastbound at the opposite end of the City. The traffic volumes along the corridor are estimated to increase from between 120 to 500 vph in each direction depending on location.

Other roadways in the City and UGA are also expected to have a significant growth in vehicles. However, the number of vehicles is small in comparison to those along US 2. For example, most City streets are expected to have less than 300 vph in each direction by 2028. The corridors that are estimated to serve more than 300 vph per direction include Chumstick Highway, Riverbend Drive, and Icicle Road. Chumstick Highway is estimated to increase from 220 vph to 440 vph in the northbound direction and 250 vph to 460 vph in the southbound direction. Icicle Road provides an important connection to the areas south of the City. PM peak hour traffic volumes along Icicle Road are estimated to increase from 180 vph to 320 vph in the southbound direction and 210 vph to 360 vph in the northbound direction. Riverbend Drive, or alternatively known as the Safeway Access Roadway, is expected to serve more vehicles as new commercial growth takes place in that area.

The baseline and final traffic forecasts with new connections were evaluated using a traffic operations model to identify intersection level-of-service (LOS) and other possible improvements to address expected deficiencies.

### **Level of Service Analysis**

This section evaluates the forecast traffic volumes for baseline conditions, but also evaluates the final traffic forecasts assuming the identified new roadway connections are in place and the other improvements identified in the long-term project list (**Table 14**) have been implemented. It provides a summary of future intersection traffic operations with and without the long-term improvements identified in **Table 14**.

Level of service (LOS) standards measure the performance of the transportation system and establish the basis for the concurrency requirements in the Growth Management Act (GMA), while also being used to evaluate impacts as part of the State Environmental Protection Act (SEPA). Agencies are required to “adopt and enforce ordinances which prohibit development approval if the development causes the level of service on a transportation facility to decline below the standards adopted in the transportation element of the comprehensive plan, unless transportation improvements or strategies to accommodate the impacts of development are made concurrent with development.” (RCW 36.70A.070(6)(b)). Therefore, setting the LOS standard is an essential component of

regulating development and identifying planned improvements for inclusion in the Transportation Element.

**Figure 8. 2028 Weekday PM Peak Hour Traffic Volumes**



### Level of Service Definitions

Level of service (LOS) is both a qualitative and quantitative measure of roadway operations. Level of service, as established by the Highway Capacity Manual, uses an “A” to “F” scale to define the operation of roadways and intersections as follows:

**LOS A:** Primarily free flow traffic operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delays at signalized intersections are minimal.




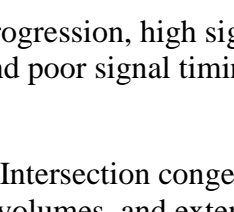
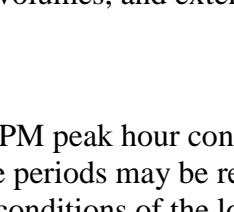
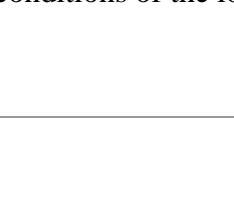
**LOS B:** Reasonably unimpeded traffic flow operations at average travel speeds. The ability to maneuver within the traffic stream is only slightly restricted and control delays at signalized intersections are not significant.

**LOS C:** Stable traffic flow operations. However, ability to maneuver and change lanes may be more restricted than in LOS B, and longer queues, adverse signal coordination, or both may contribute to lower than average travel speeds.

**LOS D:** Small increases in traffic flow may cause substantial increases in approach delays and, hence decreases in speed. This may be due to adverse signal progression, poor signal timing, high volumes, or some combination of these factors.

**LOS E:** Significant delays in traffic flow operations and lower operating speeds. Conditions are caused by some combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and poor signal timing.

**LOS F:** Traffic flow operations at extremely low speeds. Intersection congestion is likely at critical signalized intersections, with high delays, high volumes, and extensive vehicle queuing.

LOS	What it Looks Like	
<b>A</b>		Free Flow
<b>B</b>		20-55 seconds of delay per vehicle
<b>C</b>		*Capacity
<b>D</b>		Forced Flow
<b>E</b>		
<b>F</b>		

### City Level of Service Standard

The City typically applies the LOS standards to weekday PM peak hour conditions for its arterials and collectors. However, evaluation of other time periods may be required based on the type and location of development and the existing conditions of the local

transportation network. For areas in the UGA but outside the existing City limits, the City's standards are applied. The City's current minimum standard is LOS D.

If expected funding for improvements to meet future transportation needs is found to be inadequate and the City will not be able to meet their adopted LOS standard, then the City may pursue one or more of the following options:

- Lower the LOS standard for the system or for portions of the system that cannot be improved without a significant expenditure;
- Revise the City's current land use element to reduce density or intensity of development so that the LOS standard can be met; or,
- Phase or restrict development to allow more time for the necessary transportation improvements to be completed.

### *State Highway LOS Standards*

The City of Leavenworth is served by US 2. It is classified as a Highway of Statewide Significance (HSS). According to WSDOT's Highway Systems Plan, the LOS standards are set forth by State law. State law sets LOS D for HSS facilities in urban areas and LOS C for HSS facilities in rural areas. Since US 2 is located within the Leavenworth urban area, the LOS D standard applies. GMA concurrency requirements do not apply to HSS facilities.

### *Level of Service Methodology*

For signalized, unsignalized, and roundabout intersections, the LOS is calculated using the procedures described in the latest edition of the Highway Capacity Manual. Roadways are measured based on a volume to capacity ratio.

### *Year 2028 Traffic Operations*

A LOS analysis was conducted for the 2028 horizon year similar to the analysis conducted for the existing traffic conditions. The results of the future baseline LOS analysis were used to develop the framework for the recommended transportation network, and ultimately, the long-term project list. **Table 10 and Figure 12** summarize the forecast intersection operations for baseline and with improvement scenarios during the average weekday PM peak hour in the City of Leavenworth. The baseline operations analysis assumed no improvements have been made to the transportation system. The with improvements scenario highlights how the new Titus-Chumstick Road connection would improve average weekday operations at the Chumstick Highway/Cedar Street intersection from a LOS E to LOS D, and how the other transportation improvements identified in **Table 14** address most of the baseline LOS deficiencies. Roadway volume to capacities are not shown because no capacity issues are expected by 2028 for City maintained roadways.

**Table 8. Future 2028 Intersection LOS Results**

Intersection	2028 Average Weekday PM Peak Hour					
	Baseline			With Improvements <sup>5</sup>		
	LOS <sup>1</sup>	Delay <sup>2</sup>	V/C or WM <sup>3</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	V/C or WM <sup>3</sup>
US 2/ Icicle Road	F	67	NBL	D	26	NBL
US 2/ Mill Street	F	56	SB	A	10	0.45
US 2/ Ski Hill Drive	F	>200	SB	B	12	0.57
US 2/ Front Street <sup>6</sup>	A	10	WBL	A	10	WBL
US 2/ Evans Street	C	32	0.66	C	30	0.65
US 2/ Chumstick Highway	D	53	0.95	D	51	0.93
US 2/ E. Leavenworth Road	F	>200	NB	F	>200	NB
US 2/ Riverbend Drive	C	20	0.80	C	20	0.80
Chumstick Highway / Cedar Street	E	38	EB	D	26	EB
Chumstick Highway / North Road	B	14	WB	B	14	WB
Pine Street / Titus Road <sup>4</sup>	A	9	-	A	8	-
Icicle Road / E. Leavenworth Road	B	11	WB	B	11	WB

1. Level of Service, based on 2000 Highway Capacity Manual methodology.
2. Average delay in seconds per vehicle.
3. Volume-to-capacity ratio reported for signalized intersections. Worst movement is reported for unsignalized intersections. This is not applicable (NA) to all-way stop controlled intersections.
4. All-way stop controlled.
5. Assumes the improvements identified in **Table 14 have** been implemented.
6. One-way street in the southbound direction.

**Figure 9. 2028 Weekday PM Peak Hour Intersection Levels of Service**

The results shown in **Table 10 indicate** that traffic operations will degrade significantly along US 2 by Year 2028 if no further traffic control improvements are constructed. Except for the intersection with Front Street, all of the unsignalized intersections along US 2 will fall below the State's adopted LOS D standard. In addition, although the existing signalized intersections appear to meet LOS standards, the operational analysis does not fully account for other deficiencies likely to occur along the corridor, such as significant vehicle queuing.

The large number of peak hour vehicles along US 2 provide for few opportunities for vehicles along the minor streets or business driveways to turn onto the highway. This results in LOS F conditions for those minor street approaches controlled by a stop sign. Traffic control enhancements or turn lanes have been identified for those unsignalized intersections along the US 2 corridor as discussed as part of the next chapter. The East Leavenworth Road intersection with US 2 is the only intersection along the corridor shown to continue operating at LOS F under the with improvements scenario. The intersection is located very close to the eastern terminus of the Wenatchee River Bridge and is a short distance from the Riverbend Drive signalized intersection, thereby making it a very difficult location for a stand-alone project. Any project would require a larger access management strategy for the eastern segment of US 2. Since State law requires that local agencies not apply concurrency to US 2, which is a highway of statewide significance, the intersection is shown to operate at LOS F conditions in 2028. However the City will continue to work with WSDOT to identify possible mitigation under SEPA as part of the development review process when new developments are anticipated to have an adverse impact on the intersection. The development review process is further outlined in the Finance and Implementation Program chapter.

The only location not to meet City LOS standards under baseline conditions and not located along US 2 is at the intersection of Chumstick Highway and Cedar Street. The eastbound approach to the intersection is expected to operate at LOS E by 2028 with no improvements. The new Titus-Chumstick Road connection would shift traffic volumes at the intersection and improve operations from an LOS E to an LOS D, thereby meeting LOS standards and concurrency by Year 2028 with improvements.

A summer weekday operations analysis was also conducted to identify how conditions change throughout the year and better understand the impacts of time periods with significant tourist activity. However the results of the summer analysis are not presented in the Transportation Element because the City does not intend to plan for summer conditions. The City recognizes that traffic congestion and operational issues arise during weekend events and holidays, particularly during the summer and mainly isolated to the US 2 corridor, when significant out-of-town guests visit the City. However, as discussed later in the Finance and Implementation Program chapter, the City has significant funding challenges and expanding regional roadway facilities to address seasonal increases in traffic is not a fiscally sustainable strategy the City intends to follow. In addition, expanding roadway facilities within build-out areas of the City would not be consistent with the overall goals of the Transportation Element which focus on priorities such as maintaining the existing infrastructure, promoting safety, supporting alternative modes, and reducing impacts on the environment.



## **Transportation Systems Plan**

The Transportation Systems Plan provides a long-range strategy for the City of Leavenworth to address current and forecast transportation issues and identified needs. The Plan is based upon an analysis of the existing transportation system, forecasts of future travel demands, and identified needs of the community. The Plan builds upon the City's policies and standards and seeks to give specific shape to the City's transportation goals and objectives.

The Transportation Systems Plan first identifies the overall hierarchy of the City transportation system, the priorities of the community, and the programs to maintain the system. This includes the roadway functional classification, road and trail standards, overall project priorities, and maintenance program. Based on the identified hierarchy and priorities, capital improvement projects have been defined for WSDOT, City, and County roadways, along with specific non-motorized, transit, and other modal needs. The projects are organized by jurisdiction and mode. State Highway improvement projects are presented first, followed by City and County roadway improvement projects, then other modes, as applicable. The Plan is organized as follows:

- Functional Classification and Street Standards
- Project Priorities
  - Regional Priorities
  - City Transportation Issues
  - City Priorities
- Street Maintenance Program
- Roadway Improvement Projects
  - State Highway Improvements
  - City Street Improvements
  - County Roadway Improvements
- Non-motorized Facilities
- Public Transit and Travel Demand Management
- Freight, Air, and Waterborne Transportation

The core of the Transportation Systems Plan covers street and highway improvements with a focus on the major corridors within and surrounding the City. The street system serves the primary movement of automobiles and truck traffic. The street system also provides the framework for other travel modes in the community, including transit, pedestrian, and bicycle modes.

## **Functional Classification and Street Standards**

### *Functional Classification*

Functional classification is the grouping of roadways by function. The City has established four types of street classifications: major arterials, secondary arterials, collectors, and local streets. Each classification is described in **Table 11**.

Roadway functional classification provides for a hierarchy of roadways. These classifications also act as a guide for future development of the overall street system. Arterial streets serve higher traffic volumes and may have few access points. Local streets provide neighborhood circulation and access to individual parcels. Collector streets link arterials and local streets, and may provide access to individual parcels. A well-connected system of streets enhances overall mobility and facilitates greater opportunities for pedestrian and bicycle travel.



**Table 9. Roadway Functional Classification Definitions**

Functional Classification	Description	Typical Range of Daily Traffic Volumes
Major Arterial	Inter-community roadways connecting community centers or major facilities. Major arterials are generally intended to serve predominately "through" traffic with minimum direct service to abutting land uses. The minimum right-of-way width is typically 80 feet. No parking is usually allowed within the right-of-way. At volumes over 20,000 ADT these streets are generally five lanes wide with two through lanes in each direction and a two-way left-turn lane. Other channelization such as turn lanes at intersections is also provided as needed.	Greater than 5,000
Secondary Arterial	Provides for intra-community travel for areas bounded by the major arterial system. Secondary arterials serve trips of moderate length and provide more direct access to abutting properties than major arterials. The minimum right-of-way width is typically 60 feet. Traffic lanes vary in width based upon traffic volume, design speed and the context of the roadway environment. Parking may be allowed and parking lanes are typically 8-10 feet wide.	1,500 to 10,000
Collector	Provides for movement within a community, including connecting neighborhoods with smaller community centers. Collectors also provide connections to secondary and major arterials. Property access is generally a high priority for collectors, with a lower priority for through traffic movements. The minimum right-of-way width is typically 60 feet. Traffic lanes are at least 10 feet wide and parking lanes are 8 feet minimum. One through lane is provided in each direction, with parking and channelization as necessary.	500 to 2,000
Local Streets	Provides access to abutting properties and include a variety of designs to match the surrounding land uses.	Up to 1,000

**Figure 13** shows the classification of existing and planned streets within the City and its UGA. The primary changes in functional classification from the 2003 Transportation Element include:

- UGA Roadways:** The roadways outside the City, but within the UGA, are identified based on the City roadway classification scheme. As development takes place in those areas, the roadways will be improved to be consistent with City

classifications and street standards as agreed upon in a memorandum of understanding between the City and County (July 1997).

- **Wheeler Avenue:** Re-classified Wheeler Avenue as a collector street to be consistent with Mine Street, since Mine Street is shown to no longer continue north from Wheeler Avenue due to sensitive area concerns. Wheeler Avenue provides the needed connection back to Ski Hill Drive for vehicles, pedestrians, and bicyclists. As development occurs along the corridor, the street will be reconstructed to provide the necessary urban design features and amenities to safely accommodate all users as consistent with the collector street standards.
- **Village View Drive:** Re-classified a portion of Village View Drive in the UGA as a collector street, which is west of the proposed north-south connector linking Titus Road to Village View Drive. The roadway links this future north-south collector back with Ski Hill Drive.
- **Bergstrasse/Detillion Road:** Re-classified Bergstrasse/Detillion Road from a local street to a collector street. This classification is consistent with the County's updated Transportation Element and identifies this existing corridor as another link between Titus Road and Ski Hill Drive. It is a logical location for an improved east-west connection because it already exists, has few direct access points to adjoining properties, and has sufficient right-of-way necessary for urban amenities, such as sidewalks.
- **Emig Drive:** Re-classified Emig Drive from a collector street (in previous City Transportation Element) to a local street. The corridor is not presently a through route and has a high number of access points to residential properties. Bergstrasse/Detillion Road is a more logical east-west route based on the factors described above. This change will result in consistent classification schemes between the County and City.

## Figure 10. Functional Classification System

The roadway classifications are generally consistent with Chelan County designations. However, the County only has one type of urban designation, which is an urban collector. WSDOT has classified US 2 as a rural principal arterial (R1) as part of the State Highway System.

Overall, the roadway classification changes reflect the anticipated and desired function of the streets and are consistent and supportive of surrounding agency classifications.

### *Street Standards*

Street standards have been developed for the City as summarized in the Street Development Standards with the City's Municipal Code and adopted Standard Details. The Street Standards contain the specific standards with which all new development must comply. The standards include items such as right-of-way needs, pavement width, and width of sidewalks. The standards are intended to support the City's goals in providing adequate facilities to meet the mobility and safety needs of the community. The standards also assist design professionals and developers in the design of new facilities within the public right-of-way.

These standards have been used as the basis for evaluation of the roadway system and cost estimates. Many existing roadways are not constructed to these standards. Roadways in the UGA are typically rural in nature with few urban features.

The roadway classifications and street standards should be consistent so as to identify the specific design treatments for each roadway classification. Currently, the street standards only identify a collector street as the highest classification within the City, and do not identify design standards for secondary or major arterials. Updates to the street standards should occur based on some preliminary concepts shown in Appendix D.

In addition to an update of the street standards, design standards for trails should be incorporated into the City's municipal code. The Upper Valley Regional Trails Plan has identified possible design standards for pedestrian, bicycle, cross-country skiing, and equestrian trails. These concepts have also been included as part of Appendix D. For pedestrian and bicycle facility locations, within the street right-of-way, the trail standards should be used in conjunction with the street standards.

### **Project Priorities**

Defining priorities is an important part of the planning process. The analysis of existing and future deficiencies indicates that the City transportation system needs significant improvements. The costs of the transportation improvement needs will far outstrip the likely available future funding. Because not all identified projects can realistically be funded during the next 20 years, the City should establish clear priorities for its transportation investments. The prioritization process helps guide the allocation of resources among the various types of transportation improvement projects.

To help guide the development of the City transportation system, relative priorities were identified based on the general goals and policies identified for the Transportation Element and input from the general public and steering committee. These general priorities should help direct future available funding, including grant monies, toward specific projects and programs which reflect the community's desires.

### *Regional Priorities*

Regional transportation priorities have been identified in the Regional Transportation Plan developed by the Chelan – Douglas Transportation Council. Washington Transportation Plan (WTP). The 2007 to 2026 Washington Transportation Plan (WTP) identifies and prioritizes a set of transportation investments to serve the citizens' safety and mobility needs, the State's economic productivity, the communities' livability, and the ecosystem's viability. The adopted plan follows a strategic approach to future investment by establishing guiding principles for investments in current and future facilities. The five guiding principles are as follows:

1. **Preservation**—Preserve and extend prior investments in existing transportation facilities, and the services they provide, to people and commerce.
2. **Safety**—Target construction projects, enforcement, and education to save lives, reduce injuries, and protect property.
3. **Economic Vitality**—Improve freight movement and support economic sectors that rely on the transportation system, such as agriculture, tourism, and manufacturing.
4. **Mobility**—Facilitate movement of people and goods to contribute to a strong economy and a better quality of life for citizens.
5. **Environmental Quality and Health**—Bring benefits to the environment and the citizens' health by improving the existing transportation infrastructure.

### *City Transportation Issues*

The 2008 Transportation Element revealed that there are some specific transportation issues in the community that include:

- Congestion, speeds, pedestrian crossings, turn lanes, signals/traffic control, safety, access, and lighting along US 2;
- Operational and safety needs at the US 2/E Leavenworth Road intersection;
- Bicycle facility needs along US 2 bridge over the Wenatchee River;
- Proximity between Pine Street and US 2 intersections along Chumstick Highway;
- Impacts to Chumstick Highway from Tumwater Canyon closures and detours;
- East-west roadway connectivity in the UGA, especially a possible new Titus Road connection;
- Constraints due to wetlands, soils, and topography;
- Pedestrian and bicycle facilities and connections, such as inadequate shoulders along Ski Hill Drive and Pine Street within the City;
- Connections to the new Amtrak station;
- The need for additional transit service on weekends;

- Potential need to reduce speed limits near schools; and,
- Traffic calming in neighborhoods.

Many of the projects listed on the project list were developed to address the issues identified above.

### *City Priorities*

Transportation improvements address issues that generally fall under three broad categories, as illustrated in Table 12. Depending on the context and the specific local needs, some issues may be more relevant or important to address in priority.

**Table 10. General List of Issues Addressed by Transportation Improvements**

Category	Context	Priority Issues
<b>Economic Factors</b>	<p>Some transportation improvements focus on supporting important economic sectors for the County, such as agriculture and tourism. Transportation plays an important role in the process of attracting and maintaining economic activities. The movement of freight and goods is a critical element of the economic vitality for the area.</p> <p>Another important economic factor is the cost of the transportation improvements, and whether or not adequate funding sources are available to meet the current and future needs.</p>	<ul style="list-style-type: none"> <li>• Supporting economic development plans</li> <li>• Cost of potential improvements</li> <li>• Enhancing movement of freight and goods</li> </ul>
<b>Facilities &amp; Services</b>	<p>Many types of transportation improvements are necessary to provide for a balanced system that will work effectively and safely over the 20-year planning horizon. Priorities may be given to rehabilitating existing facilities, or building new facilities; improving existing services or creating new ones. Specific issues generally emerge for certain modes of transportation such as non-motorized transportation or transit.</p> <p>There are also concerns that are more general in nature and relate to different aspects of the transportation system: congestion, safety, and emergency response.</p>	<ul style="list-style-type: none"> <li>• Maintaining and upgrading existing roads</li> <li>• Congestion</li> <li>• Safety</li> <li>• Improving regional connections</li> <li>• Pedestrian and bicycle transportation</li> <li>• Transit, ridesharing, and other alternatives</li> </ul>
<b>Land Use &amp; Environmental</b>	<p>These priorities are related to the consistency between land use and transportation policies, and general requirements of the Growth Management Act.</p> <p>Other types of priorities focus on energy</p>	<ul style="list-style-type: none"> <li>• Reducing impacts on the environment</li> <li>• Supporting adopted regional and local land use plans</li> </ul>

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and environmental factors.

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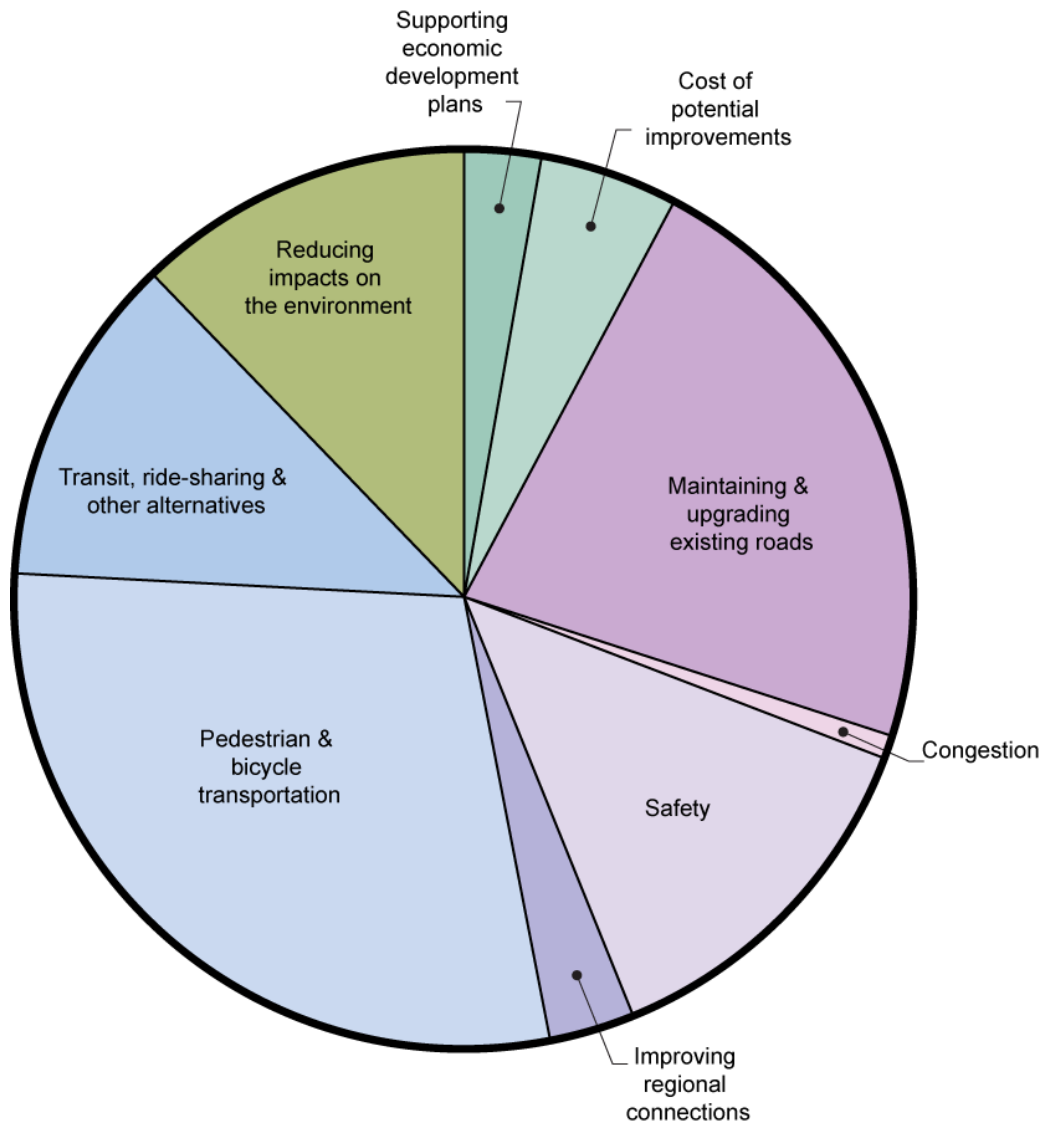
SOURCE: Transpo Group 2009

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Those who attended the open house hosted by the City of Leavenworth in October 2008 were asked to note their top three issues for the Transportation Element to address. This exercise was similar to one completed at the June 2008 open house hosted by Chelan County. A total of five issues emerged as being primarily cited by participants as their top priorities. They included:

- **Pedestrian and Bicycle Transportation**  
The plan should emphasize the need to improve safety and mobility for pedestrians and bicyclists. New or upgraded facilities should provide a network offering real options for walking and biking.
- **Maintaining and Upgrading Existing Roads**  
This priority refers to maintaining, preserving, and extending the utility of the existing transportation system. Preservation is critical to ensuring the usefulness of prior transportation investments and reducing future deficiencies.
- **Safety**  
Safety should be one of the top transportation investment priorities. Improving safety usually involves targeting locations identified by collision history and risk factors.
- **Transit, Ridesharing, and Other Alternatives**  
Alternative transportation choices should be an important component of the Transportation Systems Plan. Transit facilities, services, and programs will help reduce the emphasis and demand on single-occupant vehicles.
- **Reducing Impacts on the Environment**  
Transportation improvements should be evaluated and reviewed based on the level of impact they may have on the environment. It is important that improvements are designed and implemented in a way that helps reduce and mitigate potential environmental impacts.





\*Each priority is weighted by input received from the October 2008 Public Open House, as shown in Table 13

**Figure 11. Priorities for the City of Leavenworth**

Table 13 provides the approximate percent share that each issue received. It also identifies how likely a particular issue would be chosen. The likelihood of being chosen is the percent by which the issue was likely to be chosen as part of the top three by a specific individual. For example, “pedestrian & bicycle transportation” was chosen by 88 percent of the respondents as a top priority. These priorities should help guide transportation investments.

**Table 11. Priorities for the City of Leavenworth**

<b>Priorities</b>	<b>Likelihood of Being Chosen<sup>1</sup></b>	<b>Overall Share</b>	<b>Ranking</b>
<b>Economic Factors</b>			
Supporting economic development plans	8%	3%	
Cost of potential improvements	16%	5%	
Enhancing movement of freight and goods	0%	0%	
<b>Facilities &amp; Services</b>			
Maintaining & upgrading existing roads	68%	22%	2
Congestion	4%	1%	
Safety	40%	13%	3
Improving regional connections	8%	3%	
Pedestrian & bicycle transportation	88%	29%	1
Transit, ride-sharing & other alternatives	36%	12%	4
<b>Land Use &amp; Environmental</b>			
Reducing impacts on the environment	36%	12%	4
Supporting adopted regional and local land use plans	0%	0%	

SOURCE: Input from the October 2008 public open house.

1. The likelihood of being chosen is the percent by which the issue was likely to be chosen as a top priority by an individual.

### **Street Maintenance Program**

The main goal of the maintenance program is to maximize the use and efficiency of available revenue and provide for a comprehensive and systematic way to sustain the transportation infrastructure at a level acceptable to the City. The maintenance program is one of the most important programs the City can implement. The quality of the program and the process by which existing streets and other transportation infrastructure are maintained, directly determines the pavement surface life, future maintenance cost, ride quality, and long-term user costs.

The City should develop a long-term maintenance program that includes an evaluation of arterials and local roadways for pavement condition, sign damage, and any additional roadway features the City needs to maintain or service. Based on a field inventory, a Pavement Management System (PMS) can provide systematic approaches for identifying overlay and chip seal projects each year. The PMS could also provide input regarding the need to rebuild existing streets, instead of performing an overlay or chip seal. Street signs

and other infrastructure in the street right-of-way should be monitored and serviced regularly as well.

Based on a “windshield” assessment of City streets, a majority of the roads are likely in a marginal or failed state of repair. In other words, the dollars the City has been investing in its transportation system are not maintaining the existing pavement or subsurface structure adequately, thus resulting in a declining state of repair and the need to rebuild the streets. Rebuilding streets is a significant cost item and is something a maintenance program attempts to avoid.

To assure that the existing and future transportation infrastructure is preserved in a cost-effective manner and to avoid roads deteriorating beyond repair, the City should prepare a maintenance strategy and program to identify the true costs of maintaining the street system. The strategy will assist the City in better identify needs and funding sources to allocate resources and to maintain the existing infrastructure.

### **Roadway Improvement Projects**

Based on the evaluation of existing and forecast traffic volumes, traffic operations, safety, connectivity, and overall City priorities, a recommended list of roadway improvement projects was defined. The projects were organized into the following three categories:

- State Highway Improvements
- City Street Improvements
- County Roadway Improvements

Table 14 identifies each of the projects and Figures 15 and 16 show the location of the local and regional improvements identified in the Plan. Table 14 provides a brief description of each project and is organized by agency and type of project. A map identification number is also provided for referencing between Table 14 and Figures 15 and 16.

Planning level cost estimates are also included for each City and County project. No cost estimates were prepared for projects along US 2 or for LINK Transit. The cost estimates were prepared based on typical per unit costs, by type of roadway and scope of the improvement. The cost estimates also includes allowances for right-of-way acquisition, based on generalized needs to meet the City’s street standards. Adjustments to construction costs were included, as needed, to reflect any specific implementation issues, such as environmental impacts or impacts on adjacent properties. The cost estimating worksheets are included in Appendix C.

Priorities have been shown for County projects as identified in the County’s Transportation Element. The County projects are prioritized into three Tiers (I, II and III). The tier system is used to identify which projects should be completed first. Tier I includes the projects that likely will be funded first because they are usually lower-cost projects that can provide short term solutions to top priority issues. Tier III projects are those that will not likely be funded by the County in the next 20 years.

### *State Highway Improvements*

US 2 serves as the main street through Leavenworth and is heavily used by regional thru traffic, as well as local residents. Recreation and tourism activities draw a considerable amount of vehicles and pedestrians to the downtown. A number of intersections along US 2 are anticipated to become heavily congested on a regular basis in the future if no improvements are implemented. These intersections include: E. Leavenworth Road, Chumstick Highway, Ski Hill Drive, Mill Street, and Icicle Road. The heavy pedestrian activity, particularly on weekends and during the summer, has created pedestrian crossing safety concerns along US 2. A pedestrian underpass is proposed along US 2 near the downtown park, across from City Hall.

A preliminary design study has been identified by the City to further investigate and define potential solutions and enhancements along the US 2 corridor through Leavenworth. The types of improvements could include adding turn lanes, sight distance enhancements, improved mid-block crosswalks, access management, and adding traffic control, such as roundabouts. Roundabouts have been investigated as possible solutions for both the E. Leavenworth Road and Chumstick Highway intersections. Preliminary traffic analysis suggests that a roundabout would improve operations at the E. Leavenworth Road intersection, if feasible. The Chumstick Highway intersection would also be a possible location for a roundabout, but the preliminary operations analysis indicates a one-lane roundabout will not likely meet LOS standards during future peak conditions. Additional right-of-way would be needed to support a larger roundabout, which would include slip lanes to improve operational efficiency.

WSDOT should continue to work with the City, County, and other relevant agencies to study and prioritize needed improvements along US 2. The improvements to the corridor are required to address congestion, safety, and non-motorized access along US 2. The tourism and business community should be closely involved in developing solutions.

**Figure 12. Transportation Improvement Projects (City)**

**Figure 13. Transportation Improvement Projects (County Area)**

**Table 12. Transportation Improvement Project List**

<b>Project ID</b>	<b>Project Title</b>	<b>Project Description</b>
<b>STATE HIGHWAY</b>		
WS-R1	US 2 Bypass through Leavenworth	Construct bypass to reroute traffic away from congested business center. Investigate possible impacts to neighborhoods. Identified as a Tier III Solution in the Highways Systems Plan. Further evaluate as part of a preliminary design study for US 2 (project WS-R6).
WS-R4	US 2 Signal Improvements	Adaptive signal management and ITS solutions. Identified as a Tier I Solution in the Highways Systems Plan.
WS-R5	US 2 Pedestrian Underpass	Provide a grade separated pedestrian undercrossing in the vicinity of City Hall.
WS-R6	US 2 Preliminary Design Study	Evaluate feasibility and refine the list of possible intersection improvements, including construction of roundabouts, within the City limits.
WS-I14	US 2 / Chumstick Highway	Pedestrian crossing, signal, and channelization improvements. Further evaluate as part of a preliminary design study for US 2 (project WS-R6).
WS-I15	US 2 / Mill Street	Traffic control improvements to address future LOS deficiencies. Solutions could include a new traffic signal or roundabout. Further evaluate as part of a preliminary design study for US 2 (project WS-R6).
WS-I16	US 2 / Ski Hill Drive	Traffic control improvements to address future LOS deficiencies. Solutions could include a new traffic signal or roundabout. Further evaluate as part of a preliminary design study for US 2 (project WS-R6).
WS-I17	US 2 / Icicle Road	Traffic control and gateway improvements. Solutions could include a new turn lanes. Further evaluate as part of a preliminary design study for US 2 (project WS-R6).
WS-I18	US 2 / E Leavenworth Road	Intersection safety and traffic control improvements. Improve sight distance by elevating intersecting segment of E. Leavenworth Rd. Further evaluate as part of a

		preliminary design study for US 2 (project WS-R6).	
WS-I19	US 2 / Riverbend Drive	Improve intersection, including combing the intersection with E. Leavenworth Road to address safety and operation issues at both locations. Further evaluate as part of a preliminary design study for US 2 (project WS-R6).	
WS-I20	US 2 east of Riverbend Drive	New intersection and traffic control to provide access to future development in the Riverbend area.	
WS-NM2	US 2 Wenatchee River Bridge	Provide wider cantilevered pathway for non-motorized users on each side. Further evaluate as part of a preliminary design study for US 2 (project WS-R6).	

<b><u>CITY STREETS</u></b>			<b>Cost<sup>1,</sup> 2</b>
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<b>New Roadway</b>			
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L-R1	Pine Street Extension	Construct a new road - connector from Fir Street to Chumstick Highway. Close the Fir/Cedar/Chumstick Highway intersection.	\$810
L-R2	Cone Street	Construct connector from Cedar Street to Pine Street.	\$420
L-R3	Mine Street north to Wheeler Avenue	Construct a new road - connector from Mine Street to Wheeler Avenue.	\$940
L-R5	New streets in Riverbend Area	Construct new secondary arterial and collector streets in the Riverbend Area.	\$3,450

<b>Roadway/Intersection Improvements</b>			
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L-R6	8th Street Reconstruction	Reconstruct roadway, curb replacement, pave sidewalk, illumination from Front Street to Main Street.	\$680
L-R7	Front Street Reconstruction	Reconstruct road, sidewalks, illumination, storm sewer, watermain replacement from Division Street to 14th Street.	\$2,600
L-R8	Front Street Reconstruction	Reconstruct roadway, curb and gutter, sidewalk, illumination from 8th Street to Division Street.	\$2,480
L-R9	Front Street	US 2 at Gustav's to 8th Street - Reconstruct	\$1,970



	Reconstruction	roadway, replace sidewalks, illumination.	
L-R10	Division Street Reconstruction	Reconstruct road, sidewalks, curb & gutter, street illumination from Front Street to 200' south of Commercial.	\$740
L-R11	Ski Hill Drive Reconstruction (US 2 to Pine Street)	Repair base material and asphalt overlay. Construct missing sidewalk locations between US 2 and City limits.	\$2,640
L-R12	Pine Street Upgrade (Ski Hill Drive to Fir Street)	Repair base material and asphalt overlay. Construct sidewalk along south side of roadway.	\$3,180
L-R13	Commercial Street/10th Street Reconstruction	Reconstruct roadway, curb and gutter, sidewalk, illumination from 9th St to Division St and Front St to Commercial St.	\$1,330
L-R14	Commercial Street Reconstruction	Reconstruct road, sidewalks, illumination, storm sewer, watermain replacement from 3rd Street to 8th Street.	\$2,950

#### **Non-motorized & Railroad Improvements**

L-NM1	Icicle Station Trail	Trail connecting Leavenworth to new Amtrack station. Would use portions of old railroad ROW now owned by Chelan PUD. Part of the Leavenworth to Wenatchee Trail. Includes improving underpass along North Road.	\$1,330
L-NM2	Icicle Station	Construct new Amtrak Icicle Station along North Road.	\$850

<b>CHELAN COUNTY ROADWAYS</b>			<b>Cost<sup>1</sup>, 2</b>	<b>Priority Tier<sup>3</sup></b>
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#### **New Roadway**

CC-R3	Titus Road to Chumstick Highway Connector	New collector road between Titus Road and Chumstick Highway to provide improved access and circulation to the North Leavenworth area.	\$1,960	I
CC-R4	Leavenworth UGA north-south connector	New north-south road (unnamed) between Village View Drive and Titus Loop Road.	\$1,520	III

#### **Roadway Improvement**

CC-R10	Bergstrasse/Detillion Road	Upgrade road to collector street standards between Ski Hill Drive and Titus Road.	\$2,130	II
CC-R14	Eagle Creek Road	Grade, drain, widen, minor horizontal realignment, add base and top course, and pave	\$3,520	I

		along 1.5 mile stretch starting at Chumstick Hwy. Widening pavement from 22 ft to 26 ft.		
CC-R15	North Road	Reconstruct large culvert, grade, drain, add base and top course, and pave from Chumstick Highway to Fox Rd.	\$3,270	I
CC-R16	North Road	Construct/widen shoulders, improve horizontal curves, signage, and safety between Fox Rd and Nibblelink Rd (north connection).	\$9,800	I
CC-R17	E. Leavenworth Road	Construct/widen shoulders, improve horizontal curves, safety, and reconstruct roadway between UGA limits and Dempsey Rd.	\$4,410	II
CC-R18	E. Leavenworth Road	Construct/widen shoulders and reconstruct roadway between Dempsey Rd and Icicle Rd.	\$4,180	II
<b>Intersections</b>				
CC-I3	Chumstick Highway / North Road	Intersection safety improvements, could include signage, illumination, re-alignment, and channelization enhancements.	\$280	I
<b>Non-motorized Improvements</b>				
CC-NM7	Chumstick Highway	Complete multi-use pathway between City limits and North Road.	\$350	I
CC-NM8	Ski Hill Drive	Improve shoulders, illumination, signage, and provide traffic calming along Ski Hill Drive from City limits to Titus Rd.	\$1,790	II
CC-NM9	Titus Road	Improve shoulders, illumination, signage, and provide traffic calming along Titus Rd from City limits to Ski Hill Dr.	\$2,710	II

<b>Trails</b>				
CC-NM25	Valley Trail - Leavenworth to Peshastin	Identify ROW and construct trail between Leavenworth and Peshastin.	\$1,460	I

**LINK TRANSIT**

LT-1	Rural Commuter Route	Expand commuter service between Leavenworth and Wenatchee.		
LT-4	Expanded Weekend Service	Expand weekend service in Leavenworth as identified as a priority by the community.		
LT-9	Leavenworth Park & Ride	Construct additional park & ride location in Leavenworth.		
LT-10	Leavenworth Bus Stops	Locate and construct bus stops throughout the Leavenworth area.		

1. Cost range in \$1,000s of dollars (2008 \$).
2. No costs developed for WSDOT or LINK Transit projects.
3. Project priorities only identified for Chelan County projects as shown in the County Transportation Element.

***City Street Improvements***

This category of projects includes capacity, safety, and road standard improvements along City arterials, collectors, and local streets. Several projects identify new collector roadways to serve additional growth within the City. Other projects, reconstruct roadways to meet City street standards, to serve future growth, and to provide facilities for all modes of travel. A total of 13 projects have been identified along roadways within the City limits. These projects are listed in **Table 14 and shown in Figure 15**.

Improvements are needed along the collector and arterial roadways in the northern neighborhoods of the City. These improvements will address existing deficiencies, improve substandard roadways, and provide new collector roadways. The improvements include upgrading arterials and collectors to City standards and completing a system of collectors to enhance mobility and circulation within the northern part of the City. These projects range from extending Mine Street to Wheeler Avenue (L-R3) to overlaying and constructing missing sidewalk segments along Ski Hill Drive (L-R11). The reconstruction of Pine Street (L-R12) is an important project because it is one of the only east-west routes within the northern Leavenworth area, but the pavement is in a failed state of repair. The roadway will be upgraded to secondary arterial standards, including the construction of sidewalks to provide a safe school walk route for Icicle River Middle School and Cascade High School students. Sidewalks likely can only be accommodated on the south side of Pine Street due to environmental constraints on the north edge of the right-of-way. An extension of Pine Street to Chumstick Highway is also a project the City will work to complete. The extension would allow the City to close the Cedar Street intersection with

Chumstick Highway and provide greater separation from the US 2 intersection to avoid vehicle queuing and safety issues.

The City also has plans for its transportation system in the downtown, as identified in the Downtown Master Plan. The City recently completed an upgrade to portions of the downtown street system along 9<sup>th</sup> Street and Commercial Street. The project included replacing utilities, new sidewalks, improved pedestrian crossings, on-street parking, planter strips, and a new roadway surface. The City hopes to complete seven similar projects for the remaining segments of its downtown streets. These projects include 3<sup>rd</sup> Street, 8<sup>th</sup> Street, Front Street, Division Street, and Commercial Street corridors.

The eastern portion of the City, otherwise referred to as the Riverbend area, will include new circulation roadways to support future commercial and industrial development in the City. The new circulation streets will also provide direct access to the KOA campground to avoid vehicles from using Riverbend Drive, a local neighborhood street, as the primary access. A new intersection with supporting traffic control along US 2 (WS-120) will provide access to the area and will need to be coordinated with construction of the circulation roadways.

### *County Roadway Improvements*

The general area north of the City limits and within the UGA has been targeted to accommodate a significant portion of the growth expected within the greater Leavenworth area. In order to serve the existing and future needs, transportation infrastructure improvements will be needed on existing facilities such as Ski Hill Drive and Titus Road. In addition, new and upgraded roadways are required to provide improved connectivity and access to the UGA.

A number of potential new roadways have been identified within the unincorporated area north of the City. One project is a connector between Titus Road and Chumstick Highway. The Titus Road connection (CC-R3) has been studied by the City and County (1999 Titus Road study) for several years. The new collector street will provide improved access to the northern UGA.

A new north-south roadway (CC-R4) connecting Titus Road with Bergstrasse/Detillion Road and Village View Drive will improve access and circulation to the area between Ski Hill Drive and Titus Road. Bergstrasse/Detillion Road will be upgraded to a collector street (CC-R10) to provide an improved east-west link between Titus Road and Ski Hill Drive. It is the logical location for an improved east-west connection because it already exists, has few direct access points to adjoining properties, and has the sufficient right-of-way necessary for urban amenities, such as sidewalks. Together, these collector streets will provide adequate circulation and access to support expected residential growth in the area.

Ski Hill Drive and Titus Road provide primary access to the northern UGA and should be upgraded with wider shoulders or a separated multi-use pathway as they are a primary pedestrian, bicycle, and cross-country skiing route for the community. Projects CC-NM8 and CC-NM9 include improved illumination, signage, and traffic calming features along the two corridors. The long, straight corridors are conducive to high speeds, so geometric improvements should be made, such as splitter islands or reduced lane widths to promote

slower speeds and reduce potential for cut-through traffic when the Titus Road connection is in place.

Other improvements to County roadways include reconstructing segments of East Leavenworth Road (CC-R17 & CC-R18) and improving portions of North Road (CC-R15 & CC-R16) to include wider shoulder and improved base and surface material. The intersection with North Road and Chumstick Highway will be upgraded with improved channelization, illumination, and signing to address safety concerns and support future growth along the North Road corridor.

The following County roadway projects within the Leavenworth area are among the highest priority projects in the County Transportation Element (Tier I projects):

- New connector between Titus Road and Chumstick Highway
- Roadway improvements on North Road
- Intersection improvements at Chumstick Highway/North Road

### **Non-Motorized Facilities**

Non-motorized facilities play a vital role in the City's transportation system. The non-motorized transportation system is comprised of facilities that promote mobility without the aid of motorized vehicles. A well established system encourages healthy recreational activities, reduces vehicle demand on City roadways, enhances safety, and promotes a more livable community.

The City desires to have sidewalks on all streets, unless special circumstances make it prohibitive. Greater details on planned pedestrian, bicycle, cross-country skiing, and equestrian facilities are provided in the Upper Valley Regional Trails Plan. As a separate publication, the Upper Valley Regional Trails Plan was developed to directly address multiple modes of travel through all four seasons and for all types of users.

The goals for the Upper Valley Regional Trails Plan are to:

- Connect neighborhoods, residents, and visitors with area services, activity centers, attractions, and natural areas;
- Link and enhance existing and planned trails and determine the locations for new trail connections; and to
- Incorporate multiple non-motorized modes of travel, whether for recreation or commuting, through all seasons including but not limited to pedestrians, bicyclists, equestrians, and cross-country skiers.

Much of the trail system within the public street right-of-way depends upon implementation of the projects listed in **Table 14**. The sidewalk system will largely provide the linkages to the trails within the Upper Valley area. Particular linkages of highest priority include the reconstruction of the arterial and collector streets in the northern neighborhoods and UGA. The projects along Ski Hill Drive, Titus Road, and Pine Street will provide for enhanced non-motorized facilities such as sidewalks, separated multi-use pathways, or wider shoulders. Other projects include adding missing sidewalk segments on

Chumstick Highway, and new sidewalks on Bergstrasse/Detillion Road and the new collector roadways in the UGA.

A new trail connection between the downtown and the future Amtrak station on North Road is a high priority. The connection would likely be an asphalt trail and would use portions of an old railroad right-of-way, now owned by Chelan PUD. This trail could become a section of the proposed Valley Trail linking Leavenworth and Wenatchee. Leavenworth was recently successful in obtaining federal funds to widen the railroad underpass along North Road and to support the construction of a pedestrian facility. The City supports the extension of the Valley Trail to Peshastin and the other communities along the Wenatchee River.

US 2 acts as a pedestrian barrier separating the downtown commercial district with the neighborhoods to the north. Enhanced pedestrian crossing treatments should be considered along the corridor as part of the preliminary design study (WS-R6). New or revised traffic control enhancements at the intersections with Chumstick Highway, Ski Hill Drive, or Mine Street could include improved pedestrian signage, crosswalk treatments, or provide for better illumination to reduce the potential for vehicle and pedestrian collisions. A new pedestrian underpass is proposed near City Hall that would improve crossing safety for pedestrians and improve mobility for vehicles along US 2.

Overall, the Regional Trails Plan highlights the preferred non-motorized facilities and connections the City is planning towards. It identifies the appropriate design standards for pedestrian, bicycle, cross-country skiing, and equestrian facilities (see Appendix D). The plans, policies, and standards highlighted in the Plan are consistent and supportive of the City's Transportation Element. Refer to the Upper Valley Regional Trails Plan for more information and detail on the projects necessary to enhance the non-motorized system within the City of Leavenworth.

### **Public Transit and Transportation Demand Management**

In order to provide a comprehensive transportation system, the City of Leavenworth recognizes the importance of other modes of travel, such as public transit, rail service, and transportation demand management (TDM) programs. In general, these services and programs build on regional programs with some refinements to reflect the specific needs of the City.

#### *Public Transit*

Transit service in Leavenworth is provided by LINK Transit. The Plan has been coordinated with the Six-Year Transit Development Plans (TDPs) for LINK Transit. The TDP provides a framework to guide transit service delivery through the next six-years. Transit service in Leavenworth is largely focused on the US 2 corridor which connects Leavenworth with Wenatchee and the communities to the east. As the population increases in and around Leavenworth, more commuter traffic will increase the need for alternatives to the single occupancy vehicle. Transit service within Leavenworth will become increasingly important in providing commuters and tourists with convenient access to transit or other ridesharing alternatives.

The use of transit service would likely be increased by faster and more convenient bus service between Leavenworth and Wenatchee. Route 22 currently provides commuter service. LINK Transit is studying the opportunity for developing a new and improved park-and-ride lot in Leavenworth to replace the existing facility. Several sites have been investigated near US 2 (at Chumstick Highway and near Mill Street). The creation of weekend transit service has also been identified as a priority by the community. Overall, increased service will make transit a more convenient and attractive alternative to driving alone.

The Leavenworth Transportation Element recommends the following transit improvements.

- **Park & Ride Facility** – To support future growth within and outside the City, a new park and ride facility should be constructed. This new facility could cater to both commuter weekday traffic and tourist weekend needs.
- **Local Service Enhancements** – Evaluate modifying route 32 or 37 to provide service around the Titus/Ski Hill Loop, through town, out East Leavenworth Road, down the Icicle Road, and back through town.
- **Regional Routes** – Continue to create and enhance linkages to regional destinations, including increasing the service frequency of Route 22. In addition, consider other changes, such as providing improved weekend service.
- **Transit Accessibility and Comfort** – Improve access to transit for all users in compliance with the Americans with Disabilities Act (ADA) by evaluating accessibility to public transportation from future developments, in addition to completing a primary sidewalk system. Work to provide bus shelters where needed, along with a maintenance program that plows sidewalks and clears snow off the primary transit and access routes.

The City will continue to coordinate with LINK Transit in the development of a convenient, integrated, and efficient transit system that supports future growth and economic development in the City of Leavenworth.

### *Rail Service*

The City has been working for years with BNSF and Amtrak to build a new Amtrak station in Leavenworth. Passenger rail service is currently provided by Amtrak at Columbia Station in Wenatchee. Amtrak's *Empire Builder* travels daily between Chicago and Seattle, offering westbound service in the early morning (5:35 am) and eastbound service in the late evening (8:40 pm). Amtrak's bus service also stops at Leavenworth and Cashmere.

The new train station will be located on North Road, approximately one mile from town. The City expects the construction of the new station and the passenger service to start in 2009. In conjunction with the new station, there is a need to improve pedestrian and bicycle connections between the downtown and the Amtrak station. A multi-use path between US 2 and North Road will be provided.



### *Transportation Demand Management Program*

In addition to improving the transit system, reducing travel demand by supporting transportation demand management (TDM) programs is an effective component in the City's comprehensive transportation system. TDM programs consist of measures for reducing single occupancy vehicle travel. The Washington Commute Trip Reduction Law (RCW 70.94.521) requires TDM performance targets for firms with over 100 employees. However, the Commute Trip Reduction program does not currently apply to Leavenworth because the area lacks large employers.

However, TDM programs can also provide effective alternatives for smaller developing communities, such as Leavenworth. Potential TDM strategies for Leavenworth need to be coordinated with regional agencies, such as Chelan County, LINK Transit, and the Chelan-Douglas Transportation Council (CDTC) / North-Central RTPO. The following strategies should be considered:

- **Encouraging car and van pools.** Employer incentives for commuters to carpool and vanpool can be in the form of a financial incentive or as simple as reserved car and vanpool parking closest to the building. Other incentives should be defined with LINK Transit to encourage carpooling and vanpooling for residents.
- **Transit fare subsidies.** Employer subsidies for transit passes provide an incentive for those who are able to commute by transit and the incentive to do so.
- **Bicycle lockers/showers at work sites.** Bicycle lockers and shower facilities at work sites provide the means for workers to commute by bicycle.
- **Telecommuting.** The use of telecommunications technology can allow some employees to work from home. This reduces the need for travel to/from a work site for some work days.
- **Flexible work schedules.** Flexible work hour schedules allow employees to adjust start/end times to accommodate carpools, vanpools, or transit options. Alternative work schedules may be used to reduce the number of days an employee commutes during peak travel periods. These programs help reduce the need for adding capacity to highways and arterials, and reduce the levels of peak hour congestion.
- **Guaranteed ride home programs.** Many commuters who have children or have unpredictable schedules rely on their cars. This employer incentive provides the option of a guaranteed ride home in case of an emergency or unexpected schedule change.

### **Freight, Air, and Waterborne Transportation**

There is no waterborne transportation serving Leavenworth other than river recreational activities, such as river rafting and kayaking. The Transportation Element does not identify waterborne transportation as a component of the City transportation system.

### *Freight/Rail*



Rail freight facilities consist of the BNSF mainline running between Everett and Spokane. BNSF's mainline through Leavenworth and the Wenatchee River valley is a major transcontinental route for double-stack intermodal container trains. A predominant amount of intermodal traffic to and from the Ports of Seattle and Tacoma is handled over the Stevens Pass route. The route is heavily used, with an average of 27 trains per day (2006 data for the Washington State Transportation Commission, Statewide Rail Capacity and Systems Needs Study). These trains are usually about 1-mile long or about 60 railroad cars. The line already exceeds its practical capacity but no improvements are anticipated in the near future.

### *Air Transportation*

There are no airports within the immediate Leavenworth planning area. Commercial air travel for Leavenworth is provided via Pangborn Memorial in East Wenatchee. It provides scheduled commercial service for the greater Wenatchee area, including Leavenworth. The airport is served by only one carrier (Horizon) which currently offers 28 weekly departures to Seattle-Tacoma International Airport (Sea-Tac). Alternatively commercial air travel is provided via Sea-Tac, located approximately 125 miles west of the Cascade Mountains.

Other aviation facilities in the area consist of two airports serving general aviation users. The Cashmere-Dryden Airport is classified as a Local Service Airport. It is located in Cashmere and is a County-owned airport with a 1,800 foot asphalt runway. The Lake Wenatchee State airport is classified as Recreation or Remote Airport. It is located 16 miles northwest of Leavenworth (north of SR 207 and northeast of Lake Wenatchee). This is a state-owned, unlit, unpaved airfield with a runway length of 2,475 feet. The airport is generally open from June 1st to October 1st.

## Finance and Implementation Program

The transportation improvement projects and programs were identified to address existing and future transportation system needs for the City of Leavenworth. The estimated costs of these projects and programs were summarized and compared to projections of existing transportation-related revenues to assess the City's ability to implement the Transportation Element. As with most local agencies, existing transportation revenues will not allow the City of Leavenworth to fund all of its needed maintenance activities or capital improvements. The Transportation Element identifies other possible revenue sources to help close the funding gap. Even with additional revenues, the City of Leavenworth will not be able to fund all of the projects and programs within the 20-year horizon of the Transportation Element.

### Project and Program Costs

Transportation maintenance spending is directly related to the available revenue and/or desired performance level. Therefore, jurisdictions must continually make decisions regarding desired performance and available revenue based on overall financial priorities. Future maintenance and operations costs were based on an analysis of historical maintenance and operations spending trends. The costs increase over time as new infrastructure is built and used to meet the needs of a growing population base. It is assumed these costs will continue to rise at a per capita rate similar to recent history. It also assumes that current performance standards for maintenance and operations will continue in a similar fashion.

Table 14, in the previous chapter, summarizes the list of transportation improvement projects. Planning level cost estimates are provided for each project within the City or County. No cost estimates were prepared for projects along US 2 or for LINK Transit. The cost estimates were developed based on typical unit costs from the City and County's Transportation Improvement Program (TIP) and recent construction costs associated with the downtown streetscape improvements. However, the cost estimates should be refined and updated as each project moves into design and implementation. The project cost worksheets are included in Appendix C.

Projects and programs were combined into three categories as part of the development of a financial strategy for the Transportation Element. These categories are illustrated on Figure 17. Table 15 summarizes the estimated costs of these programs and projects in 2008 dollars. Costs are only shown for projects within the City of Leavenworth's jurisdiction. The summary also includes estimated costs of maintaining the transportation system over the 20-year study period.

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**Table 13. Transportation Project and Program Costs 2008 to 2027**

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	<b>Total Estimated Costs<sup>1</sup> (2008-2027)</b>
Maintenance and Operations	\$16.1 million (+\$5 million) <sup>2</sup>
Reconstruction and Non-Motorized Enhancements	\$15.4 million
New Construction or Upgraded Transportation Improvements to Serve Growth	\$8.8 million
<b>TOTAL</b>	<b>\$40.3 million (+\$5 million)<sup>2</sup></b>

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\* Based on existing City limits and miles of roadway.

1. Costs in 2008 dollars
  2. The \$16.1 million is based on the historical spending levels towards maintenance and operations - which has not been enough to maintain status quo. Therefore the maintenance costs over the next 20 years are likely understated and would need an additional \$5 million more (at a minimum) to maintain existing City streets.
-

## Maintenance & Operations



### Types of Projects

- Paving/Chip Sealing
- Snow Plowing
- Emergency Repairs
- Bridge Repairs
- Signing/Stiping

## Reconstruction of Existing Facilities/ Pedestrian & Bicycle Enhancements



### Types of Projects

- Roadway Reconstruction
- Shoulder Widening
- New Trails/Sidewalks
- Safety Enhancements

## New or Upgraded Facilities to Support New Development



### Types of Projects

- New Roadways
- Roadway Widening
- Frontage Improvements
- Traffic Control Improvements

## Figure 14. Project Funding Categories

### Transportation Revenue Projections

Like most cities in Washington State, the City of Leavenworth primarily relies on property taxes, motor vehicle fuel taxes, and state grants for funding transportation maintenance and capital improvements. Historical financial data from the City and WSDOT were reviewed to estimate revenues from these existing revenue sources and to project these through 2027 (in 2008 dollars). These estimates are presented below by revenue source. They include:

- Property Taxes
- General Fund Revenues
- Other Local Funding
- Motor Vehicle Fuel Tax
- State Funding
- Federal Funding

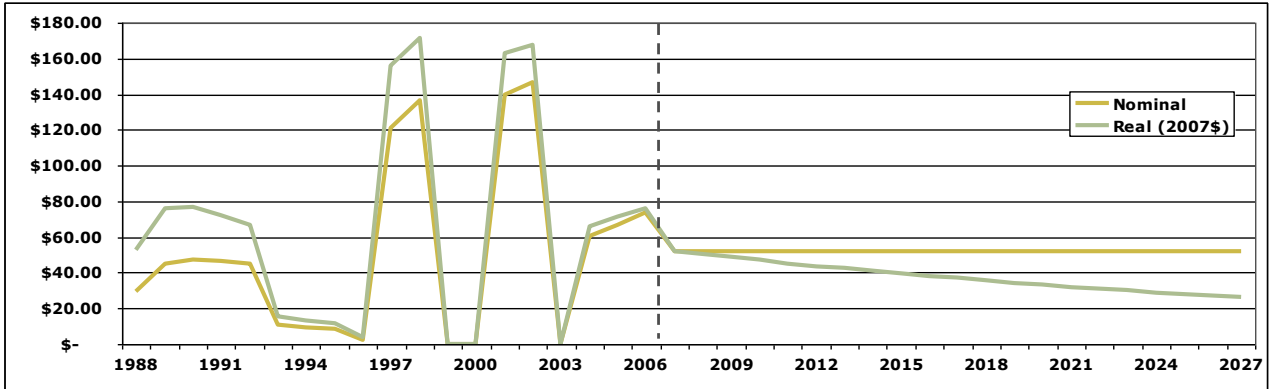
#### *Property Tax Revenues*

Because Initiative 747 (I-747) has restricted total Property Tax revenue increases at 1.0 percent annually (plus new construction, voted levy increases, etc), lower than the estimated 3.5 percent rate of inflation, cities and counties are seeing a decline in total Property Tax purchasing power. The amount of Property Tax used for transportation capital improvements in the City of Leavenworth has varied dramatically in the recent past, likely being used on a project-specific basis as needed.

Property taxes may have appeared like they have increased, but rather it is the assessed value that has likely risen. When this occurs, the levy rate typically falls to maintain the required 1.0 percent cap. This 1.0 percent increase is divided up among the City residents according to their assessed value. A property that has just been reassessed might have an increase in taxes above 1.0 percent. However, somewhere else, the assessed value went down and offset the increase.

For future projections, the historical per capita funding from Property Tax was held constant on a nominal basis. Therefore, when adjusted for inflation, future purchasing power will be declining over time. This is consistent with the trend in all Property Tax dollars, as they are held to a one percent increase, and with the likelihood that these funds, which are a General Fund revenue and not restricted to capital, will be in higher demand for other City costs.

**Figure 22** shows per capita Property Tax for transportation in both nominal and “real” inflation-adjusted dollars. Historical data is shown to the left of the dotted line, and future projections to the right. The decline in per capita revenues since the institution of I-747 in 2001 is evident particularly in the inflation-adjusted numbers shown by the “real” revenue line.



Source: Berk & Associates

**Figure 15. Property Tax for Transportation – Per Capita Baseline Projections**

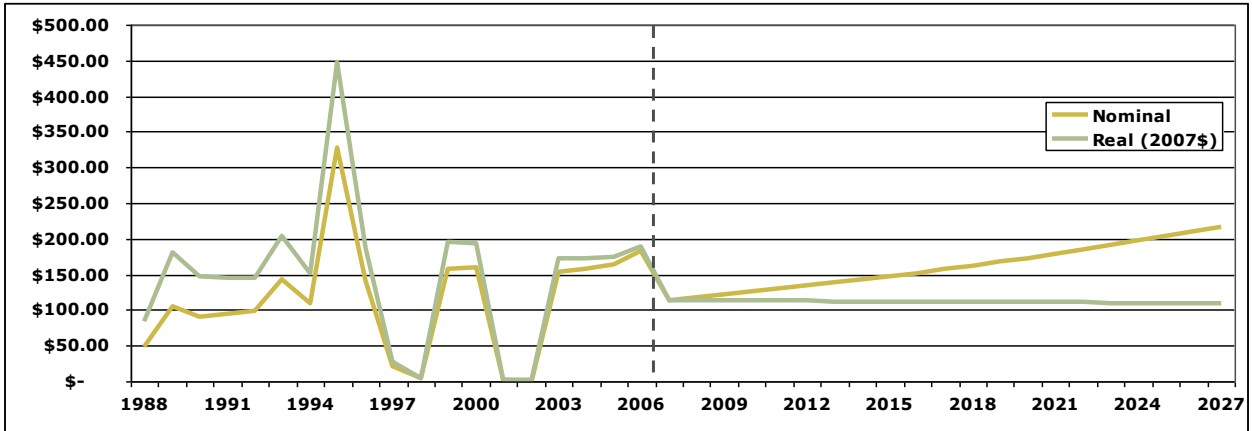
*General Fund Revenues*

Historically, the City’s other General Fund contributions to transportation capital projects has fluctuated, but were fairly regular until 2004 when they ceased entirely. According to City staff, there is no stated policy of General Fund contributions for transportation capital improvements. Therefore, no General Fund contributions are projected in the future. The City may choose to contribute General Funds for particular projects, but given the recent history, there is no basis on which to assume a reliable stream of General Fund dollars for transportation capital funding.

*Other Local Funding*

These dollars may include Real Estate Excise Taxes (REET), Leasehold Excise Taxes, payments in lieu of taxes, and others. These funds have also fluctuated in recent history, likely contributing to transportation capital funding on a project-specific basis.

Since 1989, these revenues dedicated to transportation have been increasing at approximately 3.3 percent annually. For future projections, the average historical per capita level of funding was increased at the historical 3.3 percent rate. Therefore, when adjusted for an estimated inflation rate of 3.5 percent, future purchasing power will decline slightly over time. **Figure 23** shows historical and projected per capita dollars for other local funding sources.



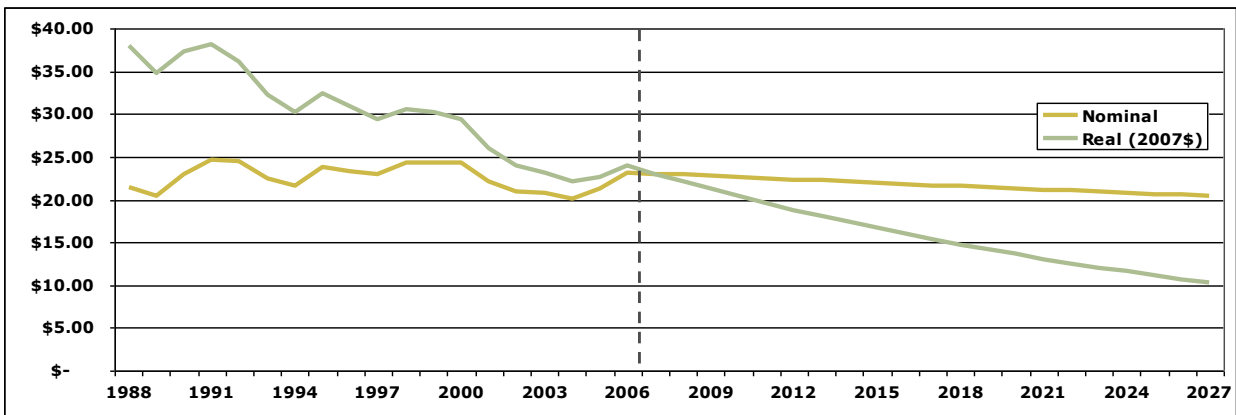
Source: Berk & Associates

**Figure 16. Other Local Funds for Transportation – Per Capita Baseline Projections**

*Motor Vehicle Fuel Tax*

Although historical per capita gas tax dollars have remained fairly constant in nominal numbers, when adjusted for inflation, it is clear that per capita revenues have been declining over time. In the more recent history, this trend is becoming more pronounced due to large increases in the price of fuel (not withstanding the decline in fuel prices in the second half of 2008). Taking into account the recent shift in travel behavior due to the increase in fuel costs and a decrease in economic activity, it is assumed that per capita spending will continue to decline at the historical rate seen since 1998 of 0.6 percent.

Figure 24 shows the historical and projected data in “real” and nominal dollars.

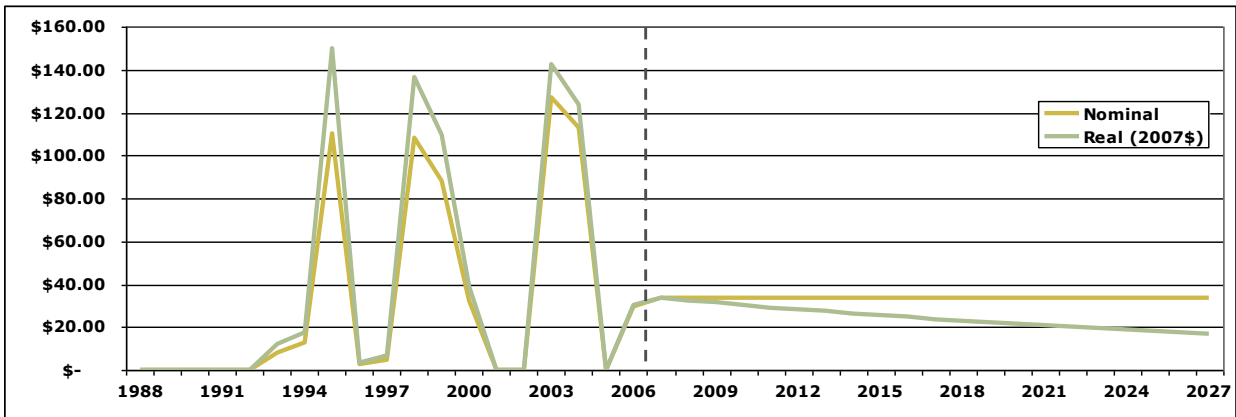


Source: Berk & Associates

**Figure 17. Motor Vehicle Fuel Tax – Per Capita Baseline Projections**

*State Funds*

This category primarily includes state grants. It may also include some other types of state funding. State grants are primarily funded through the State Motor Vehicle Fuel Tax. As discussed above, revenues generated from the purchase of gasoline are declining over time, and are expected to do so more dramatically in the near future, leading to fewer available grant dollars. In addition, with the institution of I-747, all state jurisdictions are seeing a decline in a significant source of general revenue. This is causing a higher demand for grant funding and greater competition between jurisdictions. Historical funding and future projections of state funds are shown in Figure 25.



Source: Berk & Associates

**Figure 18. State Funds – Per Capita Baseline Projections**

Since 1988, the City of Leavenworth has averaged \$33.50 per capita, per year, in state funds. For this analysis, we have assumed that the City will continue to receive this level of funding on a nominal basis, leading to a decline in “real” revenues at the rate of inflation. Because these dollars are largely project-based, the projections shown here are likely to be higher than the actual revenue in some years, and lower in others.

*Federal Funds*

Federal funds include federal grant revenues targeted for transportation. A review of the City’s finances indicated there has been little or no direct federal funding for transportation projects. Therefore, no future projections were made for federal funding. The one exception is that the City was recently successful in obtaining federal funds to partially finance the new Amtrak train station.

*Total Baseline Revenue Projections*

Table 17 shows the total baseline revenue projections over the 20-year study period. These revenues are displayed in inflation-adjusted 2008 dollars. A total of \$10 million in revenue is projected from the baseline revenue sources. The “real” revenues decrease in value over time. Figure 26 illustrates the expected distribution of the total projected revenues over the 20-year study period.



**Table 14. Baseline Transportation Revenue Summary**

<b>Baseline Funding Source</b>	<b>Total 2008-2027<sup>1</sup></b>
Property Tax	\$1,968,084
General Fund Contributions	\$0
Other Local Funding	\$6,020,451
State Fuel Tax	\$820,437
State Funds	\$1,266,567
Federal Funds	\$0
<b>Total Estimated Available Revenues</b>	<b>\$10,075,539</b>

SOURCE: Berk & Associates

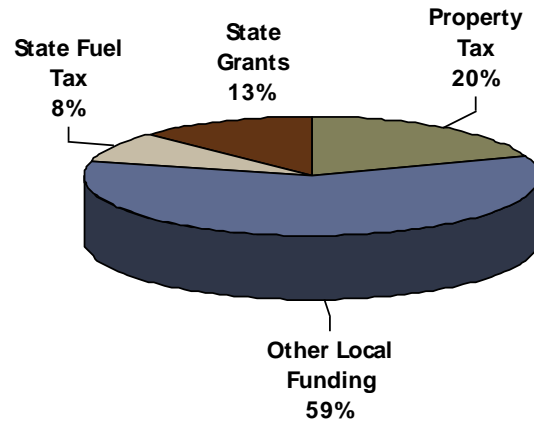
1. All costs in 2008 dollars

When comparing total available revenues for transportation capital and maintenance with expected costs over the 20-year study period, revenues fall short of paying for just the estimated maintenance costs before even considering capital project costs. This is consistent with the financial analyses showing that the main revenues used for transportation are increasing at a relatively slow rate, while costs are increasing more quickly over time. Although spending is currently balanced with revenues, the increase in costs begins to outpace the increase in revenues in the very near term. This does not account for the fact that the overall maintenance costs are likely much greater than listed in **Table 16, due** to a substantial backlog of deferred maintenance.

As shown in **Table 17, the** total estimated transportation revenues for the study period are approximately \$10.1 million. These revenues are the total available for all capital and maintenance needs for the City for the next 20 years. However, some funds are not available for maintenance expenses, including most grant funds, a portion of the REET funds, and matching funds for grants.

The first quarter of one percent Real Estate Excise Tax (REET1) must be used for capital projects identified in a capital facilities plan (RCW 82.46.010 [2]). However, the second one-quarter percent of the Real Estate Excise Tax (REET2), which is allowed for cities planning under GMA, can be used for “public works projects of a local government for planning, acquisition, construction, reconstruction, repair, replacement, rehabilitation, or improvements of streets, roads, highways, sidewalks, street and road lighting, traffic signals . . .” (RCW 82.46.035 [5]). This allows the City to choose whether a portion of the REET revenues will be spent on maintenance or capital expenditures.

The estimated \$1.3 million in grants must therefore not be counted towards maintenance costs, as well as a portion of REET funds and an estimated minimum of \$250,000 in matching funds for grants (estimated at 20 percent of grant funds). This leaves a maximum of \$8.6 million available for maintenance and operations compared to an estimated cost of \$16.1 million for the study period, resulting in an estimated \$7.5 million shortfall to cover maintenance costs. The remaining \$1.5 million is only available for capital projects, and those dollars are heavily dependent upon grant awards.



Source: Berk & Associates

**Figure 19. Projected Transportation Revenue Distribution**

Table 18 illustrates the shortfall in maintenance and operations of \$7.5 million over the life of the plan. As noted in the Transportation Systems Plan, preserving the existing transportation system is a high priority for the City of Leavenworth. Capital costs would exceed existing revenues by \$38.8 million over the 20-year period. The available \$1.5 million for capital projects would only realistically fund one or two projects on the long-term project list. The maintenance and capital revenue shortfalls result in an overall funding deficit of \$46.3 million.

**Table 15. Comparison of Transportation Revenues and Costs from 2008 to 2027**

	<b>Total Estimated Revenues<sup>1</sup> (2008-2027)</b>	<b>Total Estimated Costs<sup>1</sup> (2008-2027)</b>	<b>Difference<sup>1</sup></b>
Maintenance & Operations	\$8.6 million	\$16.1 million <sup>3</sup>	(\$7.5 million)
Capital Improvements <sup>2</sup>	\$1.5 million	\$40.3 million	(\$38.8 million)
<b>Total Transportation Program</b>	<b>\$10.1 million</b>	<b>\$56.4 million</b>	<b>(\$46.3 million)</b>

\* Based on existing City limits and miles of roadway.

1. All costs and revenues in 2008 dollars. (xxx) means negative value.
2. Includes reconstruction and non-motorized enhancements and growth-related new construction and upgrade projects. Does not include any costs for improvements along US 2 or within the City UGA.
3. Does not account for the necessary funding to improve the condition of the City streets, which is estimated to be at least \$5 million (at a minimum).

### **Other Potential Funding Sources**

The following outlines possible funding sources to close the maintenance and capital funding shortfalls. The City of Leavenworth is faced with a significant funding shortfall over the planning horizon of its Transportation Element. The City should explore strategies to address the funding imbalance and consider policy changes that would increase future revenues and available funding.

The potential funding options are described below and **listed in Table 19.**

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**Table 16. Local Transportation Funding Options**

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<b>Local Funding Source</b>	<b>Comments</b>
Transportation Benefit District	<u>With City Council and/or voter approval</u> , the City may establish various fees/taxes for the construction, maintenance, preservation, and operation of improvements to state or local roadways.
Transportation Impact Fee	<u>With City Council approval</u> , the City may charge a fee to help fund specific transportation projects shown to be reasonably related to new development.
Local or Business Improvement District (LID or BID)	Levy a special benefit assessment on properties within a specific area that would benefit from the improvement.
General Obligation (GO) Bonds	<u>With voter approval</u> , a GO bond requires 60 percent approval and creates a new source of funds when tied to an excess levy for repayment of the bond debt.
Planned Action Ordinance	A project specific action under the State Environmental Protection Act (SEPA) in which the mitigation measures that will be applied have already been identified through a environmental review process.
Other Developer Mitigation	Potential mitigation to address local development regulations and requirements such as GMA concurrency, the State Environmental Policy Act (SEPA), and street standards/frontage improvements.
Latecomers Agreements	Allow property owners who have paid for capital improvements to recover a portion of the costs from other property owners in the area who later develop property that will benefit from those improvements.
Grants or Other Fees	Various federal and state grants (see preceding section). Or Surface Water Management Fees to offset environmental and water quality/storm water detention costs associated with transportation capital improvements.

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SOURCE: Transpo Group 2009

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***Transportation Benefit District***

**Description.** A Transportation Benefit District (TBD) may be established for the construction, maintenance, preservation, and operation of improvements to state, regional, or local agency roadways, high capacity transportation systems, public transit, and transportation management programs. State law sets requirements for selecting improvements, including the need for the projects that are “necessitated by existing or reasonably foreseeable congestion levels.” The projects must be contained in the transportation plan of the State or the regional transportation planning organization

(RTPO) / Chelan-Douglas Transportation Council (CDTC). The City of Leavenworth could consider applying TBD funding for maintenance of some arterials, collectors, and local streets. The Washington Transportation Plan (WTP) and associated Highway Systems Plan (HSP) identify preservation as a key element of the investment guidelines. The need to preserve and extend the life of prior investments in transportation facilities and services at all levels is a high priority. The regional transportation plan is built from the WTP and HSP, which would support use of a TBD for maintenance and/or upgrades of roadways “necessitated by existing or reasonably foreseeable congestion levels.” The following types of fees may be imposed:

- **Sales and Use Tax.** Up to 0.2 percent with voter approval for up to 10 years – unless reauthorized by voters.
- **Motor Vehicle License Renewal Fee.** Up to \$100 annually, with voter approval – a jurisdiction may impose a \$20 vehicle license renewal by adoption of the City Council without voter approval.
- **Excess Property Tax Levies.** One-year maintenance and operation with voter approval or multi-year for general obligation bonds.
- **Transportation impact fees on commercial and industrial buildings.** Commercial or industrial projects would receive a credit if a transportation impact had already been imposed in the City (residential buildings are excluded).
- **Vehicle Tolls.** Tolls can be established and collected for improvement projects within the TBD.
- **Latecomer Agreements.** Latecomer Agreements allow property owners or the City, who have paid for capital improvements, to recover a portion of the costs from other property owners in the area who later develops property that will benefit from those improvements.

**Potential Revenue Impacts.** The following illustrates potential levels of revenues that could be generated under the TBD funding options, as well as an example of what the impact to the taxpayer might be.

- A voter approved 0.2 percent sale tax increase could generate approximately \$220,000 per year. Example: A purchase of a television costing \$1,000 would be assessed an additional \$2 in sales tax under this scenario.
- A City Council enacted \$20 vehicle license renewal fee could generate between \$50,000 to \$100,000 per year. A voter approved \$100 fee could generate between \$250,000 to \$500,000 per year.<sup>1</sup>
- A voter approved excess levy could generate funds dedicated to the repayment of general obligation bonds. These proposals to voters are typically presented in terms of a total dollar amount and the levy rate is determined by the assessed value in the district. Example: On a \$1 million voted excess levy, a single family home

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<sup>1</sup> Estimate based on analysis from Berk & Associates.

valued at \$250,000 would likely pay an additional \$50 per year in property taxes to retire the bonds.

### ***Transportation Impact Fees***

**Description.** Transportation impact fees (TIF) may be charged to help fund specific transportation projects shown to be reasonably related to new development. The impact fees “shall only be used to fund system improvements” that are reasonably related to and benefit the new development. Impact fees may not be used to correct existing deficiencies. The imposing jurisdiction must also contribute funds to the included projects, which by statute cannot be funded 100 percent through impact fees (RCW 82.02.050 [2]). The revenues collected from a TIF must then be used within six years of payment.

**Potential Revenue Impacts.** The goal of calculating transportation impact fees is to create fees based on a new development’s expected benefit from the transportation system improvements that are needed to support future growth. Generally, this is done by basing the fees on the number of vehicle trips a development is expected to generate and the proportional cost of the transportation improvement projects (alternatively can be charged on a per unit basis) needed to serve growth. Example: The impact fees must be calculated based on project costs and growth. As an example, for every \$1,000 in the impact fee rate, \$1 million in revenue could be generated over the next 20 years, based on 1,000 new residential units expected to be built in the City of Leavenworth and its UGA. Commercial development also would pay the fee based on their relative traffic impacts and benefit of the TIF improvement projects which would increase the potential revenues.

### ***Local Improvement District or Parking and Business Improvement Area***

**Description.** Any jurisdiction may form a local improvement district (LID) parking and business improvement area (PBIA) and levy a special assessment on properties within the district that would benefit from the improvements. An LID is a special purpose financing option that may be created by the City or other local governments to fund improvements, such as streets, water, or sewer facilities that benefit nearby property owners. Voter approval is not required to form an LID, but the LID formation may be challenged by the property owners. LIDs for cities are authorized under RCW 35.43 to 35.56. The City may levy a tax on the property within an area that will benefit from a specific capital project. They can be created by local governments or they can be initiated by property owners in the benefit area. Property owners that will benefit from the improvements would be assessed a special benefit assessment based on proportionate levels determined during the formation of the districts. This special benefit assessment would typically be paid annually by the property owner for a time period established during the formation of the district. The City would have discretion in its financial contribution to the overall project costs of the district.

A PBIA is somewhat similar to an LID, but has specific requirements per RCW 35.87A.010. A PBIA is permitted to aid general economic development and neighborhood revitalization. It is intended to facilitate the cooperation of merchants, businesses, and residential property owners to support economic vitality, livability, and general trade. A PBIA requires a petition be submitted by at least 60 percent of the assessments of property within the area.

**Potential Revenue Impacts.** A LID's or PBIA property assessment is determined during its formation and is assessed relative to the benefits the users derive from the improvements. Example: A LID or PBIA in the downtown area, funding right-of-way improvements, might charge on the basis of commercial building square footage. If the LID or PBIA funded \$1 million of improvements and there were 100,000 square feet of commercial square footage in the district, a property owner with 10,000 square feet of shop space might be assessed an additional \$100,000 (\$10/sq ft).

### ***General Obligation Bonds Supported with an Excess Property Tax Levy***

**Description.** The City Council may go to the public for a voter-approved bond with a property tax increase. With voter approval, the City can increase funding through debt by raising the property tax rates to pay the general obligation bond.

**Potential Revenue Impacts.** A voter approved property tax excess levy, designated to pay back general obligation bond proceeds, could generate additional funds. Example: On a \$5 million voted excess levy backed by an excess levy, a single family home in Leavenworth valued at \$250,000 would likely pay an additional \$250 a year in property taxes to retire the bonds.

### ***Planned Action Ordinance***

**Description.** Planned Action Ordinances (PAO) are a project specific action under the State Environmental Protection Act (SEPA) in which an Environmental Impact Statement (EIS) designates, by ordinance, those types of projects to be considered Planned Actions – spelling out mitigation measures that will be applied. This type of action is appropriate for small areas, such as the downtown, expecting a specific type of development. Per RCW 43.21C.031, GMA counties and cities may designate a planned action. A planned action must be designated by an adopted ordinance or resolution of the City. The planned action must be based on an Environmental Impact Statement (EIS) that adequately addresses significant environmental impacts. The EIS needs to be prepared in conjunction with a comprehensive plan or subarea plan adopted under GMA.

The planned action can only include projects that are subsequent to or implement the comprehensive plan or subarea plan; however, the projects must be located within the defined urban growth area. The planned action would be limited to specific geographical areas that are less than the boundaries of the City or to specific types of development within the City. The ordinance and/or EIS must specify a time limit for the planned action. The City will need to fund the costs of preparing the subarea plan and EIS to establish the planned action, which is typically a significant upfront investment.

To ensure that the developments are not paying twice for the same impacts, it is recommended that projects included in a planned action are not also included in a TIF, or at least are specifically allocated to each funding source. This distinction would simplify the administration of both funding options.

**Potential Revenue Impacts.** A feature of a PAO is the level of flexibility and specificity that it may proscribe as mitigation for all development within the Planned Action Area. Both existing deficiencies and growth-related improvements can be included to the degree they mitigate transportation impacts of new development.

### ***Other Development Mitigation***

**Description.** All new development in the City must pass state and local development regulations and requirements. These include GMA concurrency requirements, the State Environmental Policy Act (SEPA), and road standards/frontage improvements. These elements are project specific and are reviewed as part of each development application.

**Potential Revenue Impacts.** Funding or construction of improvements through development mitigation is dependent on the location, timing, and type/size of new developments. Therefore, a specific estimate cannot be made.

### ***Latecomers Agreements***

**Description.** Latecomers Agreements (RCW 35.72) are contracts that allow property owners who have elected to install capital improvements to recover a portion of the costs from other property owners in the area who later develop property that will benefit from those improvements. The City may also join in the financing of the improvement projects and be reimbursed in the same manner as a property owner. The period of collection may not exceed 15 years and is based on a pro-rata share of the construction and contract administration costs of the particular project. The City must define an area subject to the charges by determining which properties would require similar improvements. The preliminary assessment reimbursement area needs to be provided to all property owners within the area; owners of property in the area may request a hearing to discuss the Latecomers Agreement. The contract must define the cost allocation process based on benefits to properties in the reimbursement area. The final contract must be recorded with the County Auditor within 30 days to be valid. Although not explicitly required, the City could adopt an ordinance noting the circumstances where the option for such a reimbursement contract would be acceptable.

**Potential Revenue Impacts.** Latecomers Agreements are typically done on a pro-rata share of the project cost, plus administrative fees. Example: A one-block-long sidewalk costs a builder \$45,000 to construct. Adjacent developments that benefit from the sidewalk contract to reimburse the original owner \$15,000 to cover the cost of the improvement based on their relative benefit.

### ***Financing Strategy***

Overall the City is not able to fully fund the identified transportation projects and programs. As noted in Table 18, in order to fully fund the transportation improvement projects and programs, the City would need approximately \$58.6 million (in 2008 dollars) between 2008 and 2027 (plus additional funds for increased maintenance and operations). Existing revenues would cover \$10.1 million of the \$56.4 million costs for the City. This represents about 18 percent of the needed revenues for the 20-year study period. Additional revenue of approximately \$46.3 million will be needed to fully implement the Transportation Element.

In addition, WSDOT and Chelan County have significant roles in the transportation system serving the greater Leavenworth area. However, the \$46.3 million funding shortfall is only for those local projects on existing City streets and does not include funding for projects within the City's UGA or along US 2. There are several significant projects that need to be funded along US 2 and within the UGA to accommodate growth in the area. Overall, the



existing baseline revenues fall well short of the estimated 20-year costs of transportation improvements and programs.

The following identifies options for the City to pursue to fund both regional and local transportation needs. The financing strategy is guided by the following principles:

- Funding from New Development - New development should fund its share of expanding/upgrading transportation facilities in the City and its UGA.
- Pursuing Grants and Other Funding - Continue to aggressively pursue grants and other funding options.
- Partnering with Other Agencies - Partner with Chelan County and WSDOT to improve transportation infrastructure within the City's UGA and along US 2.
- Identifying a New Local Funding Source - A new funding source or combination of local revenues will be needed to fund maintenance, operations, and the highest priority capital projects to preserve and enhance the existing transportation system.

### *Funding from New Development*

Growth within the City and its UGA results in a need for additional transportation improvements, as discussed previously. The City has primarily required new developments to mitigate their potential transportation impacts based on its review under the State Environmental Policy Act (SEPA), its Road Standards requirements, and GMA concurrency.

The City should consider updating its development review processes, level of service standards/concurrency program, and its street development standards to better address the adequacy of the transportation system to serve growth. The City should also further evaluate whether a GMA-based transportation impact fee (TIF) should be implemented to help fund growth-related roadway and intersection improvements.

### *Development Review Process*

The City of Leavenworth is required by State law to review development proposals for environmental impacts under SEPA. Under the GMA, the City of Leavenworth must not approve new development unless its transportation system is adequate to support the growth; this is implemented through concurrency. The City also has adopted street development standards to guide the construction or upgrading of roadways and other related transportation facilities. These processes all support the development and improvement of the City's transportation system.

**Concurrency and SEPA Review.** The City will continue to use concurrency and SEPA to review the impacts of new development on roadways and intersections. As a minimum, the SEPA review would be used to evaluate impacts on:

- Safety, such as horizontal curvature issues
- Intersection operations
- Congestion
- Transit and Non-motorized transportation

SEPA review is based on the development project having an adverse impact. Assessment of transportation impacts under SEPA depends on the conditions for each transportation facility or service serving a new development. If adverse impacts are identified, the City can condition the development to provide mitigation to offset or reduce its impacts. This mitigation would help improve the transportation system or address any concurrency issues.

The concurrency evaluation may identify impacts to facilities that operate below the City's level of service standard during the PM peak hour on an average weekday. To resolve that deficiency, the applicant can propose to fund and/or construct improvements to provide an adequate level of service. Alternatively, the applicant can wait for the City, another agency, or another developer to fund improvements to resolve the deficiency.

**Street Standards.** The City has adopted road classification and street development standards. They identify requirements for design speed, right-of-way width, pavement width, non-motorized facilities, storm water, parking, and other roadway design features. New developments are required to comply with the street standards for all on-site roadways, adjacent street frontage, and access roadways. The standards cover both public and private roadways. The City has specific review and approval processes if variances to the standards are requested by the developer. The City is also in the process of developing new non-motorized system standards as part of the Upper Valley Regional Trails Plan.

**Latecomers Agreements.** Mitigation under concurrency, SEPA, or the City's street development standards may entail constructing or improving roadways or intersections that future development in the City will benefit from. To help balance the costs with the benefits of the improvements, the City can provide for Latecomer Agreements. As discussed previously, Latecomer Agreements allow property owners or the City to recover a portion of their costs of constructing capital improvements from other future developments that benefit from the improvements. The Latecomers Agreements are set up for specific improvements and would calculate a share of the construction costs based on the relative benefit of the improvement to each development. Contract administration costs of the agreement also can be included. A maximum period of 15 years can be established for the Latecomers Agreement.

### ***Transportation Impact Fees***

To address the broader system transportation impacts of new growth, the City of Leavenworth should evaluate the benefit of implementing a transportation impact fee (TIF) program. The TIF would need to be implemented as a development regulation adopted by ordinance.

The GMA allows agencies planning under the GMA to develop and implement a TIF program to help fund transportation projects needed to accommodate growth. State law (Revised Code of Washington [RCW] Chapter 82.02) sets forth that the impact fees:

- Shall only be imposed for system improvements that are reasonably related to the new development;

- Shall not exceed a proportional share of the costs that are reasonably related to the new development;
- Shall be used for system improvements that will reasonably benefit the new development; and,
- May only be collected and spent on public facilities that meet the requirements of RCW 82.02 and are addressed by the Capital Facilities Plan (CFP) Element of the Comprehensive Plan.

TIFs can only be used to help fund the improvements needed to serve new growth; the GMA specifically notes that the fees cannot be used to address existing deficiencies. The City could include costs of prior capital projects to the extent that new growth will benefit from the improvements.

The benefit of a TIF system is that funds could be pooled together and entire projects could be constructed at one time. With the transportation improvement projects dependent upon some level of development mitigation, several projects might be constructed piecemeal or not at all due to the inability to pool funds together for SEPA related mitigation. A TIF system would allow the City to pool funds together to implement an entire project at one time while also likely saving in costs and construction impacts to the surrounding community.

A TIF program should be considered as another funding source for the City, and could potentially collect between 15 to 35 percent of the total costs of those projects within the City limits. Several of the projects identified in the long-term project list serve new development growth and therefore, are eligible to be funded partially by a transportation impact fee. However, to be effective, the City must show that a reasonable amount of growth could be expected within the existing City limits to collect enough revenue to implement projects. More importantly, the City should have sufficient capital revenues available to provide the matching funds to complete the identified TIF-eligible projects, since the TIF can only cover a portion of the project costs.

Since a majority of the growth within Leavenworth is targeted for its UGA, the City should work with Chelan County to implement a similar TIF program. The County is currently considering the implementation of a TIF program as part of its updated Transportation Element that will be adopted by the end of 2009. If both the City and County implement a TIF program, it would make it easier to enter into an Interlocal Agreement with the County to share impact fees. This could be a good strategy for both the City and County to assist in implementing projects in the greater Leavenworth area and specifically the UGA. Through an Interlocal Agreement, key system improvements within the City could be added to the County's TIF program and resulting rates. The County would then pass the portion of the fee associated with the City improvements to the City. The City also would collect fees from developments under its jurisdiction for system improvements in the unincorporated areas of Chelan County. This would help fund key improvements serving the UGA. This will also provide for a more seamless transition of the UGA at the time the City annexes the remaining areas.

Before a TIF system is considered, the City should evaluate additional local revenue sources to use to match against TIF related revenue. This new revenue source would not only provide for matching funds against growth related projects, it could also be used to address maintenance and non-motorized needs. If both a new local revenue source and a County TIF program move forward towards implementation, a City TIF program is a logical next step in funding growth related transportation projects within the City. Without either of these other programs planned for or in place, a TIF program would not be a strong funding option for the City.

### *Pursuing Grants and Other Funding*

As noted previously, the City depends on state and federal grants to help implement its transportation improvements. These grants are becoming more competitive because most agencies are facing funding issues, gas tax revenues used to fund the grants are declining, and project costs are increasing at a rate faster than inflation. **Table 20 lists** a variety of grants and state and federal funding sources to assist local agencies in implementing transportation projects.

The City will need to continue to pursue traditional transportation related grants through the Transportation Improvement Board (TIB) and federal grant programs administered by WSDOT. These grants can be used to fund preservation, non-motorized, intersection, and roadway projects. Grant programs specific to regional trail projects also should be pursued with state, regional, and other local agencies.

In addition, the City will need to pursue grants for other types of projects and programs that can partially support transportation improvements. These could include economic development grants such as the Local Infrastructure Financing Tool (LIFT) or Community Block Grants administered through the Washington State Department of Trade and Economic Development (CTED).

**Table 17. Grants and Other Funding Options**

<b>Grant / Funding Source</b>	<b>Comments</b>
<b>FEDERAL</b>	
FHWA – Surface Transportation Program	See State STP below
FHWA – Safe Routes to School	See WSDOT Safe Routes to School below
<b>STATE</b>	
Surface Transportation Program (STP) – Regional	Funds are allocated to the Chelan-Douglas Transportation Council (CDTC) / Regional Transportation Planning Organization (RTPO) for regional prioritization and selection. Must be used on Federal Highways such as US Highway 2 or rural county collectors.
STP – Transportation Enhancement	Funds projects that allow communities to strengthen the local economy, improve the quality of life, enhance the travel experience for people traveling by all modes, and protect the environment.
WSDOT Safe Routes to School	Funds pass from FHWA through WSDOT to local jurisdictions. Funds projects to increase the number of children walking and biking to school safely.
WSDOT Pedestrian and Bicycle Safety Grants	Projects that help reduce collisions involving pedestrians and bicyclists.
Transportation Improvement Board (TIB) – Small City Arterial Program (SCAP)	Provides funding for projects that improve safety and roadway conditions.
TIB – Small City Preservation Program (SCPP)	Provides funding for rehabilitation and maintenance of the roadway system, in some cases in partnership with WSDOT or county paving projects.
TIB – Small City Sidewalk Program (SCSP)	Provides funding for sidewalk projects that improve safety and connectivity.
Community Trade and Economic Development (CTED) - Local Infrastructure Financing Tool (LIFT)	Allows the City to take advantage of tax revenue generated by private investment in a revenue development area (RDA) to help finance the cost of public infrastructure improvements that encourage economic development and redevelopment in that area.
CTED – Community Development Block Grant Planning Only	Planning-Only grants fund planning activities that lead to projects that benefit low-and moderate-income persons. Activities could include infrastructure planning, feasibility studies and pre-engineering reports.
CTED – Community	General Purpose grants are designed to assist in carrying

Development Block Grant General Purpose	out significant community and economic development projects that principally benefit low-and moderate-income persons. Examples include public facilities such as streets and barrier removals for improved handicap accessibility.
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Typically, the City will need to provide local matching funds to receive the grants. The need for these matching funds further supports the strategy for a new local revenue source. The City of Leavenworth can also apply for low interest loans through the Public Works Trust Fund (PWTF). While not a source of new funding, the loans can help advance high priority projects. Depending on the interest rate, the loans may help reduce the total project costs by completing projects prior to inflationary increases in construction costs.

*Partnering with Other Agencies*

The City will need to continue to coordinate and partner with WSDOT and Chelan County on transportation needs within the City and its UGA. Improvements along US 2 are critical to the long-term transportation needs of the City. At this time, there is no significant funding for most of the improvements along US 2. However, a significant amount of the traffic using US 2 within the City are regional in nature. The City should work with WSDOT and WVTC to seek grants, legislative “earmarks,” and other outside funding for improvements along the highway.

Chelan County also plays a major role in funding and constructing transportation projects in the greater Leavenworth area. The County’s Transportation Improvement Program (TIP) currently includes several major projects in the area. These include projects along North Road and Eagle Creek Road. The County is currently evaluating a proposed transportation impact fee program to fund additional capital improvements within Leavenworth’s UGA. The City will need to work with Chelan County on funding improvements to corridors that serve both the City and UGA. These could include improvements to upgrade Titus Road and Ski Hill Drive to urban standards or improvements to the intersection of Chumstick Highway and North Road. The City and County should partner on the arterial improvements serving growth in the UGA. Together, the agencies can increase the potential for grants for some of these projects.

*Identifying a New Local Funding Source*

A new funding source or combination of local revenues will be needed to fund maintenance, operations, and the highest priority capital projects to preserve and enhance the existing transportation system. The City of Leavenworth should identify a new local funding option to implement capital improvements, while also addressing maintenance of its existing transportation infrastructure.

The Transportation Element identifies the maintenance shortfall the City is facing just to maintain the existing transportation infrastructure. In addition to the maintenance needs, the Transportation Element identifies several transportation improvements that address existing safety issues, non-motorized needs, and enhancements to the downtown street network, as identified in the Downtown Master Plan. These maintenance needs and capital

improvements would provide benefits to residents, property owners, businesses, and tourists in the City. The projects include regional trails, sidewalks, traffic calming, pavement upgrades, new traffic control, and corridor enhancements.

The City is facing a shortfall of more than \$48.5 million over the life of the plan. Many of the capital improvements will be needed regardless of growth, so new growth can not be expected to make up the shortfall. However, some of the growth related improvements also benefit existing users, thus requiring local matching revenue. The matching revenue would support establishment of a transportation impact fee program as well as be used to partner with Chelan County or WSDOT to implement projects that serve both agencies.

In an effort to create a new revenue source suitable to funding both maintenance and capital projects, the City should consider establishing a Transportation Benefit District (TBD). A TBD may be established for the construction, operation, or maintenance of improvements to City streets. The TBD may be used for the reconstruction and upgrade of existing facilities, pedestrian and bicycle enhancements, or other regionally significant projects included in the Chelan-Douglas Transportation Council (CDTC) / North Central RTPO Regional Transportation Plan.

A TBD allows for an array of funding options. It is suggested that the City implement some combination of the following types of fees:

- **Sales and Use Tax.** Up to 0.2 percent with voter approval for up to 10 years – unless reauthorized by voters. A voter approved 0.2 percent sales tax increase could generate approximately \$220,000 per year for the City. Assuming a 2 percent rate of growth in the value of taxable retail sales collected, the 0.2 percent sales tax could generate an additional \$3.9 million over the planning period (in 2008 dollars).
- **Motor Vehicle License Renewal Fee.** A City Council enacted \$20 vehicle license renewal fee could generate between \$50,000 to \$100,000 per year or \$1.0 to \$2.0 million over the planning period.
- **General Obligation Bond with Excess Property Tax Levy.** A voter approved property tax levy lift to pay back a 20-year general obligation bond. A \$10 million voted excess levy backed by a property tax levy. Assuming a single family home is valued at \$250,000, they would likely pay an additional \$500 a year in property taxes to retire the bonds.

The TBD could help fund anywhere from \$3 million to \$16 million (or more) depending on the combination and magnitude of funding options pursued during the 20-year life of the plan.

### **Reassessment Strategy**

A reassessment strategy has been provided to help maintain a viable transportation program to address the City's existing and future needs. The financing strategy is based on the ability of the City to expand existing revenues and generate new funding sources. Some of these efforts will require specific action by the City Council, such as adoption of a transportation impact fee program. Other strategies, such as establishment of a TBD will

require voter approval. These requirements will affect the actual level of funding and its timing.

Due to the uncertainties in funding and the magnitude of the potential deficit, the City of Leavenworth is committed to reassessing its transportation needs and funding each year as part of the development of its Six-Year Transportation Improvement Program (TIP). This will allow the City to match available funding with the highest priority improvements and programs. The reassessment strategy also includes a periodic review of its land use plans, level of service standards, and funding options to ensure they support one another and ensure that concurrency requirements are met. The City will consider the following principles in its transportation funding programs:

- As part of the development of the annual Six-Year Transportation Improvement Program, the City will balance improvement costs with available revenues;
- Review roadway designs to determine whether costs could be reduced through reasonable changes in scope or deviations from design standards;
- Fund improvements or require developer improvements as they become necessary to maintain the City's level of service standards;
- Assure that developer contributions adequately address their impacts and benefits;
- Coordinate and partner with WSDOT and Chelan County to vigorously pursue a full range of grants from state and federal agencies to fund regional transportation improvements;
- **Work to implement a new local funding source, such as a TBD.**
- Coordinate with the County in implementing a Transportation Impact Fee program and Interlocal Agreement between the two agencies;
- If the actions above are not sufficient, the City could consider changes in its level of service standards and/or possibly limit the rate or location of growth as part of future updates of its Comprehensive Plan; and,
- Acknowledge that some lower priority projects may be delayed or removed from the program.



## Relationship to Other Plans

Leavenworth's transportation system is part of, and connected to, a broader regional highway and arterial system. The GMA works to increase coordination and compatibility between the various agencies that have responsibilities for the overall transportation system. The Leavenworth Transportation Element directly interfaces with the WSDOT, the Chelan-Douglas Transportation Council (CDTC) / North Central RTPO, Chelan County, and LINK Transit. The Transportation Element is intended to be consistent and compatible with the plans and programs of these agencies.

The Transportation Element builds off the transportation planning documents adopted at state, regional, and local levels. Since transportation improvements need to be coordinated across jurisdictional boundaries, the Transportation Element needs to be consistent with and support the objectives identified in the *Washington State Transportation Plan*, the *Chelan-Douglas Transportation Council (CDTC) Transportation Plan*, and LINK Transit's development plan. However, it is primarily a bottoms-up approach to planning, with the City exploring its needs based on the land use plan. Eventually, the local projects are incorporated into regional and state plans. A schematic of this approach is shown in Figure 27.



**Figure 20. Relationship to Other Plans**

The following summarizes how the City Transportation Element relates to these other plans.

### Washington Transportation Plan

The *Washington Transportation Plan 2007-2026* (WTP), adopted in November 2006, and the associated *2007-2026 Highway System Plan* (HSP) from December 2007, provide the umbrella for all metropolitan and regional transportation plans.

The WTP's vision is:

*“Washington’s transportation system should serve our citizens’ safety and mobility, the state’s economic productivity, our communities’ livability, and our ecosystem’s viability.”*

The priorities set by the City of Leavenworth for its Transportation Element align closely with these state guidelines. The WTP priorities focus on preservation, safety, economic vitality, mobility, and environmental quality and health. The City's goals and policies are supportive and consistent with these WTP objectives.

The Highway System Plan is an element of the WTP. The HSP identifies highway system improvement projects and programs consistent with the WTP priorities. The HSP is constrained by available funding forecast for the next 20 years. Improvement projects listed in the HSP were reviewed for consistency with the strategies and projects recommended in the Transportation Element.

Pursuant to the GMA, the Leavenworth Transportation Element addresses the existing and future conditions of US 2 serving the City. The transportation inventory describes existing conditions along US 2 through the City. Data and analyses on existing traffic volumes, operation levels of service, and safety have been summarized for US 2. The Transportation Element also identifies forecast conditions and improvement needs on the highway.

US 2 is classified as a State Highway of Statewide Significance. According to the HSP, the LOS standards are set forth by State law. State law sets LOS D for HSS facilities in urban areas and LOS C for HSS facilities in rural areas. Since the City is a designated urban area, the LOS D standard applies for the segment of US 2 within the City. GMA concurrency requirements do not apply to HSS facilities. However, the City has an adopted LOS D standard for US 2 and all other arterial and collector roadways and intersections, which is consistent and supportive of the State standard.

When a development affects a segment or intersection where the LOS is already below the applicable threshold, the pre-development LOS will be used instead of the otherwise applicable deficiency level.

When a development would degrade the facility's LOS below the applicable threshold, the facility would be considered deficient to support the development, and WSDOT and its partners would seek mitigation of traffic impacts.

The City's Transportation Element includes WSDOT improvement projects to US 2 that were identified in the HSP. The expanded project list in Appendix C lists those projects that originated from the HSP or directly from a WSDOT study. Several additional projects were then identified as part of the City's Transportation Element that are shown to be needed to address anticipated growth at both the local and regional level. These projects include a preliminary design study to evaluate traffic control enhancements and intersection improvements along US 2. The outcome of the study would better define the improvements at the intersections listed in **Table 14. Many** of the intersection projects, along with the pre-design study are not in the State's current plans. The City requests that the State and regional transportation plans include these projects to provide for grant or other funding to be available.

### **Regional Transportation Plan**

The Chelan-Douglas Transportation Council (CDTC) is lead agency for the Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Organization

(RTPO) for the Wenatchee-East Wenatchee metropolitan statistical area, encompassing Chelan and Douglas counties in central Washington State.

CDTC has developed a Regional Transportation Improvement Program (TIP) . It includes a project list by jurisdiction and identifies what is needed along the State Highway System and the arterials. Many of the projects in the Transportation Element are also listed in the regional TIP. It recognizes that the needs far exceed available revenues. The Transportation Element is consistent with and supportive of the regional TIP. However, there are still a number of improvements in the Transportation Element that are not reflected in regional TIP..

### **Chelan County Transportation Element**

The Leavenworth Transportation Element was prepared alongside the County Transportation Element. Both plans are consistent in regards to priorities, projects, and possible financing strategies to address the anticipated funding shortfall for both agencies. The Transportation Element lists those projects within and surrounding the UGA which the County has in its Transportation Element. The City's Transportation Element recognizes that the County improvements are important elements of the regional and local area transportation system.

The Leavenworth Transportation Element accounts for the significant growth anticipated for the UGA and unincorporated Chelan County. Most of the traffic associated with the developments in the UGA and surrounding county areas will connect within Leavenworth, while other trips will pass through the City. The City plans to continue coordinating with the County on capital improvements, and will work alongside the County as new revenue sources are investigated to address the considerable funding shortfalls that are highlighted in each Transportation Element.

### **Transit Plans**

Two recent transit plans were used in the process of developing the City Transportation Element:

- LINK Transit's Transit Development Plan
- Coordinated Human Services Transportation Plan

LINK Transit adopted a six-year transit development plan covering the period 2008 to 2013. The document highlights a set of action strategies organized around the following items:

- Preserve existing public transportation service levels
- Preserve existing public transportation facilities and equipment
- Integrate public transportation services into a coordinated system linked by intermodal facilities
- 2008 service expansion

These strategies guided the development of the transit strategies of the City's Transportation Element. The projects listed in **Table 14** are based on those projects found in the Transit Development Plan. The City plans to work with LINK Transit to locate

another park & ride facility near the downtown, while also supporting an increase in transit service and frequency to communities along the Wenatchee River. Overall, the Transportation Element is generally consistent with and supportive of the Transit Development Plan.

In 2007, WVTC led the development of a Coordinated Human Services Transportation Plan for the North Central Regional Transportation Planning Organization, which covers Chelan, Douglas, and Okanogan counties. The document describes existing transit services available and identifies service gaps and overlaps. Specific projects to address existing and future needs are described, and ranked into three categories to assist in defining which projects should be funded in priority through federal grant programs. The list of proposed projects was reviewed and some of these projects were included in the list of transportation improvements listed in **Table 14.**

LINK Transit also recently completed a Park and Ride feasibility study and identified two possible locations in Leavenworth for a new park and ride facility. The Transportation Element is supportive of this conclusion and notes the need for a new park and ride in **Table 14.**

### **Upper Valley Regional Trails Plan**

An Upper Valley Regional Trails Plan is currently under development, with the City of Leavenworth as the lead agency. The new plan will integrate existing planning processes occurring in the upper valley area of the Wenatchee River. The plan proponents intend to build a community in which residents and visitors, in a safe and enjoyable manner, can travel for leisure or work, from corner to corner by their own force. This plan is envisioned to incorporate multiple modes of travel through four seasons and will include, but not be limited to, pedestrian, bicycle, equestrian, and cross-country ski travel. This plan will link and enhance existing and planned trails, and will determine the necessary locations for new trails--all within urban, rural, and public lands settings. Where possible, this will also include development of pathways pursuant to Smart Growth initiatives such as "Green Infrastructure." This plan will include the creation of capital improvement plans, goals, and policies for the City of Leavenworth, Peshastin Community, and Chelan County Comprehensive Plans, and will also involve the creation of development standards for each jurisdiction. Ultimately, this plan will further each partner's goals for development of open space, recreation, and healthy communities.



